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# OUTDOOR OPPORTUNITIES

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*The Raising and Care of Small  
Animals, Birds and Plants*



Published by  
OUTDOOR ENTERPRISE PUBLISHING COMPANY  
Kansas City, Missouri





Outdoor Enterprise Publishing Co.  
Kansas City, Mo.  
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# OUTDOOR OPPORTUNITIES

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The Raising and Care of Small Animals,  
Birds and Plants

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*A Practical Treatise on the Raising and  
Care of Small Animals, Birds and  
Plants for Profit and Pleasure*

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120 ILLUSTRATIONS

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# FOREWORD

Realizing the importance of placing in the hands of the people a book that is adaptable to individual requirements for an occupation deriving pleasure and profit at the same time and thus meeting a big general demand—is the aim of

## OUTDOOR OPPORTUNITIES

a book dedicated to the vast army of *Opportunity Seekers*.

Ever since the dawn of history the *great outdoors* has offered the best that is in the way of satisfying the yearnings of the *Opportunist*. The determination of the *Opportunity Seeker* at first to capitalize his project with brains and energy rather than money have been the chief assets of success. With this in mind, the publishers of OUTDOOR OPPORTUNITIES secured some of the most learned authorities to treat upon the various subjects herein. In all instances, the *Opportunity Seeker* will be surprised to learn of the little outlay of money which is necessary to start him on the way to build a successful industrial career, starting in spare time and building up until it will mean the full-time service of himself and others.

*Opportunity* is the *corner stone* upon which great industries are built. Every man, woman, boy and girl seek the great outlet of *opportunity* to work up to a successful career. The purpose of OUTDOOR OPPORTUNITIES is to satisfy those longings of ambition because *everybody is interested* in some kind of *animal, bird or plant*, in an occupation which is followed in the *great outdoors*, combined with the principle of *profit*, as well as being assured of *health and happiness*, which are of inestimable value. OUTDOOR OPPORTUNITIES will mean the crowning achievement of hundreds of *Opportunity Seekers*.

Should any reader want additional information upon any of the subjects treated in this book, he may write to us, and we will advise him thereon, as our services are at your command.

The publishers wish to express their great appreciation of the assistance of the writers and those who helped in the illustrations of this work.

Successfully yours,

OUTDOOR ENTERPRISE PUBLISHING COMPANY.

Edw. H. Stahl }  
Jas. Bunt } Compilers.

July, 1922.

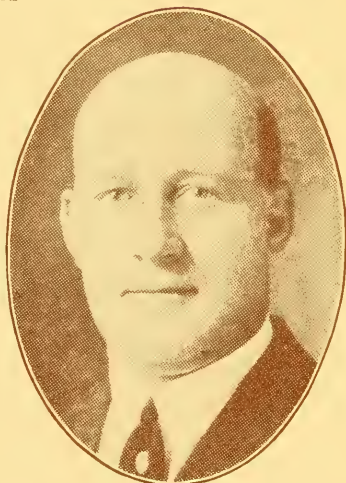
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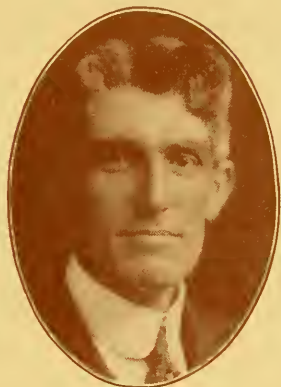


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# THE RABBIT INDUSTRY

## Food—Fur—Fancy

**T**HE experimental stage, the “kid” stage, of the rabbit industry has passed.

We now have to deal with a real business of the production of food; food of the most nutritious and valuable kind and among the cheapest to produce of any.

Lest some should still look upon the rabbit industry with a view of its past days of experiment and “boom” times, we draw respectful attention to the fact that there are in the United States alone over 50,000 persons engaged in it, with plants and equipment and live stock valued at over \$25,000,000. Thus it will be seen to be no small industry, when its value and backers are considered.

### Can Begin With Small Capital

What possibilities are here! In no other business is there so much opportunity for the person of small capital to begin and make a real showing.

This business of the breeding of rabbits has now become the national business of the American people, and will be found to pay in just the proportions that we put time and effort and thought into it. To do this intelligently requires that we start correctly. Hence the great demand for a work of this kind, a work beginning at the natural starting point of the industry and continuing to its logical end.

In other words, to start with the housing of the stock and to continue the instruction to the sale of the hide of the rabbit.

Between the extremes of “just a few for the table” and a large rabbitry “for commercial gain” you may find your place and in this book find your complete instruction. Your success from here forward will depend on YOU.

## HOUSING

### For Fancy and Breeding Stock

It would seem to be obvious that the first thing to do on starting into the rabbit business, either for pleasure or profit, would be to fix a place to put the rabbits. But it oftentimes happens that Uncle John or Aunt Sarah gives Tommy a rabbit or two and there is no place for the bunnies.

What is the right course?

### Construction of House

In the first place, the three main enemies of rabbits are DRAFT, DAMP and DOGS. These we must guard against.



—Courtesy of Charles Humfeld

A MODEL RABBIT HUTCH

To eliminate the drafts we will make the back and the two ends of our rabbit house walls of good construction to keep out wind. A cheap way to do this is to use a good roofing, or to cover a board wall with building paper and then shingle it.

Preferably the rabbit hutches should open to the south or east and the other three sides be built solidly. Where a stout fence or brick wall is available to build against, this is comparatively easy.

To keep out damp we will roof the building securely, as well as the three sides, leaving a space of not less than four inches and preferably six inches, between the hutch walls and the walls of our building clear around. For this reason, the movable or portable type hutches, built in groups or sections.

As a rule these are built in sections of six, three long and three high, each hutch being 30x30 inches square on the floor and 18 inches high from floor to ceiling in each hutch. There is then a sliding partition built between each two of the group on a floor giving a hutch 30x60 inches when the partition is out, which is the proper size for a doe with a litter, or a larger type of rabbit, such as the Flemish or Checkered Giants.

The bottom tier of the three rows of hutches will be about eight or ten inches from the floor of the shed or rabbit-house.

The door on the front of each hutch must be the full length and full height of that hutch. Some favor one door for the full height of the entire three tiers or rows of hutches, which is a very good method also, and saves some time in the feeding period.

The door frame should be made of 1x2 common pine, the screen being held on the inside of the door with strips of lath nailed clear around to conceal the raw edge of the screen. Lath may also be used to put across the corners and brace the doors with.

Little hay-racks should be constructed against the walls of each hutch, either accessible through a hole in the screen of the door to put the hay in, or open on one end so that the hay may be thrust in after the door is open.

The grain and water should be fed in heavy crocks. A very good type of feed or water crock is handled by most rabbit supply houses.

### Nest Boxes

Besides the water and feed crocks and the hay racks used to equip the hutches, you will need a number of boxes for nest boxes, to be used as in the manner described in the section on Breeding.

These boxes may be ordinary grocer boxes, measuring about ten inches high, about twelve inches wide and about sixteen or eighteen inches long. It will be noted that we say about so many inches in most of the measurements given in this work. There is no exact rule. What we wish to do is to help the rabbit breeder work out a system of rabbit-keeping that shall be adaptable to the breeder's particular environment and circumstances. The important thing is not the exact number of inches that each object shall measure, but the comfort and health of the rabbit and the convenience of the owner in their care.

The nest box, then, conforming as nearly as may be to the given measurements, or a little larger for the Flemish Giants and large breeds, should have the lid cleated into one piece and hinged on at what shall be the back end. The front or entry end will have a hole cut so that half the hole is cut from the end of the lid of the box and half of the hole from the end of the box. The hole should be about six inches in diameter and rather round in shape.

The hutches and the nest boxes should all be painted inside and out, both as a preservative and to keep germs from lodging so freely in them. Besides it gives a finished and business-like appearance to the rabbitry.

White or a very light color should be used inside the hutches and grey or olive green or some other neutral color for the outside of the hutches. This will set off the stock to better display advantage and help sell it.

These hutches, built in sections of three long and three hutch high, as outlined, may be used in old sheds, if it is not convenient to build new. Such old buildings or sheds must be thoroughly cleaned out and made damp and draft-proof, before setting up a rabbitry in them.

As for dogs, be sure that your fences or outside sheds and walls are sound, for a big dog will do some remarkable stunts in his efforts to get at a rabbit or her young. Dogs have been known to stalk about a rabbitry for weeks, watching the chance to get in, at last succeeding, to the destruction of a fine line of stock.

Build as many hutches at a time as you think you will need for the stock you get and their offspring for three or four months to come. Figure one hutch to each mature ani-

mal and one hutch for each litter for the next three months, that you may expect to raise, after learning from this book about what to expect.

### Open Pen System for Commercial Stock

For those who desire to operate entirely upon a meat or market basis, and who do not desire to keep the exact track of their stock that would be required on a pedigreed-stock basis we will show in this section a range, or pen-system of keeping rabbits.

Select a piece of ground with a slight slope, preferably shaded by trees or a building to some extent. Have it sloping to the south if possible. Lay out a space about fifty feet in length and twenty feet wide on this ground.



—Courtesy of W. J. E. Williams

#### PORTABLE HUTCHES—BUILT-IN NEST BOXES IN REAR

Around the border line of the ground dig a narrow trench twelve inches deep and set in two boards temporarily to make a concrete form four inches wide and extending three inches or more above ground. Run such a trench and concrete across one end of the space about twelve feet from the end.

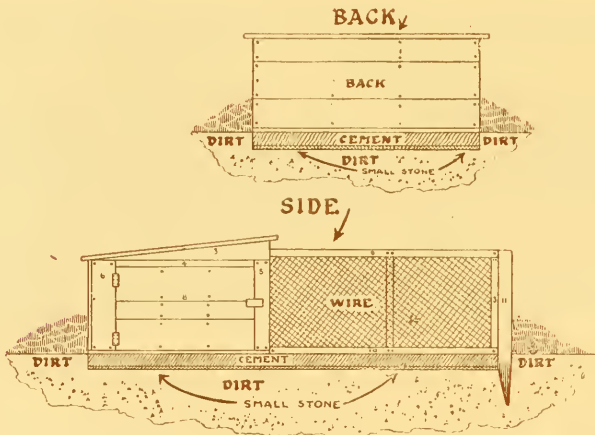
You now have a space twelve by twenty feet and another space thirty-eight by twenty feet. Build the little concrete walls all around and across, of about six to one mixture, that is, six parts sand to one part cement, and mixed with water to a fairly thin consistency.

After you have set your forms you can set the posts that are to carry the rabbit wire, a one-inch mesh wire made for

the purpose. These posts may be set right in the forms at the corners and then each six feet apart all around and across the dividing line. Spaces should be left for two gates, one into the large space and one into the small space.

Pieces of galvanized wire must be left sticking up out of the concrete each foot or so, to fasten down the rabbit wire to the wall between posts. Pieces of wire two feet long bent U shape with the ends sticking up, will do.

The small space has been left on the north end of the patch, if possible, and a shed with back and end walls tight will be built clear across the end of the space, twenty feet in length. This shed will be only about four feet high and six



A PORTABLE HUTCH DESIGN, SHOWING SIDE AND END VIEWS

feet wide. The back side of it will be about two and a half feet high, thus giving a good pitch to the roof. This roof is hinged on in sections so that it may be raised in filling the grain and hay hoppers beneath. These grain and hay hoppers occupy ten feet of the length of the shed, three feet for grain and seven feet for hay, the other ten feet of the shed's length being occupied by rows of stalls or boxes, built-in.

Thus you will have provided a place for hay, in the hoppers with the screen fronts, for grain in the three-foot hoppers with the solid front and the narrow trough at the bottom, and for a sleeping room.

As for water, it may be provided in whatever convenient hopper or running water trough form may be most readily devised, avoiding freezing in winter, if possible.

The cross-fence, dividing the large space from the small, should be provided with two small apertures, just large enough for the rabbit to run through. These two gates should be managed by a lever from the outside of the pen.

The purpose of these gates is to have the rabbits in the small pen at feeding time, so that those desirable for butchering for market may be readily caught.

## FEEDING

### General Rabbit Feeding

At this point we will take up the general feeding of the rabbit and the main principles by which one may be guided. Feeding for size, color or any special effect will be taken up under the name of the breed for which such special feeding is desirable.

The rabbit is naturally a herbivorous or vegetarian animal. It is this fact that makes it so desirable for food, and more nutritious than any other kind of meat. The chicken, by comparison, is a natural scavenger, eating all manner of dirty food, including decayed meats, etc. The hog also follows this line of eating, hence we find only the bovine animals, such as the cow, sheep and deer that will bear any comparison to the fine white meat of the rabbit, and NONE of these can show such beauty of meat or such a large weight of meat compared to bone in the dressed animal.

Practically all vegetables are food to the rabbit, much of the parings and waste from the kitchen making a very desirable addition to bunny's very economical plan of eating. There are a few things, though, that are better left out, and to the young rabbit frequently prove dangerous. Among these are potato parings, which act as a violent physic on the intestines of the rabbit, causing scours and acute indigestion, generally resulting in death. Parings that are rotted or badly wilted are too low a grade of food, too, for the cleanly little

animal. See that all the food your rabbits get is as fresh and clean as you would want for yourself and you will have no trouble. Avoid dusty and musty hay, rotted cabbage or other vegetable and all uncleanness in the food of your rabbits.

The general feed of a rabbit, with such special feedings and changes as will be noted in the sections of special breeds and special effects to be attained (as noted later) are principally rolled barley, alfalfa, carrots, chicory and water.

Where rolled barley cannot be obtained, a mixture of rolled oats and bran, equal parts, make a good substitute, or cracked wheat and bran, equal parts, may be used. Corn should be avoided, except in cold weather or extreme Northern states. Corn is too heating for rabbits as a rule, and results in skin and abscess trouble in the summer or warm weather.

Where alfalfa cannot be obtained, a good substitute will be found in clover and timothy, equal parts mixed; or in wheat or rice straw and clover, equal parts. Oat hay, if well cured, may be mixed with clover to good advantage, about equal parts.

Other roots besides carrots may be fed, but sparingly, as too heavy feeding in roots may result in pot-belly. Roots should not be fed over twice or three times a week. Other roots besides carrots that are suitable to rabbits are principally radishes, turnips, beets, artichokes and sweet potatoes.

Vegetable greens, such as celery tops, lettuce, cabbage (sparingly), beet tops, carrot tops, radish tops, turnip tops, etc., may also be fed, but it must be borne in mind that these things are to be fed sparingly, especially for fancy stock where shape is an element of culture. Too much greens as above mentioned, or too often fed is frequently the cause of the misshaping of the abdomen, known as "pot-belly."

We give here a list of the foods that may be used for rabbits, their value being indicated by their place in the list:

**ALFALFA.** Used as roughness. Should be well cured and, if being fed for the first time to stock used to other hay, should be fed sparingly at first and mixed with the hay formerly used. Bear in mind that it is much easier to over-



feed a rabbit than to under-feed one, as they are naturally adapted to very little at a time. A small handful twice a day to each mature rabbit, except as otherwise noted further on.

**ROLLED BARLEY.** Used as a grain food and fattener. Should be fed once a day for general feeding, twice a day for fattening purposes. One to two ounces to each rabbit per feeding. Find out how much one ounce is in appearance and then get a small can, using that for a measure. Thus you can be regular in amount as well as time of feeding, which is one of the cardinal principles in rabbit rearing.

**CARROTS.** Used as a root crop for digestion and keeping system generally in tone. Said to have some little influence on color in the red and brown types of rabbit. Should be fed sparingly, generally a piece as large as your thumb for each mature rabbit, fed once a day in the evening.

**BRAN.** Often used with equal parts of rolled oats, as a substitute for rolled barley. Fed same as rolled barley, whether mixed or not.

**ROLLED OATS.** Generally used mixed with bran. (See Bran.)

**WHEAT.** Generally used crushed or rolled, fed mixed equal parts with bran or rolled oats. Fed same as rolled barley.

**OATS.** Sometimes fed whole, but the hulls are a little dangerous to young stock, liable to give them the scours or acute diarrhoea.

**CELERY, LETTUCE, ROOT-TOPS, ETC.** Fed once a day only and then just what they will clean up quickly, say twenty minutes, as you must not allow roots or green stuff lay about the hutches and rot. The younger stock sometimes eat this rotted food and stomach and bowel troubles are the immediate result.

**CABBAGE, BRUSSELS SPROUTS, CAULIFLOWER, ETC.** A strong food for young stock, tending sometimes to looseness. All right for mature stock, but always remember about feeding green stuff sparingly as outlined above, and once a day only.

**ALL OTHER FOODS** try out slowly and carefully, feeling your way. Avoid sudden changes,

WEEDS. There are many weeds that make excellent food for rabbits, fed carefully as outlined for other greens above, such weeds numbering the dandelion, often used to correct liver and kidney troubles (see section on diseases), rag-weed, pig-weed, sour-dock, lamb's quarter, wild spinach, wild oats, and many others. We have given them common names used in the middle west for these weeds, as the scientific names would be of little use to any but regular botanists. Weeds should be tried out carefully, as outlined in the paragraph on all other foods, just above.

The two cardinal principles of rabbit feeding are CLEANLINESS AND REGULARITY. Keep the grain and water crocks thoroughly CLEAN. Keep all foods off the hutch floors as much as possible, using crocks for grain and water.



—Courtesy Western Stoneware Co.

NON-TIP FEED AND WATER CROCK

Use a small hay rack as shown below to keep the hay up and clean. Feed root crops in the grain dish as well as the green stuff. Dry, but not mouldy; dry bread is excellent for the rabbits occasionally, instead of grain.



—Courtesy of M. Meek

HAY RACK

Always keep plenty of clean water before the rabbits, as they are warm blooded animals that sweat. Hence they MUST have water. It is rank and outrageous cruelty to deprive ANY warm blooded, sweating animal of water. Ask any veterinary or any doctor about it. Be sure to give water to your rabbits.

## BREEDING

### General Remarks

Breeding for special purposes and particulars for each breed will be taken up under the headings of the breeds that may be referred to, when such instructions are deemed necessary. In this section we will only take up the general principles and breeding of rabbits in general.

Health of the parent stock is the first consideration in rabbit breeding. A habit of constantly testing out your own stock before breeding them for general health, is a very good habit. If you are taking or sending your doe to some buck owned by another breeder, be sure to get a good report on the buck's health and see to it that your doe is in good health also. The question of health and the proper tests to be made are taken up in detail in the section on buying stock.

Having ascertained the health of the stock to be bred, the next consideration is the pedigrees, if it is fancy stock you are about to breed. A great deal has been said pro and con about pedigrees, their use and their abuse. It is true that the pedigree has been much abused and many fakes have been promulgated on the strength of a pedigree not worth its paper, in order to obtain money for rabbits of otherwise doubtful value. But the fact remains that some sort of record of the parentage of an animal is absolutely necessary in order that we may see what we are doing, what strains we are crossing and what effects in color, weight, type or shape we may expect to get.

If you are not where you can have confidence in the stock you are breeding to or with, if you cannot trust the pedigrees and the records, then you will have to simply build up a strain of your own keeping accurate and scientific records of your own on the subject.



—Courtesy of C. F. Bonham,  
"NORWOOD BOY," FLEMISH GIANT BUCK

The section on rabbitry records will be taken up in detail, the matter of pedigrees, forms and manner of recording and registration.

Having ascertained that the parentage of the rabbits you propose to breed is what you want for points and pedigree you will now take the doe to the buck's hutch. She is a stranger to his hutch, which will tend to prevent her from fighting and he, being at home, has a tendency to greater boldness. If the doe will take the buck at all she will do so in the first five minutes. In that event you will see the action, which will be almost instantaneous. Immediately remove the doe, after *one* serving, setting her on a little table or shelf you have built handy for exhibiting your stock. This table or shelf, about twenty by twenty inches each way, is covered tightly with carpet or burlap sacking. Stroke the doe down a little and get her calm again, then replace her for a *second* serving to make sure. Now replace her in her hutch, marking her card as instructed in the section on rabbitry records. In exactly thirty-one days she will drop her litter, if normal conditions prevail.

Watch and feed her carefully and if she is a fancy rabbit commence adding a little milk to her drinking water on the twenty-second day after breeding. Start out with about a tablespoonful to the cup of water, increasing until you have about two-thirds milk in her water crock, each morning. This will tend to make her babies fat and healthy and keep her in fine health and fur.

On the twenty-fourth day after breeding put a nest box in her hutch, which you have half filled with clean straw or prairie hay. This nest box you have painted inside and out, and dried thoroughly, if you have had it in previous use. You should have at least half as many nest boxes as you have hutches and keep them always painted up and ready for emergencies, painting and setting aside each one as you get through with it.

Do not disturb or move the nest box after you have placed it in position, and if it is necessary to clean out the hutch do so without touching the box. Place the nest box so that the entrance of it is away from the light. Mrs. Bunny

likes to think that her babies are a great secret and she resents any knowledge of the event on your part.

Two days after the babies have come, or should have come, according to your records, take the doe carefully out of her hutch and place her where she cannot observe your operations. Now put on an old pair of gloves and stroke the stomach of the doe a little to get the scent of her on the gloves. Remove the nest box to the nearest convenient place to the hutch, so you can raise the hinged lid of the nest box and examine the young. Count them quickly. Remove any dead ones and all the smallest ones, above the number eight in the Belgian hare doe, where size is not the prime object; and all above the number four in the Flemish Giant where size IS an object. You may give these young to a nurse doe, if they are desirable stock, as pointed out in this section a little later. Replace the nest box carefully and set down the number of young the doe produced that litter, on her card, on the buck's card and on your charts, if you are running your rabbitry the modern way.

When the young are one month old and you see that they do not need the nest box any more, take it out, substituting a pile of clean straw in one corner of the hutch. The youngsters will be healthier than in the nest box, from then on. For this reason it is better to have the removable nest box, rather than the built-in type. The removable one is also easier to keep clean and sanitary, being painted and renovated after each litter.

If you have the room, you can now pull out the partition between the mother doe's hutch and the next, giving the mother and young a double hutch, making healthier stock. Leave the bottom board in the partition so that they will have a hurdle to jump over for exercise.

## BUYING

### General Remarks

There are some general facts about the buying of stock that will apply to all breeds of rabbits. The particular facts and points relating to the buying of particular breeds will be found in the sections relating to those breeds.

In the first place there is absolutely no value to be placed on the buying of a sick rabbit. Health is the first and primary consideration and no rabbit is a bargain at any price that has ANY disease or illness, however slight.

In examining a rabbit for health, first look carefully at the fur. In health the fur is smooth and clear in appearance, the hair having a natural glossy appearance and laying fairly smooth. Even in a rough haired Angora rabbit the fur will have a soft smooth feel to it.

Next look squarely and carefully into the eye of the animal. The eye should be clear and bright and in the smaller breeds should have a snap and fire to it, especially the Belgian Hare. The eye of the larger breeds, as in the Flemish



—Courtesy of G. N. McCoy

"RED PEPPER," A SPLENDID NEW ZEALAND RED BUCK

Giant and the New Zealand Red rabbit, is liable to a more lazy easy-going, less excitable appearance. In any rabbit, however, the coloring matter of the eye, whether blue, black, brown or pink (in the Polish and similar breeds) will be clear and liquid with a perceptible depth to it, in the healthy specimen. In the sick rabbit the coloring matter of the eye takes on a dead or opaque appearance. Watch the eye carefully, therefore, in picking out stock.

Running or mattery eyes are especially to be watched for, as indicating a cold or snuffles.

Next, look into the ears. They should be clear and pink down in the base inside. Do *not* buy rabbits with scabby ears, no matter how confident the seller is in assuring you that "that's nothing. You can fix it up in two days." Maybe so, but you don't want to BUY trouble at any price. Time enough to FIX it if it breaks out in your own hutches.

Next put the rabbit up on your shoulder with your ear against its ribs. Stroke its back vigorously while in that position and listen for a rattle or a rasp in its breathing. Any trouble in the breathing of the rabbit is especially to be avoided, as indicating the presence of cold or snuffles.

If the rabbit passes these tests without any apparent disease, turn your attention to the rabbit's surroundings. Are the surrounding hutches and rabbitry clean and healthful in both smell and appearance? Are the OTHER rabbits apparently free from diseases and sneezing of any kind?

The two or three fatal diseases of rabbits are contagious to other rabbits. Do NOT buy ANY stock where the other stock is diseased, for you cannot tell what infection has already taken place. You may be buying more than your money's worth in trouble by carrying home infections that will wipe out some of your own fine and healthy stock.

If you are buying pedigreed stock try to see that each one is recorded in the regular registry or national system of registration. While many fakes have been practiced and are practiced in the pedigreing of stock undeserving of it, your chances of getting a good specimen are much increased where an official national registrar has passed on the animal. It gives you all the chance there is, anyway, and is well worth the small fee charged.

After you have purchased good stock and it is what suits you after having read up on the standards for that type of animal, THEN you can start building up your own strain and in three or four generations of stock you can, by careful selection, have a real STRAIN whose pedigrees you KNOW to be right. Keep careful track of your pedigrees as shown in the section on rabbitry records; if you do those things it will not be long until you have a well-earned reputation of being a person of honesty who has the "real thing" in real stock of your favorite breed.



Honesty pays from the ground up and that business is not worth while, whether rabbits or dry goods, that is not built foursquare on the foundation of the square deal.

Spend your money for a little of the best, rather than a lot of the cheapest, and you will invariably find that you have really bought the cheapest; for the best IS the cheapest. Better to buy ONE good bred doe from a reliable dealer, a doe bred to a good buck, and good clean papers on both the doe and her coming litter, than to buy a lot of half-breeds that will bring you nothing and do nothing.



—Photo by Kadel & Herbert, New York

BLUE BEVEREN RABBITS RAISED BY EX-SERVICE MEN IN ENGLAND. THE CARCASSES ARE SENT TO LONDON. THE PELTS ARE TANNED AND SOLD FOR \$1.75 TO \$2 EACH.

Of course, where one is buying simply to raise meat stock, a selection should be made on the basis of good health and PRODUCTIVITY, more than any other factor. Size is the next consideration, but look up the matter of the parentage of the stock from a productive standpoint, where meat will be your object.

## SPECIALTY BREEDING

“The successful rabbit breeder is the one who does NOT try to mix his objects, but devotes his time, talent and advertising space and money to one great specialty.”

Now in market stock you will find that the buck from a productive mother will be the sire to big litters, while the doe from a productive father will put out big litters. So see to the parentage as well as you can, and when you do get a fast and good producing doe save all her sons for breeders, selecting the best of these for herd leaders (speaking now of market or meat stock), and when you get a buck that is an especially fine producer, throwing large and good litters from practically all does, save his daughters for breeders, selecting the best of these to head a pen.

Heed these remarks because they apply to buying the stock, insofar as you can learn these things of the stock you buy. You will know by this that you should buy the daughters of the fine bucks and the sons of the fine does. Thus you will carry on the line for it is nature's law of preservation of a species to thus promote the father's best in the daughters for the next generations benefit, and the mother's best in the sons.

There is no doubt that you will make some mistakes in buying stock, but if you will persevere THROUGH these first mistakes and still go on loving the BUSINESS, you will be well rewarded for your efforts.

## RABBITRY RECORDS

### General Remarks

Rabbitry management or any business management requires records more or less permanent in order to know whether we are progressing or not. Hence the earnest injunction to START your rabbitry with WRITTEN records of some kind. If you can find improvements on the kinds given here, well and good. But at least start with these and thus have something to refer to.

The first and most essential record, perhaps, about the rabbitry is the hutch card, to be kept in a little tin pocket bent for the purpose and fastened to the door or front of the hutch. The tin pocket or slide is better than tacking on

the card, as it preserves the card and is easier to change from hutch to hutch as the records may require.

The following is a form of hutch card used by many of the finest and largest rabbitries in the country, and worked out after years of experiment, based on simplicity and wide range of usefulness.

The card should be about 3x6 inches in size.

NAME (or number) .....		
SIRE.....		DAM.....
BORN.....		PRICE.....
DUE	NUMBER	MATED TO
(to litter)	(of young)	(buck or doe)

The numbering system of keeping track of rabbits is probably the most simple and easiest to handle, and what may here be said of recording the numbered rabbits may readily be applied to the naming of the stock, instead of numbering it.

We will assume that you have just separated the young from each other at about three months, or a little less, of age.

To mark these youngsters, one by one, as they are separated to a hutch for each, you should get a regular marking or tattoo outfit, which can be purchased from any rabbitry supply house, or write to the publishers of this book. This marking identifies your rabbits permanently, and is one of the best systems known for keeping track of individual rabbits and litters. Instructions, "How to Use," are supplied with each marker.

A good system of records is to letter the bucks and number the does.

Now referring to the hutch card, the number (or name) of this rabbit, let us say, is 34, being a doe. Her father, or sire, was K; her mother, or dam, was 21. 34 was born July 7, 1921.

## OUTDOOR OPPORTUNITIES

The hutch card now looks like this on the top portion:

NAME .....	34.....	
SIRE.....K.....		DAM.....21.....
BORN....7-7-21.....		PRICE....\$5.00....

Along in January, 1922, we decide to breed this doe to a fancy buck we just bought, which we have lettered R. Thirty days later, she drops a fine litter of seven. As we bred her on the 12th, the hutch card now looks like this:

NAME .....	34.....	
SIRE.....K.....		DAM.....21.....
BORN....7-7-21.....		PRICE....\$5.00....
DUE	NUMBER	MATED TO
2-12	7	R

Assuming that the buck, K, the father of 34, was sired by B, and was out of the doe 11; and assuming that the doe 21, the mother of 34, was sired by D and was out of the doe 14; we now can make a pedigree of the mothers side for any one of the seven youngsters produced by the doe 34, on the 12th of February, as per the above hutch card.

This pedigree for the mother's side would appear as follows:

Pedigree of any one of the seven born February 12, 1922.

<b>BLANK'S SUPERIOR RABBITRY</b>			
229 Billers Street			
JONESBURG, N. C.			
Sold to .....		.....	
Address .....		.....	
Shipped, date .....		.....	
Remarks .....		.....	
(Here write in show winnings or any other interesting facts about the lineage or stock.)			
ANY ONE OF THE SEVEN	SIRE...R....	{	SIRE..... { SIRE..... DAM.....
		}	DAM..... { SIRE..... DAM.....
Born..2-12-22..		{	SIRE...K.. { SIRE...B. DAM...11.
DAM....34..			}
We declare the above to be a true and correct pedigree as shown, to the best of our knowledge.			
THE BLANK SUPERIOR RABBITRY,			
By.....Mgr.			

Of course, where the data is known, you will fill in the pedigree of the sire to the young, known above as R, which would make the pedigree complete.

These pedigrees should be made out in duplicate, one to be kept on file in your lettered or numbered files, the other to be given to the customer with the purchase of the rabbit.

This makes a reference file with almost no extra labor, and enables you to refer to any rabbit the customer bought.

To obtain duplicates most effectively you should have a typewriter. In these days they may be obtained on small payments down, and carbon paper may be used on a blank

paper of a cheap kind for the second copy, only the one copy being a regular printed job, the one you send to the customer.

The typewriter is also very necessary for the use of the correspondence part of your business, as its use with carbon paper always gives you a copy of what you wrote the customer, and typewriting looks so much more business-like and makes a much better impression on the prospective customer.

## VARIETIES

### Belgian Hares

So far as we can learn, the Belgian Hare, sometimes known as the Rufus Red Belgian Hare rabbit, originated in France and Belgium, the breeders of the two countries crossing their lines so frequently that it is impractical to tell which is which so far as rabbits are concerned.

Although titled a "hare," the Belgian Hare is not a hare at all, but a rabbit. The chief distinguishing difference between hares and rabbits being that the rabbit is easily domesticated, while the hare is not, and that at birth the hare is equipped something as the deer is, ready furred and with eyes open, able to care for itself, that is, so far as escape from immediate danger may be concerned.

The rabbit, on the other hand, is born blind, and remains so, generally, for seven to nine days, and is born practically without any hair, thus being totally helpless in its extreme infancy, up to at least three weeks, so far as foraging for itself may be concerned.

The Belgian Hare finds its principal usefulness as food, although we are now getting to the point where the fur is getting noticed more and, no doubt, in the very near future will be a highly desirable asset in the Belgian Hare, as it already is in some of the other breeds mentioned later.

While the utility side of the Belgian Hare will always be largely food, the fancy or thoroughbred side of the industry will always have its devotees just as it does in cattle, hogs and horses. There will always be a good market for good stock at top prices for those who will let the world know

that he has such stock and who will base his business absolutely on the square deal.

In the matter of feeding as applied to this breed of rabbit, a plain food of grains and alfalfa with but little green stock and small quantities of root crops, are to be advised. Water should be given rather sparingly to the show stock, a short drink twice a day being sufficient except in extreme hot weather. The whole idea being to hold the long slim shape and not to overfeed, as it is far easier to overfeed a rabbit than to underfeed it in this breed of stock.



—Courtesy of Carl Th. Goldenberg

BELGIAN HARE, "MORNING STAR"

Although the standard on Belgian Hares, as shown in the latter part of this section, calls for seven pounds mature buck and eight pounds mature doe, it is still a fact that the thing most by breeders of the fancy stock is shape and color. When these are well advanced the weight becomes a secondary consideration with practically all breeders and most of the judges in actual practice.

So much is this true that in the effort to get fine bones and delicate appearing specimens of the long, slender variety and type among the English breeders of the past twenty years, health and weight were sacrificed and some of the finest and longest specimens ever seen were produced.

Poor health, of course, meant poor fur and dead color. Thanks to the breeding wisdom that made America famous as outbreeding the Belgian horse, outbreeding the English setter dog, and many other types of cattle and domestic animals; we find that the American breeder took hold of the rabbit question, until today the very finest specimens of ANY rabbit are those bred in the United States.

We find many breeders not only retaining shape and color, but actually meeting standard weight requirements by careful selection.

By observing the simple rule that nature always promotes the color of the father in his daughters as their most noticeable trait, and that the size and shape of the mother is promoted in her sons as their most noticeable trait, it is comparatively easy to build up any kind of strain you wish by just keeping careful track of what you are breeding. The future is before you and the rest is simply patient progress.

### Description

The color of the Belgian Hare required is a rich, light mahogany red, or reddish brown for coat, with practically half the hairs on the back and flank coats tipped with black on the extreme ends. This gives an overlay or "ticking" of a wavy, fine shadowy effect, having a rich velvety appearance. The fur should be glossy and lifelike.

The belly should be a strong cream and the under jaw practically the same. The ears must be well furred to the tips and very thin and the inside a shell pink.

The eye bright and saucy looking, with just enough white showing to give a slightly wild and hare-like appearance.

At maturity the standard calls for seven pounds for the buck and eight for the doe, at seven to eight months of age. Up to six months the rabbit should weigh about one and one-eighth pounds for each month of its growth.

The type of Belgian Hare desired by fancy and thoroughbred breeders is of the long slim variety, with snap and go in the manner of carriage and plenty of room beneath the



belly and flanks of the animals as it sits up. The ears to be held well together and at direct right angles to the line of the head; chest well out, front legs slim and well together, the whole appearance full of life and pride. Flesh firm and solid, which is obtained by a long hutch with a hurdle in it as a regular home for the rabbit.

## BELGIAN HARE STANDARD

*Adopted by the Federation Belgian Breeders of America.*

### Color

Rich Rufus Red. Carried well down the sides and hind quarters and as little white under jaws as possible. Points, 20; cuts, 1 to 10.

### Shape

Body long and slim, well tucked up at flank and well ribbed up. Back well arched. Loins well rounded, not choppy. Head long, slim and trim; the slimmer the better. Tail straight, and specimen to be altogether of a racy appearance. Points, 20; cuts, 1 to 10.

### Ticking

Wavy appearance. Points, 10; cuts, 1 to 5.

### Ears

Five inches in length, thin, well laced on the tips, as far down the outside edge as possible. Good color and well set on. Points, 10; cuts, 1 to 5.

### Eyes

Hazel color, large, round, bright and bold. Points, 10; cuts, 1 to 5.

### Legs and Feet

Fore feet and legs long, straight and slender, well colored and free from ticking. Hind feet to be as near the color of the front feet as possible; (not a tan color). Points, 10; cuts, 1 to 5.

### Condition

Perfectly healthy, not fat, but firm in flesh and with good quality of fur, without dewlap. Points, 15; cuts, 1 to 5.

### Weight

Eight pounds. Points, 5; cuts, 1 to 3.

### Color Description

A description of a Rufus Red color is well nigh impossible; we have before us a description given by the National Association as follows: The true color is almost a cherry red, but has a golden shade of rust in the effect that is very pleasing to the eye.

The well informed breeder will agree that "cherry" red is rather far fetched and altogether insufficient. We lean to the thought of a brownish red blended with a cinnamon brown. Harmonize this brownish red with a cinnamon brown in your mind's eye and you will have more nearly the color of the thoroughbred Belgian of today.

The ticking should be entirely absent on lower sides, shoulders and front legs.

The jaws and ears to be free from ticking. Particular attention should be given to producing red feet and legs.

A beautiful jet black lacing confined sharply to the edges of clean ears is one of the real features of a thoroughbred.

The ticking, which consists of black points on the red hairs, should be found on the following sections: Rump, back and upper sides.

Special color sections are: Belly to be a deep creamy cinnamon, rather than creamy; the color which has been acceptable in the past and before the Belgian was brought up to the Standard of today. This belly color should be held up as nearly as can be under the jaws. Top of tail should blend with the body color and be as free from ticking as possible; under side of tail, white. Under color (not belly) should run clear to the skin.

### Disqualifications for Registration

Bucks under 5½ pounds, does under 6 pounds. Any disease, crooked feet or legs, missing toe nails, a decided patch of white hair, very poor condition, lumps, blemishes of any kind, crooked tail, lop ear and ear under four inches in length. A lop ear is to be understood as an ear that is not carried up in position when the specimen is in an alert pose. A specimen may carry the tail to either the right or left side at intervals, but when it is so decidedly kinked that it "flops" back into a crooked shape when released, it should disqualify.

## THE FLEMISH GIANT

As its name would imply, this rabbit originated in Flanders, principally, but like the Belgian Hare, it has been crossed and recrossed so many times with specimens from other countries that it is difficult to really say just what we have in America, so far as ancestry is concerned.

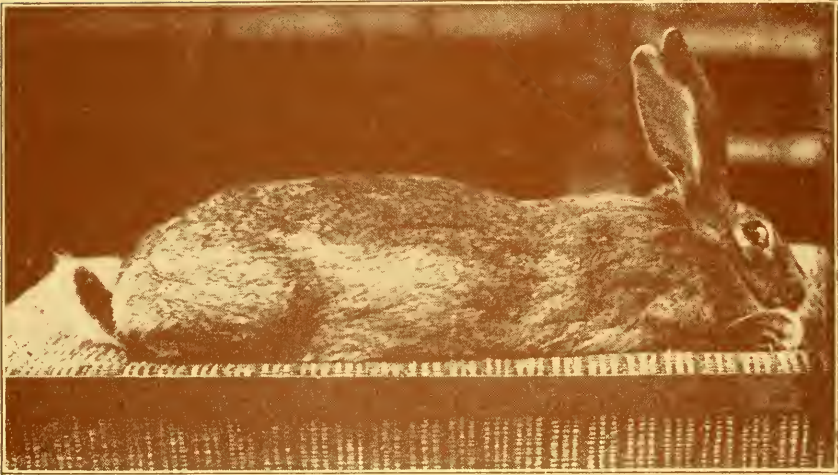
It is probable that the Flemish Giant rabbit will always be raised principally for its meat, although some of the breeders are already making a special issue of the fur, particularly where the rabbit is of a fancy color, such as clear black or clear white.

In feeding the Flemish Giant rabbit, we have more of a beef purpose than with the Belgian Hare, as weight in the Flemish Giant is a primary consideration. Therefore, we will pursue a little different method.

A good start is the first requisite. Some of the young should be placed with a nurse doe for first three days, so that the real mother will have only three or four to feed. To do this, of course, it will be necessary to breed a common or meat stock doe at the same time you do the Flemish doe. By thus raising the young with more than one doe, we get size and weight. A little precaution must be used, however, in changing the young over to the nurse doe. First, take the mother nurse doe out of the hutch and place her at a little distance. Take her babies out and kill them all but one or two of the best. Take the Flemish Giant babies one at a time and rub them back and forth gently on the stomach of the nurse doe, placing them in the nest box of the nurse doe immediately. Do this with each of the Flemish babies that you want to save.

Leave about three or four babies to each doe when through.

About ten days before the Flemish Giant babies are born, you should commence adding a little milk to the Flemish mother's drinking water until, at the birth of the babies, you are giving her about one-third water and two-thirds milk to drink twice daily, just as much as you find she will clean up nicely in twenty minutes, so as not to have it about the hutch to sour.



FLEMISH GIANT DOE, "FERNWOOD PRINCESS"



—Courtesy of Scott Smith

FLEMISH GIANT BUCK, "FERNWOOD PRINCE"

After the young have started to eat well, in three to five weeks, you may discontinue the milk diet for the mother, and start feeding the whole hutch a mash made up of the grains you have been feeding regularly, and one part of linseed oil cake, or oil meal to each six parts of the mixed grains. This will be a dry mash and must be thoroughly mixed.

Feed this mash twice daily in the winter and once daily in the summer, along with your hay and water, regularly.

Feed just so that each mess is well cleaned up before the next feeding. Do not feed so much that it will lie about and rot.

A larger quantity of greens and roots may be fed the Flemish Giant than to any other rabbit, although the rule of nothing left at the next feeding must be observed at each meal. Regulate it accordingly.

While you will, of course, feed the Flemish Giant more than you do the Belgian Hare or the smaller breeds, as they are a bigger rabbit, still the cost per pound of produced meat will not probably be as great in the actual feeding of the stock. This may be offset, however, by the fact that one must support a nurse doe in the first three weeks of the life of the young. Where this is not done the young will gradually take on less size per month in each successive generation, until you get to the production of the pitiful little grey rabbits sold as Flemish "Giants," when they are anything but giants, or more like dwarfs.

The reason is all in the good start on a rush growth that must be made. You MUST get MORE nourishment into stock to keep up size and you MUST begin at the beginning to do it. Hence, you can stuff a Flemish Giant all that they will clean up between feeds and that of rich foods if you are careful about breaking them in to each new feed, and you will get what you want in the Flemish—weight. But one thing must be remembered, you must give the Flemish Giant plenty of room and exercise, they are big rabbits. If you attempt to keep them in small hutches to gain weight, you will find that they only gain flabby fat and that they will weaken their constitution with this same weight of fat until they will be susceptible to every little ill that comes along.

### Description

The Flemish Giant may be of several colors, it being so far impossible to make them hold to any one general color, with the exception of the white and blue Flemish. The color determines to some extent what weights shall prevail, the heaviest rabbits being in the types in which little or not any attention has been paid to color to gain weight. This is known as the Grey Flemish, and is of a nondescript grey color, generally showing plenty of "sand" or red tinge across the shoulders and top of the neck. The belly may be white or greyish.

They must have great length to carry the weight and furnish the meat, and the rabbit will generally be lying down in a lazy posture, seldom showing the poses and snap of the smaller breeds. The weight of the Grey Giant, standard, is thirteen pounds for the buck and fifteen for the doe, at twelve months.

The steel grey Flemish Giant must have the color of newly-made iron, as near as possible, or perhaps more resembling the color of a bar of heavy iron casting, at a new break. The color should be as even as possible on the back, flanks and sides and the belly grey, but not ticked like the back and flanks, giving the broken iron effect.

The weight of the steel grey Flemish Giant is eleven pounds for the buck and thirteen for the doe. Of course, in all Flemish, the main title being Giants, any weights over these, as high as possible, are to be desired; these weights represent the standard minimum in this class of rabbit, and are given as at maturity, twelve months in the Giant rabbit.

The other Flemish Giant rabbits are the White, the Black, and the Blue, or Maltese. All weights running about one pound below given on the steel grey, just above.

The ideal Flemish Giant in any class is one that makes the weight, carries the color and still has a firm clean flesh and fur.

### FLEMISH GIANT STANDARD

*Compiled from Standards in use by Several Associations.*

#### Color

As is well known by all the Flemish Breeders, Flemish Giants as a rule do not breed true to the color of the par-

ents. A sire and dam of one color will throw young of another color; for instance, when Steel is bred to Steel Grays, Light Grays and Black may be in the litter of this mating. This does not by any means mean that stock producing young like that are inferior or not pure bred. The Giant is a rabbit that has been crossed and recrossed many times to get size. In many cases where mostly Steel Grays were wanted, a Black doe has been mated to a Light Gray buck, or vice versa, and it has been found that whole litters have been Steel Gray from such a mating, and in most cases the majority of the young have been Steel Gray, therefore it can be seen the reason why the Giants as a rule do not breed true to the color of their parents. This, however, in no way reduced the value of the stock, as all colors are of equal value. It is possible to produce a strain that will breed true to color by always selecting specimens of a certain color and never breeding to another color.

### Type

The Flemish Giant should be a giant in every respect, with a long body, large massive frame, large bone and ears, straight powerful legs and feet; bucks to have larger heads than does, and does may have a well developed dewlap evenly carried.

### Weight

When fully matured bucks and does should weigh as follows according to color.

Steel Grays—Bucks, 12 pounds and over; Does, 14 pounds and over.

Light Grays—Bucks, 13 pounds and over; Does, 15 pounds and over.

Blacks—Bucks, 12 pounds and over; Does, 12 pounds and over.

Whites—Bucks, 11 pounds and over; Does, 12 pounds and over

Above are weights for stock fully matured and developed and when these weights are attained especially when not over fat, you have a Giant rabbit in every sense of the word.

### Ears

Large, strong, thick and straight, well set up and to be the same as body color of the animal.

### Condition

Glossy shiny coat, full of life, brightness and luster; flesh solid and firm, and coat free from moult.

### Flemish Standards Scale of Points

	Steel Gray	Light Gray	Black	White
Head .....	5	5	5	5
Body .....	15	20	15	15
Size .....	15	15	15	15
Weight .....	10	15	10	10
Color .....	25	20	25	20
Ears .....	5	5	5	5
Legs and Feet .....	15	5	15	10
Condition .....	10	15	10	20
	100	100	100	100

### Disqualifications

Patches of hair of other color than specimen; lop or lazy ears; moon eyes; crooked, broken, wry, screw tails, or tails that are carried sideways; crooked or deformed feet; ears with cuts over one inch long; unhealthy specimens.

### NEW ZEALAND RED RABBITS

The origin of this rabbit is shrouded in mystery, some claiming one origin and some another. The theory is that it originated from a crossed Golden Fawn with possibly a Giant of some type, giving an extra large Golden Fawn rabbit. As a matter of fact, the rabbits from the islands of New Zealand are of a greyish hue, something after the manner of our cottontails, but somewhat larger; so the claim made concerning the first specimen of this breed, has never been convincing. Be that as it may, the many fine points of the New Zealand Red rabbit are not to be despised, and it is good that this useful and beautiful animal enjoys so great a popularity among breeders today.

In weight and size the New Zealand is between the Flemish Giant and the Belgian Hare, the mature stock weighing nine pounds for a buck and ten pounds for the doe, standard.

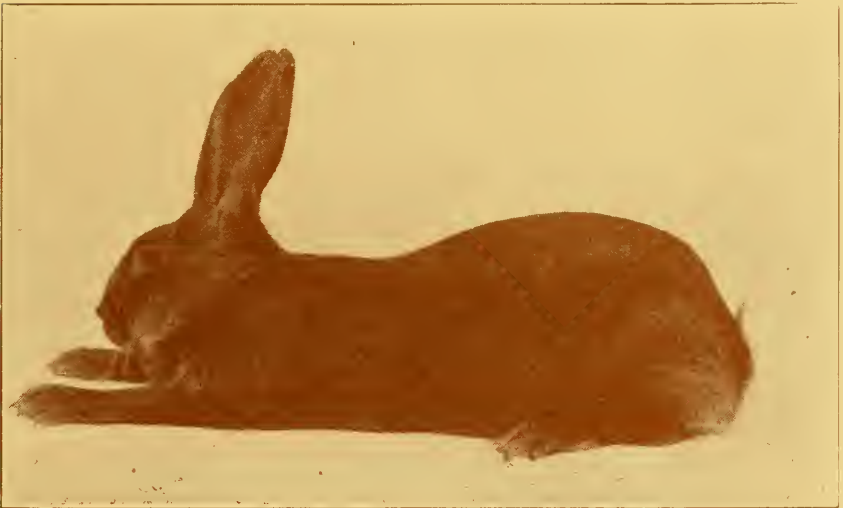


The color is a rich tawney yellow in the fine specimens, tending toward an orange in shade, the redder types being more desirable.

They are useful both as fur and as food rabbits.

As meat they are of firm flesh, maturing quickly and reaching weight in good time. The taste does not show material difference with that of the Belgian Hare.

The same instructions for feeding as given in the Flemish Giants will apply to the New Zealands, as weight is a prime consideration when coupled with good color and firm flesh. The delicate form and fine bones of the Belgian Hare are not desired nor sought in the New Zealand nor any of the heavy rabbits, as they are all raised for their beef qualities.



—Courtesy of Junior McConnell

NEW ZEALAND RED DOE

Like the Flemish, they should be allowed to have plenty of room and exercise, and, in fact, this will apply to any rabbit, as they are naturally a foraging animal and used to wide freedom in their native state.

In breeding the New Zealand, care should be used to get specimens that come up to the weight first and then breed for the colors and type. Too many times the anxiety to at-

tain the exact rich orange color so desirable leads one to sacrifice weight, with the result that, for all practical purposes, we have a Golden Fawn rabbit, calling it the New Zealand.

### Description

In color, the New Zealand should be a rich tawny yellow tending to a reddish buff, with a real creamy belly. The feet and legs must be free from white or light bars, sometimes called shadow bars. The ears should be carried well up and they should have a bright, though not a wild, eye.

Flesh must be firm and fur clean and glossy. The whole type of the animal should be alert and alive, but the nose of the New Zealand will generally resemble that of the Flemish Giant more than the Belgian Hare, as the New Zealand comes under the head of the heavy type of rabbit.

The mature New Zealand will be eight months old and weigh nine pounds to the buck and ten pounds to the doe.

### NEW ZEALAND RED STANDARD

*Adopted by the American Federation of New Zealand Breeders.*

#### Color

Rich Reddish Buff, as evenly spread as possible over head and face. In its general appearance this color scheme should be free from stray white hairs, light or dark ticking, frosty or smudgy effects, and as near the same shade over all surfaces as possible, due allowance being made for a much lighter shade of color on the belly, where the skin is made free to permit motion of joints.

#### Type

In general appearance the ideal type of New Zealand should present a rather close coupled frame that is well filled and free from over fatness.

#### Ticking

Free from ticking or smudge.

#### Head

Head to be medium full from top to bottom with well filled face and jaws.

#### Eyes

Medium large, bright and expressive,

### Legs and Feet

Medium bone, medium length and size, straight and strong, as near general color as possible, free from ticking and shadow bars, Dewlap evenly carried.

### Condition of Fur

The fur coat should be clean, free from hutch stains, smooth, even and glossy.

### Standard Weights

Three and one-half pounds at two months old.

Four and one-half pounds at three months old.

Six pounds at four months old.

Seven pounds at five months old.

Seven and one-half pounds at six months old.

Eight pounds for bucks at eight months old.

Eight and one-half pounds for does at eight months old.

Nine pounds for bucks and ten pounds for does at maturity.

### Complete Color Description

The ideal New Zealand Red color is a rich reddish buff, as deep in tone as possible, but not so deep as to lose the buff element and become a deep mahogany red, the sorrel red horse is offered as nature's nearest likeness.

In general appearance this color scheme should be free from stray white hairs, light and dark ticking, frosty or smudgy effects, and as near the same shade over all surfaces as possible; due allowance being made for a much lighter shade of color on the belly, on the flanks, and all surfaces where the skin is made free to permit motion of joints.



—Courtesy of W. J. E. Williams

AN IDEAL SMALL HUTCH (MOVABLE)

HEAD. Rich Reddish Buff, as evenly spread as possible over head and face.

EARS. Rich Reddish Buff, as free from ear lacing as possible.

NECK. Color to be as near that of other sections as possible, allowance being made for lighter shade on back of neck and on the under side.

BACK. Rich Reddish Buff, to be as even and uniform over the entire back as it is possible to get it.

SIDES. The Rich Reddish Buff of the back shall be carried well down over the sides and blend with the belly without any sharp or sudden breaks.

BELLY. Rich Reddish Cream, credit to be given for the closest possible approach to the general color scheme.

FRONT QUARTERS. Rich Reddish Buff, carried well around the limb and blending with the dominant color of the belly at the under and inner side.

FRONT FEET AND TOES. As near that of the general color as possible, free from shadow spots or bars; as free as possible from ticking of any kind; toe nails horn colored.

HIND QUARTERS. Same as the general body color and carried well over the hind parts to the tail, well around legs to blend with under color.

HIND FEET AND TOES. As near the general body color as possible; toe nails horn colored.

TAIL. Upper surface to be the same as body color, under surface to be as near that of other under parts as possible, but not to be cut for white.

### Standard Disqualifications

Crooked front or hind feet or legs, crooked spines, wry or twisted necks, tails that are crooked or otherwise deformed, ears that fall below the horizontal of the head as drawn through it from ear to ear, ears that are less than four and one-half inches long, eyelids that turn either in or out upon themselves, blindness of one or both eyes, absence of ear, tail, toe nail or any evidence that a possible blemish that would have disqualified has been removed, any other anatomical or bodily deformity.

Scale of Points

Section	Type	Color	Condition	
Total Length .....	10	..	Fur 5	Flesh 5
Head .....	5	3		
Eyes .....	3	1		
Ears .....	3	5		
Back .....	6	4		Points
Sides .....	3	3	Type .....	60
Belly .....	3	3	Color .....	30
Front Quarters ... ..	8	3	Condition .....	10
Front Feet .....	2	2		— —
Hind Quarters .....	3	3	Equals .....	100
Hind Feet .....	2	2		
Tail .....	2	1		

RABBITRY MANAGEMENT

All business is conducted for a profit. Hobbies frequently begun for pleasure only, develop into businesses, and then come under the above rule.

The profit in a business is often miscalculated for the reason that only one or two of the costs are taken into consideration in the figuring up of the costs against the income. For instance, in the rabbit business, many breeders fail to figure in their rental costs on the theory that since they are renting the house and grounds, or own them, it is not necessary to figure any cost for that. The rental basis should be the value of rental of that portion of the property of the owner used as a rabbitry, feed room, store room, etc. Depreciation of the buildings and equipment should be figured in at a basis of at least twenty per cent of the original cost per each year of use.

Profit on any business can only be derived from the difference between the total costs and expenses and the total receipts or income, on the service rendered. SERVICE should be in capital letters in the mind of every breeder of rabbits,

whether fancy or common stock. Careful, efficient service depends almost entirely on the records kept. In our business real service will depend on our knowledge of our stock based on the reports we get from the hutch cards, the pedigrees, and the accurate records. By keeping such records we can so manage our fine does and bucks that we will see to it that each doe produces not to exceed four litters per year, while the bucks will be used not oftener than twice per week. This makes a ratio of about one buck to fifteen or sixteen does.

The surplus of bucks, after a careful selection is made each week or so for breeding purposes, will be disposed of by the well regulated rabbitry, on the theory that no "free boarders" are wanted. The same good management will see to it, too, that the doe producing below the average will soon find the air. This is taken up more fully in the past section on rabbitry records.

### Efficiency

Efficiency is the idea. Efficiency in production, efficiency in reporting that production, that we may know precisely who is doing it and which rabbits to keep on as producers.

The market for fancy stock is naturally the fancier, that is, the breeder and buyer of thoroughbred stock. Just a word here for the dealer, the man who buys fancy stock at a price to dispose of it again.

It is perfectly logical that the dealer should want Dick to come back to the dealer for his future stock, because this same said dealer has spent honest-to-goodness money for big space in the pet stock magazines to let Dick know that the dealer COULD furnish the stock that Dick wants. Hence this dealer does not take the trouble to say "I bought this rabbit of Tom, to fill your order," when Tom was too cheap to do a little advertising and win the trade for himself.

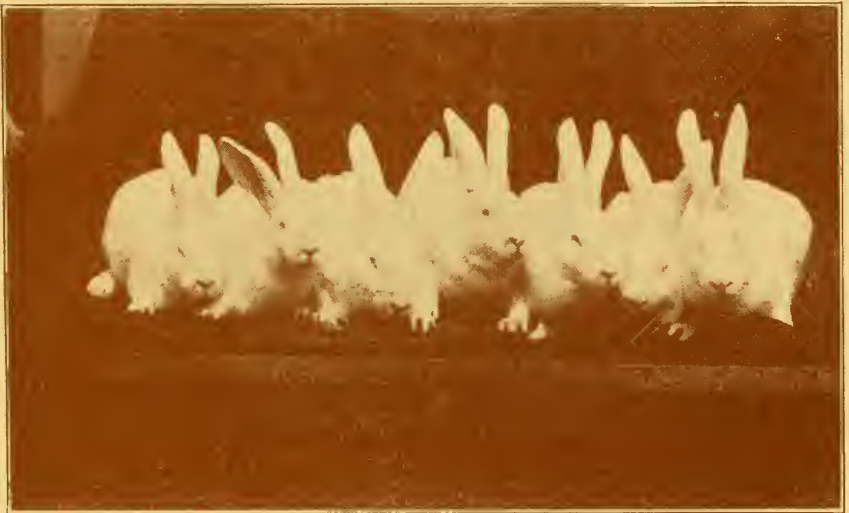
We hold that if the breeder is a good breeder but not a good salesman nor a good advertiser, then it is really the DEALER'S place to bring Tom's goods to Dick, and there is no obligation whatever to tell Dick where he got them as long as the goods are honest and the value for the money.

That's the way big business of all kinds is conducted and

we will get on a business basis when we quit fighting our distributors, learn the selling and advertising games for ourselves and live and let live.

It is just here that this work will find its great value; it will enable us all to get a good idea not only of the breeding of rabbits, but of the great profit that will come to him who dares to put up his money on his judgment of the public's wants.

Such men are the Marshall Fields, the Ingersolls, the Woolworths in big business and the big men in the rabbit industry who dare, are the men who win. So let's not crab about the other fellow's success; let's just thank him for the example, be he dealer or strictly breeder, and "GO ON" in the industry.



—Courtesy of S. M. Scott, Jr.

#### WHITE FLEMISH GIANTS

Our market being the fancier and fancy breeder, we will most likely be able to reach him through his reading. What does he read? He reads all the late pet and small stock journals, the rabbit magazines and poultry journals and such papers. A person who is a rabbit fancier or breeder is quite as frequently a lover of other stock, such as cavies, dogs, cats, fish, skunk and mice and rats, bantams and chickens. Hence the order of importance of the mediums you may choose to advertise in is about as follows;

Rabbit Journals, Small Stock Journals, Poultry Journals, Dog and Cat Publications, Goat and similar trade magazines.

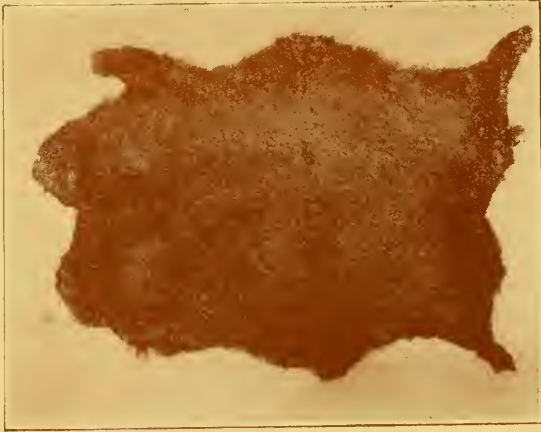
The essential thing, however, before rushing into print is to get a QUANTITY of GOOD stock on hand, by breeding up and then see to it that you have exhibited in several shows, so that you know by *experience* WHAT a good animal IS, after which it is plenty of time to take up space and money in the better class of trade to which you aspire as a



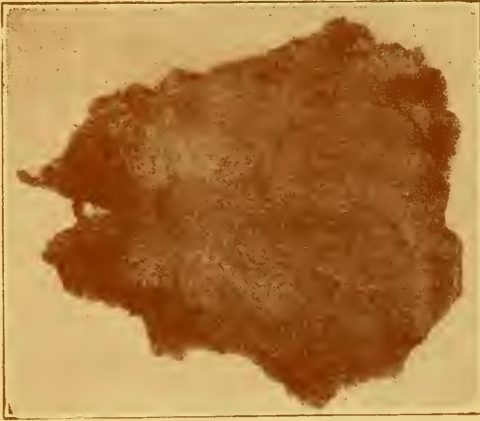
AN IDEAL SHIPPING CRATE

fancier. You should really HAVE what you advertise, either as a discriminating dealer of experience in rabbits, or else as a bona fide breeder. Do NOT try to deceive the people. On the other hand do not sell the best you have or your quality will soon deteriorate till you have no quality left. Keep your very best to keep up your stock and let the show winners you own stay with you until they have left a goodly part of themselves in youngsters behind them, before you sell them.





BEAVER



MOLINE



SEALINE

RABBIT SKINS ARE PREPARED TO IMITATE THE MORE EXPENSIVE FURS, SUCH AS SEALINE, MOLINE, BEAVER, AND SO FORTH. THE WORK IS SO PRACTICAL THAT IT IS HARD FOR EVEN AN EXPERT FURRIER TO TELL THE DIFFERENCE BETWEEN A REAL AND A PREPARED FUR.

## DIFFERENT WAYS OF PREPARING APPE- TIZING RABBIT MEAT

By O. E. POHL

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### The Preparation of Preserves From Rabbit Meat

**T**HE chief value of the rabbit can be divided into two varieties of uses, viz., as breeder, and last but not least, as a furnisher of food and fur. Its value as food is by far the most important, even if we have to fall back to the sport-breeder to give us a rabbit that combines all purposes.

The present feeling against the eating of rabbit meat is entirely without cause and in regard to taste, rabbit meat surpasses many other meats. The main point of cause is the mode of preparation for the table. This we will describe in the following articles as it is done in countries where the rabbit is a standard addition to the table.

We can preserve meat by putting it up in Mason jars, smoke it, or put it up in sausages; thereby meat that can be raised during the summer can be canned, etc., at the right age and eaten when you wish throughout the year by simply warming it up and serving it, the same as you would vegetables. This canning process is best done in the fall when the fur is of some value.

1. In this country we have our Mason jars and these are the ones that we will use in the first part of this article.

After the rabbit has been prepared as usual by skinning and cleaning, it is soaked in water for 24 hours, changing the water several times. Then hang the rabbit until it has dripped out good. The next day cut the rabbit into suitable pieces, to fit the jars to be used. The spaces created between pieces can be filled with suitable pieces of meat from the bones. Fry these pieces as usual in the pan until about one-half done. To add to the taste a few strips of bacon can be fried with it. Then put the meat into the jars and fill the jars with the drippings from the frying pan to about two inches from the top and cover the whole with about one inch of rendered rabbit fat. A space of one inch from the top of jar should be left empty to give enough room for a vacuum to hold the jar cover. Put rubber ring and cover on

the jars and put them in hot water to cover two-thirds of jar and let it slowly boil for one hour for pint jars and one and one-half hour for quart jars. Take the jars with the boiling kettle off the stove and let cool slowly, while the jars are in the water. After they have cooled put a clamp on them and they will keep this way until you use the contents. Only good rubber rings must be used for this purpose.



WIRE FUR STRETCHER  
IN USE

In order to have meat on hand to make soup, etc., cook the meat, after the large bones have been removed, in a little water with spices and vegetables to be used, and put the whole in jars, and after closing seal the jars by boiling at a temperature of 212 degrees Fahrenheit.

Stewed rabbit can be prepared the same way only do not put any flour into the stew to thicken until ready for use on the table.

If you now want to use the canned rabbit, all you have to do is to warm it, or in case of fried rabbit, fry it, until done in the gravy already in the jar and in a very short time a wonderful meal is ready on the table. Meat prepared this way is said to taste better than when prepared fresh.

### Smoking

Rabbit meat is just as suitable for smoking as any other kind of meat, provided it is done right. Before you can smoke it, the meat necessitates a careful preparation. Usually older and larger animals are used in this process, especially bucks, who give a tough roast or fry anyway. The butchered animals, after soaking in water and dripped, are cut into pieces, the hind legs, the front legs and the back. This is cut into pieces about two inches long. The head is used for soups, etc. To smoke a whole animal is not practical

Now a solution is prepared that contains one tablespoonful of salt and one tablespoonful of saltpeter to the quart. Enough of this brine must be made to cover all the meat to be smoked. Into this place the meat and cover it with a board in such a way that all the meat is covered by the brine at all times and weigh the board down with a rock. Put this in a cool place and let stand for two or three days. During that time a good smoke house can be made out of a barrel. If you like, spices such as laurel leaves or pickling spices can be added and this naturally improves the flavor.

In order to make a smokehouse, take an empty barrel and up end it, place two bricks into the bottom lengthwise and put a piece of tin over them. This will support a metal pot. About an inch from the bottom and through the bottom bore a few holes to give the draft to the apparatus.

Then lay over the open end of the barrel a few sticks to hold the meat, attached thereto with strings. The pieces of meat must not touch each other though. The space between the fire in the pot and the meat must be at least 30 inches. Now start a weak fire in the pot, of sawdust, preferably beach tree, until a good smoke evolves and smoke the meat daily for about two hours and keep this up for a week. During and after smoking a piece of burlap must cover the top of the barrel to keep the smoke in better.

Meat preserved this way will keep quite a while if kept in a cool dry place and can be used either raw or cooked with vegetables, to make stews, etc. In other words it will keep as good as bacon anytime.

### Sausages

The preparation of sausages from rabbit meat is very practical and the taste is beyond equal. It is not practical to use it alone though, but the addition of pork makes the combination perfect. The proper meat is the one of older animals. The meat is taken from the bones, cut into small pieces and salted. It is then ground in the meat grinder and spiced to taste. For every three pounds of rabbit meat one pound of fresh fat pork is ground up and added. The whole being mixed well and the mass left to stand for four or five hours in a cool place.

In order to make the sausage, a sausage funnel is used and the mass filled into hog intestines after a small amount of ground cloves has been added. Sausages prepared this way are then boiled and dried for two or three days. To make them still more durable, smoke them in the smokehouse described previously.

Sausages from rabbit meat are very appetizing and can be fried, cooked or used as spread on sandwiches.

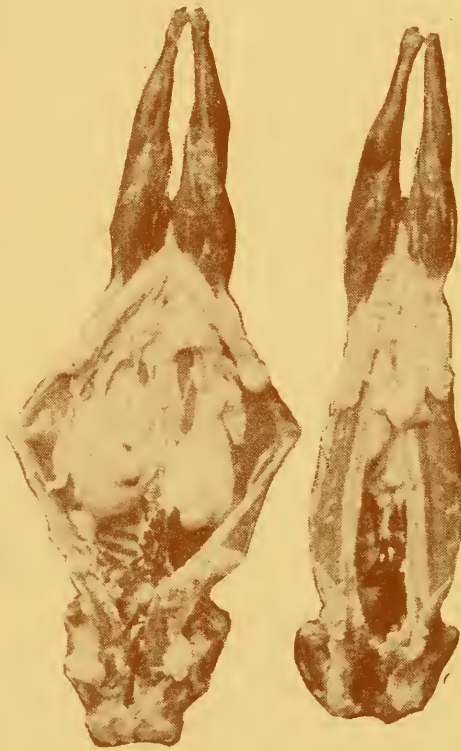
Left over rabbit fat can be used just like suet or lard for frying all meats and will not impart a taste to the meat.



—Courtesy of Mrs. G. A. DeLano  
A SPLENDID EXHIBITION OF RABBIT FURS

## COOKING THE RABBIT

It may be said first, before proceeding to the recipes for cooking rabbit, that the rabbit may be fixed for the table in any way that chicken can be fixed, but that about one and one-half times as long would generally be required for the cooking to make a tender and palatable dish. A very little practice will enable any good housewife to prepare the rabbit in its tastiest and best array for the table and of all meats known to man there is none more palatable, more nutritious than the humble bunny.



DRESSED RABBITS

### To Fry

The best rabbit for frying is a young buck or doe from ten to twelve weeks old and weighing from three to four pounds alive. This dresses at about one and one-half to two pounds.

Have the skillet sizzling hot with grease, preferably pork "cracklings" or bacon rinds. Cut the rabbit up at all the

joints and roll in flour or cracker crumbs. As soon as you have put the rabbit in set the skillet back where it will fry more slowly, taking from forty to fifty minutes, according to age, to fry. Just before taking off the stove pour just a little melted butter over the rabbit.

### Roast

A little older and heavier rabbit may be used for a roast, if desired, but of course the younger and more tender the rabbit, the better it can be cooked the easier it may be handled.

Fill the dressed rabbit with a dressing made to suit the taste, having the dressing rather wet. Sew up the carcass and sprinkle well with salt and seasoning to suit. Put strips of bacon across the body or pour a little melted butter over the rabbit and bake slowly for two to three hours.

### Pressed Rabbit

Boil until well done with a pinch of soda in the water. Skim frequently and then take all the meat from the bones and grind it up in a grinder. Pour the skimmed broth, the water it was boiled in, into the ground meat and mix well. Press the same as chicken and let stand in a cool place. For sandwiches and lunches.

### Hare Spanish

One onion sliced, one chili pepper, three or four medium tomatoes. Cut fine and let come to a boil in salted water, salted to taste. Carve the hare at every joint and put into the boiling stew as above. The addition of a little soup stock of beef will often add to the flavor. Just before it is done add browned flour and butter to thicken.

### Onion Roast

Take a small roasting pan. Place a layer of sliced onions in the bottom. Cut your dressed rabbit rather fine and make a layer of rabbit and a layer of onion, seasoning each layer of the onions to suit. Pour a little melted butter over the top of all. Roast slowly, two to four hours, in a double roasting pan,

### Rabbit Curry

Cut into joints, putting two tablespoonfuls of butter and a few slices of onions. After it is well browned add a cupful of good soup stock and a tablespoonful flour and currie well mixed, smooth with cold water. Let simmer gently for an



hour or two and then add a tablespoonful of juice with a little parsley. Serve with boiled rice.

### To Broil

Boil in salt water for five to ten minutes first, and then put on the broiler immediately. Season to taste.

### Pot Roast Rabbit

Cut the rabbit, roll in flour, brown in hot fat, cover with boiling water, add salt, pepper, one carrot and one onion. Cover the kettle tightly so that all flavor will be retained. Simmer until tender. Drop in dumplings fifteen minutes before serving. This recipe may be adapted also to the fireless cooker.

### A Breakfast Dish

When preparing cornmeal for frying, just before setting out to cool, briskly stir in some finely chopped rabbit meat, mixing thoroughly with the cornmeal mush. Season it. Roll in flour for frying.

### Jellied Rabbit

One rabbit, one slice onion, one bay leaf, six peppercorns, three stalks celery, one envelope gelatine, one-half cup water. Cook rabbit in just enough water to keep from burning until very tender. Add vegetables and spices shown above to the meat of the rabbit and boil until the amount is about one quart. Pour into a square mold and serve when cold in thin slices.

### Stewed Rabbit

Soak the rabbit after killing for a few hours in cold water. Cut in pieces and scald for five minutes in boiling water. Fry the rabbit for twenty minutes in hot grease. Let cool slightly and then slowly add gravy or hot water to make sufficient soup. Season with onions or garlic and peppers, bay leaf, salt and celery to taste. Cook slowly until very tender.

## WHITE NEW ZEALAND RABBIT

By H. K. CARTER, Tacoma, Wash.



H. K. CARTER

### A Special Section Pertaining to All Breeds of Rabbits

**T**HE White New Zealand is a new breed; they were a sport from the Red New Zealand and are said to breed true to color and type. They should have the true New Zealand type, no off colored hairs, said to have very good fur. The Standard calls for the weight type and points of condition the same as the New Zealand Reds. COLOR points being a true Albino the New Zealand White calls for pure white color in all sections covered by fur, the eyes should be pink in color. Spots of color other than white shall disqualify.



(Left)  
WHITE  
NEW ZEALAND  
BUCK

—Courtesy of  
Wm. Smith

(Right)  
NEW ZEALAND  
DOE



—Courtesy of  
A. M. Findlay

**American Spotted Giant or Checkered Giant**

A large Spotted Rabbit that must be as the name calls for, a GIANT, as well as a well marked specimen, makes a very striking looking rabbit.

The Standard calls for a butterfly nose, eye circles, and a spot directly under each eye; ears solid color, must have large patches on sides and hips and must not run together, but must have a strip of white between them; have saddle markings that run along back from ears to hips.

They come in Blue and White, Black and White, Tortoise and White. Three colors are not permissible. They should be large, from 13 pounds and up for does, and from 11 and up for bucks. Fur when made into children's coats is a very pretty article.



BELGIAN FARM RABBIT—THE FOREFATHER OF THE GERMAN AND ENGLISH CHECKERED. NOTE ABSENCE OF "BUTTERFLY" ON NOSE.

**American Spotted Giant Standard**

(Formerly called German Checkered Giant.)

- Head—Large, but not so full as Flemish. Avoid "Bull Dog" type of head..... 5
- Ears—Large, heavy, firm, solid color..... 10
- Body—Long, well arched, broad hindquarters, straight, tapering to the front, not wedge-shape. Body carried well off the ground. Upright position..... 20



—Courtesy of W. B. Garland

CHECKERED GIANT RABBIT

Legs—Front legs long, straight, medium size bones, hind legs larger, carried parallel with body.....	10
Size and Weight—Large as possible. Bucks 11 lbs. or more. Does 13 lbs. or more.....	20
Color Marking—Without chain markings. Side markings to consist of two or more heavy patches on both sides.	25
Condition—Perfectly healthy, not fat, flesh firm and solid.	
Fur medium length, good quality, free from moult...	10
Disqualifications—All defects under general disqualifications, also split butterfly, one-half butterfly, absence of any important markings, as eye circles, butterfly, ear markings, more than three-fourths of saddle or side marking. Gray color or any three colors disqualifies. Side patches and saddle marking all in solid patch disqualify. Cuts; double dew lops; sway back. Spots and markings other than called for to cut according to size and number.	

' Black, blue and tortoise to be judged alike. No preference shown to either color. Separate classes may be made for blacks, blues, tortoise.

### The Himalayan Rabbit

The Himalayan is one of the most beautiful of all rabbits. A class of them in the show room makes a striking display and causes much comment. This breed is used more for fur and exhibition purposes than for the meat. They have to be small, about four pounds is what the Standard calls for.

This variety is thought to have come from the valleys of the Himalaya mountains of India. In early history they are described under the following names: "Egyptian Smut," "Antwerp" and "Chinese Smut-nosed" rabbits.

They differ greatly from the average breed of rabbit, in markings; should have black feet, tail, ears and a black smut on nose that should come up well between the eyes and should be egg-shaped and not come to a point or be broken. The eyes are red and the fur is short and glossy, resembling ermine. Its markings are most striking—a white body, with nose, ears, legs and tail a velvety black.

When the young are born they are pure white and do not start to show the markings until they are six weeks old, when a nose smut will start to appear and the ears will have

a small black band at the base which every day will get higher until the entire ear is black. All this time the feet and tail will be taking on a dirty gray color, which will soon be black as the rest.

As it is a fur rabbit, great care should be used to keep it clean. Plenty of good clean straw should be in the hutch, and it should be cleaned often. When entered in a show spotted with hutch stains and with feet badly stained the judge will pass it very quickly.

One thing the fancier must guard against is stains under the eyes. Sometimes it looks as if the rabbit had stained it with its front feet. These should never be used for breeders, for this will disqualify your rabbit in the show room. The ears should be all black, with no white hairs, the black ending abruptly where the white begins. They should be small and shapely, carried rather close together, with clean cut white between them.

The black of all four feet should be a good deep black with no white hairs. The markings or stockings on the hind feet should go up as far as possible and should be black to the top. This is one of the strongest points.

The fur is best when the rabbit is 5 to 8 months old. Does should not be bred until 8 to 10 months old. The litters are small and can be bred more often than the larger breeds. Bucks should be separated when 4 months old and stock kept for exhibition should be kept out of strong light, as the black will fade in the sun.

Great care should be used in breeding. Always pick the most perfectly marked animals and be sure that they are in good coat, for if they are in poor condition you must expect to find poor, broken-coated youngsters.

Shape is another important point. They should not be short and stuffy, but have slender shape and weigh about four pounds. The coat is another important point. It should be fine and silky, pure white. A coarse, wiry-coated animal should never be used for a breeder.

### Himalayan Rabbit Standard

Hind legs—Color: The "boots," as they are sometimes called, should be rich black and extend up the leg as far as possible. Right hind leg, 12.5; left hind leg, 12.5 points.

Front legs—Boots should be same as the hind legs. Right front leg, 7.5; left front leg, 7.5 points.

Ears—Should be solid color, with clean cut white between. Right ear, 7.5; left ear, 7.5 points.

Smut on nose—Round, solid and well up between the eyes, 14 points.

Tail—Solid color, 6 points.

Weight and shape—Four pounds, body long and slender; does free from dewlap; 11 points.

Condition of flesh and fur—Flesh to be solid and fur to be fine, soft and close; 14 points.

### Disqualifications

Putty nose, eye stains, ear markings or nose smut or feet markings missing; over five pounds.

### Dutch Rabbit

The Dutch rabbit was thought to have originated in Holland and in the last few years has become very popular in the United States. In all large shows good classes are shown. They should be about the size of the Himalayan or between 4 and 5 pounds weight.

They are a hardy animal and will stand up well in all parts of the country. They come in blues, blacks, tortoise shells and steel gray.

In breeding, always pick your strongest color. The blacks are the most popular and as a rule the blue will fade out in a short time. The other colors mentioned above are very rare in this country.



—Courtesy of Wm. A. Smith  
DUTCH RABBIT

**Face Blaze**—A white tapering wedge covering the nose and ending just beyond the whiskers, tapering up to the ears, dividing each cheek and ear and having a cord like line running between the ears and joining to the white part of the body color, and run down to the jaw bone, not running under it, or cutting off the white saddle; blaze should not be wide between the eyes, nor taper off all at once. It should appear as a perfectly round sweep, the colors not running into each other. A perfect head is beautiful, but hard to produce.

**Neck and Ears**—The base or starting spot of each ear on the neck should be the exact color of the body, and cut perfectly clear, without the colors running together. The white neck color should run down between the ears, wedge shaped into the small line connecting the blaze and the neck. Many specimens have poor necks and fail to have the connecting line between the neck and the blaze. The ears should be short, free from white hairs and match the body color.

The saddle is the part of the rabbit which covers the front feet, chest, throat and body, just clearing the shoulders. The circle should be perfectly round and clear cut, not running into the body color. The under part should be perfectly straight, and not touch the front legs. A good way to tell if the under cut is free from the front legs is to straighten out the legs with your hand. The white color should not run into the belly color, but cut off clear. Perfect under cuts are very scarce.

**Feet stops** are the beautiful markings, appearing on the ends of the hind feet, and should be white and run back about one and one-half inches from the end of the toes. They should be perfectly round, clean cut and alike on both feet. Eyes should match the body color, but hazel in blacks. They should be free from specks and "wall eyes." Wall eyes are off colored, pale blue as a rule, and speck eye is one with a small speck or splash of light color in the iris.

### Dutch Rabbit Standard

**Color**—Black, blue, steel gray, tortoise and tortoise shell. The color to be solid and uniform, over ears, check and body, from saddle lie over back to tail and down hind feet to feet stops.



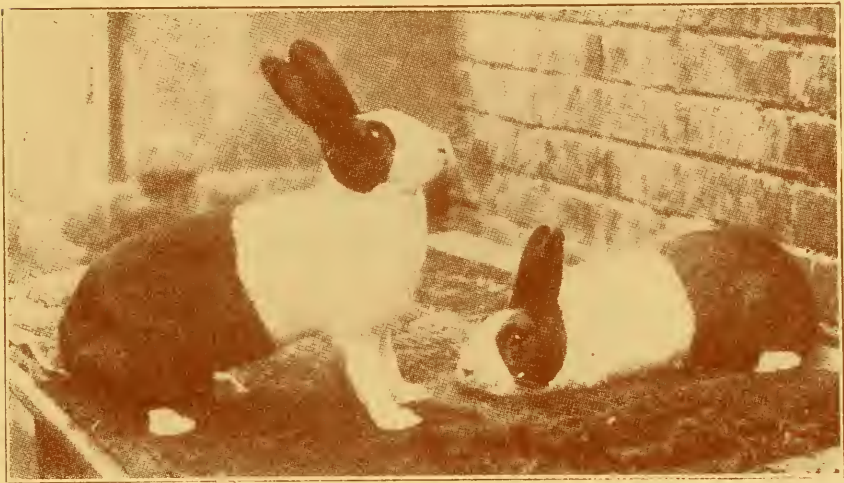
Ears, cheek and body..... 5  
 Tail and hind legs..... 5

Saddle—A white collar, starting just clear of the front legs, running to the ears and in clean cut lines on top and underneath body.

Top part ..... 5  
 Right side ..... 5  
 Left side ..... 5  
 Underneath ..... 5

Blaze on Face—The white color appearing in shape of a wedge, rounding just clear of the whiskers and becoming narrow at the ears, where it has the appearance of a white cord.

Blaze .....10



PAIR OF DUTCH RABBITS

Small white mark passing through ears and connecting with white belt..... 5

Ears and Neck—Erect, color to be solid and same as body. The color around base of each ear should be solid and not run into the white. The lines all to be clean cut.....20

Eyes—To be rich hazel in blacks and to match the color of the body in other colors.

Right eye .....	2.5
Left eye .....	2.5

Stops on Hind Feet—Clean white markings starting about one and one-half inches from the toes and should be cut off even on both feet.

Right foot .....	7.5
Left foot .....	7.5

Size and Shape—To be under five pounds. They should appear lively, frame compact and limbs a trifle short.

Score .....	10
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Condition of Flesh—Flesh to be firm and solid, the fur very close, even and shining.

Condition of flesh.....	2
Condition of fur.....	3

Total points .....	100
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—Courtesy of Wm. Smith

"THESE LITTLE 'RABBITS' WENT  
TO MARKET"

### English Spotted Rabbit

English spotted rabbits originated in England in the late 80's, and are said to have originated from the common white smut-nose rabbit.

This breed is very difficult to get proper marking; much more so than any other breed. Besides shape and color, the markings that effect every portion of the animal, from nose to tail, not only have to be in the right position, but of specified shape.

If the fancier starts with a well marked pair you will find, as in all other spotted and belted rabbits, quite a number of the young with the proper markings on one side, and the other a blank as far as the standard calls for. In the

English Spots, the points and spots of perfection are more numerous and as a consequence this breed is much below that of other breeds.

They are bred in black and white, blue and white, tortoise-shell, gray and white, and rarely a yellow and white. The black and blues are the commonest breed in the United States.

In describing the points and markings: The nose should have a butterfly with no spots or white hairs, or split butterfly, eyes should have a black circle around each one, all spots to be free from the eye circle; ears to be not over 4 inches in length, to be free from white hairs; chain markings to run from top of neck in a link-like formation and run in a slanting direction toward the loins, and should start with one dot and run in two rows; saddle or herring-bone should start between the ears and run in an unbroken line to top of back to the tail. Leg markings, a small dot on the elbow of each leg; front leg most important. There should be six belly or teat spots. This rabbit when well up to the standard is a very beautiful animal.

They are fed the same as any of the middle-weight rabbits. The American standard calls for 6 pounds, the English says from 6 to 8 pounds. In breeding, never breed two with the same markings missing.

### English Spotted Rabbit Standard

Color—Blue, black, tortoise or gray; color to be clear and the markings to be the same size, color and in the same position on both sides; the color of the fur outside of the markings to be white. Right side, 2.5; left side, 2.5. Smut on nose—To have the appearance of a butterfly in shape. Color, 5; shape, 10.

Eye Circles and Cheek Spots—Eyes bright and bold. Solid colored circles under right eye, 4; solid colored circle under left eye, 4; dot on left cheek to be cut clear from eye circle, 3; dot on right cheek to be cut clear from eye dot, 4.

Ears—Not over 4 inches long, good carriage, 4; color to be solid, clean cut and free from white hairs, 4.

The Chain Markings—Named on account of link like formations; start on top of the neck near the base of the ears, and run in a slanting direction towards the loins. They

should start with one dot and run in two rows. Right side, 6; left side, 6.

Markings on the Loins—Appear to be a continuation of the chain markings, only the spots are larger. No plain patch of white hair should appear between the ending of the chain and the starting of the loin markings. Right side, 6; left side, 6.

Teat Markings—Should be six small dots on the white belly. Right side, 3; left side, 3.

Markings on Legs—A small dot appearing on the elbow of each leg; the front legs are the most important. Hind leg, 4; front leg, 4.

Saddle Markings—A line beginning near the base of the ears and running in an unbroken line on the top of the back to the tail. It should be very narrow at the start and widen out near the rump and again become narrow at the tail. It should have hair extending out from the edges in the form of a herring-bone. Saddle, 5.

Size and Condition—Six pounds; the flesh to be firm and solid. Fur soft and free from molt, 10; herring-bone, 5.

### The Black and Tan and Blue and Tan Rabbit.

The Tans were first introduced in England in 1883. In type and weight are the same as the Dutch, 3 to 4½ pounds in weight. *As to color*, no other is permissible but Black and Tan, no White or foreign color. The color, both Black and Tan should reach well down to the skin; the same goes for the Blue and Tan. The Blue should be a slate blue, the same color as a blue Persian cat; the fur should be silky to the touch.

In the Black and Tan, the black is the body color and the tan the marking, the official description reads. *The head and cheeks* to be black, that color reaching up to the nose point, but with a ring of tan around each eye. Saddle back, rump and sides also upper part of tail black; all should be free from brindling except sides; sides of rump should be thickly laced with long tan hair. The nostrils, jaw, chest, belly, flanks and under part of tail should be one solid mass of deep golden tan inclined to a red or mahogany tint; the tan

should be free from soot or body color. *The shoulders* or neck immediately back of ears should be tanned wide and tapered to a fine point, thus forming a triangle; this should be large enough to be seen when the rabbit's head is up *Ears* should be fine, short and not tapery, outside jet black, well furred; inside laced with tan; ears free from white tips, white hairs or brindling. *Shape*, the shorter the better, coat must be fairly short, laying well with the body with a silky feel to the hand. Standard is the original English one used the world over.



BLACK AND TAN RABBIT

**Black and Tan**

	Points
BLACK—Dense and sound.....	10
TAN—Deep and rich.....	15
TRIANGLE .....	5
CHEEKS.. . . . .	10

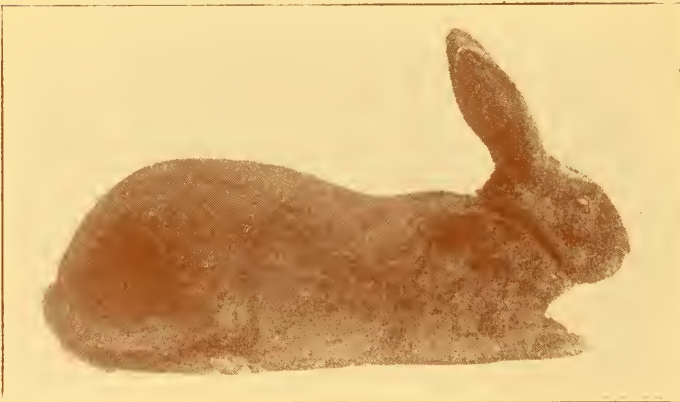
FEET—Hind .....	10
FEET—Front .....	5
CHEEKS, FLANKS AND BELLY.....	10
EARS.....	5
NOSTRILS, EYES, JAW.....	5
SHAPE—Dutch .....	10
EYES—Full .....	5
CONDITION .....	10

### Blue and Tan

BLUE—Sound .....	10
TAN—Rich .....	15
DISTRIBUTION—As to Black and Tan.....	40
SHAPE—Dutch .....	10
EARS—Short and Blue.....	10
EYES—Blue and Full.....	5
CONDITION .....	10

The ideal weight  $3\frac{1}{2}$  to  $4\frac{1}{2}$  pounds.

### The Blue Imperial Rabbit



BLUE IMPERIAL BUCK

This breed was introduced by Miss Mabel Illingworth of Braintree, Essex, England. The ideal Imperial is described as to shape and size, similar to that of the Belgian, Buck.

but "shorter in limb." *Weight* when full grown, 6 to 7 pounds. *Color* dark blue, even shade; fur soft and bright, rather longer than most short haired varieties. *Head* narrow and tapering, eyes large and bright and deep blue. *Ears* 4½ inches long, round at tips, carried erect, set rather close.

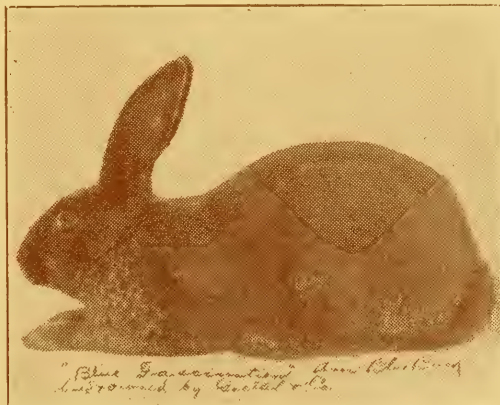
The commonest faults are white hairs, rusty color, brown eyes, bars of light or darker shade on feet.

The original Standard used for years in England are as follows:

	Points
SHAPE AND SIZE.....	25
HEAD .....	10
EARS .....	5
EYES .....	15
COLOR .....	25
COAT .....	15
FEET .....	5
<hr/>	
Total points .....	100

### American Blue Rabbit

One of the new breeds which has been said to have originated from the Blue Vienna. *In shape* they are described as Mandoline; *in color* a deep rich slate blue. *Eyes* blue; toe nails to match. Well adapted for meat and fur. *The Standard* fully describes them:



### American Blue Standard

SHAPE—Mandoline, compact, broad, meaty back, slightly arched back, not flat, medium size bones, small dew-lap as possible.....20

COLOR—Rich, clear Slate Blue, with as great a depth of color as possible. Should be free from all white hairs, sandy, or rusty colors and uniform over the feet, legs, chest, head, ears, body and tail .....25

WEIGHT—Bucks and does at maturity, 10 lbs.....10

HEAD—Well shaped, not too long; even color..... 5

EYES—To be blue ..... 5

EARS—About five inches in length, narrow, well set on and even color..... 5

Well developed thighs.....10

LEGS AND FEET—Straight, medium size, dark toe nails .....10

CONDITION—Coat to be free from moult and good, deep color, free from any stray colored hairs, with dense soft, fine silky texture; flesh firm and solid .....10

(All general disqualifications, also.)

Disqualifications—White patches of hair, crooked feet, legs or tail; any other colored eyes but blue or lop ear. Faults to be severely cut, but not disqualified; stray white hair, sandy or rusty, or any other foreign colored hair, uneven color on body, legs or loins. Rough or uneven coat.

### Black Siberian

The rabbit that has caused more controversy than all other breeds as to its origin. It was claimed that they first came from Siberia. It is still an open question among many fanciers. *The Standard* calls for Bucks 9 pounds and Does 10 pounds. They are getting away from the Flemish type and size. The new Standard calls for a bright black sheen for coat, free from white hair and as to type as near the Belgian as you can get. The writer has spent a few seasons in Northern Alaska and found all rabbits and small game



of the brown shade change to a white in winter as nature provides this protection to all animal life in Alaska, and as Siberia is only 54 miles from Point Barrow across the ice the climatical conditions would be the same in Siberia. They should be, Bucks not over 9 pounds; matured Does not over 10 pounds. *Type* same as Belgian Hare. *Head* medium, not too large, having the bulldog appearance as the Flemish. *Ears* large and long, having a tapering shape. *Eyes* dark brown. Does to have as small dewlap as possible. *Body* shapely, similar to Belgian Hare. *Type*, legs large, long, strong, carrying the body well off the ground. *Tail* very long and jet black. *Fur* thick, dense black and of good length with a bright sheen. Disqualifications—Color other than Black, White Patches, scattered white hairs, severe cuts, etc.

### Angora Rabbit

All Angora wool used comes from France and Belgium, where they raise them by the thousands for meat and wool, but from the fineness it is like silk. The wool, when made up into yarn, retails for \$2.50 to \$3 per ounce and not enough is made to supply the demand.

Here is a branch of the industry that the fanciers should take up. They are easy to raise, and a pair of breeders can be bought at a reasonable price. They are a hardy breed and require only a reasonable amount of care. Of course, if you are raising for exhibition you will have to do more grooming and give more attention.

In breeding, it is advisable to limit each doe to four youngsters. Destroy the rest of the litter or use a nurse doe, and keep only the largest and most promising youngsters, with big bold head and big bone. The youngsters should be separated when six weeks old and put in pairs in separate hutches, as they will huddle when kept together and are liable to spoil their coats.

Do not ever wash an Angora in water. If soiled, dust with French chalk or corn flour; do not put too much on. In exhibiting, always remember that the longest and finest haired rabbit, free from mats in the wool, is the one that will get the blue ribbon.



—Photo by Kadel & Herbert

PLUCKING ANGORA RABBITS ON A FRENCH FARM—A PROFIT-  
ABLE INDUSTRY OVERLOOKED BY THE  
AMERICAN BREEDER

Hutches should be large and roomy. You must not expect to keep a wool-bearing rabbit in a little 2 by 4 hutch. Have hutches as large as you have room for, and clean out often. Sprinkle sawdust in corners and bed down. I have seen Angoras kept in yards and they looked good and healthy, with nice long, clean wool.

In color, white predominates, although they come in blues, blacks, fawns and grays. In competition the colored Angoras seldom have a "look-in."

In describing the Angora, they should have the coat as long as possible and of uniform quality, fine soft under-coat, having the fleecy appearance of wool, not in any way open or have a cottony appearance; the fur on shoulders and chest when brushed forward hiding the entire head and gives the rabbit the appearance of a big round ball of wool; all four feet should be well covered with a deep fringe of wool hanging from them; ears well covered, should be stout and erect, with a tuft of wool on tips if possible.

In shape, the Angora is cobby, and size is a point that is sometimes hard to attain and keep the wool of the highest quality. Good small ones are more easy to attain, but what is wanted in the show is an Angora that is good and at the same time large.

The eyes should be pink; the coat must be well brushed and free from cots or matted fur.

## Standard

	Points
QUALITY OF WOOL—The texture shall be very fine wool, soft body.....	20
FEET AND TAIL—To have thick wool.....	10
LENGTH AND QUALITY OF WOOL—Shall be of good length, 2½ to 5 inches at 4 months of age..	15
TAIL AND FEET—Feet to have a fringe of wool hanging from them.....	10
HEAD—To have a noble appearance and covered with a good quality of wool.....	5
CHEST AND HEAD—Chest to have wool as long as possible .....	5
EARS—Short, stubby and erect; good quality of wool and tufts on end of ears.	

Right ear .....	5
Left ear .....	5
SHAPE—To be cobby and have the appearance of a large white ball.....	5
SIZE—Over 6 pounds, with large bones in legs, and good, large, round head.....	10
CONDITION OF WOOL AND FLESH—Wool free from mats and well brushed.....	5
FLESH—Firm and solid.....	5

Angoras are bred in White, Blue and Blacks, or Smokes, as they should be called. Fawns and Grays are also exhibited. White Angoras should have pink eyes.

### Champagne De Argent

The Champagne De Argent is known in America as French Silver or Champagne Silvers, from its name it is a native of France.

It is one of the greatest fur rabbits in the world, as the fur is the same all over, with hardly any waste.

In 1916 over 200,000 Champagne furs were exported from France. This will give you some idea of the value of this rabbit as a fur animal.

In color it is described as having a rich under-color of blue intermixed with black and white hairs, the outer covering a rich, even silvering, making a striking appearance.

A matured rabbit should weigh 8 pounds and in shape should not be racy or baggy. Hutches should be cleaned often so the fur will not get stained.

The Silvers, when born, are jet black and gradually change to a silver ticking; sometimes it will show only in spots around the chest and sides, but does not show full coat until about 5 months old, and on the second moult shows lighter.

It is better not to keep this breed in the direct rays of the sun. In breeding, you should pick the ones with the most even, rich silver ticking; all specimens will show a dark butterfly smut on the nose.

The Continental Standard calls for blue under-color good and clear, intermixed with black and white hair.

The silvering must be even all over the body, presenting a sharp, bright, silvery appearance, full of life and sparkle.

The coat must be smooth and soft. The ears must be neat and straight, well set on head, rather high in position. The body shape must be neat and compact, not bulgy or baggy.

Condition must be such that the rabbit is clean and lively. Eyes bright, coat sleek and smooth, size 8 pounds.

### English Lop-Eared Rabbit

This breed has two varieties, the English and the French.

It is recorded as far back as 1850, when they were shown in the shows in London, England, in large classes, for trophies and cash prizes for years.

They were known as the King of the fancy. Where and when they originated is not known, but they can be traced back for over 100 years.

Lops in the early stage were different from the lop of today. They had great difficulty in getting them bred with the ears hanging down as they do today, and in the early shows they had different classes. If the specimen had both ears with the correct fall it was known as a Double Lop; if both ears stood out from the head at right angles it was classified as an Oar Lop; if one ear hung down it was known as a Half Lop, but these have disappeared, and only the Full Lop is now recognized.

Ears have been produced  $28\frac{1}{2}$  inches long, the improvement has all been made by the English fancier, as this breed has never been very popular in America.

They come in all colors, both solid and broken. In a show held at Leamington, England, in 1910, twenty lops in one class had ears that came to 25 inches in length, the winner with an ear 25 inches long and  $6\frac{1}{4}$  inches wide. The longest ear in the show was 26 inches long,  $6\frac{1}{2}$  inches wide. This goes to show the breeders what can be done with proper breeding and attention.

Lops cannot be raised successfully in out-of-door hutches. They should be in good tight hutches, free from draughts. Also you must pay particular attention to the ears, as fleas are sure to infect the base and inside of ears in a warm rabbitry.

The young should have ears eleven inches in length at 4

months; if they do not come up to that length they will never amount to much.

If you have a youngster that one ear does not lop well, you can take a piece of tape, wrap it at the tip and place a small weight in the tape, and this will help them to fall. The ears should be massaged from the root to the tip; do this gently. Vaseline rubbed in well will help the growth.

To measure the ears, take the flat part of the left ear and hold firmly. Place a rule with measure to tip of right ear across the head; to get the width of ears, place rule at widest part of ears. This breed needs about the same feed as any of the larger breeds.

### Standard for Lops

Length and width of ears—any length of ears—	
RIGHT EAR .....	12.5
LEFT EAR .....	12.5
WIDTH OF EARS—Any width from widest place	
on ear .....	19
THE EARS should be stout, strong and free from	
blemishes .....	10
EYES—To be large and bright.....	6
SHAPE, SIZE AND TAIL—Body to be large and	
arched. Bucks to weigh about 10 pounds and	
does 11 pounds and over. Tail straight, not	
wry tail .....	14
LEGS AND FEET—Good size and straight.....	6
COLOR AND CONDITION—Any color. Flesh	
solid and in healthy condition.....	20

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100

### White Polish Rabbit

They are one of the most beautiful of all fancy rabbits, never weighing over 3 pounds; the smaller the better.

As they are a hard rabbit to raise, and have no great value except for show purposes is one reason that they have never been very popular in the United States.

The Polish have very short ears, set very close together so when you look at them from one side they look like one ear, have large blood red eyes; the coat must be very short,

the shorter the better, and must have a high sheen; should glisten with life. The color should be pure white, the shape small and neat.

It is said that this breed originated from the sports of the Belted Dutch rabbit and prior to 1884 any small white rabbit was called Polish. The first authentic record of a class of Polish was in Hull, England, in 1884.

It is not necessary to keep them in dark hutches but they should be kept out of the direct rays of the sun, as they fade easily.



A CHAMPION WHITE POLISH

In feeding grains, give oats and wheat. In summer they can be fed green feed, but not cabbage, as they are subject to diarrhea, and in feeding roots be sure to cut in small pieces. If you give whole roots they will stain their noses and jaws as they gnaw into it.

Sawdust is the proper bedding. Never bed in hay as the dust will get in the fur. Feed just what they will clean up and clean the hutch out at least twice each week. The Polish are perhaps the least prolific of all rabbits. Five are considered a good litter. Much inbreeding has been done in the Polish. The young are not as hardy as the other breeds and a greater difficulty will be found in rearing them.

In breeding be sure that the buck and the doe are in the pink of condition, have correct type, well coated ears, fine bone and rich, blood-red eyes.

The young should be separated when five or six weeks of age.

Preparing for the show the fancier must remember that coat and condition are the strongest points. In cleaning to remove dirt use bread crumbs, not too dry. They should be given a good hand rubbing and finished up with a polishing with a chamois skin.

Never put anything in your shipping coops but sawdust and see when they enter the show room that the exhibition coop is good and clean and bedded with good clean sawdust.

### Polish Standard

	Points
COLOR—Rich pure white.....	14
SHAPE—Short and neat; weight, 3 pounds.....	14
COAT—Short, fine and silky.....	26
EARS—Short, set very close together and well rounded. When viewing them from the side they appear as one ear; good fur on base of ear if possible. . . . .	16
EYES—Large, bold and blood-red.....	16
CONDITION—Flesh and fur-flesh firm and healthy.	
Fur in fine condition, free from moult or stain...	14

### Japanese Rabbit

A rabbit rarely seen in this country, they are described as a short, well-shaped body, strong limbs, good shaped head with neat ear carriage; should weigh 8 pounds at maturity.

No set markings, in color from faintest cream tint to a deep brick red with patches and spots and stripes of black.



Care should be used not to expose them to the direct rays of the sun as their color readily fades. The Standard describes them as to shape and size. Short and thick legs, 8 pounds in weight.

	Points
BODY .....	10
LEGS .....	10
HEAD—Medium size, well spotted with black patches .....	5
EARS—Medium size, spotted patches to match body .....	5
MARKINGS—To be irregular and of different color. . . . .	30
UNDER-COLOR—Shiny and shading from cream to brick red. . . . .	20
CONDITION OF FLESH AND FUR—Flesh to be solid; fur to be soft, close and free from moult. . . . .	20

### Silver Brown Rabbit

The Silver Brown is another breed, they were produced originally by mating the Belgian Hare Doe with a light Silver Grey Buck, and breeding up to the present perfection. They are not as popular as the Silver Grays and do not stand up in coloring as long as the Grays and is one of the hardest of breeds to keep anywhere near the Standard. It is near impossible to see a real first class Brown.

The Silver Brown is bred in four distinct colors, Slate Blue, Brown, Black and White; the white is the silvering and the black the ticking.

In size and shape almost the same as the Silver Grays. The English Standard calls for—

	Points
UNDER-COLOR—Deep rich Chestnut.....	25
SILVERING—Evenness throughout .....	20
TICKING—Sharp, even and bright.....	15
COAT—Short and full.....	15
EARS—Neat and well set on.....	10
EYES—Bold and bright.....	15
CONDITION AND SHAPE.....	15

### Silver Gray Rabbit

The Silver Gray Rabbit was known as the Silver Sprig, originated in England. *In size* the Standard calls for 4 to 5 pounds; *in color* you will have to imagine a short haired black rabbit that has stayed all night out of doors in a cold winter and has a covering of frost glistening on his black coat; they are exceedingly handsome animals, lively and bright and are quite hardy.

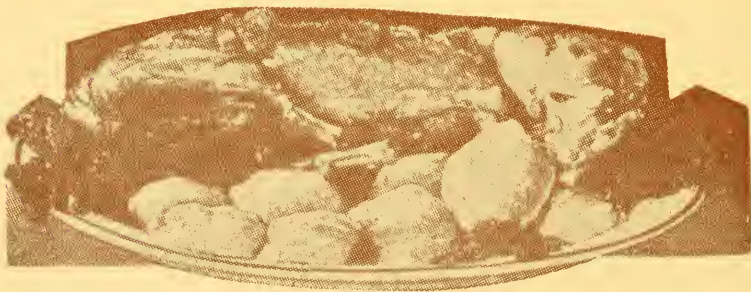
They come in different shades—light, between and dark. They have a dark under-color with a white or silver ticking. The Standard is used in England where they are most popular.

#### Standard

	Points
UNDER-COLOR—Deep rich blue black.....	25
TICKING—Sharp, even and bright.....	15
EVENNESS OF SILVER THROUGHOUT.....	20
(COAT—Full and short.....	5
EARS—Neat and well set.....	10
EYES—Bold and bright.....	10
CONDITION AND SHAPE.....	15

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100



A DELICIOUS DISH OF RABBIT AND DUMPLINGS

## THE HAVANA RABBIT

By THEODORE TURNER.

The value of the Havana lies in its adaptibility for food and fur production. Its type is one producing the maximum flesh in proportion to offal and at the smallest cost. Its fur, especially in the cold months, is extremely dense and very valuable for imitations of Hudson Bay Sable and Marten. Its size is such that the pelt is matured at the same time that the rabbit is the proper size for market.

Havanas originated wholly by chance on a farm in Holland. The first pair were produced by an unknown sire and a Dutch marked black and white doe. This occurred in 1898. They were shown in Holland the following year and in 1903 made their appearance in France, where they were quickly taken up and perfected. For that reason they are claimed as a production of France, and by some called French Havanas. They were first shown under the name of Fire-Eyes, due to the red light which will show in their eyes in the proper circumstances. Havanas were first imported into the United States in 1908.

Breeding Havanas is the source of great pleasure and no small profit. They are very healthy and hardy rabbits, have a very pleasing disposition, taming very easily, yet getting offended at the first sign of ugliness from their breeder. Havanas breed easily the year round, have proven to be wonderful producers and are able to rear large litters very well. The young grow very fast, usually being fully matured at six months. They are born all shades of brown, and with an occasional black, white or blue among them. White young are valueless and should not be kept. Black ones, if does, may be kept to darken the stud if it has a tendency to become light. Goudas or Lilacs originated from the Blues. The lightest colored young usually prove to be the best show specimens, the light color denoting the proper under-color.

Havanas are very fond of green stuff of all kinds and when it is in season will grow and thrive on practically nothing else. They are also kept in the best condition through a liberal feeding of grass, clover and other similar feeds.

Proper selection of breeding stock is very necessary for the success of the beginner. Due to the great popularity of Havanas many Havanas or brown crosses from other stock are sold as Havanas, but have not the proper characteristics. With proper foundation stock, care must be used to breed only when the stock is in prime condition, and then breed for the bright brown color and the densest fur. Care must also be used to keep Havanas from coarseness.

### Standard

The standard for Havanas, as advocated by the American Federation of Havana Rabbit Breeders, is as follows:

	Points
COLOR—Rich, BRIGHT Brown on entire body, head, feet and ears, with under-color of pure pale gray .....	20
SHAPE AND SIZE—Extreme mandolin type, broad behind, narrowing to the front, well arched back, short body. Weight from six to eight pounds .....	30
EARS—Four inches long, narrow, straight and carried upright .....	10
FEET—Slender and straight, brown toe nails....	10
EYES—Large, having gentle expression, color of body, but showing a red light in the pupil....	5
COAT—Short, silky and heavier than is general..	20
CONDITION—Healthy, clean, firm in flesh.....	5

## THE CHINCHILLA RABBIT

By THEODORE TURNER.

The Chinchilla rabbit is a wonderful fur-bearing possibility. The fur of this animal resembles very closely the real Chinchilla. The color is the same from the time of birth to maturity, making it possible for its fur to be sold at any age. Good specimens of this particular rabbit in this country are very few. We give the views of two breeders. —Publishers.



—Courtesy of Outdoor Enterprise Co.

A CHINCHILLA DOE

The color and coat character of the Chinchilla is of the utmost importance. The Chinchilla color is produced in the following peculiar fashion: Each individual hair consists of—firstly, a band of medium gray next to the skin; then a band of lighter gray; then a darker band; then a band of very light gray and lastly a band of black. The fur is loose and very thick and the surface effect is that of light and dark gray bands blending into one another. Therefore, with the proper color and the proper fur character, a very good imitation of the real Chinchilla is produced.

The honor and credit for producing the Chinchilla rabbit belongs to a Serbian who spent quite a few years experimenting to produce a rabbit with the real "Chinchilla lanigera" coat. After he had produced this stock and found it bred true to color, he interested one of France's wealthy rabbit men, who took some of his stock and in a short time had sown a few Chinchillas all over Europe. This was in 1920. The first Chinchillas made their appearance in this country in 1921.

The great value of the Chinchilla lies in its pelts, which imitates very well the real Chinchilla, which is now practically a thing of the past. Real Chinchilla pelts are worth \$75.00 each. Chinchilla "rats," the only other imitation for the real Chinchilla, are also scarce and very valuable, from which you can see the advisability of raising Chinchilla rabbits.

### Standard

Because there is at this time no recognized Standard for the Chinchilla, the author submits the following:

	Points
COLOR—Chinchilla color over entire body, feet, head, ears, with the exception of belly, which is white. Under-coat full, soft slate.....	30
COAT—Exceedingly soft and dense, hairs one inch long .....	30
SHAPE AND SIZE—Mandolin type, size up to 8 pounds .....	20
HEAD AND EARS—Head free from coarseness, Ears to be small with darker lines on their edges .....	5
EYES—Full and round, bright but dark colored....	5
FEET—Small, straight and evenly ticked.....	5
CONDITION—Healthy, clean, firm of flesh.....	5

## THE CHINCHILLA, ITS SOURCE AND HEREDITY

By O. E. POHL.

The Chinchilla rabbit was first bred by the Serbians and during the world war French soldiers occupying this country imported these most pleasing little animals to their homes in France. On account of the large numbers of foreign soldiers being there, they at once saw the great possibility of this breed as a fur rabbit and it spread rapidly all over Europe as well as this country and is known there and here as the Chinchilla rabbit.



—Courtesy of Outdoor Enterprise Co.

CHAMPION CHINCHILLA BUCK—SENSATION AT  
OMAHA, NEB., 1921

As to ancestry it is not hard to find the forefathers of this breed. Long before our Christian history a silvered rabbit was bred in India, especially in Siam and Burma, where also the white elephants make their home. If we cannot say that this rabbit made the trip on Noah's ark, it is written in the histories by Buddhist priests, dating back to before Christ, that animals of that breed existed in that country.

In the beginning of the sixteenth century (1547) these were imported to Europe by Portuguese sailors. Also the French about 1630 brought specimens of this breed home to France with them and later the Spanish also. In the eighteenth century this rabbit could be found domesticated in all Latin speaking countries, mostly by the efforts of the English it spread from England south and west, thereby also reaching Serbia about the middle of the last century.

This rabbit appeared in three different shades, a brown-silver, a gray-silver and a yellow-silver, and had the same shape and weight as the present Chinchilla. The lightest shades of the gray-silver could hardly be distinguished from our present Chinchilla and only the breeding of the lightest shades to each other, the introduction of animals with long black-tipped hair already existing in the forenamed breed, and the influence of the Serbian mountain climate was needed to produce what all those who see it admire.

We have now a small rabbit weighing up to 6 pounds on the average, but by the use of nurse does it ought not to take us long to get the average weight increased to the limit, about 8 to 9 pounds.



A WHITE FLEMISH GIANT



## KUDZU AS A RABBIT FEED

Kudzu succeeds on land too poor for alfalfa.

It does not have to be fertilized or limed.

It enriches poor soil more rapidly and more permanently than it can be improved in any other way.

It will transform non-productive barren hillsides into a main resource of the farm.

It doesn't have to be cut at a certain time to save it.

A shower of rain doesn't ruin the hay.

It makes a good permanent pasture.

It is not injurious to rabbits and is perfectly safe for all stock, when fed either green or dry. (Does not cause sickness of animals even when overfed.)

When fed to nursing cows it will produce more milk and richer milk than any other one feed.

It contains more protein than alfalfa or wheat bran.

Kudzu is a wonderful perennial legume. It is perfectly hardy all over the United States and endures the winters as far north as Nova Scotia.

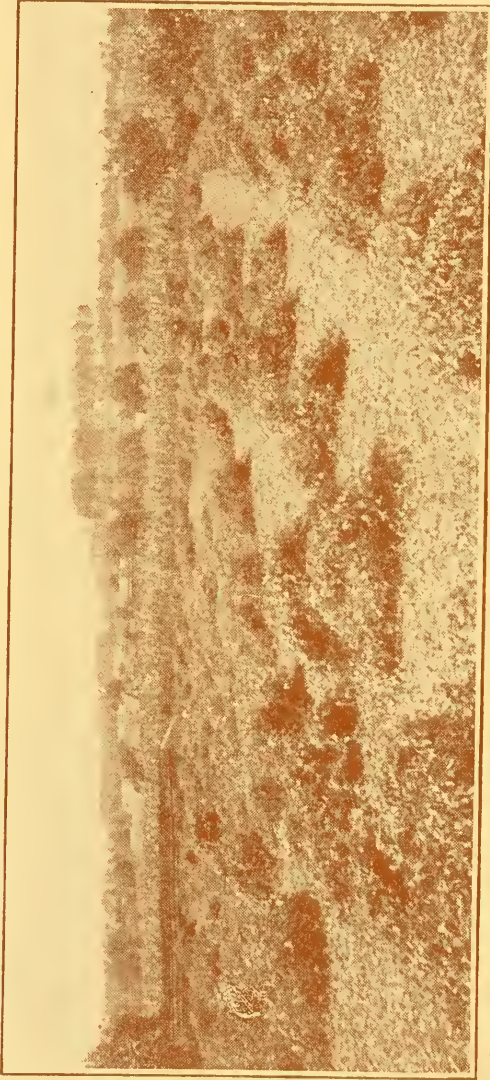
Kudzu springs up from the roots when the first warm days come in the spring and grows vigorously until a killing freeze comes in the fall. Two cuttings can be made each year in the North, and four in the South. Instances are known where four cuttings of hay, averaging  $2\frac{1}{2}$  tons per cutting and making a total yield of ten tons per acre in a single season, have been made.

A remarkable feature is that although the hay is richer than alfalfa, yet it is entirely free from the tendency to cause loose bowels, kidney disorders and bloat. When moistened, Kudzu hay becomes almost like fresh foilage again and makes an excellent green ration for rabbits in winter.

Kudzu will thrive on any soil, provided the land is well drained. Like any other crop, it will make a stronger growth on rich land, but it does well on land that is too poor for any other hay crop and rapidly improves the soil by drawing in nitrogen from the air. Poor, worn out land planted to Kudzu soon becomes like the rich soil that has been recently

## OUTDOOR OPPORTUNITIES

cleared from the virgin forest. The soil becomes richer every year, and the deep roots live to a great age and become



—Courtesy Burgess Feed & Plant Company

#### A FIELD OF KUDZU

Makes a wonderful rabbit feed; yields very largely on a small piece of ground and needs but little attention. A small plot of ground in your lot will produce enough feed for a small rabbitry.

stronger and more vigorous as the years pass by. The roots penetrate so deeply as to make it proof against dry weather.

Kudzu should be given cultivation the first season. Some other crop may be planted between each row of Kudzu the first season if desired. After this it needs no further cultivation, as the vines will run all over the ground the next season and take root at the joints, growing so rapidly as to choke out all other plants (even such pests as Johnson and Bermuda grasses), yet it is an easy matter to get rid of Kudzu if desired, for it has a peculiar habit of neither blooming or bearing seed under field culture, and the plants will only sprout from the crowns and can be killed by cutting off these crowns with a disk plow in hot, dry weather. When the crowns of Kudzu roots are cut off and exposed to sunshine for half a day or so they are killed, and the roots decay. For this reason there is no danger of it ever becoming a pest.

Plant the Kudzu on these hills, about 5 feet apart, on plowed strips 5 or 6 feet wide. These strips can be laid off 10 to 12 feet apart on the cross-way of hillside to prevent washing. The second season these hills will be entirely covered and sodded with the finest crop of hay or pasture you ever saw.

Kudzu is a native of Japan, where it is a leading hay crop, and is highly recommended by the United States Department of Agriculture.

Growers are now propagating it largely by transplanting young plants from old Kudzu fields, owing to the fact that the seed is very scarce. They prepare the ground the same as for a crop of corn, and then check off into rows 8 feet apart each way, setting a plant at each check. It takes only 680 plants to set an acre, so you see it is not as big a job as one might imagine, and the time spent is a very small consideration when you figure that once you get it planted it is there as long as you want it.

Rabbit and Cavy breeders especially should have a patch of Kudzu. A plot 100 feet square will produce enough to feed a good sized rabbitry or caviary the year round. It is claimed that it can be fed green without affecting the stock in any way. It is also said that rabbits will leave all other feed for Kudzu.

## DISEASES OF RABBITS—CAUSES, SYMPTOMS AND REMEDIES

### Colds

Rabbits will be found to take cold quite readily, although they are above the average hardiness of people in this regard. The causes of colds in rabbits and people, however, are much the same and in fact, nearly all diseases of rabbits have the same symptoms, the same causes and about the same cures as of the same diseases in people.

Changing from warm hutches to cold ones, changing from low to high or high to low, where the temperature or airing will vary, frightening to the extent that the animal gets overheated and any other means of changing temperatures suddenly, either of the animal's body or his hutch, is very liable to be the main causes of colds in rabbits. Infection due to companionship or mating with another rabbit afflicted with a cold will cause it also.

The symptoms of a cold at first, as in the human, are sneezing, coughing and thickened breathing. Slightly watery eyes indicate colds also.

The remedy is transference to a newly disinfected hutch, where there are no drafts or damp. Feed well on clean food, sprinkled well with Ex-Cel-So Tonic and Regulator and common table salt, equally mixed, salted on to the grain and hay. A hot mash may be given once a day of equal parts of bran, crushed oats and linseed cake, with a very light sprinkling of cayenne pepper, which will help straighten up the sick one's stomach and ward off the cold.

The best cure, of course, for any trouble, is prevention. This is accomplished by the application of right principles in the start, right housing, right buying, right breeding. Right housing will be found well explained in the early part of this work. Right buying means the careful avoidance of rabbits either infected or in a place containing infected stock, right breeding in disease prevention is to breed only healthy stock in a healthy place.

### Catarrh

Catarrh is an advanced stage of cold settling usually in the nasal passages and the bronchial tubes. It will be distinguished by a slight rattling in the nose and the flow of a mucous of a thin greenish nature from the nostrils. Treat same as for a cold and make up the following prescription, putting the medicine into a small machine oil can for convenience in dropping into the animal's nostrils: 4 ounces clear Sweet Oil, 2 ounces Oil of Eucalyptus, 6 drops Turpentine, 6 drops Coal Oil, 2 ounces Glycerine. Mix the Glycerine, Sweet Oil and Eucalyptus Oil together in a warm pan on the back of a stove where it will not be too hot. Take off the stove and add the Turpentine and the Coal Oil, mixing thoroughly. Drop six drops of this mixture in each nostril of the afflicted animal night and morning. Keep the animal in clean dry hutches, free from drafts.

### Snuffles

Snuffles is a case of quick consumption in rabbits and is absolutely without any cure. Care must be used, however, not to confuse Snuffles with the Catarrh. Snuffles will manifest itself in a thick whitish mucous from the nostrils, loss of appetite, thinness and utter indifference to surroundings. When the disease gets to this stage the only safety for the rest of the stock, and the only right way to relieve the animal from its sufferings is a quick sure death. There are remedies professing to cure Snuffles, but they will be found really effective only in cases of Catarrh and Colds. If it were possible to cure Snuffles in a rabbit it would be entirely practical to use the same remedy to complete curing of the human in cases of quick consumption, as the rabbit and the human are organically the same.

## STOMACH TROUBLES

### Slobbers

The first stomach trouble liable to a rabbit in its young days is Slobbers. This is shown by a wetness about the chin and mouth, caused by derangement of the stomach, resulting in a weakening of the salivary glands. The ducts of the salivary glands being weakened, an excessive watering

of the mouth results, causing the "slobbers," from which the disease gets its name. Improper foods and feeding, sometimes old or rotten foods getting in the youngster's way, and generally an attempt to eat too early in life, are some of the causes of this trouble. Be sure to have the nest boxes made with the entrance holes high so the youngsters cannot get out on the floor too early to eat. They should never be out before fourteen days anyway and eighteen is better. See that the hutches are kept well cleaned or else built on the self-cleaning style.

First, separate all the youngsters whose jaws are wet, as the trouble is contagious by contact with the slobbers on the food. For these separated youngsters see that they have six drops of sweet Spirits of Nitre to each cup of drinking water. Feed as usual, excepting that you should substitute dry or toasted bread for grain.

Make a ration salt as follows:

One part Ex-Cel-So Tonic and Regulator, one part common table salt, and then to one pound of the above mixture add one-half teaspoonful of common table soda. Mix thoroughly and place in small salt shakers to be dusted on the grain ration or the bread ration at each feeding, salting the grain or bread with this mixture just a little each time, as you would your own food. It must be remembered that the rabbit in a hutch cannot get out to select his herbs as he might in the wild state and that the above salting is necessary to his health. This salting should therefore be done for all rabbits as a stomach trouble preventive, or, a better way is to hang an Ex-Cel-So Salt spool in the hutch. These spools are made for that purpose.

When the youngsters are first found with the slobbers they should be taken up and a mixture of half and half of common table salt and baking soda rubbed on the wet jaws. Repeat twice a day until the trouble is cured, which it will be in a few days if the case has not been left to advance too far.

### Constipation

Constipation is sometimes caused by the water and sometimes by the food, but is rather a rare disease in rabbits.

May be known by an extreme hotness of the ears and a general dumpiness or lack of energy in the rabbit.

Dust powdered licorice root on the food night and morning and give a little milk to drink instead of water.

### Diarrhoea

Frequently caused by eating green food too young or by other poor food. May be noticed by the droppings being soft and shapeless when they really should be round and firm. Equal parts powdered Arrow Root, common table salt and common baking soda dusted well over the ration will have a good effect. Feed toasted pieces of bread instead of grain and give tea leaves from the kitchen after the tea has been used, which the rabbit should eat readily. The trouble will be found principally in the young, but may occur in older stock. Not dangerous if handled early.

### Pot Belly

An extra large fullness of the abdomen caused by too much green or wet foods. Really a sort of permanent bloat, which while not very dangerous in itself is ruinous to the appearance of such rabbits as the Belgian Hare where shape is a requisite to value. To prevent this do not feed root crops or greens so heavily, but in the case of young stock showing a tendency toward the trouble feed dry grains, clean dry hay and give only what water they will drink in twenty minutes twice a day. Powdered licorice root to act as a mild physic will help take down the bloated or "pot" effect.

### Red Water

An excessive redness of the urine, caused by deposits in the kidneys, sometimes due to the water given and sometimes due to the food containing minerals. Sweet Spirits of Nitre, one teaspoonful to each half pint of drinking water is a good remedy. See that the rabbit has plenty of clean clear water always at hand, properly fixed with the Nitre. As soon as the urines assume the natural color, a light yellow, discontinue the Nitre.

### Ear Canker

This affection is not at all dangerous if any care at all is used with it. The trouble appears generally as a scab in either or both ears and if allowed to run on will fill the ear.

Mix up the following prescription and have it in a small machine oil can handy to drop a few drops in each affected ear night and morning. No other treatment need be applied, except that it will be well to massage the ear a little.

working it gently round and round. Even if you do not do this it will work out all right in three to four days. But do not poke sticks or other attempts to clean out the ear. The prescription for the oil to be used follows: Cottonseed oil, 4 ounces; Turpentine, 6 drops.

### Abscesses

These are the gathering of matter under the skin of the rabbit, generally along the back or under the neck. They may be caused by a bite, a scratch or a protruding nail in the hutch. Wait until the abscess appears to be full size, when it will get quite soft. Carefully cut away the hair from around the place of incision or cutting of the abscess, which you will do at the base or side of it and not on the top of it, as it will clean out so much better.

Have someone help you hold the rabbit. Make rather a long incision at the side of the abscess and if the pus is in a sac be careful not to cut the sac if you can help it, as it will be a cleaner job if you can remove the sac entire.

After the pus or sac is removed and the pocket is well cleaned out, have a pan of luke warm water into which two tablespoonfuls of Listerine have been poured. Wash the pocket out well with this Listerine water and then with clear Peroxide of Hydrogen, full strength. Fill the pocket pretty well with Carbolated Vaseline and squeeze it out again, leaving little or none for the rabbit to lick off, which it will be sure to do if possible.

### Spotted Liver

Heavy breathing in rabbits is often laid to lung or bronchial troubles when the real cause lies in what is known as Spotted Liver. This is generally a deposit of lime or some sodium or salts on the liver and may be caused by bad food, by poor water or by hay or alfalfa grown in marshy or salty soil. There is no cure, once the disease finds a good hold, but it is comparatively easy to prevent.

If you are not where you can obtain dandelions in the wild state and dry them yourself you will need to buy dandelion root at the drug store. By using the following salt ration regularly and keeping it in your salt shaker to dust a little on EVERY grain ration that you feed, you will pre-



vent all kidney and liver trouble as well as practically all stomach troubles in both old and young stock.

Ex-Cel-So Tonic and Regulator, 1½ lbs.; common table salt, 1½ lbs.; common baking soda, 1 tablespoonful; powdered dandelion root, 1 tablespoonful; powdered licorice root, 2 tablespoonfuls. Mix all together thoroughly and sift through an ordinary flour sieve. Keep in tightly closed can to maintain the strength of the herbs and to prevent the salt gathering moisture.

For regular use have a large salt shaker and supply it from the large closed can as needed. If care is used to dust this salt on EACH ration of grain, the larger part of the rabbit diseases will be prevented, especially all those relating to the stomach, liver and kidneys.

### Paralysis and Convulsions

This disease may occur to any rabbit, but is especially prevalent in young stock. At first will be noticed a stiffness in the hind legs, followed a few hours later by a dragging of the limbs about on the floor. About this time convulsions will appear, causing spasmodic movements of the sufferer, resulting in death in considerable pain in a few hours. There is no known cure for the disease, which is almost always caused by malnutrition or the lack of vitality due to malnutrition in the parents. This lack of nutrition may be caused by the kind of food fed, rather than by the lack of the food. Rabbits require a variety enough in their diet to furnish the salts, phosphates, proteins and hydros necessary for building the blood and bones of the animal.

The prevention of the disease, therefore, will be found in the proper care as to the feed and the water given the rabbits, more especially to the breeding does and bucks. As the trouble is due to lack of vitality also, the necessity of care is not overusing the bucks or the does as breeders will be easily seen. Take very careful note on the principles laid down in the section on breeding.

### Vent Diseases

Vent Disease is caused by mating with unclean specimens and sometimes by filthy floors in hutches. The preventives are, clean hutches, which it is hoped that every reader of this

book is a crank on, and another preventive, and the main one, is care to examine both specimens BEFORE mating them. The trouble is easily detected by an inflamed or reddened appearance of the generative organs of the animals. If this condition is observed make an ointment as given below and apply it well to the affected part twice daily. Keep the rabbit in clean, disinfected hutch and do not breed so long as the slightest sign of the disease remains.

The ointment is made up as follows:

Carbolated vaseline, one ounce; powdered sulphur, one-half teaspoon; common baking soda, just a small pinch on the end of a pocketknife. Mix well and use as a salve.

### Skin Disease

Usually caused by filthy conditions but may occur in a well regulated rabbitry by other sources of infection than the direct uncleanness of a hutch. It generally appears in the form of a germ called mange and may be noticed by the hair falling out on the affected part and a general scaliness or scalded appearance of the skin at the place. The ointment given above for vent disease will prove entirely sufficient if applied twice daily and well rubbed in. Do not leave too much surplus ointment on the place as the rabbit will be sure to lick the spot or rub it with its paws and then lick the paws, which may make it ill if too much of the ointment is left on the place to be licked off.

### Sore Hocks

May be caused by filthy hutches, by frozen or cold urine and dirt on the floors, or by other infection. It will appear on the bottoms of the hocks of the rabbit in the hind feet as first a swollen place and then matter will gather in the sore places and the rabbit will move about with apparent pain and will not slap the foot on the floor in the natural way of the rabbit when aroused or fearful.

The condition is easily overcome by using the ointment given as a remedy for vent trouble. This will probably be found to be the best all around general ointment to have about the rabbitry that can easily be procured. Apply the ointment after soaking the hocks of the affected animal in warm water for a few minutes to loosen the skin and open the pores. If matter has gathered in the sores, which is sometimes the case, have some one help you hold the rabbit while

you gently open the places with a sharp knife. Wash out well with Peroxide of Hydrogen or with Listerine. Fill the place with the ointment and then place the rabbit in a clean disinfected hutch, with a bedding of two inches of clean straw in the bottom. Keep the patient under these conditions until well.

### General Remarks

It may be assumed from the perusal of the numerous diseases listed above that the rabbit is a very easily deranged animal, but such is not the case. Of all the domestic animals the rabbit is the healthiest and far more so than chickens could possibly be under the same conditions. The large chances are that one following the precepts laid down in the earlier portions of this work, especially as to cleanliness and regularity, will have few if any of the diseases listed and certainly not very many of them in the course of many years.

Some rabbitries go from one year's end to the other and NEVER need to doctor one rabbit, by reason of the care and judgment they use in the general prevention of disease. The only source of disease you need fear is outside infection through purchase or breeding to diseased stock, and this book has already thoroughly instructed you as to that.

### MONEY IN RABBITS

Information concerning the rabbit here given is from a source of reliability and experience. Large profits can be realized from this enterprise if the instructions mentioned herein are carried out, as no previous experience is necessary to make a success. Rabbit culture in this country is yet in its infancy, yet is taking very fast in all parts of the Union. Those who enter the business now with determination to get ahead have every opportunity of doing so and building very prosperous circumstances. These instructions will enable you to make the attainment and the result will be of profit and of pleasure; first, because there is much money to be made in rabbit raising; secondly, there is no other enterprise which affords more pleasure to the individual than does the raising and care of rabbits.

## THE CAVY INDUSTRY

BY EDWIN F. DEICKE, Cavy Judge.

*Illustrations by Courtesy of Author*

### Characteristics of the Cavy

**T**HE Cavy, commonly known as "Guinea Pig," is a member of the rodent family, although it does not gnaw, scratch or bite. It is a very gentle little animal and is entirely in a class by itself. It resembles neither the rabbit nor the rat, and by no means does it resemble the real pig, by which I mean the barnyard hog, which some people think is the case, because of its nick-name, Guinea Pig.

It is different from practically every kind of animal, in that it does not have a tail, and that is where the old joke about the Cavy originated—"Pick it up by its tail and its eyes will drop out."

The Cavy, when fully matured, weighs about two pounds. It matures at the age of about six months. Cavies, when born, weigh from three to five ounces, and at the age of four weeks will weigh ten ounces, at which weight they are at the proper marketable size. Cavies breed at the age of four months, and the period of gestation is from 60 to 70 days. Cavies are born with their eyes wide open and will start eating food practically the same day they are born. In this respect they are quite different from the rabbit, which does not open its eyes until nine days old.

Cavies are very interesting and at the same time they are very profitable. They require but little food, room and attention. It is estimated that each female of breeding age will net its owner a clear profit, above all expenses of at least \$5.00 a year when properly cared for. Cavies are so interesting and fascinating that they instantly appeal to anyone who sees them, and they become even more interesting when one learns of their usefulness and the profits that can be made from raising them.

### Feeding

If Cavies are properly fed, you will never experience any difficulty in raising them successfully. The Cavy, like any

other animal or bird, if not properly fed will not thrive as it should, and, therefore, proper attention should be paid to the feeding.

During the summer months, dandelions make the very best kind of food, and dandelions may be obtained in almost all parts of the United States. They just wax fat on dandelions and they certainly like dandelions above any other kind of green food. Cavies cannot be over-fed. They take

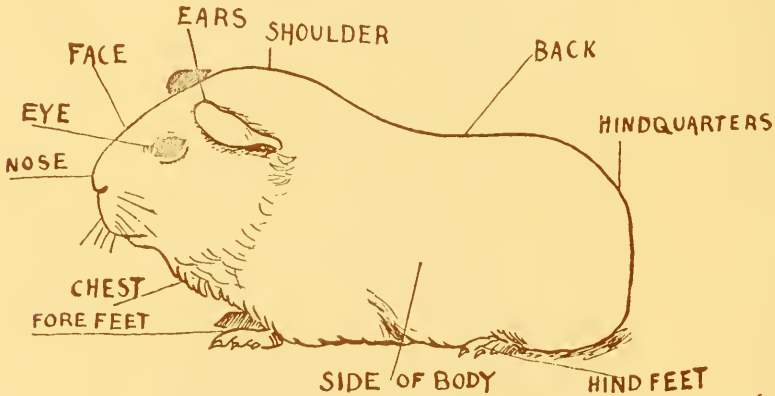


EDWIN F. DEICKE  
Cavy Judge

care of this themselves and do not eat more than what is good for them. Therefore, feed them all they want. In addition to dandelions, during the summer you may feed lawn clippings, lettuce, cabbage, green alfalfa and clover, and any other vegetables you may best be able to procure. In addition to green food, they should have clean oats and hay once a day. Oats may be fed either whole, rolled or steel-cut, which ever way it can be obtained the cheapest.

Timothy hay is best for them, and it should be fed rather than alfalfa, as alfalfa is too rich for the Cavy. Use prairie hay if timothy hay is not available.

During the winter, carrots and mangel-wurtzels make the best kind of green food. Therefore, it is advisable to put in a patch of carrots and mangels during the summer so you will have them for the winter. Grass and other greens are usually gone by the first of October, and then you will have to start feeding carrots. If you are not able to raise the carrots and mangels yourself, then it is best to buy them in the fall, for at that time of the year you can obtain them



from the Truck Farmers for about \$5.00 to \$12.00 a ton, depending on your location. If you feed both mangels and carrots, then feed carrots one day and mangels the next day. But either one of these roots may be fed alone and exclusively all winter, together with hay and oats.

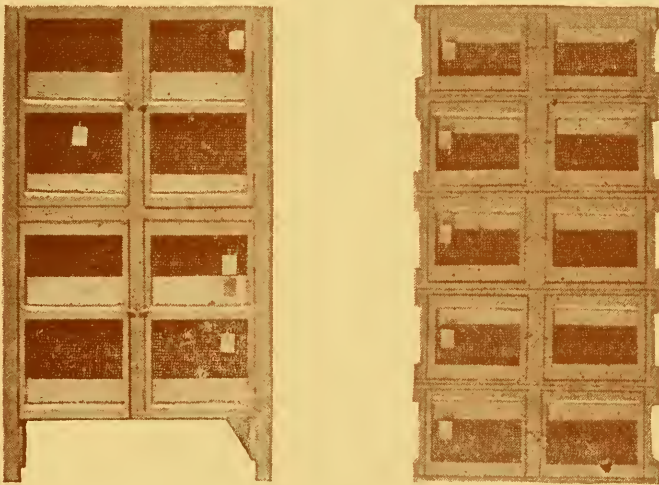
Dry bread is also a good food for them. This need not be soaked, but is best to feed this dry. Cavies do not need any water at all, if you feed them enough green food, which you should do. Under no circumstances should you feed potatoes, as they are not good for them.

### Housing

Proper housing for Cavies is very essential in order to be successful. The main thing in housing, however, is to see that they are located free from all drafts. Nothing will kill a Cavy quicker than when subjected to drafts from which it cannot get away. Drafts on Cavies will develop into colds, and colds into pneumonia, and then your Cavy is a has-been.

Therefore, provide good, comfortable housing for your Cavies where they are free from drafts, and where they get sunshine at least part of the day. Hutches as illustrated in this chapter are very practical and used successfully by many of the modern Cavy Breeders.

"Cleanliness is next to Godliness." This also applies to Cavies. Be sure that your hutches are cleaned once a week. Oftener is not necessary, but they should be cleaned each week. The Cavy is absolutely the cleanest animal in the world, and therefore it insists on being kept clean and in sanitary quarters at all times. After cleaning the hutch it is best to disinfect and place shavings on the floor, which



FOUR AND FIVE SECTIONAL HUTCHES

make the floor nice and dry and comfortable for the Cavies. During the summer time you may keep your Cavies in hutches outside or even provide runs for them if you wish, but during the winter they should be kept inside, either in a warm building or a basement. The basement is an ideal place to keep them. They are clean and there is no odor connected with them; but be sure that your basement is dry and not damp, and place them where the sunlight will face them. Cavies prefer as much as possible an even temperature, and, if possible, you should arrange to keep them this way.

### Breeding

Careful attention should be paid to the breeding end of the Cavy business. Do not breed a Cavy if it is not in the best of health and condition. It not in good condition when mated, they will produce inferior stock and many times both the mother and young will die. Therefore, mate your stock only when in good condition.



WHITE CAVIES, THREE WEEKS OLD

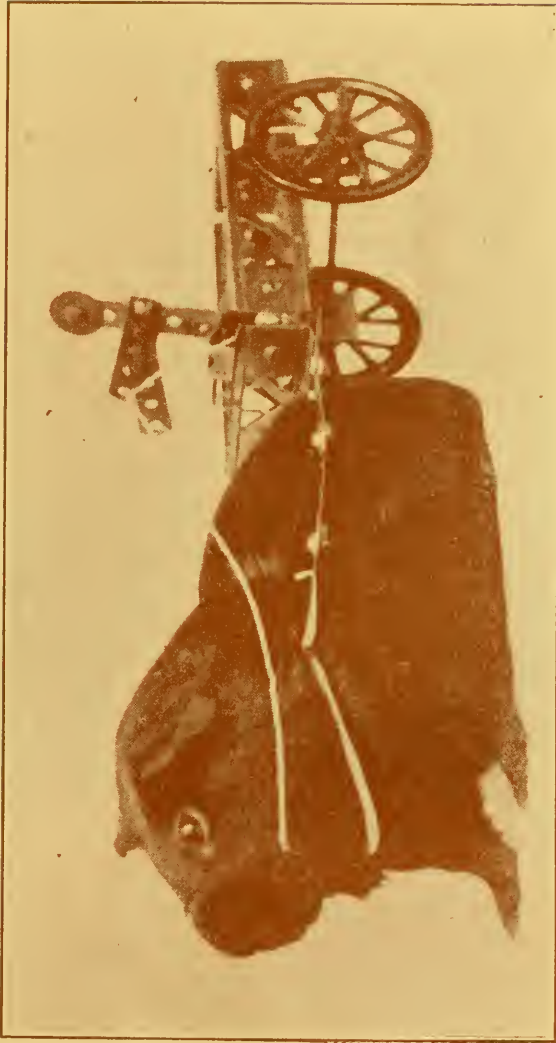
Females may be bred when four months old and males when five months old. If, however, they have not attained mature size when four months old, then it is better to wait another month. It takes from 60 to 70 days for females to have young. They produce from one to six young at a time, and sometimes as high as eight, but this is a very unusual occurrence. Three is a very safe average.

Immediately after they are born they can be seen running around their mother with their eyes wide open. They are



SOLID BLACK AND WHITE CAVIES

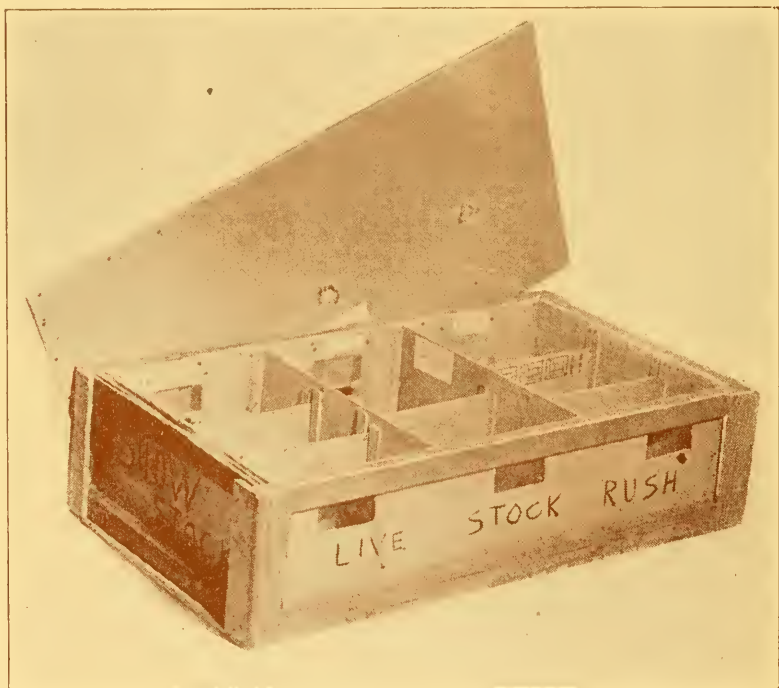




—Courtesy of Walter F. Sage  
A TRAINED CAVY—CAVIES MAKE FINE PETS

very hardy when they are first born. Mother Cavies do not make nests before giving birth, and nest boxes are not necessary for Cavies.

When a female is about to have young it is best to place her in a hutch by herself where she is not disturbed. If left together with other Cavies, she is sometimes injured, and this would easily cause premature birth, resulting many times in the loss of the mother.



CAVY SHIPPING CRATE

One male and four females make a properly mated pen. When the females show signs of being heavy with young, then separate and place by themselves. Females are usually bred as soon as placed with the male.

When females have young, leave the youngsters with the mother until three weeks old and then separate them, placing the males by themselves and also the females by themselves. This is necessary as they become sexually mature when only about four and five weeks old, and therefore it is not advisable to leave them together. After weaning the young, give

the mother a rest of one week, and then place her again with the males by themselves and also the females by themselves. By doing this you can safely raise four litters a year from each female without injuring her. A female is good for at least six years of breeding, and in some cases females have successfully raised young for nine years.

### Commercial Use of Cavies

Cavies are useful for medical work, food, fur and fancy. Their usefulness in the medical field is almost beyond comprehension. Practically every hospital and physician uses Cavies off and on in their medical work. Every university and medical college keeps large quantities of Cavies on hand for research work. Every laboratory needs Cavies. One laboratory near Chicago alone uses 25,000 Cavies each year.



FINE SPECIMENS OF CREAM, BLACK AND WHITE CAVIES

Another institution near Philadelphia uses approximately 50,000 baby pigs a year, and another institution near New York City uses about 40,000 a year. They are also used in large quantities on the Pacific Coast. The Government is also a heavy buyer of Cavies and they use them at their various Research Stations.

The above is merely to give a slight idea of the vast quantities in which they are used, and this will give you an idea of the large commercial demand for Cavies. The demand for baby pigs is at nearly all times of the year ahead of the supply. Most laboratories desire them when from nine to twelve ounces in weight, and again others want them

of a larger size. Some desire only males and others want only females, but the majority of them do not care whether they get males or females, so long as they are healthy.

The Cavy is generally known as the "LIFE SAVER," because it gives its own life to let others live. Some people have the idea that it is cruel to use Cavies for this purpose, but at the same time we all have to admit and agree that it is better to take the life of an animal than the life of a HUMAN. The Cavy is absolutely the best animal to use for this purpose, as they are very easy to handle, do not scratch nor bite, and are very quick to show symptoms of irregularity.



TWO CHOICE BLACK SPECIMENS

The Cavy is also good for food. The meat value of the Cavy can hardly be estimated. It is regarded far more nutritious than most any other kind of meat. Many banquets are held where the Cavy is the main item on the menu. Although, because of the scarcity of stock for this purpose, it will probably be some time before they will be more generally used for food purposes. There are many ways of preparing the Cavy, and they can be prepared about the same as the rabbit.

Their fur, too, is of great value, and is very adaptable to many purposes. Caps, gloves and even coats are being made of their furs. When the supply of Cavies becomes more abundant, then their fur, no doubt, will be more commercialized.

The Cavy, like nearly every other animal, has its place in the "SHOW WORLD." Practically every live stock show has an exhibit of Cavies, and no show, large or small, is complete without a display of Cavies. The best displays are usually found at the Chicago Coliseum, the Madison Square Garden at New York, the Los Angeles Live Stock Exposition, and also at other big shows, such as are held at Boston, Cleveland, Kansas City, St. Louis, Colorado Springs, and other places. A visit to any of these shows will convince one of the popularity of the Cavy, and the demand that exists for fancy, well-bred stock.



PAIR OF CUP WINNERS

**Various Breeds**

Cavies come in the following breeds and colors:

- |                      |  |
|----------------------|--|
| ENGLISH SMOOTH-HAIR. | <ul style="list-style-type: none"> <li>White</li> <li>Black</li> <li>Cream</li> <li>Red</li> <li>Chocolate</li> <li>Tortoise and White</li> <li>Dutch Marks</li> <li>Himalayans</li> <li>Brindles</li> <li>Silver Agouti</li> <li>Golden Agouti</li> <li>Mixed colors</li> </ul> |
| ABYSSINIANS.....     | <ul style="list-style-type: none"> <li>Cream</li> <li>White</li> <li>Black</li> <li>Red</li> <li>Chocolate</li> <li>Mixed colors</li> </ul>  |

PERUVIANS.....	{	Red
	{	Cream
	{	Black
	{	White
	{	Mixed colors
ANGORAS.....	{	Black
	{	Red
	{	White
	{	Cream
	{	Chocolate
	{	Mixed colors

As you can see by the above, there is certainly a large variety of color to choose from and also have you got four distinct breeds to select from. There is nothing monotonous about the Cavy business. There is an equal demand for the various colors, but the demand for the Abyssinians, Peruvians and Angoras is rather limited, because they are used and bred almost entirely for the show room, as they are not practical for medical experimental work on account of their long hair.

The smooth haired Cavy, as you can tell by the name, has a smooth coat of hair, while the Abyssinian's fur is rosetted, its hair being short and wiry. The Peruvian has long and silky hair flowing both backward and forward so that it is entirely covered with its silky hair. The Angora is similar to the Peruvian, only its long silky hair flows only backward and does not cover its head, as the Peruvian.



# THE MILK GOAT INDUSTRY

BY DR. C. E. LEACH

**T**HIS is not written with any thought of making it a complete treatise on the Milk Goat, but it is with the hope that it will be complete enough to enable the reader to obtain a fair understanding of the industry and enable the would-be breeder to avoid the mistakes that have been made by the pioneers in goat breeding.

We have three standard breeds of milk goats in the United States at the present time, viz: Toggenberg, Saanen and Nubian.

We also have the Royal Murciana and the Alpine, for which no standard has been set.

The Toggenberg is a native of the Toggenberg Valley of Switzerland. It is a fawn or brown goat with lighter legs and brindle markings. The bucks are rather long-haired, but the hair of the does should be shorter. They have small up-standing ears.

The Saanen is a white goat from the Saanen Valley of Switzerland. Like the Toggenberg, the buck has rather long hair, but the does should be smooth coated. They have small, upright ears.

The Nubian is native stock from India and Africa which was taken to England and there crossed with the native English milk goat, and is therefore an English goat and not a Swiss goat. Nubians are any color, and are distinguished by their large, drooping ears, almond shaped eyes and nostrils, roman nose and large size. Both male and female should be smooth-coated.

Anyone interested in the complete standard for these breeds can obtain same by writing to Will L. TeWalt, Vincennes, Ind., who is secretary of the American Milk Goat Record Association.

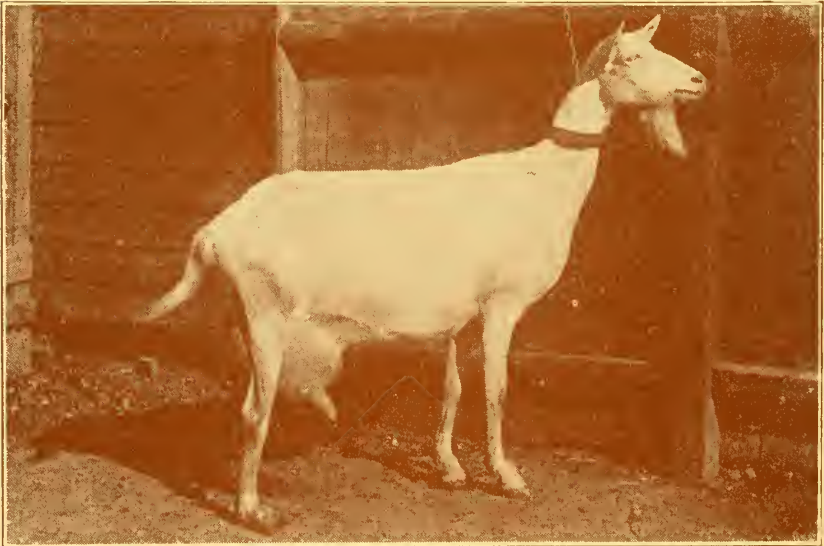
There is now a move on foot to develop what is called **Free-Bred Goats**. This is a cross or crosses of the three standard breeds. J. A. Winans, 4571 Pasadena Ave., Los Angeles,

Calif., is secretary of this movement. No doubt there will be one or more very good strains of milk goats developed from these crosses.

Horns are gradually being bred off all the breeds until now we have most of the stock born hornless.

In the United States we have registry associations for each breed and also the American Milk Goat Record Association. This association registers does containing 50 per cent or more pure blood of any breed and only pure bred bucks.

The breeders of each breed claim special merit for the breed they own. Perhaps it is more a matter of choice than any real difference in economic value.



—Courtesy of R. R. Glahn

SAANEN DOE

### Feed

In manger feeding we prefer alfalfa hay, though we have had fair success with oat hay. Almost any grain is good. We usually feed oats or corn preferring the oats. Kaffir corn is fine when obtainable. Bran or shorts mixed to a thin mash with warm water is excellent. Beet pulp, carrots, oil meal, etc., are good.



For pasture, we like alfalfa, rye or oats. Goats are very fond of most weeds and brush. They do *not* like rape, sudan grass, blue grass or prairie hay.

We are often asked if alfalfa will kill goats. We have pastured it under all conditions and have never had one show signs of bloating from it. However, when first turning them on it in the spring, we feed dry hay, morning and night, for a while, turning the goats on the pasture days only.

#### ALL FEED MUST BE CLEAN.

They should have access to clean water all the time. Warm water in winter, especially for milking does, is well worth the extra expense and trouble.

### Method for Manger Feeding

We have found after many expensive experiments that the following manger is the only practical one.

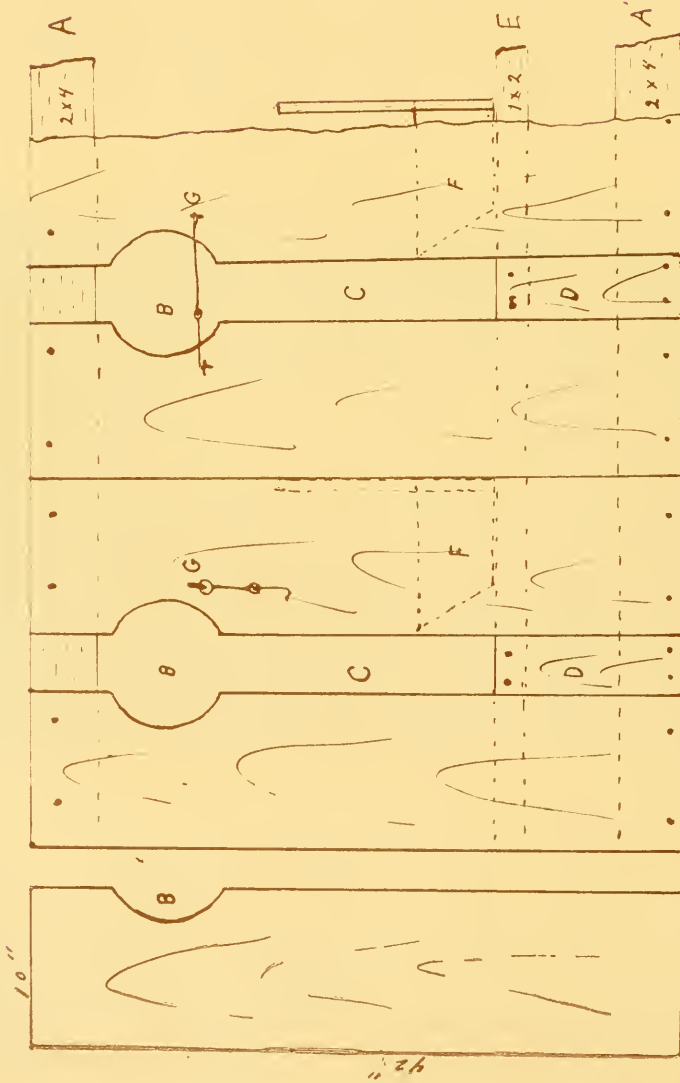
Fig. I shows a ten inch board cut to shape. A fourteen foot board, ten inches wide, cuts just right for four pieces.

Fig. II shows the side of the manger. The board, Fig I, should be nailed to two-by-fours, top and bottom, A and A. These boards should be spaced three and one-half inches apart, leaving the slot C three and one-half inches wide. If it is narrower it is too small for the goat's neck. If larger, the kids will get through into the manger. The notch B should be cut two inches into the board, thus leaving the diameter of the opening B, Fig. II, seven and one-half inches.

A one-by-two inch strip is nailed to the inside of the manger twelve inches above the floor of the manger as E, Fig. II. Strips D three and one-half by twelve inches are nailed to the two-by-four A at the bottom and to the strip E at the top.

Fig. III shows a grain box which is nailed to the inside of the manger and on top of the strip E. The high back on the feed box is to prevent the neighboring goat from stealing the feed.

G is a wire hook made from number nine wire. It should be jointed two-thirds of the distance from where it fastens on the manger to the hook end. After the goat has placed her head through the opening B the hook is dropped into staple at left of opening and the goat is stanchioned.



By C. E. LEACH  
FAIRBURY  
NEBRASKA

FIG. III

FIG. II

FIG. I

This style manger may be placed near a wall, using the wall for one side. If this method is used, the manger should be set twenty inches from the wall.

If the barn is twelve or more feet wide, it makes a good arrangement to have the manger set in the middle of the barn, making both sides alike. If this method is used, the two sides should be set three feet apart, having one end fastened to one side of the barn and the other end within three or four feet of the opposite side of the barn. This gives a double manger with the goats facing each other and eating from the same manger.



—Courtesy of C. E. Leach

**INKYO MULEY HASSAN**

The Most Wonderful Buck in America—Pure-Bred Nubian

If one wishes to go to a little more expense and work, it is quite an improvement to raise the entire manger six inches off the floor and put in a false floor on a level with the manger floor. This false floor is made of slats set just far enough apart to permit the droppings to fall through. The false floor should be made in sections and so placed that it can be raised or removed to permit cleaning.

### Breeding

The breeding season is in the fall, though occasionally the does come in at other seasons of the year. In breeding season they usually come in heat about every three weeks.

The period of gestation is five months. Some breeders breed their spring kids the following fall, while others wait a year longer. We prefer the latter method to give the young does opportunity for development.

The best buck obtainable is the cheapest to breed to, no matter what the charge for the service fee or the price of the buck. The increased value of the kids and the satisfaction of building up the herd is worth more than any extra expense incurred.

### Kids and Their Care

Does usually produce twins or triplets.

There are several ways to proceed with the kids. We take the kids away from dam as soon as they are born, drying them well and placing them in a warm, dry place. When the kids are two or three hours old, we take the first milk from the doe, placing it in a small pan, warming it to about blood temperature, and feed it to the kid. Usually all that is necessary, if not allowed to suck the dam at all, is to place the kids nose in the milk and it will drink. Occasionally we have to use a spoon the first feeding or two, but after that they will always drink out of a pan with no trouble.

Others prefer to use an ordinary nursing bottle and "bottle feed" the kids. But this method makes much unnecessary work and expense.

Others let the mother raise the young. The last named is the easiest method, but is not the best method to develop good milkers from the dams, especially if the kids are allowed to suck the first time or two she is fresh.

*Be careful about over-feeding the kids.* They cannot be fed too often, but if forced to go too long between feeds they get so hungry that they over-eat and become scoured. We feed the kids five times a day the first week, then cutting down to four times the next week, then to three times a day for the next few weeks, then to two times a day as long as we have milk for them and they will drink it.

A kid may be taken off of milk entirely at six weeks of



Courtesy of  
Owners

age and raised on dry feed, but it pays to continue the milk for twelve weeks or more.

When the kids are a week to ten days old they will start nibbling at hay. From then on we keep a little good, clean hay where they can reach it at all times. When about three weeks old we give them access to bran and cracked corn or oats.

We have had no success with prepared calf meals or lamb meals.

Kids like a small box, well bedded, in which to sleep.



—Courtesy of Dr. C. E. Leach & Son  
A PURE NUBIAN DOE

### Housing and Feeding

Goats do not require a particularly warm house, but it should be dry and free from draughts. The old ones, like the kids, like to have a cozy place to sleep. In winter, especially, a small barn is preferable to a large one.

The pen need not be large if it is well drained. Two or three does can be easily kept on the back end of a city lot. Four foot woven wire fencing with a barbed wire at the top is sufficient to hold them. It is economy to buy the heaviest woven wire as the goats are prone to stand on it with their front feet and they soon destroy the lighter weight wire.

### Goats' Milk

Goats differ as much in quantity and quality of milk as do cows. The same doe will vary according to her age, feed

and care. Perhaps the large majority of goats give from two to four quarts of milk per day. There are many, however, giving from four to six quarts per day and a few that will give even more than this.

The milk is as sweet and delicious as cows' milk, only richer and whiter in color. It averages from five to seven per cent butter fat, and some tests considerably higher than that.

The composition of goats' milk as published by the United States Experiment Station is as follows:

Fat .....	5.99
Solids not fats .....	10.97
Total solids .....	16.96
Sugar .....	4.93
Protein .....	4.63
Water .....	82.04

The milk is very easily digested, because the globules are much finer than the globules in cows' milk.

Most of the imported cheese is made of goats' milk.

Butter made from the cream is excellent. It is white unless coloring is used.

Goat milk sells from twenty-five to fifty cents per quart; its greatest value is perhaps in infant feeding and for invalids, although it is unsurpassed for family use.

### Infant Feeding

There are so many things to consider, and so many conditions, that each case must be considered individually to quite an extent, though there are general rules and principles that can be followed.

We can give no better suggestions than those written down by Dr. Carl G. Wilson of Palo Alto, California and published in the *Angora Journal*, Portland, Ore. Dr. Wilson is a man of experience in medicine and is considered an authority on goat-raising and the use of goat milk.

"In approaching this subject, I must frankly admit I do so with considerable reluctance, as there are so many angles of approach, conditions, chemical compositions, environment of the producer of the milk and the consumer, that I fear for too deep a consideration of the subject, and fail in the very object of this paper, namely, to give a few simple, practical

suggestions on infant feeding and broadly suggest plans and formulas for feeding.

"I am irrevocably convinced that goats' milk is the best substitute human milk for infant feeding, not only because of its close similarity, chemically and physically, but also the readiness with which the infant's digestive organs receive and digest goats' milk.

"It has been my experience in infant feeding that each child is a law unto itself, hence you can readily realize that any formula would only be a guide and it would vary according to conditions met with.



—Courtesy of J. T. Gordon  
CLETA B. OF LA MESA GOAT RANCH

"For the sake of simplicity, I will divide the infants which come under my observation, and for whom I am asked to suggest and regulate their feeding, into four classes:

"'A,' healthy normal child; 'B,' health slightly impaired with digestive disturbances; 'C,' health markedly impaired, digestive disturbances pronounced; 'D,' health vitally impaired, digestive disturbances very greatly pronounced:

"You can readily see that a general formula suggested for an infant, say one month old, would in no way agree with all four classes. Hence my suggestions will be for an



infant of Class 'A,' which would probably apply for class 'B' with slight modification, but probably would be very detrimental to classes 'C' and 'D' without considerable dilution and modification, which requires considerable skill, judgment and experience.

"It must be definitely borne in mind that infants in classes 'C' and 'D' cannot at first receive all the nutrition which they should have, but rather only that which their devitalized digestive system can handle and properly digest, for, on the other hand, if you should unduly crowd feeding on these infants they would be able to digest but a small portion. The rest would undergo chemical change which would result in poisoning the system.

"It is also necessary to classify feedings in regard to age of infants, as their stomachs are very small and cannot hold much at a time. As they grow older, the stomach grows rapidly, also the requirements for food increases.

"The following formula is a general guide which applies to infants of class 'A' and not to 'B,' 'C' and 'D' without modifying:

Age . . . . .	1 mo.	2 mo.	3 mo.	4 mo.	5 mo. and after
Goat milk . . . .	1 oz.	2 oz.	3 oz.	4 oz.	6 oz.
Malt sugar . . .	$\frac{1}{2}$ teasp.	1 teasp.	1 teasp.	1 teasp.	1 teasp.
Lime water . . .	1 teasp.	2 teasp.	2 teasp.	2 teasp.	2 teasp.
Boiled water . .	1 to $1\frac{1}{2}$ oz.	2 oz.	2 oz.	1 to 2 oz.	. . . . .
Frequency of feeding . . . .	2 hrs.	2 hrs.	3 hrs.	3 to 4 hrs.	4 hrs.
Night feeding .	4 hrs.	4 hrs.	5 hrs.	5 hrs.	6 hrs.

For "B," "C" and "D" classes I advise dilution with boiled water formula: for "B" class one-fifth and gradually increase to formula for class "A."

For "C" class, dilute formula one-third and gradually increase to formula for class "B" then to class "A."

For class "D" dilute one-half gradually increasing formula for class "C" then to "B" and then to "A."

I have frequently found for class "C" and "D," giving small quantities of formula frequently will agree better than large quantities at longer intervals. I have also had excellent results by carefully combining goat's milk with some of the prepared foods.

### Publications

For those wishing further information on the industry there are the following publications:

The Goat World, a magazine of some fifty pages printed on good paper and devoted entirely to the raising and breeding of Milk Goats. This magazine is published monthly. The subscription price is one dollar per year.

"Modern Milk Goats," a book of about two hundred and seventy pages, written by Irmagarde Richards. Price, three dollars.



—Courtesy of R. R. Glahn

SAANEN BUCK

"Profit and Pleasure in Goat Keeping," by Fred C. Lounsbury.

"The Milk Goat Dairy," by Wickersham.

The two last named are small booklets and can be purchased from the publishers of this book.

"Farmers Bulletin, number 920," United States Department of Agriculture, Washington, D. C.

"Bulletin, number 285," Agricultural Experiment Station, Berkeley, Calif.

The two last named may be obtained free of charge by writing to the respective addresses.

"Stomach Worms in Sheep, number 47," United States Department of Agriculture, Washington, D. C., is a good treatise on worms. Goats should receive the same treatment for worms as sheep.

### The Future

Many thought at first, and perhaps a few still think, the Milk Goat Industry only a fad. Such ideas have long since been proven erroneous for the demand for good stock is greater now than at any previous time. And why not? "Eight to ten goats can be kept as cheaply as one cow." (Government report.)

The milk is free from tubercular germs.

It tests twice as rich as cow's milk in butter fat.

It can be used in any way that cow's milk can.

It is the nearest approach to an ideal infant and invalid food we have.

Goats are free from tuberculosis.

(A hospital in Chicago claims to have cured many cases of tuberculosis by the use of goat's milk. They also report the cure of cancer of stomach by the same).

Goats can be kept where it is impractical to keep a cow.

The offspring will sell for more than the cost of keep for the dams.

Children and women can handle and care for goats as easily as a man. We already have several women in the industry as a means of livelihood. The clean habits, the gentle disposition of the goats and their ease of handling really make them peculiarly adapted to woman's work.

Two good does will keep the average family bountifully supplied with the richest and purest milk the entire year at practically no expense. If the does are well bred and a pure bred sire is used the kids will show a profit aside from the milk.

THE MILK GOAT HAS COME TO STAY.

# THE FUR FARMING INDUSTRY

BY A. R. HARDING

SO promising is the raising of Fur-Bearing Animals looming up that we wrote Mr. A. R. Harding, author and publisher of *Fur Farming*, to write this chapter. Mr. Harding is not only a well-known Writer-Publisher of Trapping and Fur Books, but knows fur and fur values, from more than thirty years' experience in handling, not only mink, coon, skunk, opossum, muskrat, but valuable ones as well, including black, silver and cross foxes.

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In writing a chapter devoted to Fur Farming or Raising I do not know that I can bring more clearly or forcibly before those who have or expect to engage in the business than to reproduce Chapter II from my 278-page book, *Fur Farming*, with a few changes and extracts on the care, feeding, breeding, etc., of the various animals as published in my book. Remember that this book was first published, spring of 1909, and that many things that I predicted or foresaw that have since come true.

## What Animals to Raise

There is a bright future to Fur Farming. The person who knows something of the habits of the animal or animals that they expect to raise, will be the successful ones. A person who has always lived in the city would not be likely to make a success at general farming or fruit raising. The same applies to fur farming. The person who has followed hunting, trapping, or the farmer or *pet stock raiser* who has given attention to fur-bearing animals are the ones most apt to be successful.

FOXES, no doubt, will be animals that the majority would like to begin with, especially the more valuable ones, as black, silver and cross. These, for breeding purposes, can now be secured at more reasonable prices as raisers are now selling more freely to others than formerly.

During the past few years, many started in the business of raising the most valuable foxes—black, silver, cross. The business has developed wonderfully in Eastern Quebec, New Brunswick and Nova Scotia. Prices paid for fine specimens of black and silver fox seem fabulous. It is reported on good authority that \$10,000 to \$15,000 is no uncommon price for good pairs—male and female. This is not so unreasonable when the value of the skins are taken into consideration, and proportionately would only mean \$40 to \$60 for a pair of mink, the skins of which would bring \$5 to \$7 each.

**SKUNK.** A good many attempts were made at raising skunk, a number of years ago, most of which were failures. Some entered the business on a large scale, knowing nothing of the animals, and, of course, failed; others “penned up” a few skunk, and, as they were not properly cared for, failure was the result.

The advanced price of skunk skins in recent years has caused a revival in their raising. This time, an entirely different class of people are taking up the work, and they are going to succeed. Why? Because they know something of the animals and are going at the business in a calm and business-like way.

**MINK**, at present prices, look good to the fur farmer. They are small animals, but yield a pelt worth from \$3 to \$7, \$8, or occasionally \$10, depending upon the size and color. (Remember this chapter was written back in 1909).

**RACCOON AND OPOSSUM**, compared with many fur-bearing animals, are producers of cheap furs. This is true, but at the same time, they offer the most promising future for the fur-farmer in many localities, especially the South and Central sections. Opossum cannot stand severe cold weather. They are easily raised, and in addition to their fur, the carcass finds ready sale in most cities.

Opossum and coon will not dig deep, seeking escape, but are good climbers, and considerable precaution should be taken to see that the wire netting is either extended in several feet at the top, or that a strip of tin a couple of feet wide is fastened to the posts some three feet from the ground.

### Watching Market Prices

The fur-farmer, should the market be low for certain animals, can keep over; or the better plan would, no doubt, be to kill off the surplus males and perhaps some females. At such times do not make the mistake of killing off too closely, as some do, claiming that the fur is low and that there is no need of trying to increase. Nine times in ten this is the time to raise as many as possible, for by another season, that particular article is likely to be in demand.



SKUNK

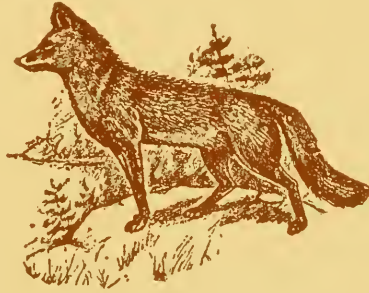
To illustrate: In the winter of 1908-09, No. 1 skunk from Northern and Eastern sections were worth \$2.00, while the following winter the same quality skins were bringing \$4.00. If the skunk raisers had sold off their stock at low prices, because the prospect was not bright, but had gone ahead, they would have had a good crop of fur to market at high prices by January, 1910.

Had the opossum raiser, during the comparatively low prices for this fur in 1908 and 1909, sold off his breeding stock, he would not have had a supply when the prices advanced in January 1910.

Some make the mistake of selling off their stock when prices ease up, expecting to go into the raising again when a reaction takes place. This is not the way to make the most money; when a reaction comes other farmers who have continued raising this certain animal, reap the harvest, selling to the market or their neighbors at high prices.

## Prices

The prices paid for the various articles show about what the grower may expect for his "crop." The demand, of course, will have much to do with the price. Fashion is constantly changing, but indications are that, owing to diminishing supply and increased consumption, prices will be on a fairly high level always. Trappers and hunters often catch fur too early and, as a consequence, have blue pelts, which are graded down. In the spring shedders and rubbed skins are secured, which are sold as No. 2 or lower. With the fur-farmer there will be no early caught blue skins or late caught spring and shedders. The animals will be killed when prime and will bring best prices.



Red Fox

## Fur Quality

Some reports from those who have experimented in a small way at raising fur animals is to the effect that they do not fur properly. This may be true in regard to skunk, when kept in a box and fed largely on meat. The writer has bought skunk skins that had been kept in a "pen" or small enclosure for weeks, and in addition to being thinly furred, the hide was much thicker than it should have been. Proper feeding was mainly responsible.

Indians and professional trappers and hunters of the North say that they can notice a difference in the fur of foxes, lynx, marten, etc., when the food supply is abundant. The fur is thicker and has a healthier, silkier and glossier appearance. The secret, no doubt, is to give the animals plenty of room, and food should be varied. Here is where a knowledge of the habits of the animal or animals one is raising is valuable. When cattle, sheep and hogs are fed properly,

they take on fat readily, and produce a healthy coat of hair or wool. The same applies to the fur-bearing animals.

### Inducements

What animals offer the greatest inducement to prospective raisers? This is a question that each individual going into the business must largely decide. The place you have in view for the starting of the farm will have much to do with this. Is the location one best adapted to skunk, mink, coon, fox, muskrat or some other fur-bearer? Again, your experience should be taken into consideration—what fur-bearers you are most familiar with. If you live near a large city, which offers a market for coon and opossum carcasses, this should be considered, as these animals are easily raised and opossum are very prolific, producing from six to twelve or sometimes more at a litter. While the fur of coon and opossum will never be very valuable, yet as both fur and carcass have a cash value, they will prove greater money-makers than many believe. Muskrat are another animal that should not be overlooked, as they increase rapidly, and their flesh is now being sold in many of the large cities.

### Localities for Raising Stock

Marten and silver fox should not be raised in the South, as they are animals that do best in the cold sections. Otter and mink are two animals whose fur is faded by the sun, and as the darker the fur, the more valuable, it is important that as little sun as possible shines upon them. For this reason it is not a bad idea to have the enclosure for these animals in the woods or thickets, in fact, some trees should be in enclosures for all animals. If raising coon or opossum, they will be "at home" in the trees, while other animals will enjoy the shade in the summer, and will make use of the leaves in the dens for winter.



MINK



There are some animals, such as marten, fisher, wild cat, weasel, badgers and wolves, that do not seem promising to raise for various reasons. Marten do best in the high mountain sections; fisher and wild cat would be hard to keep in an enclosure; weasel and badger are not valuable and would both be difficult to keep in; wolves are not valuable enough for their fur and would require considerable attention and food, hence not desirable to raise. In most states where wolves still abound there is bounty on the scalps, but the raising of them for the bounty would not work—the bounty would not be paid if county officials knew from what source they came.

### Choice of Animals

Among the animals promising the best for raising are the black, silver cross and red fox, skunk, mink, coon, opossum and muskrat. The otter, beaver, marten and lynx, under certain conditions, may be worth considerably, especially now that these animals are becoming scarcer and their value apt to increase.

### For Value and Uses

Of late years the price of most raw furs has been forced higher and higher; as a consequence, reactions have taken place, but they have not gone as low as they were some years ago. I think that fur prices in general will maintain high value and most kinds will gradually increase in value as the animals producing them become scarcer, but whenever the price is forced up too high, there is bound to be a reaction.

Suppose thousands engage in the business of raising fox, skunk, mink, coon, opossum and muskrat, what effect would it have upon the market? Would they overstock it?



MUSKRAT

How many hundreds of thousands of persons are today raising cotton and wool to furnish clothing to the millions of people, and there has always been a market? (The scarcity and high prices which began in 1917 were due, of course, to the war). The same will be the case with fur. In fact, unless thousands engage in the fur raising business, the demand is going to far exceed the supply at no distant day.

Furs in the North are a necessity, as no cloth will repel the piercing wind. Teamsters and others much out of doors wear fur overcoats and caps, and also use fur laprobes. Further south, say in the latitude of New York, Pittsburgh, Denver, etc., while furs are not an absolute necessity, yet they are much worn for comfort. In all the cities of the North furs are worn eight or nine months in the year; in the central sections, perhaps six months; while in the South, only a few months. In addition to this, American furs are worn in all civilized countries of the world.

Millions of dollars worth of fur skins are used each season to satisfy *fancy for furs*, which, of course, the trapper and Fur Raiser has no objection to.

### Combination Raising

The farmer or stock raiser, as a rule, who is making the most money, is the one who raises, not horses, cattle, sheep or swine alone, but often two or more of them. The same can be applied to the fur farmer. Suppose an enclosure of a few acres is made for skunk or other animals, why not take in a pond, if there is one, and raise muskrat, coon, fish and frogs? There is a ready market in all cities, usually at hotels and restaurants, for fresh fish and frogs.

The farmer that raises sheep not only sells the wool, but fattens and sells some of the lambs, weathers or old ewes from time to time. The farmer is in the business to make the most out of it, and such will be the case with the fur-farmer. In the cities there is a demand for the carcasses of coon and opossum at prices ranging from 40 cents to \$1.00 for coon, and 15 cents to \$1.00 for opossum, depending upon the size of the carcass, as well as the city in which you are marketing. In New York, Boston, Philadelphia and Baltimore there is a ready sale for all coon and opossum carcasses at good prices. Other cities that use large quantities are Buffalo, Cleveland, Pittsburgh, Detroit, Chicago, Milwau-



OTTER

kee, Minneapolis, St. Paul. In fact, there is no city of any size north of the Ohio River but offers a market. St. Louis, Kansas City, Louisville, Memphis and other southern cities, being near the coon and opossum producing sections, do not offer so good a market. Muskrat are now served as "marsh rabbit" in Baltimore and other cities. The trapper realizes from 5 to 10 cents each.

### Other Important Points to Consider

With the exception of muskrat, fur-bearing animals breed only once a year, unless the first litter are killed or die, when another is sometimes born, and it may be said, such is frequently the case. The number that the various animals produce in a litter is given in the chapter dealing with the animal.

Raising fur-bearing animals may be compared with raising bees for honey. Not all of those who have gone into the business of raising bees are successful, yet how few failures are there among men who began in a small way, learning more of the business, and gradually increasing the number of hives in their apiary.

One thing is important, and that is, get the animals accustomed to their keeper as soon as possible. The old will be wild for some time, but the young soon become tame. Skunk and coon are easily tamed and even beaver, otter and mink have become so tame, when secured young, that children have safely handled them.

A man who has been in the fur-farming industry for years, in response to the inquiry, "Will the business pay?" says: "Yes, it will pay the right man big dividends on the capital invested." The right man is one who has natural aptitude for this sort of work, and who is "cut out" for fur-farming. If he has a liking for this sort of work, he will study the nature and requirements of the animals and attend carefully to their every want.

Fur farming as an industry is only in its infancy, in fact, scarcely begun. The future looks bright to those who engage in the business in a business way. To those who expect to make a fortune in a year or two, we predict failure, but to all who are willing to go at the industry intelligently, building a substantial enclosure, paying the same careful attention to the feed and care of their fur animals that they

would to "other stock," to get the best results, far more than ordinary profit should result.

To all others who are desirous of trying the raising of fur-bearers for profit, we say: Read this book carefully—study it—and then if you feel that you can make it a paying business, make a small enclosure and try a few animals. By the end of a year or two, you will know whether you are going to like it; whether you can make a success of it or not, and will have acquired a lot of very necessary knowledge regarding the animals, that could not have been obtained in any other way. You will know then whether to go ahead or not, and if the former, you will also know how.

The business surely looks like a "gold mine" at present prices for fur and breeding stock. Even should prices be reduced by one-half or more the business bids to continue very profitable.

While scores, perhaps hundreds, will make good with the more valuable foxes—black, silver, cross—thousands will find that profits may not be so great (neither is the expense to get started) with the common red fox, skunk, mink, marten, coon, opossum and muskrat, yet the raising of these animals is not apt to influence values. The world needs millions of these skins each year, and the market is not so limited as with the high-priced furs. Looks like a great future for the raising of these animals. There is no denying the fact that the supply of wild fur-bearing animals is gradually becoming less, not only in America, but throughout the entire world, while the demand for furs is constantly increasing.

Since the wild ginseng and golden seal has become scarce, hundreds are profitably growing them. The value of these has never been but a million or two each year. How about the raising of fur-bearing animals? Here is an industry that can use \$50,000,000 worth of raw furs each year. Where are they going to come from unless thousands engage in the business of raising? The demand for animals for breeding will be an enormous one as well.

### Enclosures

The fur raiser should have substantial enclosures and the following is taken from Mr. Harding's book:

For foxes, coon and other animals of similar size and strength, wire netting should be of 14 or 16 gauge, and the mesh two inches. It should be about 9 feet wide. It can be gotten in four and five foot widths. The enclosure should be 7 feet high, which leaves two feet to go under ground. For skunk, muskrat and opossum, the material should be 16 or 17 gauge wire with  $1\frac{1}{2}$  inch mesh. For mink, probably as small as 18 gauge wire can be used and the mesh should be 1 inch.

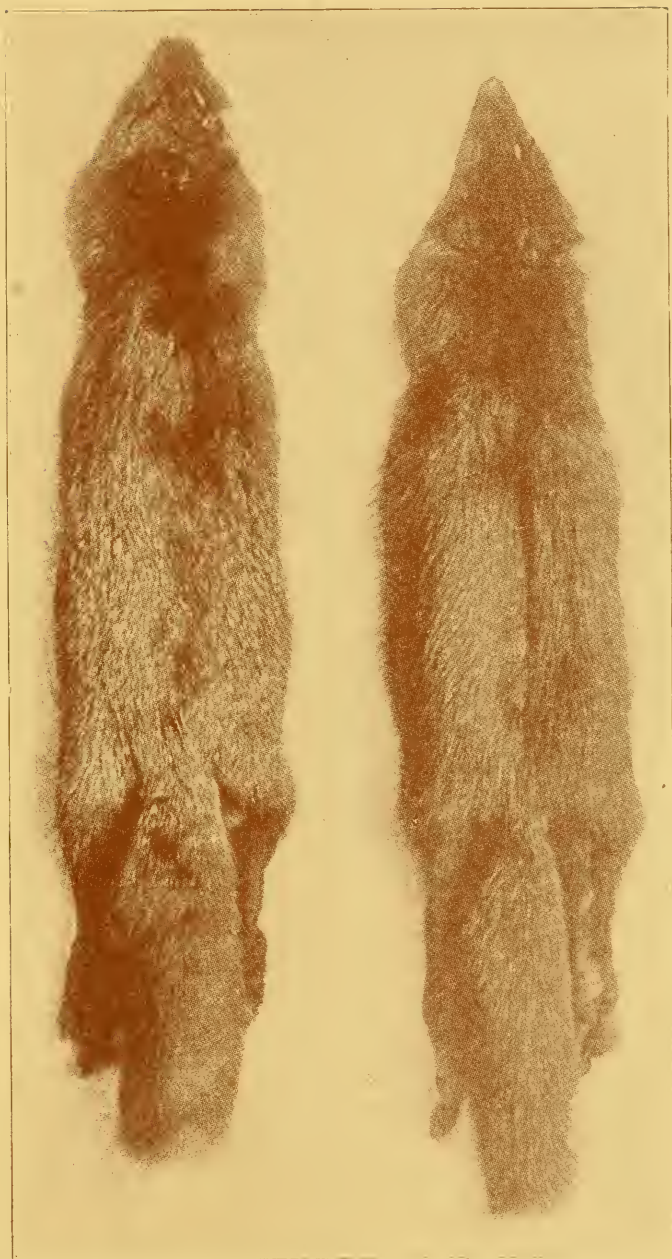
Some animals will stand crowding more than others and probably a dozen muskrat or 6 skunk could be raised in an enclosure that would accommodate but a couple of foxes.

SKUNK. For 10 skunk or less, and their offspring the first year, I suggest an enclosure measuring about 3 rods wide by 4 rods long. An enclosure of this size will answer for a much larger number, but I don't believe in crowding. Mink, marten and opossum will probably stand more crowding than most other animals, and the enclosures for the numbers given above for other animals may be smaller. In fact, an opossum or two will do fairly well in a box 4 by 5 feet, if kept clean.

FOXES. Foxes, on the other hand, will require more room, and for ten animals something like one-fourth of an acre should be used.

MUSKRAT. While muskrat can be raised "penned up," the thousands of small lakes, ponds, etc., offer a splendid opportunity for the cheap and successful raising. Many owners of such today, in their natural condition, or without any fence, are reaping a profitable and furry harvest; yet there are additional hundreds that, by building a fence around, would soon have a muskrat lake or pond worth a great deal. Muskrat are fond of their homes and often remain at the same location for years. If a wire fence three feet high were built around a lake or pond and a foot or two underground, it would keep the rats at home, otherwise some would leave when feed became scarce or their numbers became too great. Such a fence would also keep out mink which are destructive to young muskrat.

Fur animals like the earth rather than boards as the floor of their living quarters. In enclosures where only one



NATURAL BLACK AND SILVER FOX SKINS

or two are kept, temporarily in boxes, it is well to have the bottom covered with dry earth.

While best grade of galvanized wire will last for years in the ground it is not a bad idea to have the wire only come to the ground and cement below. A wall of cement two inches thick will keep or prevent any animal from digging out or through.

### Foxes—Black, Silver, Cross, Red

**FEED AND CARE.** The food for foxes in the wild state consists principally of small animals and birds, such as rabbits, partridge, quail, chipmunks and mice, but they also eat fruit, such as apples, wild grapes and nuts. They are also fond of fish and eggs.

Foxes should not be fed too much meat, for, in captivity, they do not get as much exercise as in the wild state. One of the most successful raisers feeds a quarter of a pound of meat and a quart of skimmed milk daily. A quarter of a pound of meat and a handful of table scraps is a very good daily allowance. Another fox raiser feeds along with the meat a hoecake made of corn meal and sour milk. Stale bread also makes good food for foxes. They should only be fed what they will eat up clean, and to go hungry occasionally may be "good for them" for in the wild state they sometimes went hungry, no doubt. A bone, with little meat on, is good for them to gnaw at to keep their teeth in condition. They should be fed twice a day—morning and evening—and given fresh water each day.

**BREEDING.** Each pen or compartment should be provided with small kennels, for although the fox will usually dig a den, the nature of the ground is not always suitable and they take kindly to these artificial dens. A box about four feet long and three wide and at least two high is all right for a "den," with a smooth round hole to enter and come out through. Dry leaves make good nest material, although sometimes the female fox makes use of but little.

Foxes attain their growth usually before a year old. They breed but once a year, and the mating or rutting season includes the months of February and March. The period of gestation is about 51 days. Therefore the young



are born in April and May. The number in a litter varies from two to eight, the average number born to adult parents being five. In the wild state foxes are monogamous—have only one mate—at least only one in a season, and when the young are being reared he dutifully forages for them. In confinement, however, one male sometimes has been mated successfully with two or even three females, but beginners probably had best handle the animals in pairs.

It is possible, also, as proved in a number of instances, to allow male and female to remain together throughout the year without bad results, but it is much better to keep them separate, except during the mating season. They may be paired in December or January and separated in March or April. The females should be kept in the small enclosures continuously and the young removed when weaned. (By small enclosure is not meant den or kennel, but the small enclosure surrounding same which is usually 30 by 40 feet, or thereabout.)

None other than the owner or keeper should go near when the young are born or for weeks after.

The males, if regularly fed, are not quarrelsome, except in the rutting season, and therefore, during the greater part of the year may be allowed to run together in the larger enclosures. The separation of the sexes is not as many suppose, to prevent the male from killing the young, for, unless suffering from hunger, he usually is a model parent.

## Skunk

**FEED AND CARE.** Skunk are found over most of the United States and Southern Canada. They take on fat readily in the fall and often hole up during December and January in the north, especially if the winter is a severe one. Being slow moving animals, they cannot catch the more active animals and birds, and their food consists mainly of mice, insects and grubs, also eggs and young of such birds as nest on the ground. They are great dead animal feeders, although preferring fresh. Even in the wild state they are not strictly speaking, a carnivorous animal, as they will eat and, in fact, are fond of, sweet

corn when in a milky state, also potatoes, melons and wild fruit.

Skunk in captivity will eat a great variety of foods, including meat, fish, insects, bread, cooked and even raw vegetables and ripe fruit. Table scraps will keep the animals in good condition, but occasional meals wholly of raw meat are desirable. The meat should not be putrid (decayed) nor very salty. More of it should be fed in the spring, for it is a lack of meat diet that causes old skunk to eat the young.

Cakes and mush made from corn meal and bits of meat are excellent food. If fresh milk is available, it may be made an important part of the food. Cooked green corn and hominy also are recommended.

No more food should be given than they will eat clean during the night. Do not give the carcass of some animal and let them feast on it for days. But little more food than required for a cat will suffice for a skunk. They should be fed once or twice a day; if fed but once, it should be in the evening. Females with young should always be fed twice a day. Good fresh drinking water should be given and both vessels for food and water should be kept clean.

**BREEDING.** The mating season is in February and early March and the young are born mostly in May, although some will be born in April. The period of gestation is about 63 days. There are usually from four to ten in a litter, but occasionally there will be more. One male skunk is sufficient for about six females.

The "skunkery" should be divided into several compartments which are needed to separate males or females and young just weaned. In addition to these divisions, separate breeding pens must be made for each female and her young. Cheap wooden boxes will answer for nests, but the enclosure in which they are placed should be large enough (say 8 by 12 feet) so that the young will have space to play after old enough to leave the nest and before they are weaned. Where litters are allowed to run together, there is more or less quarreling and mothers stealing the young of others and, while there might not be any killed, it is not a good plan. The divisions between the



DRESSED RUSSIAN ERMINE

various females and their young may be of wire unless there is fighting, when a board partition some three feet high is needed.

In each compartment a number of dens should be made by digging a trench and covering afterwards. While the animals will dig dens if necessary, they prefer, even while in a wild state, to use dens already made. Boxes, barrels or pens with board floors should not be used. Some of the successful ones claim that this has a tendency to cause a thick pelt and thin fur, saying that it is absolutely necessary that they have natural dens in the ground. The dens should be quite deep so that there will be no danger from frost in winter.

No matter what style of den is used, it should be so made that there is no danger of it getting damp. There should be plenty of dens, so that if one becomes damp or infected with vermin, the occupants can take up quarters elsewhere. Leaves and fine dead grass make good nests.

### Mink

**FEED AND CARE.** Although Mink are found in nearly all parts of North America, the most valuable ones are found in the Lake Superior region, Southeastern Canada, the New England States, Northern New York; yet, with the exception of those native to the extreme South, any are all right to raise. The larger and darker the animals started with, of course, the more valuable.

The food of mink consists mostly of rabbits, partridge, quail, squirrel, muskrat, mice, fish, frogs, birds and eggs in their wild state. While they will eat stale meat, they prefer strictly fresh.

The following food is recommended by those who have raised the animals: The best steady food for mink is bread and sweet milk, corn-mush and milk, or corn-mush cooked with bits of meat in it. The animals should have meat or fish about twice a week. The meat may be of a cheap kind. Keep pans clean, and feed only as much as the mink will eat up clean at each feeding. Feed once a day, except females that are suckling young. These should be fed twice. Provide fresh water regularly. Do not salt the food.

BREEDING. Mink should be kept in the proportion of one male to five or six females; that is, one male is enough for five to six females. The first half of March is the mating season in most northern states and Canada, but the owner must be very watchful during the latter part of February and up to the middle of March. The male can be admitted through chutes or holes, but must be withdrawn at once if the two begin to quarrel. If there is no quarreling, the male should be left with the female a couple of days.

The young will be born six weeks after mating, as the period of gestation is 42 days. You will be aware when the young are born from the "crying" from within the nest boxes. This "crying" is apt to continue for several days, but all is well, and, under no circumstance, disturb them by peeping in the nest box. If your curiosity gets the better of you and the box is even slightly moved, the mother is apt to kill her young. Keep away, except to feed twice a day.

A mink, when nursing young, will eat about one-fourth pound of fresh meat at each meal with what fresh milk she wants. If she does not care for milk she may eat a half pound of meat morning and evening—or a pound a day.

The females must be kept alone or they will be likely to kill each other's young. The male would also kill them if they had an opportunity.

Instead of using wire to enclose pens, many make of smooth boards four feet long, set up with the lower end resting on stone or concrete 18 inches in the ground. The pen need only be about 5 by 6 feet. The floor of the pen should be the bare ground—top, of course, covered. The pens can be built economically in groups of four or more. Boxes about 2 feet long, 1½ feet high and 1½ wide should be provided for nests. They should have hinged lids so as to allow their being opened and examined. Fine straw or hay should be provided. The boxes may be outside the pens, bolted to the outside wall. A hole in the wall admits the animal to the box. These boxes should be several inches off the ground. A round hole about four inches in diameter is made in the end of the box extending into the pen for the mink to enter.

## Raccoon

**FEED AND CARE.** The natural home of the raccoon is in the heavily timbered parts and its den is in a hollow cavity of some tree well up from the ground. While its liking is for a "tree den" they do den in natural caves, as well as dens in rocks and earth. The raiser should take his lesson from what the coon prefers—provide for them a hollow log placed on end for a den or home.

Coon eat a great variety of food, both vegetable and animal, including rabbits, fowl, fish, frogs, crawfish, clams, eggs, water snails, wild grapes, berries, nuts, acorns, etc. They are very fond of corn when in the milky state—about roasting ear time. They like sweets, also watermelon, and also fond of bread and milk.

This animal does well in captivity and soon becomes tame and makes an interesting pet. Now that both fur and carcass are valuable there is no question but that increased numbers will be raised.

**BREEDING.** One male is sufficient for from four to six females. The mating season is towards the last of February and the first part of March. The period of gestation is about nine weeks and the number of young varies from three to six—usually four or five.

The mother should be fed twice a day. If fresh meat is given each day in addition to bread and milk and table scraps, so much the better. While coon will eat putrid flesh, it is best to feed only fresh, for should the decayed meat be infected it is apt to cause the death of the suckling young.

Raccoon, in the wild state, are a clean animal, so that none but this kind should be fed. Plenty of clean water should be given, and both water and food vessels should be kept clean.

If unable to get "den trees" or pieces of trees with hollows suitable for dens, boxes will answer. These should be at least two feet square and a hole, say eight inches in diameter, cut for use of the animal. Some poles or branches should be put inside the pen for the young and mother to climb and play on. Males should be kept away from the female until the young are weaned. It probably would

be best to keep old males by themselves only during the breeding season; yet, if they do not quarrel they can be kept together.

### Opossum

**FEED AND CARE.** The opossum is a southern animal and in the wild state is not found, to much extent, north of 41 degrees, or say Central Pennsylvania, Northern Ohio, Indiana, Illinois and Southern Iowa. The animal cannot stand extreme cold weather.

While the opossum is a Southern animal, I do not see any reason why it cannot be successfully raised in Northern States and Canada as well as in the Southern and Central States, if good warm dens are provided. I am inclined to think that, with plenty to eat and deep ground dens, they will do well in most any locality. In the wild state, as a rule, their dens are in the ground, under a rock, log or tree, and are shallow.

The opossum is omnivorous, that is, feeding on both animal and vegetable food. They eat a great deal of carrion—dead animals—but in captivity it is not best to feed this. They are fond of rabbit, fowl of any kind, and eggs, as well as fruit of all kinds, also persimmons, polk-berries, paw-paws, wild grapes, etc. They also eat mice, insects.

**BREEDING.** One male is sufficient for several females. The young are born the latter part of April or first part of May, being very small and imperfectly formed. They are placed immediately after being born in the pouch on the belly by the mother, where they remain until they have attained a perfect form and have become large enough to walk about. When placed in the pouch by the mother, they attach themselves to a teat and remain there until strong enough to move about. From six to twelve are produced at a litter.

As the severe weather is over by the time the young are born, very good nests for the mothers can be made in boxes, old logs and the like. A West Virginia raiser says: The young are born the middle of April and in two months are about the size of rats and growing fast. Six months later, or December 15th, if well fed and cared for, they will weigh from 9 to 15 pounds. Thus at eight months—

born April 15—they are grown by the middle of December, which is a very good time to kill for the market as both fur and carcass are apt to be in demand at that season.”

The males should be kept from the females, at least from the time the young are born until they are two months old. The mother with her many young requires a good deal of feed, so see that she gets enough. Feed should be given at least twice a day.

### Muskrat

**FEED AND CARE.** Although one of the cheapest of the fur bearers, being so widely distributed and its numbers so great, the total value of pelts of this animal is probably as great if not greater than any other.

Best species, or at least finest and best furred seem to be secured mostly in the region of the Great Lakes, yet there is only a few cents difference in value of the brown variety regardless of where caught. The black variety found along the Atlantic Coast is more valuable.

The natural food of the muskrat is grass, roots, fruit, grain, clams. They are fond of parsnips, carrots, artichokes, white flag roots, wild rice, pond lily roots, corn and pumpkin and will eat almost all kinds of vegetables.

**BREEDING.** The breeding habits of muskrat are different from those of other fur bearing animals, as they will have three litters in a season—two being quite common. The first are born in April or early May, and there is apt to be from six to nine young. It is claimed that the female of the first litter will also bear young that season, which accounts for the small rats, or kits, caught during the fall season.

During recent years, property owners in many rat-producing sections have awakened to the fact that their “swampy land” is of more value for the annual fur harvest than for any other purpose. Those who expect to raise this fur bearer should take into consideration that little or no fencing is required on lakes, ponds and creeks if proper feed grows there. If the feed is not there, the prospective raiser should see that it is started at once by sowing wild rice, transplanting some flags and lily roots to his muskrat waters. In fact, the muskrat raiser should have the food



supply well under way before the rats are bought or secured, or they will destroy it.

Muskrat can, no doubt, be successfully raised in artificial enclosures, but if the water and food is furnished they will "raise themselves" if given a chance. This, no doubt, will be the best plan.

When starting these animals, it might be advisable to get a supply of the "black variety" from some trapper or raiser in eastern Maryland, Delaware, New Jersey or Virginia.

### Other Fur Bearers

As the wild supply becomes scarcer and values go higher, no doubt other fur bearers will receive attention from raisers. Marten will probably be one of the animals whose fur will command a high price in the future as the wild supply is diminishing. Raisers will find the plans as given for mink will be considerable of a guide for this animal.

Otter and beaver are being used a great deal—in fact, always have been serviceable furs—and prices are apt to be higher. Methods explained for other fur bearers can be used for these animals other than they must have water to swim in as well as drink. They are strong animals and the enclosures must be made very strong and substantial. As they are not prolific breeders, they, however, do not appeal to me as being desirable to raise at present fur prices.

Fisher are now quite scarce and good pelts command high prices, but as they are not prolific breeders, I do not believe this animal offers very flattering inducements to the raisers at the present time.

## THE FOX INDUSTRY

An Industry Which Has Within the Last Few Years  
Spread Over the Whole of America and Has  
Assumed Vast Proportions

By F. C. KAYE,

*Editor The Black Fox Magazine.*

**F**URS ALWAYS IN VOGUE—From the time of Adam the fur covered pelts of animals have been used by man for protection against the inclemencies of the weather, also for adornment, and from this time with never a let-up, fur-bearing animals of all kinds have been hunted and killed for their pelts, which have always found a ready sale in the markets of the world.

For centuries these animals were found to be plentiful, and inhabited the trackless wilds to be found on every continent, but as civilization progressed and the devastation of the forests took place, and man encroached ever more and more upon the native haunts of the wild fur bearers they not only were driven farther and farther back into the unaccessible sections, but have become greatly depleted, and in fact some kinds are either totally extinct or practically so.

GOVERNMENT STATISTICS—A short time ago our government, through their Bureau of Biological Survey, made the statement that within the last fifty years the supply of wild fur-bearing animals had diminished 50 per cent and that if through conservation and the fur farms the supply was not augmented, it would only be a short time before many of the fur-bearers would become totally extinct.

### Increasing Demand for Furs

As this decrease in supply has proceeded, so has the demand increased, until at the present time furs are considered one of the easiest and greatest sellers of any article of trade. There is only one solution to the problem through which this supply can even in a measure be made to equal the demand—and this solution is the raising of fur-bearing animals in captivity

FUR FARMING—Silver Fox for centuries has always been regarded as one of the most valuable and beautiful of furs,

and even in the early days was never found in quantity, the proportion being something like one silver fox for every 40,000 red foxes captured.

It was therefore most natural that when the idea of raising wild animals in captivity was originated that a valuable animal like silver fox was the one selected.



THE AUTHOR, F. C. KAYE

**PRACTICALLY A NEW INDUSTRY**—While Fur Farming is a comparatively new industry, still a certain amount of mystery exists as to the efforts of the pioneers. However, it is generally conceded that one Charles Dalton (now the Hon. Sir Charles), a farmer residing on Prince Edward Island, Canada, can rightfully claim to be the first man who, together with his partner, Robert Dalton, successfully

raised Silver Foxes in captivity. This, according to the best reports obtainable, was in 1889. Prior to this, however, a Benjamin Haywood, also of Prince Edward Island, is said to have kept a pair of Silvers in captivity, but did not raise any pups from them.

**BIG PRICES OBTAINABLE**—Thus a new industry was born, which up until 1905 was kept a close secret, and which was participated in by only six men. Foxes were raised and their pelts were shipped to the London market, and brought from \$300 to the enormous sum of \$2,650. Even in these few years the pioneers headed by Dalton made a vast amount of money out of their undertakings.

**THE INDUSTRY BRANCHES OUT**— Finally in 1905 Silver Fox fur farming began to attract so much local attention that other people were anxious to engage in it, and through the letting down of the bars on the part of one of the pioneers, the combine which had existed was finally broken and foxes were supplied to others.

From that time on up until the world war started in 1914 a wild period of speculation was indulged in. The demand for breeding stock became so great that prices of same advanced until the climax was capped through the record sale of one pair of Silver Foxes for \$32,500. It is needless to say that this wild speculation was in every way harmful, and the end had to come, so that when the war started prices of breeding pairs of Silver Fox began to decline until something near their true basic pelt value was reached, and as the industry has spread, and knowledge has been gained, breeding animals have ever more and more assumed a value strictly in accordance with their pelts' value.

### Commercial Fur Farming

It is upon this valuation that the present day commercial Fur Farming industry has been established. Like any other live stock industry, the raising of fur-bearers is subject to losses and discouragements, but where first the proper quality of breeding animals is secured, and secondly the same care and attention given them that is required to make a success of any business, there remains no doubt whatever in regard to the large profits which can be made. Conservative estimates which have been arrived at through the

examination of hundreds of records show that a pair of high class quality breeding foxes is capable of producing on an average of from four to seven pups a year, and therefore should net their owners from \$1,000 to \$3,000 annually. In many instances these figures are much larger, but even



—Courtesy of Black Fox Magazine

A PURE-BRED QUALITY SILVER FOX

though some reason, a year may pass without a profit being shown, the fact remains that no other like investment will in the long run pay so well. Present day conditions point to the fact that Fur Farming—not alone Silver Fox—but almost every known kind of fur-bearing animal is now being raised

in captivity. We have our Mink ranches, our Muskrat farms, our Skunk ranches, as well as those in which Marten and Fisher are being raised, and these are now springing up in all sections of the country. Our own government as well as that of Canada and several other countries have recognized the great importance of fur farming and all are giving it their serious attention and in every possible way seeking to encourage and develop it.

It is next to impossible in one article such as this to convey a truly intelligent idea of the magnitude to which this industry has advanced or to intelligently present all its necessary features, but with the idea that the readers may obtain a slight insight into it—which I trust they will follow up—a few important subjects in connection with fur farming will be touched upon.

### First Consideration—Location

Primarily, the first and important thing a prospective fur farmer must consider is the proper location in which to build his ranch. Proper climatic conditions are essential as it is useless to attempt to raise good fur in localities where fur can not be successfully grown. A safe rule to follow in this connection is "that wherever the native fox is found in the wild there fur farming can be successfully prosecuted." Natural surroundings as far as possible should be aimed at in building your ranch, a certain amount of shade, also plenty of sunlight is necessary.

**BUILDING A RANCH**—The building of a ranch can be made to suit the individual ideas of any one, as hardly any two ranches throughout the country can be found to be exactly alike.

**PENS**—When foxes are kept each pair should have an individual pen entirely separated from each adjoining one. These pens can be built almost any size and shape, but the prevailing size seems to be about 25x30 feet. Some ranchers prefer to carpet the whole floor of the pen with wire, others (and these are in the majority) dig a trench and sink the wire about three feet on all sides. Again some ranchers only build their pens five or six feet high and cover the top over with wire, but it is believed that the old style ranch where the wire was run up about 9 feet with an inclined overhang

on the inside of the pens of 18 inches but 2 feet is much preferable. Around the pens and at a distance of 10 to 20 feet a guard fence 9 feet high should be erected so that any animal that might dig out of its pen would be prevented from escaping.



—Courtesy of Black Fox Magazine

#### FOXES ARE EASILY TAMED

**GOOD QUALITY STOCK ESSENTIAL TO SUCCESS—**Probably the most important item in connection with the making of success in fur farming is to be sure and secure good first-class breeding stock, as with poor and cheap animals a great handicap is encountered. Insist on getting the best, as the money in fur farming is in Quality and not in Quantity.

**FEEDING AND CARE—**Feed and care form a very important part towards the final successful outcome. With the former there are many don't's that must be taken into con-

sideration and understood, as when it is considered that a wild animal is being raised in an environment that is foreign to its natural habits, care must always be taken to so far as possible make it feel happy and contented and this can only be done through proper feeding. Good clean food is vital; also a balanced ration. Every experienced rancher generally finds what he believes to be the proper feed, and it is well to follow the method of the rancher from whom you buy your animals, providing of course these animals are in good physical condition. Sanitation has always to be made a chief factor in the care of fur-bearing animals, as without absolute cleanliness is practiced trouble of one kind or another is bound to ensue. To be a good caretaker comes natural to some people while others never do. If you love animals and they take to you, the rest is very easily acquired. Study your animals and treat them as you would any other valuable live stock, and you will find that fur farming in any of its branches will pay and pay you well, for all the money, trouble and patience you care to invest in it.

### Fur Farming Is Making Vast Growth

Today not only every state in the Union where fur farming can be prosecuted can hundreds of fur farms be found, but in all parts of the Dominion of Canada fur farming is continually gaining ground. Foreign countries such as Norway, Sweden and Japan all have their numerous fur farms, and in time it is certainly believed fur farming will hold a place all over the world that will be second to no other industry of its kind.

It is no longer an experiment as for over 30 years it has been tested and tried, and governments and fur merchants alike realize that fur farming is the one and only solution as to increasing the fur supply, so that the demand can in any measure be adequately met.



# THE FERRET INDUSTRY

BY A. R. HARDING

**P**ERHAPS there is no better way to inform prospective Ferret Raisers of the importance of the industry than to publish the "Introduction" to **Ferret Facts and Fancies**, a book written by A. R. Harding, which says:

## Introduction

"No business of the importance of the ferret industry has received so little attention and notice, especially from the press. Fur Raising, Ginseng and Golden Seal Culture, Game Growing, Fish Culture, Etc., have all been given a good deal of attention from newspapers, magazines and books upon the several industries, as well as publications devoted entirely to these special lines. Although the ferret industry, in America, is really yet in its infancy, the business is of much more importance than generally realized. Perhaps there is no better way to illustrate the extent to which even now ferrets are raised, sold and used than to call especial attention to Chapter II—Ferretville.

"Ferrets are a domesticated wild animal. I have seen more than one raiser pick up, with bare hand, old ferrets, handling or wooling them around, the ferrets apparently enjoying it. At the approach of the owner or raiser they usually come to him, or as close as the wire screen will allow, jumping up or clinging to the wire and otherwise showing their friendliness.

"At the present time ferrets are mostly used to exterminate rats and for rabbit hunting. For rats, they are much used in barns, granaries, grain elevators, mills, stores, levees, walls, ships or any place where rats are. If rightly used and handled, there is no better or quicker way to rid a place of the pests. Where rabbits are doing an injury to fruit trees, etc., ferrets can be used to advantage. Ferrets are also used, to some extent, on the large Western ground squirrels, gophers and prairie dogs. Some success has also been had in using on mink, skunk, coon and other fur-bearing animals.

"The ferret is very similar to the fitch, a European animal that furnishes tens of thousands of skins to the fur trade annually. In Europe the ferret is sometimes called fitch-ferret, whereby many claimed to be half fitch. Some dealers in American furs class ferret skins as "halves"—half ferret, half fitch—and buy on that basis. At the present time the fur value of the ferret pelt is but little, yet the time is not far distant when it, no doubt, will be much more valuable.

"Raising ferrets, like most other lines of business, is profitable for those who are familiar with the nature and habits of the animal, but is apt to prove otherwise for those who know nothing about it. Information in this book was gathered from visiting some of the largest ferret colonies, as well as correspondence with many others who raise thousands, down to those who raise a very few."

NOTE.—The Ferretville referred to is New London, Ohio, near where the industry was first launched in America by Henry Farnsworth. At this time there are many there engaged in the business and some of the largest raise thousands each year. It is said that one year 35,000 ferrets were shipped from this one town alone. Those interested in ferrets will find much of value to them, not only in Chapter II—Ferretville, but throughout the book—Ferret Facts and Fancies.

### Ferrets—General Information

**COLORS.** There are two colors, white and brown. The white ones have pink eyes and are called the English ferret, and the brown ones have dark eyes and are called Fitch ferrets.

There is no difference in the two varieties as to their breeding and working qualities—only a matter of fancy as to color. They are hardy, strong animals and breed well in most climates. The average life of the ferret is from five to eight years.

**BREEDING.** In breeding, always use strong, active, healthy and hardy animals. Never breed from weak or sickly parents or bad workers. They must be wintered well if you expect to get a good, strong litter of young. They

must have warm winter quarters, plenty of straw for nests, also.

**MATING.** Watch each female for developments, which will be when warm weather comes in March or April. When you find her ready to mate, place her with the male and leave for a day. You will have no trouble in telling when she is ready to mate, as she will remain in that condition for from one to two weeks. Each female should have a pen to herself for two weeks before she has young. Use wheat straw or fine grass for the nest boxes. The female carries her young for 42 days.

**LITTERS.** The average litter is from 6 to 10, but they have been known to have 15 to 18. As a rule, they will breed and raise two litters of young in a season. Some raisers have females that breed three times during the season. In the breeding season, each male should be kept in a pen by himself, as they fight if they get together.

The young are born with their eyes shut and will remain that way for about four or five weeks. When you look at the young, do so when the mother is feeding. When the young are large enough (shortly after they open their eyes) to come out and eat, they can be weaned and in about ten days the old ferret will be ready to breed again.

**FEEDING.** Feeding is one of the most important branches of breeding, rearing and working of ferrets. The greater part of the success depends on the proper feeding. The main food is cooked graham mush, fresh meat and sweet milk. Bread and milk and meat is all right if you have only a few. A matured ferret can be kept in good, thrifty condition on mush or bread and milk, as meat is not an absolute necessity. When feeding meat in warm weather, feed only a little at a time. Do not feed salty or diseased, rotten meat, as salt and refuse will kill them. Feed the old ones twice a day, about what they will eat each time, with meat two or three times a week.

When feeding young ones it is best to feed three times a day the amount they will eat up clean and no more. Bread and milk is the best food for the young. A

little meat two or three times a week will do no harm. Use good judgment in feeding and you will lose very few.

**HOLDING.** Ferrets are naturally tame, and with just a little handling will become as tame as kittens. Never grab a ferret as he is coming out of a hole, for if you don't get him the first time, he will become shy; let him come clear out of the hole and then when you do reach him, be sure that you get him the first time. Better wait a few minutes for it than to have a shy ferret.

**THEIR USE.** They are old enough to work on rabbits when three or four months, and on rats at six months. Any ferret will hunt and drive rabbits from their burrows and come out after they have driven the game out, so you can pick them up. That is all one could desire. Most ferrets do this without training.

It is natural for them to hunt, drive and kill, and it is just as natural for the rabbit to be afraid of them and so it takes "a hike" at once. Ferrets will drive out rats, rabbits, mink, gophers and weasels, and some claim to have ferrets that will drive out skunk.

**BREEDING SEASON.** The breeding season of ferrets is from March to September, and they may breed as early as February if warm or in Southern states. Those who breed ferrets being many and under different conditions, no general rule will apply to all.

**HOUSING.** The main thing in hutch or pen building is to make a comfortable home for them and to be so constructed that cleanliness of all the apartments can easily be attended to at any time. Next in importance is to have a dry place to build and have them so arranged that they can be properly ventilated in the summer and closed in the winter. You cannot succeed in raising ferrets if you have a damp place for their hutches—dryness and warmth are the principal points to be observed.

A good size for a hutch is 4 feet long, 3 feet wide and  $2\frac{1}{2}$  feet high. Take a box about 12 to 14 inches square and make a hole in one end about 4 inches square, and then place this box, which is used as a nest box, in the larger box or hutch. The size hutch mentioned will be about right for a female and her young.

NESTS. An Iowa ferret raiser of many years' experience, says: Fix the nest for the female at least a week before she has young—young are born 42 days after mating—and do not bother her until the young are about four weeks old. The ferrets hide their young until about that time. If the young get to squealing and crawling about at this time, soak a small piece of bread in warm milk and place it in the nest, as they are hungry. They will soon find it and suck the milk all out.

# BREEDING AND CARE OF RATS AND MICE—ORIGIN

BY JOHN ALLEN,

*President of the Rat and Mouse Club of America*

**D**UE to the fact that tame rats and mice now hold a conspicuous position in the commercial world—more especially among the medical fraternity chiefly for experimental purposes—and also owing to the great demand there is for stock and the splendid chance the raising of these small animals offer as a business proposition, this book would be incomplete if this department were left out. It is all-important, and the information you will get here should enable even the very beginner to take up this wonderful enterprise profitably, as well as the entertainment to be derived therefrom.

Rats and mice belong to the rodent family—which is, a gnawing animal, originally natives of Southern Asia, that is, the common everyday rat and mouse, whose destruction we always seek. They are known everywhere in the world except in a few islands of the Pacific Ocean, and have followed man to all corners of the globe, and is still a regular traveler on steamboats, railroads and other means of transportation.

The two common species, the black and white rat, are found in nearly all parts of the world. It is commonly understood that the black rat was the first to reach America, sometime in the year 1544. It was a matter of about two hundred and fifty years later before the brown rat made entrance into this country, of course, getting here by means of secreting itself in vessels of transportation, such as above mentioned, and disembarking itself "at port," as it were, enjoying liberty and exercising its prolific characteristic of breeding, consequently the "swarm" of the common rats and mice in our country at this time.

In their characteristics, color and size, unlike other animals, they are the same all over the world, doing most of their "destructive" work at night, possessing large eyes and ears, long whiskers, all of which are suited for midnight activities.

Rats differ from mice only in being larger. The black rat is between seven and eight inches in length, while the brown grows to be ten or eleven inches long; the latter is much stronger, and has shorter hair, a shorter tail, smaller ears, and a less pointed nose. The long tail is believed to be useful in climbing and in jumping. These same principles apply to the common mouse—the only difference being the size, as already mentioned.



BALD-FACE PINK-EYED SILVER MOUSE

The common brown or black house rat or the little brown ordinary mouse from time to time have been tamed and domesticated by people who have interested themselves in this "taming" process, then by reason of closer observation and training, breeding, etc., the white rats and mice have been produced, as well as many varieties and standards—very nearly three dozen different species so far as solid and mixed colors are concerned—produced by reason of specialty breeding. Then there is the Japanese Waltzing Mouse—

characteristic of freaks of nature and queer antics which is mighty interesting to the observing eye of the rat and mouse fancier and even entertaining to the untrained eye.

### On Buying and Breeding Stock

In purchasing your breeders be sure you are getting good stock as this means more to you than anything else.

You had better get a few at the start and see what kind of stock they are, before you get a large supply on hand.

Don't take up some pet stock paper and look over the ads to see how cheap you can get your stock. It always pays to get absolutely the best there is.

You must not be backward in paying a fair price for your breeding stock. Nine times out of ten it is the stock you buy to start that spells your success or failure. So try and get your stock from a breeder who breeds up to the standard as they cost but a very little bit more, and costs no extra to feed and to take care of; then you will have good healthy stock and you can sell them for more money and are sure of more orders when you fill your order with good stock than when you send out a lot of sick stock as no one wants that kind, and you will have less trouble with your breeding stock.

A good healthy rat or mouse should have eyes large and bold, and their tails long and tapering and free from sores. Coat should be short, thick and glossy and they should be free from sneezing.

Male and female are kept together in a cage, but when the mother has young the male should be taken away and put in a separate cage. This will avoid any risk of the male rat or mouse eating the young. Also see that they have plenty of feed especially when having young, or else the female may devour her babies.

Rats and mice breed several times a year, producing from six to fifteen young to a litter, and as there is always a ready market for them it is certainly a good paying business if managed properly. Hospitals and laboratories handle and experiment on thousands of rats and mice yearly. Then there are hundreds of people who keep rats and mice for the sole purpose of pets.

### Housing

We know of no other pets that can be so cheaply housed as these little fellows. There are many ways to house them

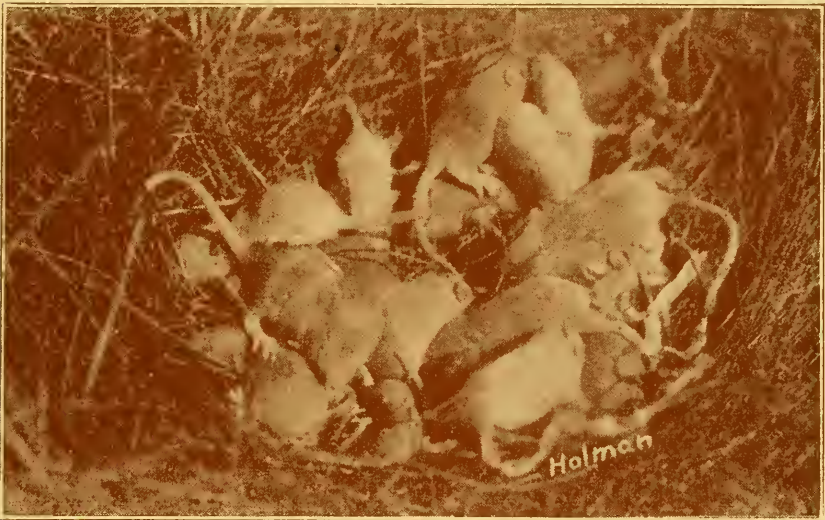


but most any good sound box will do that is large enough to give them plenty of room and is arranged so you can care for them.

Use a piece of screen wire on front of the cage and on the door too, and make the door to open from the top.

In this cage put 6 females and 2 males and a bed box; a cigar box makes a good bed. Then place the boxes in rows on the floor.

Most any place will do if it is dry and plenty of fresh air at all times. Always keep your cages dry. It is a good idea to keep some saw dust or straw or something of this kind in the cages to take up the dampness.



A NEST OF SILVER MICE

You will find a barn or any outbuildings that are not in use that can be made free from the cold winds and snows will make a fine place for mice and rats. A cage about 12 inches by 28 to 30 inches long with a bedroom 8 by 12 inches, cage to be 6 to 8 inches deep; for the bedroom use a nest of straw in summer, and in the winter use a bed made from cat tails, which the mice will pull to bits and use it for nest bedding. Put in this cage 6 females and 1 male. Then every three weeks look over the little ones and if you see any that are about one-third grown and eat grain wean them. Use a larger box or cage for the young; a cage 3 feet long and 2 feet wide with a large nest room.

In this cage you can keep from 50 to 100 young. When the young are weaned you put the little females in one cage and the males in another cage.

A mouse carries her young 21 days before they are born and a rat 28 days.

### Feeding

Care should be taken in feeding your mice and rats if you want to get good results from them. Always feed good food and feed once a day and at night only just what they will clean up over night so they won't leave any to sour. Always give fresh feed each night; clean out the feed vessels daily. If there is any food left feed it to the chickens, but give the rats and mice fresh feed each night. One thing you must not forget, mice must have feed before them at all times; it will keep them in good shape. Mice that do not have all they want to eat and have to go without feed sometimes start eating each other. So do not forget to feed your mice every night. They should be given plenty of fresh water at all times. They will eat most any kind of grain and seed but when kept confined a little more attention is given to feeding. If you feed properly the death rate will be greatly reduced. A well balanced ration—one that will keep your stock in the best condition, is one you should feed regularly. Care should be taken to get the right amount of protein and fats and carbohydrates. Some have one way of feeding, some another. Here is more than one ration. You can pick out the one you think best, all of these rations bring good stock:

#### Ration No. 1

Oats, 20 lbs.; buckwheat, 10 lbs.; whole corn, 8 lbs., wheat, 5 lbs.; millet, 3 lbs.; sunflower seed, 6 lbs.

#### Ration No. 2

Oatmeal, 25 lbs.; scratch feed, 75 lbs. Milk to drink once daily. *No water.*

#### Ration No. 3

Scratch feed, 95 lbs.; green feed, 5 lbs.; water morning and night for summer time.

These feeds are just as good for rats as they are for mice, but you know that rats are fed twice a day, night and morning. Rats and mice should have greens, at times you will find lettuce, dandelions and watercress are the best. Do not give your stock any cabbage as it may kill them; they are very fond of live crickets and grasshoppers. Dry bread crusts, grain, corn, green food, vegetables and fruits should be the general diet for your stock, fed as per the above tabulation. In warm weather, corn and nuts should be fed sparingly. Meat should never be given, or else your stock will become vicious and devour one another.

**CAUTION.**—A good sized piece of wood, preferably a piece of green wood with the bark on, should be left in the cage at all times for the animals to gnaw upon, otherwise the teeth of your rats will grow abnormally long, which will eventually kill them.

### Diseases of Rats and Mice

Diseases in mice and rats are very few, and if you give the proper feed and care you will not have any trouble of this kind. Disinfect once a week with any good disinfectant on the market.

*Diarrhoea* is an excessive action of the bowels. *Causes:* It is more often due to sudden changes from some food low in its percentage of protein to one having a high percentage; also to sour and musty food, and damp cages and so on. *Symptoms:* The evacuations are frequently watery and offensive, and if not checked at once the animal will get very thin and weakly, then little can be done to save it.

*Treatment:* Remove sick ones to a nice, clean, dry cage and feed boiled rice and warm boiled milk; do not feed any food of watery nature from then until cured.

*Colds* consist of an inflammation of the mucous membranes. *Causes:* Are usually brought on by subjecting the animal to a sudden change of temperature, or draft, or dampness. *Symptoms:* A dry cough, sneezing and a watery-like substance running from the eyes; if not treated at once little can be done that will effect a cure.

*Treatment:* Take all water away from them and give them fresh water with two drops of tincture of Aconac to each teaspoonful of water. If eyes are running watery, bathe them with a solution of boracic acid. To make solution,

take one teaspoonful of boracic acid to a pint of warm water. Use this two or three times a day and make fresh every day; use a piece of cotton to apply it with.

*No. 2 Cure for Colds:* At night take a piece of onion and cut up some for each cage; cut pieces about  $\frac{1}{4}$  to  $\frac{1}{2}$  inch long, give the sick stock some every other day until they are cured.

**CAUTION.**—Always separate the sick stock from the healthy ones to prevent spreading of any diseases. This is important.



WHITE ALBINO RAT

### Physical Culture

Rats and mice delight in exercise, and branches and perches should be provided, in addition to any windings and swings. The more exercise and play your stock gets, the healthier and robust will be your production—consequently a more prosperous and successful business.

Always work for and aim at the highest attainment in your enterprise. Conduct your rat and mice activities on

business-like lines—heed the instructions here given, and you will experience success at all times.

### Varieties, Exhibition, Etc.

There are numerous breeds or varieties of tame rats and mice, but each belongs to one of the two species, and has been the result of experimental and scientific breeding by those fanciers who have interested themselves therein, and endeavored to produce “something different” from that already in existence, and to improve specimens, and so forth, by selecting and breeding.

Pure white animals with pink eyes are the commonest kind. Then there are those that are white with brown or black spots, while others are “tortoiseshell,” or several different colors combined. There are also other varieties which are pale gray, others black with white markings, and others yellow or orange. Among the Rat and Mouse fancy, the different breeds are known by the following different names: *Agoutis*, of a rich brown color, ticked all over with orange hairs; eyes are black; the underneath body color being rufus red—the color of the real Belgian Hare rabbit. *Blacks*, of a solid color—lustrous appearance, in popularity, comes second to the white rat and mouse. *Solid Blue*, very definite of a slate shade, though there is still some experimentation going on in the production of this specimen. *Broken Marked Black-Eyed* and the *Broken Marked Pink-Eyed*. As this would indicate, the colors are not even, there being a mixture, but with certain specific markings as mentioned about the eyes. *Solid Chocolate* placed in the same category as the Blue, the only difference being the color. *Chocolate and Tan*. While there are many fanciers who prefer the solid colors, still there are many raisers who appreciate the mixed colors, and take quite a great deal of interest in producing stock of two or more colors—even markings—distances, etc. *Cinnamon*, another uncommon color; the coat should be a rich brown, ticked with chocolate hairs. *Creams*, perhaps the third in popularity among the solid-color varieties. This variety attracts great attention. Once produced in this color, they will nearly always produce that way. *Dutch Marked* is very pretty and pleasing to behold, and, while there is a good demand for them, they are not so easily produced as some of the other more-than-one-color. The markings should be very

much after those of the Dutch rabbit. *Grey Agoutis* are considered quite pretty among fanciers and are very successful at shows; the coat has a similar appearance to that of the silver grey rabbit, and the belly-coat should be of silver grey. Then there are *Solid Reds*; these are scarce, comparatively speaking, yet offer a whole lot of attraction to the practiced eye of the fancier. Among others there are: *Harliquin*, *Lilacs*, *Plums or Plum Silvers*, *Sables*, *Sable and White*, *Silvers*, *Silver and Tans*, *Silver Grays*, *Tortoise Shell*, *Variegated*, *Etc.*

The above-mentioned colorings apply particularly to the *Mouse*; as to the *Rats*, they are produced in such colorings as *Agoutis*, *Blues*, *Chocolates*, *Yellow and Whites*, in particular. There may be a few others, though not generally recognized. Then there is what is known as the *Hooded Rat*, possessing a square-cut hood, with a narrow pencil line along the back. It is generally accepted that the hood and pencil line may be of any color on a ground of white; the eyes may be either black or red.

The so-called "Japanese Waltzing Mice," science has been unable to account for, though some who have made a keen study of the peculiarity of this particular mouse say that it has a brain disease which causes it to run in circles or in an erratic manner. They were originally produced in Japan, and may be bred easily in confinement. However, this mouse is particularly amusing with its freakish behavior, antics, and so forth. It is quite likely that this specie, in time, will be no more, as it is found that by cross-breeding the "antics" are gradually being eliminated, so very much evidenced in the progeny of this cross-breeding.

Rats and mice are easily kept and do not require a great deal of care. They always seem happy and are very prolific. There are probably no animals in the world that are more easily handled and more entertaining generally than Rats and Mice, as well as offering a very profitable business proposition to the ambitious man, woman, boy or girl. The cost of keep is but very little, and the profits are large.

# THE DOG

Compiled by R. P. MERCER.

Foreword:--In this brief treatise on the dog no attempt is made to be original. It is, as its heading indicates, a matter of compilation. Everything which came to hand regardless of its source has been used if it looked to be of interest to the new or old fancier. Due credit is given for all help in this small work.

## The Dog "A Faithful Friend"

The dog is man's oldest and most faithful friend and helper. He has been found pictured in some of the oldest of the Egyptian monuments and was held sacred by many of the ancients. The dog was also among the first of the beasts of burden. The savage tribes tamed the wild dog and trained him to guard his possessions and to draw his heavy loads. This wild savage wolf dog was made to do service at a time when beasts of burden were few and if the history of his life among the savage tribes can be relied upon he did better service at that time than many of our fine bred specimens of today have ever accomplished.

Many of our present day specimens which have been bred for years to an almost perfect standard, have been trained to perform services for mankind which are almost unbelievable. However, owing to the many domesticated animals at present under the command of mankind, the dog's services have been sadly neglected. How much more could be done with such dogs as the collie, the Airedale and the pit bull than have been done, under skilled and well directed teaching. Let us hope that breeders of such dogs will try in the future to put them to better use than to keep them only as pets.

Dogs trained for the service of which they are capable are not only most useful but bring much better prices than dogs of no training.

A not uncommon story is told of a dog who loved his master so well that after his master's death and burial, the dog was missing from home for several days and when found

was lying on the grave of his dead master and though gaunt and hungry refused to leave even to eat. He was forced to go home, where he had to be tied for several days. Verily the love of a dog is past human understanding and not only follows the master through hunger and privation, but follows him to the grave as a lasting mourner and ofttimes remembers after his human companions have forgotten.



—Photo by Kadel & Herbert

“JENNIE McCAURA,” A WINNING SPANIEL

### Get the Best Start

Do not expect such devotion from a mature dog raised by someone else. Buy your dog when he is a young puppy and raise him yourself. You will get the devotion you are entitled to expect. Above all, if you love a dog, love a good one. Buy from a man who thinks enough of his dogs to make a permanent record of their breeding and give them a name on such a record. The thoroughbred of whatever breed you fancy is the cheapest in the long run and costs



no more to raise and less effort to train in his path of usefulness; for he will develop with proper training into just what you have a right to expect from him according to his breeding and training.

You can always judge a man by the kind of stock he keeps around him. If you find his chickens, his dog, his rabbits or other stock of the highest grade you immediately place him as a man who is satisfied with nothing but the best and your opinion of him is at once of the best.

Large clubs have been formed for the registration of dogs according to bloodlines. Among these is the United Kennel Club. This club registers whole litters with a separate certificate for each puppy for one dollar, and advertises the litter in its own journal, "Bloodlines," free of charge.

All fanciers who own pure-bred dogs should by all means register them and thus have a permanent record of their stock. It has been truly said that the sun never sets on United Kennel Club registered dogs and may the star of its ascendancy never grow dimmer but brighter with the years.

### Feeding and Care

No matter what breed of dog is kept, no matter for what purpose, the feeding, care and management of the animal is absolutely essential to its well-being. Cleanliness and freedom from draughts are just as necessary as feeding, and will protect the dog from many diseases he would otherwise be subject to.

From general observation we can easily see how many dogs are not properly cared for, that is, they are not regularly looked after as they should be taken care of; they are allowed to "run wild" as it were, seek its own food and shelter very often. However, regularity in meals, general care and keep must be properly observed, and in the matter of meals, they should be served regularly if you want the best that is to be bred and maintained. Wherever possible, it is best to keep dogs out of doors; see that they are properly kennelled or housed, free from exposure to drafts, etc. Another thing to consider, that is, do not keep it eternally chained or in a kind of prison house; see that it has plenty of exercise; don't keep the dog indoors as it is essentially an outdoor animal. Reverting to feeding, one meal a day is

sufficient which may consist of dog-biscuit or scraps from the table, and not too much meat, otherwise the animal is likely to cultivate a habit of viciousness, which is not the general characteristic of a dog if it is properly looked after. Don't forget a good bone once in a while. Again, see that it has free and easy access to a water pan at all times, and don't forget to bathe him at least once a week; soak the coat in warm water, apply good dog soap to a brush, and then scrub the coat of the animal thoroughly; after this is done, give the body a rinsing, and then rub with a dry cloth, until the body is about as dry as you can get it. If you commence this bath treatment while the animal is young it will look for it regularly, and you will never experience the difficulty that some breeders have when they are bathing their dogs, due



—Courtesy C. J. Mercer

#### BOSTON BULL

to the fact that the animals were not bathed when youngsters.

These are simple instructions, but if carried out will ensure the health of your dogs, and enable you to cultivate an increased liking for them so that you will always delight in doing everything that will promote the health and happiness of your animals. They'll appreciate it all right as you will notice by their fondness for you in looks and in actual service.

## Male and Female Dogs; Their Relative Value Male Dogs Versus Females

Much misunderstanding has been prevalent in the past as to the relative value of male and female dogs as companions and hunters, watch dogs and general purpose dogs. The following is an unbiased opinion of the relative value of the sexes. Females are more affectionate than males, are better home dogs, do not run after other dogs and are just as game and make just as good fighters and hunters as males. In your home or place of business a male dog may be approached by anyone having with him a female dog without being molested, but woe to the man who tries it with a female. On the other hand, a female is often objectionable to people on account of their being subject to their regular seasons, when strange visitors are likely to make life unbearable for their owner. Just a word in this direction. If properly cared for during this time you will be out of the use of your dog much less time than you would a male on account of their proneness to be away from home on all occasions. Another phase of the subject which presents itself for consideration is the fact that you can always have a regular income from your female by properly breeding her.

All females who do not show promise of being above the ordinary should be promptly killed before being allowed to suckle the food which should be given to the best ones. Also do the same by any males which do not show proper form and class. It pays and pays big to do this. On no account allow a pup to grow up that would not in every case be a credit to your name. If they show faults according to the Standard eliminate them at once. Like produces like, and a dog that you would be ashamed to own as a product of your kennels is better not sold. A female, if she is worthy to propagate her specie, is intrinsically worth more to the fancy and her owner than a male.

### Varieties The Airedale

Like the "master key" to the huge skyscraper which unlocks every door in the great edifice, the Airedale may be called the "master key" to Dogdom. The Airedale terrier is a self-respecting, self-contained gentleman, reserved in his

tastes and friendships, quiet in his demeanor, leisurely in his walks, the embodiment of force and well developed, well suppressed energy and power; good natured in disposition but terrible in anger. When aroused, as quick as chained lightning, as game as a tiger and bold as a lion. The well-bred Airedale bears the red badge of courage, the kind of courage that will die in the defense of home and master, or climb a black locust thorn bush to fight a wildcat. They combine



—Photo by Kadel & Herbert, N. Y.

“DASH,” THE CHICKEN CATCHER

the affectionate heart of a woman with the courage of a gladiator. Trustworthy guardians of home and master, inspired with an instinctive love of the game, they will hunt for you, live for you, starve with you and, if necessary, die in your defense. All hail to the Airedale, the “Master Key to Dogdom.” The All-Round-King-of-Hovel or castle, equally at home in the tropics of the south or the rigid zones of the Arctic.

## Dogs Can Be Raised and Sold at a Profit

Almost any one who does not care to raise many dogs could own a pair of his favorite breed and by intelligent advertising make money on his investment and at the same time have the pleasure of owning a pair of fine dogs.

Remember that advertising is the force that moves the modern world around it and by it all the achievement of merchandising and business are built. Ministers and philosophers, salesmen and service men, and all others with a message to read must take advantage of this great force or the best and greatest part of their message remains unsung. Great trade names worth millions of dollars have been built up by intelligent and consistent advertising. The constant hammering at it in the medium which is read by the people who want to buy is the secret of the whole business.

## The Redbone Coonhound

If there has been one development in the past few years that has added to the pleasure and profit of the sportsmen, it has been the development of the Redbone Coonhound. Many of us remember when any kind of an old crossed dog was a coon dog. Many people still try to hunt with them and get some coon.

The Redbone was developed from pure hound bloodlines by breeding the best and by natural and other selection, until today a hound has been developed that is pre-eminently a coonhound. Trained for generations to hunt coon.

Sportsmen marvel at the ability of these dogs to unravel a cold and tangled trail, their grit and courage in pushing through briars and underbrush and spattering through ice cold water, forgetting all physical discomforts in the joy of the scent and the chase. These dogs are also wonderful fighters and unlike many hounds do not forget the game in the joy of the trailing.

Their lightning like speed in the dash through open woods and their unerring progress through almost inaccessible swamps, their unerring quickness in locating the tree in which is their game is the result of the breeding of the best to the best for many generations.

Like the range horses of our own dear West, they have weathered the blizzards and drouth and only the strongest



—Photo by Kadel & Herbert, N. Y.

THE CALL OF THE WILD  
A Male Wolf Dog Calling for His Mate

can survive. They have been accustomed to the hard races through heavy underbrush and thickets and briars and thorns. Icy rivers and muddy streams.

Fine, large, brown eyes, broad forehead, with lots of sense, loud, clear voices that can be heard for miles and miles. What more musical to the coon hunter than the loud, clear voice of the hound on trail or at tree.

They come from a long line of healthy, hardy dogs, never inbred, but always bred to the best.

The Redbone can be taught to track anything that leaves a scent. They have been worked successfully on wolf, cougar, bear, deer and every known game, and have never been found lacking in the performance of any kind that a hound can do. Long live the Redbone Coonhound.

### The Pit-Bull-Terrier

The Pit-Bull-Terrier is the family dog. His affections for his master and mistress know no bounds. It has been bred in him for years. While the Pointer and Setter have been learning their lessons in the fields and the Collie has been developing his marvelous instinct in the pastures, the Pit-Bull-Terrier has been at home with his master and mistress. It has been bred in him for years that his master's possessions must be guarded and that he must die to protect them.

The Pit-Bull-Terrier is not necessarily a fighting dog, as so many are led to believe. They are no more apt to start fights than other breeds, but if something starts and he is mixed in it, as the boys say, it's "all off;" he is game to the core. The Pit-Bull-Terriers are most beautiful in colors. It is most impossible to find two with the same color markings. They are all colors and beautifully marked. In 1910 the United Kennel Club registering officers recognized the Pit-Bull-Terrier as a distinct breed and in the past seventeen years they have developed wonderfully. They now register several per month of the finest bloodlines in North America. In fact, they have developed so strongly that there are a few Purple Ribbon litters being registered.

### The Scotch Collie

Almost every one knows the great Sable and White and the wonderful black and white Scotch Collie which have

been developed to a well nigh perfect standard. What many fanciers who are well up on collie bloodlines do not know, however, is that the Scotch Collie is exactly the same bloodlines as the widely exploited German Shepherd dog.



—Photo by Kadel & Herbert, N. Y.

"CHOWS" ARE BECOMING POPULAR

### The Columbian (White) Collie

There is a strong tendency in the animal race, as well as in the human race, as the generations roll by, for the offspring to become lighter and lighter. It was only a few short years ago when the Collie breeder would go and look at his new born thoroughbred litter and to his unintelligent disgust would find one or two white ones in the litter. At first the white ones were unintelligently destroyed and nothing said of their appearance in the litter, but they kept on coming just the same. Naturally a few were raised by the more humane breeders and the United Kennel Club registering officers were quick to get behind them and encourage their breeding. They recognized them as a distinct breed,



calling them the Columbian Collie, and today they are running 40-60, if not more, with the great Sable and White bloodline. There are a few pure white Columbians, but most of them show a little spot of Sable, artistically placed upon their head.

You Collie fanciers try training your Collies for any and all things which German Shepherd breeders claim as the prowess for their dogs. You will find him equally capable and more tractable.

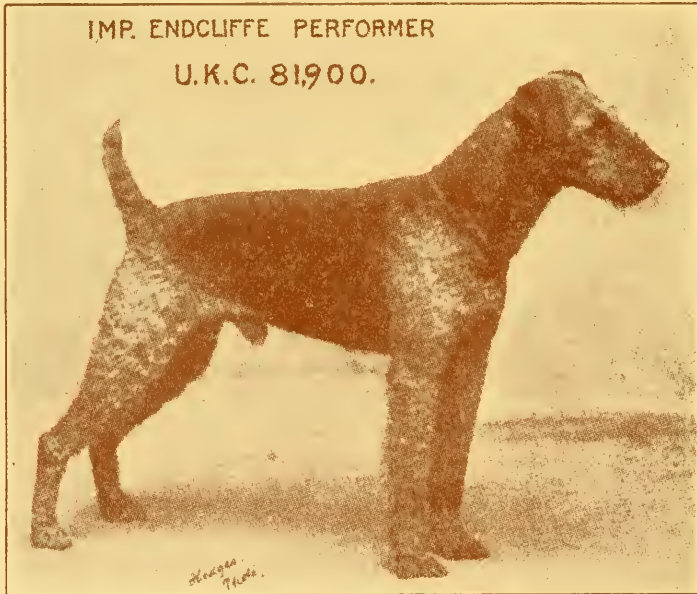
### The Borzoi the National Canine—The Samoyedes and Owtchar Popular

In speaking of Russian dogs one's thoughts instinctively settle upon the Borzoi, because this graceful creature is more intimately associated with that vast, mysterious land than any other. We know him better, and therefore regard him as typically Russian. So he is, in a sense, being to the Russian noble very much what the Foxhound is to the British aristocracy. First and foremost we associate packs of Wolfhounds with the Imperial Court and the establishments of the Grand Dukes, who follow the chase in the truly grand manner.

By introducing the Boroi into this country we have transplanted him into an alien atmosphere; not only into a climate different from that of his native land, but into surroundings strange and unfamiliar. Having no wolves to hunt, we have wrenched him away from his proper vocation, keeping him merely for the sake of his undeniable beauty and for the companionable qualities about which there has been a difference of opinion. Those, however, best acquainted with the dog insist that he is all he should be in this respect, being gentle in manner, dainty of habit, and a fit inmate of the house, in which he takes up less room than might be imagined from his size. That he enjoys less popularity than some of the big dogs—the Great Dane for example—goes to demonstrate the futility of trying to account for taste. No one can dispute that he is handsome, graceful and picturesque.

The Greyhound form stands in a class by itself among the canine race, and the Borzoi has a size that makes him imposing, and a coat and markings that certainly please the eye. As far as one can see at shows, he seems to be tract-

able, well-mannered, and readily taught. No dog could have a better start than was given him by the Dutchess of Newcastle, who, if not the first to acclimatize the breed, may reasonably claim to have been the earliest exhibitor to establish an extensive kennel. Next came Royal sanction, with the appearance of Queen Alexandra among the exhibitors. In spite of all these advantages, and notwithstanding that prices for good specimens are far from being extravagant compared with the money asked for others, no appreciably solid progress has been made. Indeed, from 1907 onwards the registrations at the Kennel Club have gone steadily downwards. Frankly, I cannot pretend to offer an explanation.



—Courtesy C. J. Mercer

#### AIREDALE

British dogs have been imported into Russia for many years, especially Foxhounds, and Pointers and Setters. Turgenyev's "Sportsman's Sketches" abound in references to shooting dogs. There is Valetka, Yermolai's Setter, who was never fed by his master. "A dog's a clever beast; he finds a living for himself." That doubtless accounts for a misdemeanor that he was in the habit of committing. "He distinguished himself by untiring energy in the chase, and had a good nose; but if he chanced to overtake a slightly wounded

hare he devoured it with relish to the last bone." Possibly the Russians train their Setters to retrieve as well as find, which would explain why Valetka had the opportunity of chasing a wounded hare. One little colloquialism may be repeated. A dog that keeps close to heel is said to clean his master's spurs.

### The Bird Dog and Other Varieties

When we speak of a Bird Dog, the average man will think immediately of a Setter or a Pointer. The best interpretation of the word "Bird Dog," however, includes not only the different families of Setter and Pointers, but other dogs bred principally for hunting birds.

These include the Water Spaniel, the Chessapeake, the Tolling Dog and perhaps some others. The Water Dogs are more familiarly known as "Dick Dogs."

Of the Setters we have the strains known as English, Llewellen, Irish and Gordon Setters. The Setter is a noble looking animal and is very brainy and affectionate and can be trained for other things, but his predominating instinct is the hunting of birds on land.

The Pointer is likewise a land bird dog but works in a little different way than the Setter. The Pointer is a smooth haired dog while the Setter is a longer haired dog. Both breeds have fine noses which are developed principally on game land birds.

Of the Water Retrievers, the Spaniel is perhaps the best and most widely known, and is recognized as a distinct breed by the different kennel clubs and associations.

The Brown Water Spaniel is a duck retriever of no mean prowess and was developed by P. I. Appleman. He is a wonderful breeder and trainer of the different breeds of bird dogs.

Sam Stephenson, the originator of the Redbone Coonhound has also a goodly number of fine bloodlines in the Setter and Pointer. Most all of his stock are trained or partly trained.

Altogether there are about two hundred different breeds of the domestic dog and it would be impossible to treat upon all of them in this work. We have dealt very largely along the lines of the most widely known.

# THE BREEDING, RAISING AND CARE OF CATS

BY MRS. F. G. HILLER.

**I**N ORDER to be successful in the raising of cats, you must have a heart interest in the work. Some people are fond of cats, while others do not care for them other than for mere domestic purposes. However, this article is intended for the "lover of cats," who anticipates and appreciates fancy and has a matter of personal taste and of individual preference in catdom. "The best is always the cheapest—in the long run." Such is a well-known saying, and should be a maxim to be observed by all cat fanciers.

## Varieties

There are many varieties of Persians. First, decide upon which variety you prefer, and it is best for the novice to keep to one color until he or she has learned something about the breeding, care, etc. Then look around for the very best. If you can get about two queens, which could be bred to good studs, you have a good start.

The Whites with blue eyes are very beautiful, but have a great tendency to deafness, which those with the orange eyes do not have. Some breeders advocate crossing with a blue stud in order to obviate that tendency.

The Blacks should be BLACK, sound in color to the skin, with no tinge of brown nor white hairs, eyes deep orange or copper.

Blues, which vary in shade, some being dark and others light, should also be sound and free from brown, the light lavender shade being preferable; they also should have deep orange or copper eyes.

The Reds or Orange tabbies are very popular and are beautiful. The tabbies should have very distinct markings of darker shade. So many in this class have white or light chins, which should not be. The chin should be dark, and the eyes orange or copper.

The Brown tabby is really related to the Red tabbies, and are wonderfully beautiful if the markings are correct. They have a tawny color with broad, very distinct black markings, copper eyes.

The Tortoiseshell is not quite so popular, although some wonderful reds have come from breeding them to the Red or Black.



—Photo by Kadel & Herbert, N. Y.

\$20,000 REFUSED FOR THIS SILVER SHADED PERSIAN CAT

Last, but not least, are the Silver classes. The Chinchilla, which ranks first, is a wondrously beautiful creature. The tips of the hair are very pale silver, growing darker at the roots, with a lavender tinge over all the coat, which is very beautiful. They should have deep sea or blue green eyes, as should all silvers, the eyes being very large, round and full.

Then there are the Shaded Silvers and the Silver tabbies. The tabbies have very broad black markings, and are lovely also.

The Persian males, particularly, should be very cobby; low on legs, broad head, short, square muzzle, small ears well rounded at tops and set well apart, the eyes large, full and set well apart, and with the exception of the blue-eyed Whites and the green-eyed Silvers, should have deep orange or copper eyes. Brush should be short and full. The females are not, as a rule, so cobby, as they make better breeders when not so.

### Breeding

In breeding, one should try to find a stud that excels in the points in which one's queen is lacking. It is well also, to breed color to color. It is absolutely a crime to breed the Silvers with their green eyes to cats that are supposed to have copper eyes, for the reason that the resulting kittens are ruined in regard to eye-color, and that for generations, as the Silvers are very likely to have the orange eyes, while the others take the green.

Unless there are a number of females in one's town to pay for keeping a stud, it is much more economical to send your cat to be bred, for keeping a stud entails a lot of work and worry.

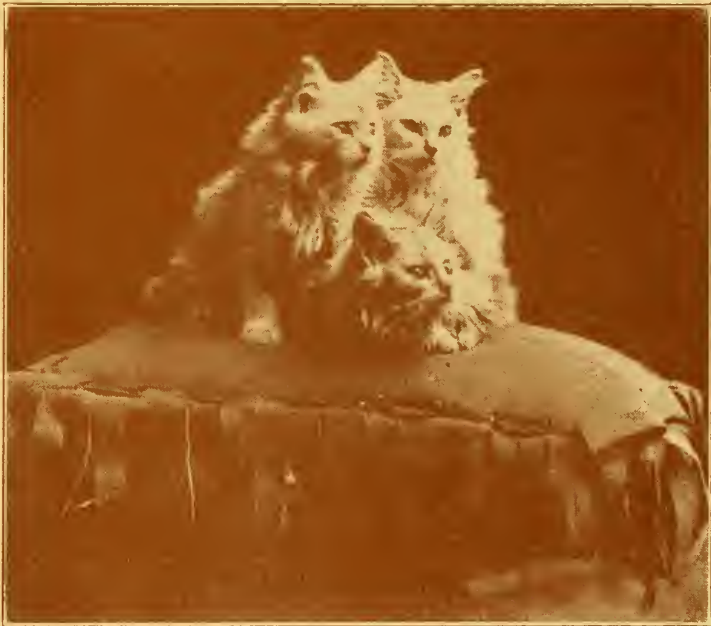
### Gestation Period and Preparation

The period of gestation with the cat is from sixty-three to sixty-six days. Before being bred, she should be thoroughly wormed and gotten in the pink of condition. During that time she should be well fed, ground raw beef mixed with a little bone meal or calcium phosphates, and sometimes mixed with health bread, at least two or three times a day. Should always have access to grass, and pure fresh water with a little lime water in it. Her bed should be in a dark place and she should have gotten used to it before her time comes. Some breeders advocate leaving her entirely alone while giving birth to her babies; some do not. Sometimes a kitten will come feet first, and unless the queen has help she is in a bad fix, and the kitten very often will have strangled before it can be delivered. I have saved many a valuable kitten by promptly taking it and dipping it first in quite hot and then cold water, slapping it and breathing into its nostrils; in about a minute it will begin to gasp, and your kitten is saved, which,

had you not been right there to render first aid, would never have breathed. During the last two weeks of the queen's period, if three pellets of homoeopathic pulsatilla are given daily, it will greatly aid her in giving birth to her kits.

### Necessary Care After Young Are Born

When the kits are all safely into the world, the mother should have a clean bed, a turkish towel is good. She will greatly relish a drink of warm milk at that time, and then should be left to rest. While she is nursing her family, she should have ALL she wants to eat, and whatever she wants.



—Courtesy of Mrs. E. H. Danforth  
PERSIAN KITTENS

The kits should NOT be taken out every few moments to show to someone, for they look like little rats anyway, and the light is apt to cause sore eyes, which is very stubborn to cure, once it begins. They should be left in the dark until they come out themselves, which will be about four weeks. Another thing, no good, human mother will awaken her sleeping baby if she wants it to thrive, then why allow some one to grab up the tiny kits out of a sound

sleep? However, about the ninth day, when the eyes should begin to open, it is well to rub your finger over the eyes, and if there is any roughness caused by infection that sometimes will develop, they should be bathed with a solution of real warm boric acid, and a drop of castor oil put in the eye, and the trouble is usually ended.

### Number to Raise

Four kits are all a queen should be allowed to take care of; if there are more, a foster mother should be found. Some will say, "Oh, nature never gives them more than they can take care of." Not so. We must remember that nature is very much perverted these days, like everything else in this old world of ours.

The kits should be fed a little scraped raw beef, moistened with lime water when they begin to come out of the basket. But they are greedy little things and it is very easy to over-feed them, so great care must be taken not to leave food on the floor, for everything should be taken right up as soon as they are through.

### Feeding

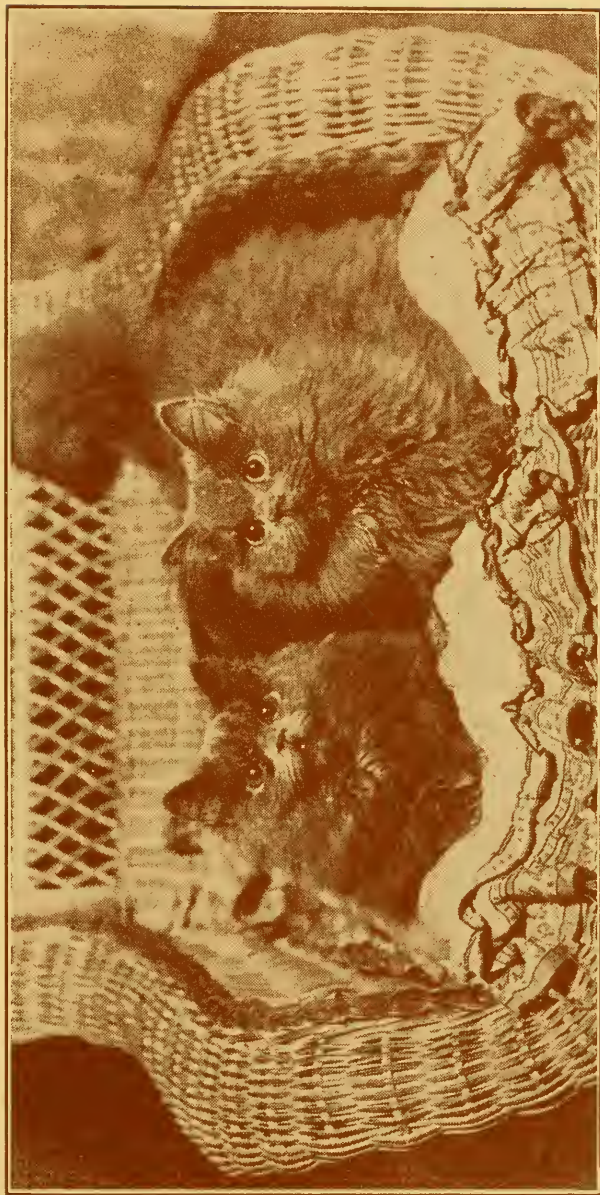
In the breeding season the studs should be fed two good meals of raw beef. After the season is over, the quantity can be cut down and just a small amount given in the morning and their good meal at night. If one has a number of cats it is practical to keep a few chickens, for there will usually be almost enough left from the cats to feed the chickens. If, after you have fed your cats at night, they still cry and claw at the wires of their runs, you may rest assured that they have not had enough, but when they sit back and begin to "wash up," then take up what is left for the chicks.

Don't feed liver, kidneys and stuff like that, and expect your cats to thrive. Don't feed mush and milk either; a cat that is fed that sort of stuff will succumb to the very first serious ailment he may have, where the meat-fed cat who has all the resistance possible will quickly recover.

### Housing and Cleaning

Persians should be kept out of doors, in a dry place. Their houses should face the south with plenty of windows in the south and west, for they need all the sun that is going in the winter time. They should have cozy boxes of





—Courtesy of Mrs. F. G. Hiller  
MADRONA BLUES IN A ROCKING CHAIR

clean straw, and in winter time they love to curl up in a keg containing straw. The runs could be built to the north, made with inch wire mesh, and the top covered with roofing paper to keep out the rain. Their houses should be kept scrupulously clean, and if a few moments each day are spent in combing and brushing, and they are kept free from worms, fleas and other vermin, your cats will always be in show form. Some judges will give a poorer cat which is in perfect show form the blue ribbon over a better cat that is out of condition.



—Courtesy of Mrs. F. G. Hiller  
CHINCHILLA KITTEN  
"MADRONA SILVER TWINKLE"

### Exhibiting

When you go to the show, don't go with the idea that you have the ONLY cats. Your cat looks good to you undoubtedly, but remember the other fellow's cat looks good to him. Remember that the judge has been engaged to judge the cats, not the people, although some of them I fear do



—Courtesy of Mrs. F. G. Hiller  
CHINCHILLA FEMALE, 'FI-FI'

not always do so. Be a good loser as well as a good winner. A good winner does not crow over those who are not so fortunate; remember that "Charity is kind." There are many heartaches and disappointments in the show room, and if you cannot lose without showing a spirit of bitterness and envy, stay at home.

### General Advice

Now remember, it is not always the highest priced cats that are the best; do not deal with one you KNOW to be unreliable, for they should not be encouraged. When you have kittens or cats to sell, don't be afraid to advertise, for that is one of the most important considerations. When you have a prospective buyer, be sure to describe your cat accurately. If she has a fault, tell that as well as the good points. Your customer will not then be disappointed when she receives her purchase, and you will be surprised how quickly people begin to sit up and take notice that such a one is honest, and they soon begin to tell each other, "You need not be afraid to deal with so and so for she is straight, and you'll get a square deal from her," etc. As we used to write in our copy books, "Honesty is the best policy."

*IN CONCLUSION.* Cats are divided into two general classes, namely, the long-haired kind and the short-haired breed. The former type belong to the various Angora and Persian Cats, while the latter belong to the common cat we see every day.

# RAISING PIGEONS FOR PROFIT AND PLEASURE

BY FRANK HOLLMAN,

Editor American Pigeon Journal.

**E**VERYONE is interested in making money. But to make money out of pigeons is, perhaps, something new to the average American citizen. Too many people, when the subject of pigeons is mentioned, think merely of the common barn pigeon which may be seen flying around in the country, villages and cities. But in raising pigeons for profit distinct breeds and varieties are used and such birds are kept penned up in wire pens or aviaries.

Therefore, in the following pages it shall be the privilege of the writer to give a few fundamental principles and, also, general information on the raising of pigeons for profit. While this will prove of interest to experienced breeders, yet it is written primarily for the beginner, showing him how to make money with pigeons.

## Squab Raising As a Business

Squab raising as a business has become quite an industry in America. There are thousands of people who keep pigeons, some only a loft of 25 or 30 pairs, while others as many as several thousand birds. There is one class of people who keep them as a side line to their regular business, and who raise enough squabs to supply their own table with meat. Pigeons can be raised profitably from a few pigeons to several thousand birds, with careful management, if the owner studies the business as one would do any other business. Besides the man who has from 50 to 100 birds for the purpose of producing his own meat, there is the large squab plant conducted solely for profit. The largest plants are usually classed as those having 500 or more pigeons. One of the largest plants is that of King Lofts, owned by C. R. King and located at Hayward, California. They have a total of 16,000 pigeons, kept primarily for the purpose of producing squabs for market. Of course, it is understood that a large

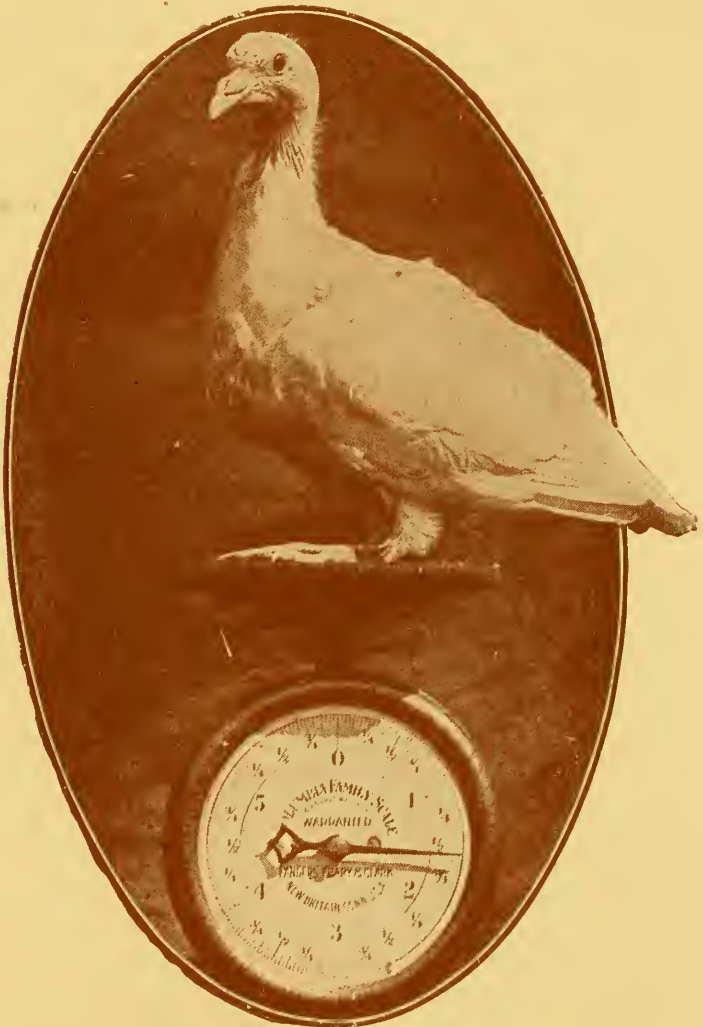
plant can make more money than the average size plant, due to the fact that grain can be bought in larger quantities and squabs can be sold to the large hotels, private clubs, railroad companies and steamship lines in large quantities.



—Courtesy American Pigeon Journal  
WHITE SWISS MONDAINE

A list of questions on pigeon raising was recently sent out by the United States Department of Agriculture to pigeon breeders throughout the United States, and among other replies were received from 22 large breeders, who kept from 300 to 2,200 pigeons and produced squabs for market. The record of these breeders are considered more acceptable to the commercial production of squabs than the replies which were received from breeders keeping only a few pigeons for home use or pleasure. The replies showed that the annual profit per pair of breeding stock varied from 32 cents to \$3, and averaged \$1.52. All squabs were sold for market, while about one-half sold both as breeders and for market. A great deal of valuable information was contained in these replies of in-

terest especially to commercial squab breeders, but the interesting fact to be noticed is that all showed a profit for each pair of breeding birds.

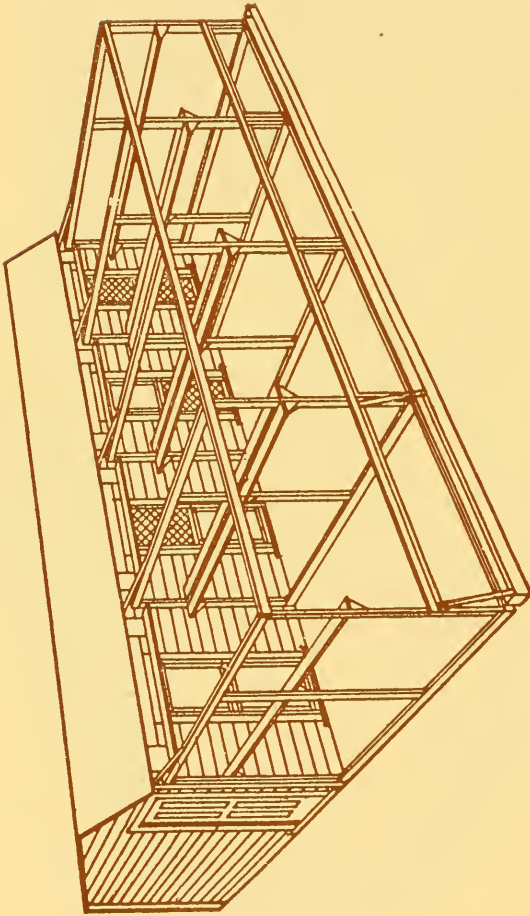


—Courtesy American Pigeon Journal

WHITE KING SQUAB, WEIGHING 1½ LBS. AT THREE WEEKS OF AGE

### How to Start

Too many people, when they get the "pigeon fever" want to start big at once. This, many times, is the first step towards failure. The advice to a person who knows nothing



—Courtesy of American Pigeon Journal  
FOUR-UNIT SQUAB HOUSE AND FLY PEN READY FOR WIRE



concerning the nature and characteristics of pigeons is to start small. By a "small start" is meant beginning with from five to twenty pairs of mated pigeons. In this way the beginner will learn the general management of pigeons, such as the feeding, watering, selection of breeders, banding, record keeping, killing, shipping and marketing. The plant can then be enlarged as one's knowledge increases. Then, also, by starting with a few birds you will find out whether or not you actually love your work, for that is the greatest factor in the success of any business.

Be sure to get guaranteed, mated and working birds from some reliable breeder, and not some "bargain lot." Be willing to pay a good price for breeders and be satisfied with nothing but the best for foundation stock. Good stock goes a long way toward success.

### What Breed to Select

This is a very common question asked by the beginner and rightly so. There are eight prominent utility breeds of pigeons, namely, Carneaux, Homers, Mondaines, White Kings, Maltese, Hungarians, Runts and Polish Lynx. These are the most popular squab breeding varieties used in America at this time and the advice would be to study carefully each breed and then select the one that suits you the best, considering the size of squabs produced, etc. One can make a success with any of the breeds mentioned, provided he will specialize on one breed and give this breed proper care and attention. One must study each breed and after having selected the one of his fancy, the breeder should make this his specialty, paying particular attention to culling and selection of breeding stock. It is of paramount importance for the beginner to get first-class birds from a reliable breeder, and, having done this, the chances are that the beginner will make a success, provided he takes the proper interest in his birds and will give them the necessary care and attention. Briefly, the advice is this: Select your breed then stick to it.

### Advantages Over Poultry

Squab raising has several marked advantages over poultry. Squabs are raised the year around and bring highest

prices during the winter months, when your hens usually unanimously decide to take a rest. No new blood is necessary every two or three years in raising pigeons. Pigeons stay mated for life and the average pair is profitable nine to ten years while in poultry, new blood is necessary every two or three years. Pigeons are not as susceptible to disease and are rarely bothered with lice or mites. The common chicken louse is not known to affect pigeons.

Squabs are reared by the parent birds and therefore there is no bother with incubation; also, no need of worry about squabs drowning when a shower of rain comes, as the squabs are always under roof sitting quietly in the nest. Other ad-



—Courtesy American Pigeon Journal

RED CARNEAU

vantages may be mentioned equally as important as the foregoing, such as less space needed, less equipment necessary, and smaller capital.

### Value of Squabs as a Food

The pigeon is the only species of aerial bird kept in domestication to provide food for man. It is also the only useful domestic bird that is able to maintain itself and increase in numbers in populous districts without the care of man. Their value as food is primarily the use of the squabs which they raise. A squab is a young pigeon from four to five weeks of age and is called a squab as long as it remains in the nest. After it leaves the nest it loses in weight and is then called a youngster. Its growth is so rapid that at four weeks of age it is practically as large as the parent bird, fully feathered and ready for market. The average weight is from 14 to 24 ounces at four weeks of age, and sometimes even weighing as high as 26 ounces. However, all this depends upon the breed and the care and attention given the birds.

Because of the fact that the squab remains more or less inactive in the nest for the first four weeks of its existence, it becomes very fat, due to the generous feeding of the parent birds, and on account of lack of exercise, squab meat is exceptionally tender. Only the choicest grains are eaten by the parent birds and as the old birds are not scavengers, only clean, sweet food is fed to the squab. Squabs are, therefore, one of the cleanest forms of meat. They are simply the result of a transformation of grain and cereals into animal flesh. Pigeons are exceptionally clean, in fact one of the cleanest of the bird family, and as a result, their squabs are most delicious and palatable. Squab meat is used for two general purposes, namely as a food for home consumption the same as any other meat, and for medicinal purposes.

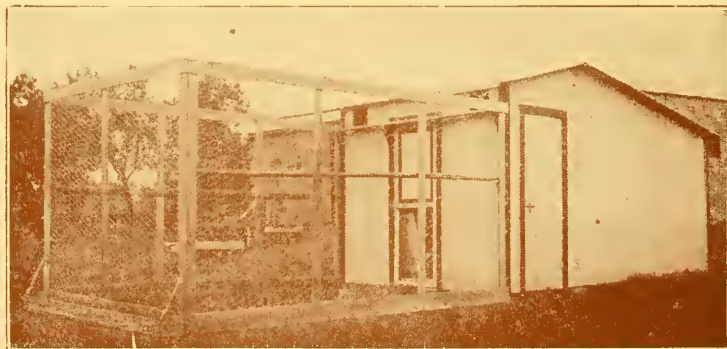
### Profits

The profits in the squab business are usually from three sources. They are selling squabs for market, selling adult birds for breeding stock to other pigeon breeders, and selling beautifully plumaged birds to firms who mount the birds and sell them to milliners, floral houses, undertakers and such

uses as might be found for mounted birds. The white plumaged bird is especially in demand for this class of trade, and thousands are used annually for this purpose, one of the largest firms using them being J. W. Crismore of Chicago. There are other sources of profit such as selling feathers plucked from squabs, disposing of the fertilizer to tanneries and florists.

With proper care and attention one ought to realize at least 15 per cent profit on his investment, but if one has a large plant, having several thousand pairs of breeders, and with the best of culling, this profit sometimes is as high as 25 per cent.

A good pair of birds should raise, on an average, from 12 to 16 marketable squabs per year. The small breeds, such as the Homer and Maltese, raise the greatest number of squabs per year, averaging 9, 10, 11, and sometimes 12 pounds to the dozen, while the large breeds, such as the Mondaine and



—Courtesy American Pigeon Journal

ONE-UNIT SQUAB HOUSE READY FOR BIRDS

Runt, do not raise, perhaps, as many but average 10, 11, 12, 13 and 14 pounds to the dozen and some even as high as 15 pounds to the dozen. But usually the final outcome is the same, since the number of pounds of squab meat produced per pair by the small breeds is equal to the number of pounds of squab meat produced per pair by the large breeds.

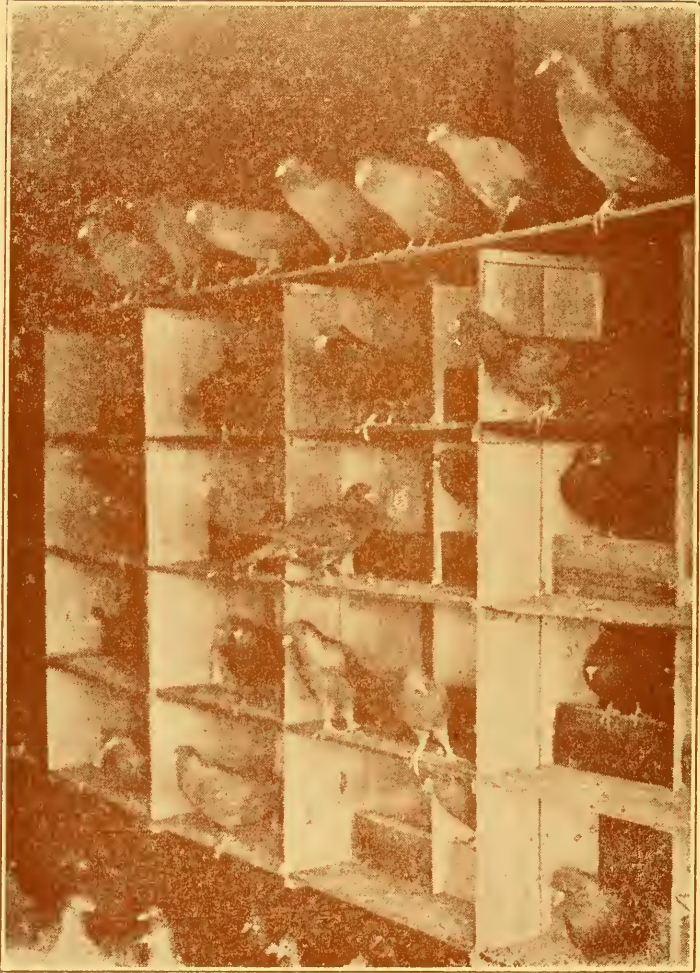
Prices on squabs are based on the weight per dozen, and of course, the heavier the squabs, the greater the price. Squabs weighing 12 pounds to the dozen usually bring from \$9 to \$12 per dozen, depending upon the season of the year. It is usually considered that a pair of breeders should make

a net profit of from \$1 to \$3.50 per year, depending entirely upon the cost of feed and the price received for squabs. However, do not think that squab raising is a get-rich-quick business, for it certainly is not. But it is a very profitable business, and many large, successful plants are to be found throughout the country. Quite a number of squab men are making as much as \$100 per month from their squab plants. WHY NOT YOU?

### Value of Pigeons as a Hobby

The domestic pigeon is not only rendering a service as a means of profit, but also as a pleasure to the busy man. There are thousands of business and professional men who have a small loft of pigeons merely as a hobby, and are strictly fanciers. The birds are kept for the pleasure of raising something beautiful to the eye and it brings a spirit of satisfaction to the man who is able to realize his ideal along this line. There are many different varieties of so-called fancy or ornamental pigeons raised for show purposes only. A small pen of pigeons does not require much time, perhaps only 15 or 20 minutes daily for providing feed and water, because the old birds feed and take care of the young pigeons. This, then, forms an avocation to his regular work and a means of pleasure and diversification from his regular routine duties. The value of a hobby can readily be appreciated by a man who is kept busy with his tasks from day to day, as it gives him an opportunity to develop the artistic and aesthetic side of his nature, thus giving him a chance for expressing the finer sense of his nature.

Annually throughout the country there are held many pigeon shows where the best of each variety is exhibited, and these shows mean much in developing the hobby as well as the business. Pigeon conventions are held throughout the country in connection with the large shows, and much interest is manifested in seeing who is able to produce the very best in his favorite breed. To raise a champion bird as near the official standard as it is possible for man to raise pigeons is indeed an art and something that can only be done by the experienced breeder after years of careful study of the laws and principles of heredity and environment.



DOUBLE NEST BOXES IN USE

### Pigeons Ideal Pets for Children

Then there is also another value of the pigeon and one of great importance in the life of the boy and girl. Most children love pets and a few pairs of pigeons make ideal pets for children. Many a man, in his youth, has spent his leisure time taking care of a few pairs of pigeons, studying their habits and learning their traits and characteristics. It is an ideal means of keeping the boy, who is in the adolescent period of life, at home, thus keeping his mind occupied with something that will be of value to him in after years. Pigeons do not require so much care and attention as to make the work monotonous, but a few minutes each day is all that is required for attending to the needs of the birds. It teaches the boy to be responsible for his pets and to take care of their wants and needs, and the lesson of responsibility is one of great importance in the life of any child and in the shaping of his future character. Habits of obedience and promptness will necessarily be formed in taking care of his pets and these are traits of great value to him through life. It is in youth when the habits are formed which will make or unmake the boy, and if his mind can be occupied with the things of educational and cultural value, such as described above, it will teach him the first lesson of industry and citizenship. The problem of the youth in modern society is how to counteract the influence of the street gang and places of cheap amusement. Instead of wasting his after-school hours in conniving some mean trick with other boys running on the streets, or perpetrating something that they consider daring, his time will be spent learning the traits of the birds, and thus the boy is saved from the temptations and vices of the influences of evil.

### Traits and Characteristics of Pigeons

The traits and characteristics of a pair of pigeons may be readily compared to family life. Unlike other birds, the pigeon is monogamous and remains true to its mate for life. Judging by modern social standards, it is doubtful whether we can make the same statement regarding present-day family life. There is no need for matrimonial bureaus and divorce courts. The cooing and courting of pigeons is very interesting. When the male bird has selected one of the opposite sex,

he begins the process of flirtation and courting with such a degree of proficiency as though he were a past master of the art. He will parade himself before the bird of his choice, displaying, to the best of his ability, his prowess, graceful step and beautiful plumage. This continues until he secures her attentions, and if to the contrary he is unsuccessful he repeats the performance to the next bird of his choice.

If, however, he is successful, he is within her company most of the time, and will soon go house hunting. After they have selected a nest box for their home, both will share equally in the duties of the home and in the raising of the family. In the building of the nest, the one bird, usually the hen, will take its position in the nest box while the male will bring the desired straw or twigs of proper length to his mate who arranges them in the desired manner in the nest.

The co-operation between male and female does not stop here, but continues during the incubation of the eggs as well as the raising of their young. Seemingly, union hours are observed by a pair of pigeons, as the male incubates the eggs during the six most pleasant hours of the day so that his partner may have the pleasure of the board walk in the sunshine and the joys of a refreshing bath on a hot summer day. Then, at about 4 o'clock in the afternoon, the hen will return to take charge of the home and continue throughout the night until about 10 o'clock in the morning, when the male will again take charge for the day.

The eggs hatch after 17 days of incubation and both parents take equal responsibility of feeding the youngsters. When the squabs are about four weeks old they begin to leave the nest to take care of themselves, and then the parents start to prepare for the next nest of eggs.

There are few men who would care to share equally in the work of the housewife, and especially in taking care of the home during the day, much less the night. Many an American home could learn a wonderful lesson of loyalty and constancy to their home and family life by watching and studying the traits of the domestic pigeon.



# INSTRUCTIONS FOR HATCHING AND REARING OF PHEAS- ANTS AND GAME BIRDS

BY W. F. KENDRICK,

President American Game Association.

**T**HE hatching and rearing of pheasants and wild game birds for ages and centuries has been looked upon as an intricate and mysterious process and in the old country, especially in England and Continental Europe, has been under the management of professional game keepers. The head and under keepers often being on the same estates and preserves from generation to generation. The oldest son having the preference in the father's position. Many of these head game keepers having what they call their secret mixtures that has brought them their success in feeding and rearing, which they impressively impart to their sons.

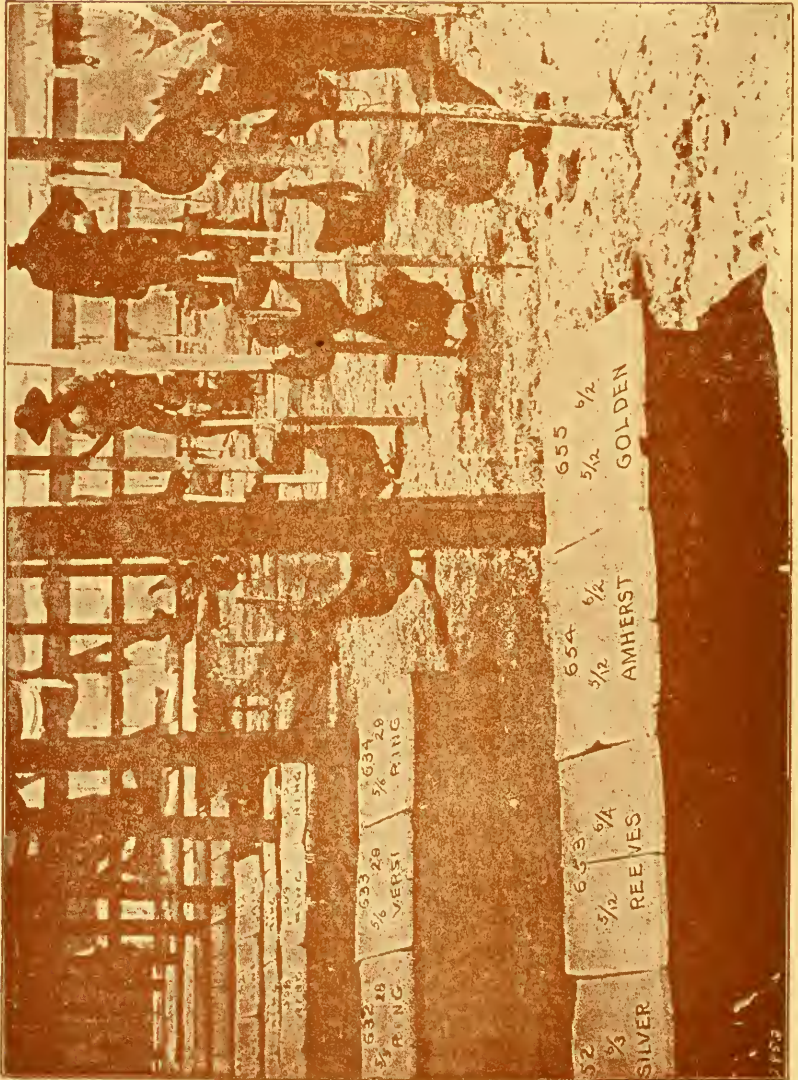
By faithful study of the nature of the pheasants, any industrious, intelligent person can successfully handle the situation.

Pheasants can be reared by incubation and brooder, as shown by accompanying illustration of the picture of several hundred baby pheasants in the brooder, also where there were common chickens and pheasants hatched at the same time, mixed.

## Feeding

Feed exactly the same as with baby chicks, using hard boiled eggs freely with first foods, and in addition baby chick food dry mixtures, also may bake what the game keepers call Johnny cakes, composed of either whole wheat and corn ground together, or if buying, use a mixture of bran, flour and corn meal, about one-third each, mixed with about four eggs to each quart, shells and all, and a tablespoonful of charcoal to the quart, which bake well, and after cooling put it through a grinder or crumble it by hand. Where you are feeding baby food to chicks hovered by a hen feed her corn so she will not consume too much of the baby food.

SETTING  
BOXES  
AND  
PICKETING  
OF  
HENS  
FOR  
FEEDING



—Courtesy of  
W. F. KENDRICK

To the above, of course, are added fine sand, gravel, oyster shell or other grits, also an abundance of pure water, kept in clean modern water vessels, by which the birds can drink freely without getting wet and the water protected from the hot sun.

These same foods will answer for partridges, quail, prairie chickens, peafowl, turkeys and water fowl.

In addition to this you can use the modified form of the English and European method as used by imported game keepers, so that you may be posted and decide what system you wish to adopt, or are prepared to adopt, owing largely to the magnitude on which you handle the business.

### Hatching and Rearing of Pheasants by Modified English Method

The accompanying illustration (see page 202) of one end of some setting boxes, and picketing of the hens for feeding, will give a good idea of this method which was established by a gamekeeper who came from England for that purpose. The next head gamekeeper, a Scotchman, also came over for the purpose, cut off the stakes even with the ground and drove a nail in the top to which he tied the string and the hen could not wind up the tether about the stake. Another head keeper uses brooder boxes instead of stakes.

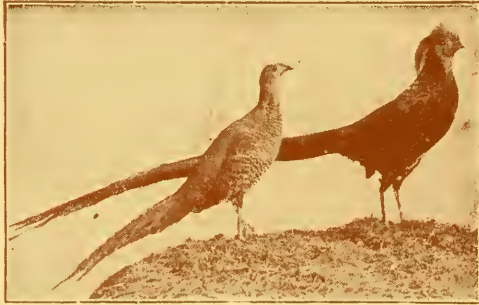
### Hatching Boxes

The hatching boxes are constructed first of partition boards of 14 inches long, of which hundreds of pieces are cut ready for use. Then take a board for the back of the box, 16 feet long and 12 inches in width, and line it every  $12\frac{1}{2}$  inches, making 15 setting boxes. For the front of the box use 10-inch boards, 16 feet long, marked identical with the back board. In these are nailed the partitions, which are 14 inches long, 10 inches in width, and 12-12 inches center to center. Taking out the thickness of the board partition, one inch, leaves the size of the nesting box  $11\frac{1}{2} \times 14$  inches, inside measure. On top of these put lids made of 13-inch board and fasten at the upper end with canvas hinges, as shown in the picture.

These boxes, in the fall, after the hatching season is over, are taken apart, the nails taken out, and the boards piled up as lumber to be used again the next season. But before using

these boards boil them in a solution of lime and salt water, adding a little crude carbolic acid, so that the cracks in the boards may be thoroughly filled to protect the hens from insect pests. Cleanliness is the first requirement in the pheasant business.

The nest boxes, after being constructed, are placed on level ground and one or two inches of damp earth put into each box. A good way to prepare the nest is to use fine soft blue grass hay, winding a portion of it into a rope one inch in thickness and about three feet long, then place it inside the nesting box on the earth, as the outside of the nest. Inside of this lay a one-half inch coating of hay, laid all one way, on which to place the eggs. After the eggs are hatched a nest made in this way will be almost as perfect as in the beginning.



—Courtesy of W. F. Kendrick  
PAIR GOLDEN PHEASANTS

### Placing the Eggs

Place from 14 to 18 pheasant eggs under each hen, according to her size and the time of year. The warmth from the hen brings up more or less moisture from the earth, keeping the eggs from drying out too rapidly; although the last week sprinkle them daily with warm water. As you may set several thousand hens during the season, take whatever you have on hand or can readily buy. As a rule the mongrel, or common barnyard hen is preferable as it is usually not so heavy; although you can use many thoroughbred White Rocks and other fowls of like weight.

### Care and Attention

These hens are dusted with a powder to kill vermin and put on trial nests with glass eggs for one or two days before

they are put on the pheasant eggs.

The hens are fed and watered daily at about the same hour, being allowed to remain off the nest, according to the temperature, from 10 to 20 minutes for the purpose of eating and drinking. The hen will soon become so accustomed to being tethered that before the hatching period is over many of them will remain near the stake at which they are fed if their tether slips off. In taking the hen off the nest, do so with both hands, but in returning her to the nest it is hard to use both hands, so take the thumb above the backbone of the hen and two fingers underneath, one each side of the rear end of the breast-bone. A hen can be held in this way without molesting the feathers or hurting her and can be put on the nest quietly. If the hen commences to strike at the board on her nest with her feet, tip her body up and set her down quietly and at the same time, with the free hand, hold the lid close to her head, closing the lid as the hen is put on the nest.

The necessity for having a high and close box for a hen setting on pheasant eggs is that it is the nature of the pheasant when it is hatched to run away from its mother, like that of the partridge. The saying is that a young partridge will run with the shell on its back. Most of the hens setting on pheasant eggs without an enclosure lose most, and in some instances, all of the young pheasants.

### The Setting Hen

The food for the setting hen is largely wheat, cracked barley, corn or oats. Also see that plenty of grit is given them. Give the hens water in dishes that are kept clean. If their feet are soiled while off the nest, have them washed or cleaned before putting them back. While they are off the nest see that the nest and eggs are in good order. If there is a broken one, take it out and wash with warm water any that are soiled.

### Cleanliness

Clean the feeding ground each time after the hens are put back on their nests, being sure to return each hen to her own nest; put out fresh water and grain before picketing out the next lot of hens. Twenty-five picket posts, or brooder boxes, according to method used, can take care of several hundred hens by using them in relays.



REEVES PHEASANT HELD BY W. F. KENDRICK

### Record Keeping

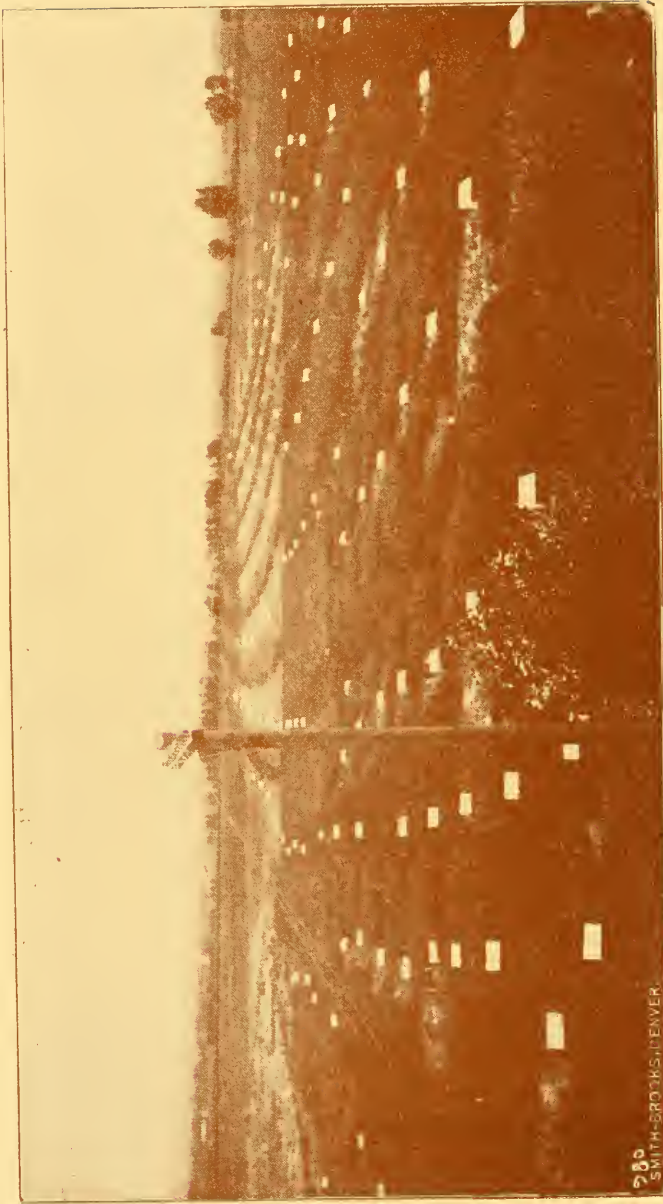
The head gamekeeper and assistant should look after the hatching, each egg is examined before setting, the lid of each box is inscribed with the kind of eggs, date, etc. The last box in photo on page 202 is No. 655, 5-12, 6-2. Golden, set May 12, due to hatch June 2nd. The whole battery of boxes are marked so that the keepers know when each hen is due to hatch and the kind of birds. When hatched and dry the head keeper delivers each hen with fifteen babies to an under keeper in the rearing field. Any hen not a good hatcher is put in fattening pen and her young divided up to average 15 birds to each hen put in the rearing fields. When the head keeper turns them over to his under keepers at the rate of 80 hens and brood of 1,200 babies to each under keeper or feeder, who is held responsible for the successful rearing of the birds.

### Brooding and Care of Young Pheasants in Rearing Field

#### *Modified English-Scotch-European Method*

The stepmother, or common hen from the poultry yard, used for hatching the eggs, is placed with the newly-hatched chick pheasants in a brooder coop, closed for first day, in front of which the under keeper attaches a closed runway. Coops are made 22 inches wide in front. Make this runway 22 inches wide to fit all coops, and four feet long, with side-board 12 inches high, and where there is danger from magpies, cats or vermin, cover this with one-inch mesh wire. This allows the little birds to only get four feet away from the mother for the first three or four days, until they become accustomed to the hen's call. After that the keeper quietly removes the runway, giving the birds the run of the field. There is a shutter made of light material to close the front of each coop after dark. This serves to teach the young birds to remain in the coop, so they can be caught to be removed from the field, and also protects them from vermin.

The feeders wear, as near as possible, the same looking clothes and move quietly, allowing no dogs within the field, nor strangers, in order to keep the birds quiet and under control; otherwise, the birds are liable to become frightened and run away. At any time between six and eight weeks old



REARING FIELD

—Courtesy of W. E. Kendrick

280  
SMITH-BROOKS, DENVER



they are removed to their permanent quarters, especially if they are to be put into enclosures.

The birds are brooded in meadows with roadways kept cut through the grass six to ten feet wide, laid out like streets of the city, shown in accompanying photo, allowing the young birds exercise and food in the sunshine, or to run into high grass for hunting bugs and in which to hide when frightened.

The coops are moved every day or two, the width of the same, or as far as necessary to get it onto clean ground. Coops are placed 40 feet apart. In stormy weather place coops in the field two or more days ahead of the time you expect to use them, in order to have the ground dry on which to place the hen and young birds.

The birds are not fed until they are from 24 to 48 hours old, giving time for the digestion of the yolk of the egg taken into the digestive organs of the bird just before it is hatched, supplying sufficient food for the first two days or more.

Sand or very fine grit can be put into the coop when it is put in the field or at their first feeding, and it should be furnished them until they are old enough to gather it from the ground.

The first food game feeders give the birds is prepared from egg boiled from 20 to 30 minutes, to make them mealy and easily digestible, and passed through a colander or sieve. This is mixed and rubbed or chopped with ground barley, ground whole wheat meal, or with toasted bread, dry bread crumbs or Johnny cake.

The food is just moist, not wet, but so it will crumble through the fingers. Never feed young birds sloppy foods.

Where barley or whole wheat meal cannot be secured, the bread crumbs or toasted bread and fine corn meal can be used.

When five days old, a little rice with a very little boiled meat finely chopped and rubbed is mixed with the above. Boiled rabbit is a favorite dish among the English feeders for either young or old pheasants. Rub it thoroughly in the Johnny cake so it is not pasty. One hard boiled egg in the food is sufficient for 50 or 60 birds for one meal.

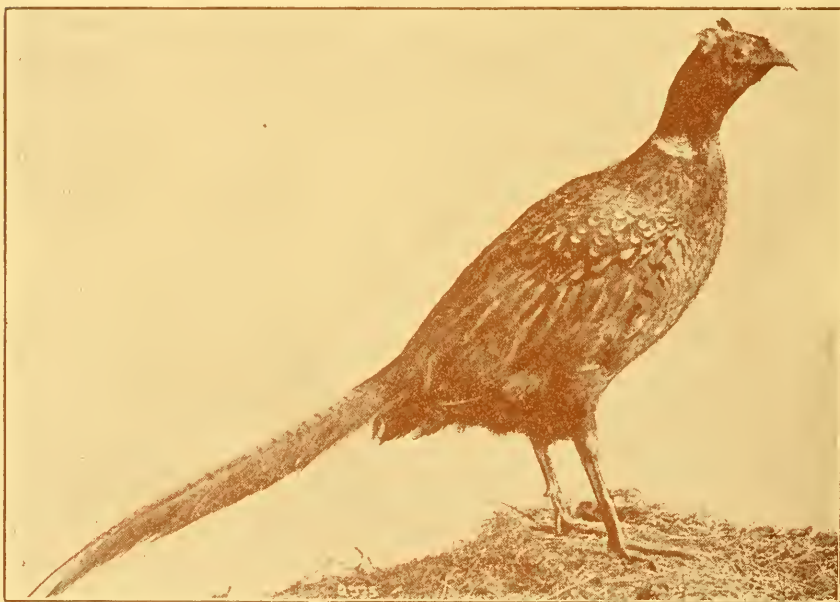
Feed at 6 and 10 a. m. and 2 and 6 p. m. Feed but little

at a time, no more than the birds will eat, and want a little more. Food left on the ground to sour may sicken them.

At ten days old hemp seed, wheat or hulled barley, or finely ground corn meal or oat meal can be gradually added.

At two weeks gradually drop off the feeding of eggs, and at the same time add the feeding of cooked meats.

Pure linseed oil or linseed oil meal in the food at the age of from two to three weeks aids in the growth of the feathers. At this date cracked grain of different kinds is added to the bird food.



—Courtesy of W. F. Kendrick

CHINESE RINGNECK COCK PHEASANT

Cottage cheese, made from sour milk, is often added to the bird food, either fed to them separately or mixed with their food after they are a week old.

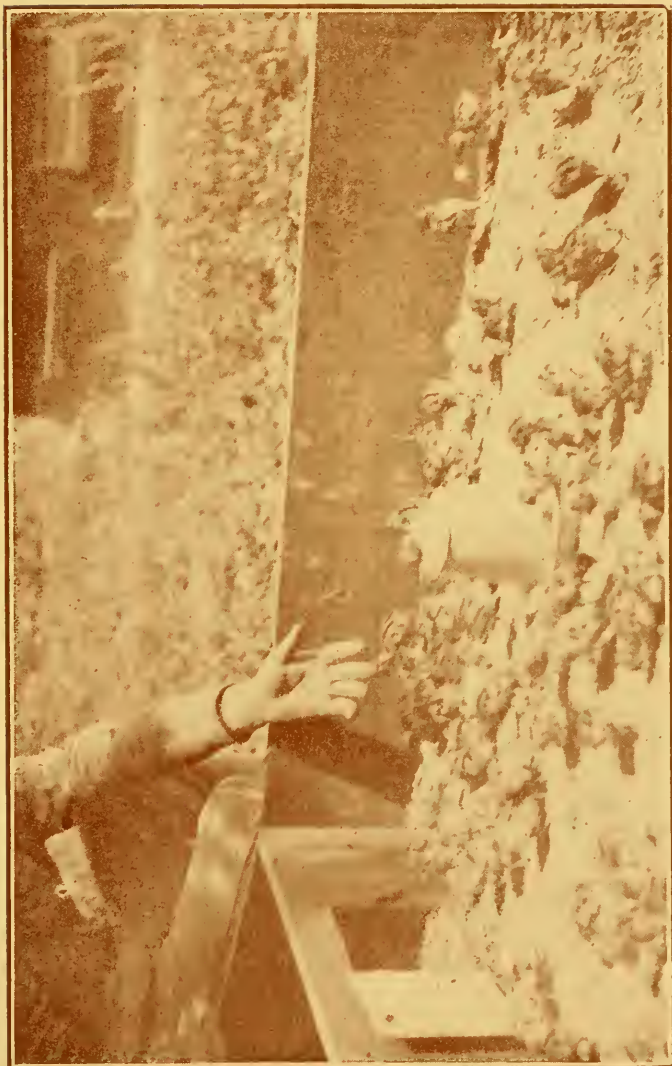
Where parties have not an ordinary sieve they can use mosquito wire for rubbing the food through.

In order to save the bird food the game keeper places it on the clean grass in front of the coop, where the hen can only reach a small part of it; feeding the hen a mixture of wheat, corn and barley, either whole or cracked.

When insect life is plentiful the young birds often secure

FEEDING  
BABY  
PHEASANTS

—Courtesy of  
W. F. Kendrick



enough insects and larvae from the plant life, and worms from the ground, so they eat but little of the prepared food.



—Courtesy of W. F. Kendrick

REINHARD'S PHEASANT

The pheasant is an insectivorous bird and will eat insects and worms in preference to grain, when obtainable.

When more food is given the birds than they will eat at a time, either gather it up or cover it with earth, so that birds cannot eat soured food. This is an important part of feeding. It is better to feed so they will clean the ground than to overfeed, as they are liable to cause trouble by picking up the old or rancid food. Only mix up the amount of moist food you wish to use at one time.



—Courtesy of W. F. Kendrick

PAIR SILVER PHEASANTS

The birds you wish to keep in open top enclosures, commence clipping the eight flight feathers from one wing at about seven weeks old, being very careful not to clip a green feather that would bleed, as it injures the bird and in hot weather is liable to become fly-blown, which would kill the

bird. This process is repeated about five times, two weeks apart, which will do until the birds moult the coming season, and prevent them from flying. When pinioning is adopted the wing is clipped when a few days old.

Where there are but few birds the food can be prepared on the kitchen stove, or use dry mixtures.



—Courtesy of W. F. Kendrick

#### PHEASANTS

At most places the early birds are given food prepared at the cookery at the buildings, but in the main rearing season, when each feeder has from 80 to 100 coops to look after, the cooking is done almost entirely in the fields, and the men live and sleep among or near the birds.

When birds are reared to be liberated, as in England, they are usually moved to the game fields when six weeks old, accompanied by their stepmother hen, or at eight weeks old if not accompanied by the hen. The under game keepers or feeders continue with them, to feed, care for and keep them from straying and protect them from their enemies until after the shooting season.

## CARE AND MANAGEMENT OF BANTAMS

By A. C. SMITH.

**B**ANTAMS are the "Shetland ponies" of poultry. They are miniatures of the regular breeds, the dwarfs of larger fowls

Like the nurserymen have developed dwarf varieties of fruit trees for use on small lots, so the bantam fanciers have developed a dwarf variety of poultry—similar to the large varieties in everything except size, and which can be raised in small space.

There is practically no difference between a bantam and a regular chicken, except as to size. They weigh less, eat less, lay smaller eggs. Instead of requiring large houses, they use "doll houses." Instead of needing a big run or yard, they require only a small one or none at all. In other words, they are treated and fed like big fowls, except on a reduced plan.

Bantams are far from being a pet or plaything, although they are all of that. They lay as many eggs as their big sisters and, while they are smaller, still it takes less feed to produce them and are larger in proportion to the size of the fowl. If eggs were valued by weight, instead of by the dozen, you would find that bantams will produce them just as cheaply or cheaper. Three bantam eggs are equal to two regular ones.

Just as many city and town people plant dwarf fruit trees on their lots instead of regular ones, so do many persons with small and limited space satisfy their desire for chickens by raising bantams. You can get all the pleasure, experience and satisfaction out of bantams that you can out of regular poultry. On a limited amount of space you can raise many more bantams than you could full-sized chickens. You can get as many or more eggs for the food used—you can sell all you raise at as high or higher a price. In other words, you can go in for bantams and find them just as profitable as the larger breeds, with far more pleasure and less work and expense.

Bantams and bantam houses are an ornament to any back yard, instead of being a nuisance, as regular chickens often are. They do not need a range and even if let loose, are not wanderers. You can keep bantams anywhere, and they are the only chickens you can keep in many places without being an annoyance to your neighbors. Nobody could possibly object to bantams.



GOLDEN SEABRIGHT BANTAM

You can keep a dozen bantams in the same size space that four regular chickens would require and for about the same feeding expense. Your dozen bantams would produce many more eggs than the four full sized. Bantams are gentle, tame, easily handled, and a constant source of pride and pleasure for every member of the family.

### The Kind to Raise

The most popular of all bantams are the Cochins—white, buff, partridge and black.

### Origin, Description, Buying Stock, Etc.

The Buff Cochin Bantam is of ancient origin; credit has been given to the Chinese for the production and culti-



vation of the Bantam. The history of the Pekin, or Cochín, as far as one can determine, shows that the first birds secured were from the city of Pekin, China, hence the name "Pekin" in relation to the Bantam.

A COCHIN BANTAM is supposed to be a "midget" or diminutive Bantam, certainly noted for its smallness. One of the most important features about this specie of the poultry family is the shape. Head should be small; comb, single and evenly serrated; *face, ear-lobes, and wattles* must be bright red; *eyes*, red or as nearly so as possible; *beaks*, a rich yellow; *neck and back* of male should have plenty of hackel and saddle feathers flowing well over the shoulders and saddle; *breast*, broad and full, and fluff very abundant; *tail* should be carried rather horizontally, broad but short.

BLACK COCHIN BANTAMS. These are being bred to a high degree of perfection, and they are just as popular as any of the Cochins. They possess a greenish black all over, with bright red comb, face, wattles and ear-lobes. These Bantams are very attractive indeed, and "hard to beat," as the saying is.

LIGHT BRAHMA BANTAMS. These are after the order which their name implies, but have been bred down to little midgets. They are especially attractive to look at, and lay the largest and most eggs of any variety of the Bantam. These kind of birds are recommended to those who have very limited space to keep their stock, yet want the greatest possible production, as this kind of stock does well in close confinement.

### Feeding

Bantams are fed much as ordinary chickens are, except much less. A few pens of bantams could easily be kept on the table scraps of the ordinary family with maybe a little grain, just before going to roost.

### Housing

Bantams require only a "play-house." A very practical and serviceable house can be made from a dry goods box, by covering it with tar paper to keep it warm and dry. A house three feet deep and five feet long will hold comfortably a pen of one rooster and four or five hens. Have the

house about thirty inches high in front, sloping to twenty inches in the rear. The floor should be of boards covered with straw or chaff. Provide a roost in the rear and several nest boxes. It should be built with three sides solid and front covered with chicken wire and a waterproof curtain for use in inclement weather. A small wire-covered run can be provided, if desired. Such houses can be nicely painted and will make an ornament for any back yard.

### Breeding

Bantams should be kept in pens of from three to six—or one rooster to two to five hens. Inbreeding is quite largely practiced among bantam breeders. Cochin Bantams make the best setters and mothers of any variety of chicken. They



WHITE BANTAM

hatch every hatchable egg and raise every chick hatched. Buff Cochin Bantams are used by pheasant breeders to hatch pheasant eggs and raise the baby pheasants. Breeders of the very highest priced fancy chickens often hatch out their eggs from prize-winning stock under bantams, as they are sure of a maximum hatch and the best of care of the little chicks. Give a bantam mother clean, dry and warm quarters and she will raise every chicken.

## Hatching

May and June are the best months to hatch Bantams. April, July and August are not favorable months, while September is all right if you have a suitable place to care for the chicks in winter.

The eggs can be set under Bantams or large hens, but you have to be careful to see that if the chicks are hatched by a large hen that she does not step on the youngsters and kill them, which is quite likely to happen if due care is not given to this matter.

## Bantam Profits

Bantams are profitable because there is a wide market for all you raise at a fancy price. There are nothing like enough bantams in the country today to supply the demand. We know, because we have tried ourselves to buy them in large quantities and cannot find them. Almost any kind of a bantam will sell for more than an ordinary chicken. At the same time it costs much less to feed and raise them.

Bantams are truly the chickens to raise for pleasure and profit. No other will give you so much enjoyment. No other will so appeal to every member of the family. There is not a boy or girl who will not love them and enjoy them. They can be made as tame as a puppy. The eggs they lay are as good as those of their big sisters and the children seemingly enjoy them more. They are an ornament to any yard. The pleasure of exhibiting them at poultry shows is unlimited. There are no entries that create so much interest. From every standpoint, bantams are the ideal chickens to raise, and are, in fact, the only kind that one with limited space at his disposal can raise with any degree of satisfaction.

## Success Pointers

Keep your chicks free from lice, give them clean, dry quarters, clean water, dry food in abundance, and you have the four main essentials in rearing Bantams for Pleasure and Profit.

# THE CANARY

BY H. A. HASSLER.

## Breeding, Feeding, Care and Management

**C**ANARIES have been used as cage birds for so many centuries that they are really thoroughly domesticated and have lost practically all of their wild characteristics. Of all small cage birds, they are most popular, as they are hardy, require comparatively little care and are charming songsters.

### Selecting Stock

If you wish to breed canaries, use judgment in selection. The pale lemon colored bird, called in Germany the roller, on account of the rolled tones in his song, stands at the top. Those with darker color are birds crossed with linnets, and are also wonderful singers, having the rolled tones, and both are capable of being taught to imitate the notes of certain wild birds and, more wonderful still, the notes of a violin.

Do not breed a fine singer to any old kind of a hen, as we estimate that 3-5 of the blood lines are carried by the female.

When wishing a singer, select the bird whose song pleases you, then give him the right food in the right quantities, and protect him from draughts, and he will keep in song. The male is the finer singer and on the job all the time. The female, of course, on account of family cares will not be so ready at all times to entertain you.

There is a registration system now in force which guarantees to you the breed and quality of the bird you buy in the certificate which goes with it.

### Breeding

It is very easy to breed and raise canaries, provided you select good, strong, healthy birds from a prolific strain. Buy only birds with a registration certificate in a National Association.

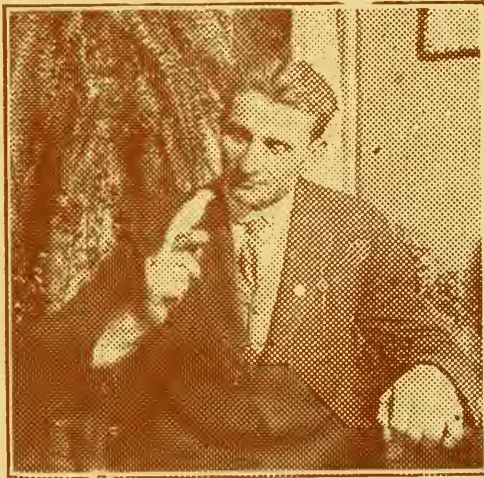
With a record of the bird's breeding, you may intelligently set about to raise birds. Related birds are not desirable for breeding unless you wish to line breed, and this should not be attempted by an amateur.

If directly related birds are bred, you will get weaklings, worthless and short lived.

Sometimes it is difficult to get a certain pair mated. You must remember that they must be ready to mate. And that they are sometimes nervous.

There are many ways to make them mate. One is to place them in cages side by side so that they will flirt and get acquainted, and it goes without saying that each must be in the pink of condition. If you think you will have to use a tonic, get some from a dealer who KNOWS.

It is best to alternate in the ages of birds bred. With common sense treatment, one can raise a number of good birds from a good pair each year. When the birds are about two weeks old the hen is ready for another nest.



THE AUTHOR AND A TAMED CANARY

Birds, when breeding, may be given a more liberal diet. Add a fourth part of summer rape to the staple food. A small teaspoonful of the mixture of equal parts of Hemp, Maw, White Millet and Linseed may be given to the cocks every second day and to the hens twice a week. Egg Food and crushed bread or biscuits should be given the cocks twice a week and to the hens once a week. Also some dainty green food, like lettuce or apple, placed between the wires.

Now after the hatching process is over, you may allow the young to remain with their parents as long as they are kind to them. The mother bird may be your guide as na-

ture has taught her. The cock bird will often feed the birds through a cage placed near enough, and this develops the muscles of the young and their tiny frames.

When you take the young birds out, place them in a flight cage, which is larger than the ordinary one, so as to make the needed exercise possible. Keep them for a time on the diet of hard boiled eggs, chopped up, and crushed cracker crumbs, then for a time, give nothing but plain canary seed.

### Careful Feeding

When birds are moulting some of the diet prescribed for them at breeding time is required, and bread and milk may be given, being sure to drain off all of the milk. Also clean gritty sand should sometimes be supplied.

Cleanliness is essential. The foods must be fresh. Bear in mind that many seeds are old and musty, and that your bird will starve before it will touch seeds that have been visited by rats and mice.

The water should also be fresh. Place a cuttle bone between the wires. They will sharpen their bills on it. Keep gravel in for them, and a little tempting lettuce or clean peeled apple. The birds' main diet should be Spanish Canary seed and German Summer Rape, the former being fed in the proportion of three parts to one of the larger hemp, this latter being too fattening.

### The Canary Bath

Cleanliness is essential, not only of the food, but of the cage and the water given for the bath. Two or three times a week is often enough for the bird to bathe, and right here let us caution you about never allowing the bird to stay in a wet cage.

Do you know that birds sometimes refuse to bathe because they slip on the bottom of the tubs? A little gravel or sand will help. And in cold weather, the water should be warmed a little.

Dust will ruin the voice of a canary, so cleanliness even of the atmosphere is essential. You can remove your bird's cage to another room if sweeping and dusting without a vacuum cleaner.

### Caring for Your Canary at Night

Wild birds naturally seek their roosts at dusk, but a canary cannot do this in a lighted room, so you may cover



—Photo by Kadel & Herbert, N. Y.  
TEACHING BIRDS HOW TO SING

its cage with paper at nightfall, using one thickness in summer and three in winter, with the paper fitting closely about the lower part of the cage and extending several inches above the ring which supports it.

When moving a canary from one place to another, cover the container completely with manilla paper, and make holes about the size of a dollar near each drinking or food vessel, also other holes with a lead pencil, for air.

### Caring for the Health of Your Birds

Following above suggestions should keep your birds absolutely well. However, should they be ill GIVE NO GREEN FOOD AT THIS TIME. Even the moulting time will not be critical if the birds are kept under healthy conditions and properly fed.

### More About Moulting Time and Exercise

As we have said, it is most advisable to allow the young birds extra space for exercise until they have entered into their moult, when they should be placed in their small, quiet cages in a warm, quiet place, in twos and threes. They will feed better this way.

When some portion of the new feathers begin to come in, about two weeks after the moulting time starts, it is best to shut out some of the light. Also a few grains of linseed will add lustre and finish to the new feathers. Just a few grains for each bird about twice a week.

### The Development for Song, or Training a Roller

The care of canaries for breeding is somewhat different from that required for the development of song tours. This song training may begin as soon as the young cocks are, in the flight cage, at about four weeks, or even younger.

In the elementary stage, only a twittering is noticed, which, however, day by day becomes louder and stronger, and even in the early days one can distinguish plainly in some of the more forward birds, the tours in their songs. The general opinion is that the moult hinders development of song. It will be found that the birds which have made the most progress in the moult will show the greatest advancement in their song.

The above rules are not hard and fast. You can use your judgment and common sense with your birds. Different climates and different conditions should govern you.



### The Demand for Canaries

The principal demand for song birds comes from the bird lovers in the homes. But a great fad for using these birds in the higher class Motion Picture Houses, the artistic Cafes and in Hotel Lobbies and in other public places is growing rapidly.

### Some Other Breeds of Canaries Are

The Saint Andreasburg, noted for singing in the evening; the Campanini Holden, raised and bred by the most successful breeders and which has a wonderful soft, full, melodious voice, and the Manchester and the Norwich of the English Canary strains. These last are noted and greatly admired for their many odd wild bird notes. And also there are the Red Canary and the Gold Spangled Lizard Canary, which originated in England.

Those birds known as "mule" canaries are produced by crossing the canary with some other bird.

### Traditions, Facts and Fancies About Canaries

Some people place a rusty nail in the birds bath tub to supply the iron they believe necessary.

Canary seed is small. Hemp and Rape are larger. Feed the greater proportion of the small seeds.

When the birds are breeding keep mite powder around, and use a brush dipped in kerosene around the cage weekly.

Or place a thick cotton flannel cloth over the cage at night, and iron with a hot iron to kill any mites which may collect on it.

Should you be breeding a large number and you find the birds in the moulting season developing the mischevious habit of plucking feathers from each other, you may tie pieces of unraveled string to the wires of the cage and let the birds amuse themselves by playing with these.

A little electric light placed in the top of the beautiful wicker cages of the "music birds" in certain theaters makes them sing at night.

Your bird will build her own beautiful nest from pieces of paper, rags and string.

Canaries belong to the finch family, noted for their aptness in being trained to sing music other than their own natural song.

To sum up, the canary is a beautiful and attractive bird, a real songster and a charming pet.

## MAKING MONEY WITH BEES

BY WM. (BILL) ANDERSON.

**A**NOTHER outdoor industry which invites you to step into the avenue of pleasure and profit is that of Bee Culture.

There are unlimited opportunities in this enterprise for the would-be get-ahead, and you can make your business just as large as you want it to be, which will depend wholly and solely upon the time and effort you give to the same; the more of your personal attention you give to the enterprise the more money you will make.

### You Can Start Right on Your Own Lot

You can start right at home—on your own lot—in your spare time. You need not give up your position until you have firmly established your business where it will take up your full time, and perhaps the time of others, so that you will be an employer in place of an employee. Hundreds have done it, so can you.

### The Honey Bee

The bee which supplies man with one of his most popular luxuries, namely, Honey, is commonly known as the "Honey Bee," or "The Little Busy Bee," because of its great industrial qualities as well as being an insect of social life and activity.

**SMALL CAPITAL REQUIRED.** By following the instructions given below you will find that you do not require expensive equipment; just simple things are needed which can be made at home by any handy man, or the equipment may be purchased at very moderate cost. It is a business which takes but very little capital in the start, and from that humble beginning it is possible to grow without limit.

### The Start

The following are some of the things you will need; some of the Bee-Keepers' terms are used to describe the hives and accessories.

*The Brood Chamber* is the lower compartment of the hive, and it may otherwise be called "the home." In this chamber the Queen Bee lays the eggs from which the young are hatched.

*The Super* is a frame the same length and breadth of the brood chamber and about five inches high, or about the height of the pound frames of honey one can see in the stores. This super is placed on the brood chamber about the time you notice that the worker bees have the brood chamber filled with honey, that is, when they have the cells that are not filled with brood, filled with honey.

A *Veil* is also needed. This can be home-made and can be put on over the hat and come down over the shoulders and then tied under the arms.

To pry open the cover of the hive a putty knife can be used and small screwdriver can be used to start the frames.



THE AUTHOR, WM. (BILL) ANDERSON  
Also a Noted Rabbit Fancier

Now pay particular attention to the situation, and you will be able to see the Queen. She is much longer than the Bees and is always in motion. She is truly as "Busy as a Bee;" turn the frame around, (NOT over) as if you hold it flat, the Queen may fall off and you would not notice her.

In your operations, if you see there is capping over honey cells for about an inch along the top of the frame, it is time to put on a "super." After you have done this, look at it about every three days and when you see that they

have the cells all drawn out and about the time they are commencing to cap them over, lift this "super" off and place another where it was, and put the first one on the top. The Bees will immediately start to work drawing out the lower foundation and at the same time finish the upper or first one.

The "super" holds ten frames and each frame when well filled will weigh about five or six pounds of honey, and in a good season a splendid colony will fill four or even five or six "supers," according to how far the Bee will have to travel for the nectar.

The hives should be placed facing South, and if you can have them along the south side of a fence, it will be ideal for winter. Of course, there are different kinds of hives, but the beginner is advised to get the Hoffman ten-frame standard hive, and after you have secured the first one, you can go ahead and make the others from the sample you have, and thus reduce your cost of equipment.

Again, be sure to place your bees in a sheltered spot, and if unable to let the hives face exactly south, then if possible, let them face southeast or southwest; be sure to avoid northern exposure as it has proved disastrous to many an enterprising Bee-Keeper. The old saying is, "Being forewarned is being forearmed," and if you attend to this matter of locating your hives as advised you will experience no trouble at all that can be attributed to hive location.

Before starting you should investigate your proposed location very carefully, and also ascertain that the bees have no great distance to go to get to the flowers from which they draw the perfumed nectar, which is far preferable to them than to be fed upon moistened sugar. The bee not only takes honey from the flower; for the young, which are not little bees, but tiny "grubs," are not fed on honey, but on "bee bread," which is the pollen the flower visiting bees carry home on their thighs.

The bee is the only insect which makes any contribution to the food of man, and is the most highly developed and intelligent of the insects. Bee culture is undoubtedly a very practicable and profitable enterprise. A small back yard in any suburb, or lot, can be used very successfully to develop this highly interesting and ever growing business.

There is room for hundreds of people to start in this interesting money-making enterprise, for Bee-Keeping is followed by a few people in comparison to poultry raising and other outdoor enterprises. It is not necessary to start in a big way, but if you have a location for your bees which is within easy distance of the growth of white clover, sweet clover or mellot, heartease or smart weed and other blossoms, one can very directly add to his income by having this Bee-Culture as a sideline, if you do not feel disposed to go large enough to make of it a regular employ.



—Photo by Kadel & Herbert

A SUCCESSFUL BEE FARM MAINTAINED ON THE FLAT ROOF OF  
A FIVE-STORY APARTMENT HOUSE IN THE HEART  
OF SEATTLE, WASHINGTON.

The raising of bees for commercial purposes is not a simple matter of placing a hive in a suitable place, however, and for a swarm of bees to be within it. There are quite a few things to learn and which must be attended to; these you will gradually learn and experience as time goes on.

### Attending to the Hive

We will presume that you have gotten your first colony from a reliable source and that the season of spring is here; that the bees have been working for two weeks, and at present are out. Choose a warm day; the hours of 10 a. m. and 3 p. m. is a good time to attend to the hive, as most of the workers are then out of the hive, and they are also more quiet.

Take the top off the hive (as before indicated), being very careful in doing this; move slowly, yet deliberately. If you use a veil you will need a smoker. Some Bee-Keepers smoke cigars during the time they are attending to the hive, and they blow a few puffs of smoke over and down on the top of the open hive. When you have removed the cover, set it to one side and be sure you stand at the rear—or at least on one side.

Now lift out one of the frames. You will note that all but  $1\frac{1}{2}$  inches around the ends and top and bottom is capped over; this is known as "brood," or young bees. You will also see at the back of some of the cells a white object, curled up; this is the "grub," or young bee that has not been sealed up or "capped" over. In some of the cells you will see a substance that glistens, which you will readily understand to be honey.

Here are a few other terms that are used by Bee-Keepers, which words you should become familiar with and know their meaning.

**THE QUEEN.** She is the mother and lays all the eggs, which is her only duty. Average life of the Queen Bee is two to five years.

**THE WORKER**—as his name implies, is the industrialist; they build the combs, rear the brood by feeding it and maintaining its warmth; they harvest the honey; chase intruders away, and also keep the hive clean. Average life of "The Worker" is 40 days if she is flying about and keeps busy, which is generally the case with her; she really "wears herself out." During the winter months, when she is in much repose, her life may be extended to something like a period of six months.

**THE DRONES.** These are the largest inhabitants of the hive. They are just what their name implies; they do not work at all, but feed on that which is within the hive and spend their life in pleasantly flying around, etc. After a drone has mated he dies in that act; two drones are sufficient to fertilize the young queens of a colony.

To keep and care for living things is most interesting and instructing to anyone, and the person who becomes interested in Bee Culture and will follow the course rightly will prove it to be a source of profit as well as pleasure.

This article has been prepared for the purpose of giving brief instruction in Bee Culture. No doubt when the enterpriser gets well started, by reason of the instructions here given, he may want to learn more of the things necessarily to be done in order to extend his business. In a case of this kind the publishers of this work will be glad to render their help to such a person.

This variation in time is brought about by climatic changes.

There are many enemies of the egg mass, as fish, turtles, ducks, snakes, etc., etc., are known to devour great quantities. The tadpoles' first food is the gelatinous envelope which protected the egg from which he hatched.

Shortly afterward he will devour almost anything given him. It was thought for a long time that the tadpole lived on a vegetable diet, but it is now known that while they can live on vegetation exclusively, they thrive much better when some sort of meat is fed as well.

The Bullfrog tadpole grows to a very large size, and



A GIANT BULLFROG

often measures 4 to 6 inches, also develops four legs.

He also has very many enemies and it is necessary that the pools are kept free of fish, turtles, also frogs as the bullfrog seems to relish his own tadpole as well as any other food.

The tadpole develops into a frog during last of first season and grows rapidly.

Again we caution to keep frogs only of a size together.

Frogs fed right do remarkably well. They will not take meat or other dead food from the ground. It has to be offered in some attractive manner.



Frogs begin to burrow in August and September, and later bury themselves in the mud where they stay dormant, protected from frost, etc., all winter until spring.

Successful frog farms and froggeries are to be found throughout the East, in the Middle West, also many in the South. California perhaps has more than any other one state.

The possibilities to derive an income from the breeding and culture of bullfrogs are excellent and the surprising thing is that more have not taken it up. Perhaps the reason is that it has not been brought to notice.

Should you be serious regarding a start, go into the matter earnestly, using common horse-sense.

As experience is the only satisfactory teacher where animal life is concerned, it is advisable to make a small beginning which enables one to feel his way and learn as he goes.

## GROW MUSHROOMS AND MAKE MONEY

No Special Building Necessary—Your Own House  
Cellar One of the Best Places

**M**USHROOMS are grown to perfection in cellars, stables, sheds, boxes, greenhouses, caves and the like.

Many people think that mushrooms can only be grown in a warm, dark, damp place. This is a mistaken idea. Any ordinary place heated or not, where the temperature does not go below 32 degrees in winter, and where the bed can be screened so that the direct rays of the sun will not fall upon it, will grow large quantities of this delicacy. The bed should be on a dry bottom, it making no difference whether it is a wooden, cemented or earthen foundation.

The beds may be on the floor, on shelves, or both, but no matter where they are, whether in a dwelling house, cellar or other place, if properly made, they emit no odor and are in no way offensive or unhealthful.

First, remember that mushrooms can be grown all the year. There is no off season and it is never too late to start. Beds bear just as well no matter when started.

During the summer or in hot climates a cellar or cave, cement house, or some place that can be kept moderately cool is to be preferred. It is necessary that the intense heat of the hot months should not strike the mushrooms. To overcome this place straw on top of the beds one foot deep and water the beds through the straw and they are thus kept cool and moist. Pick the crop by moving the straw from side to side with a fork.

In a cellar, cement house or cool place there is no need of doing this, only in unprotected hot sheds where the hot sun beats directly on the roof that covers the mushrooms.

Do not give the idea that the beginner must have an expensive, large or specially built establishment to make a profit at this business. Just the reverse. No matter where

he is located, whether in a cold or hot climate, he has without doubt at hand a good place to grow mushrooms. That is the beauty of cultivating this crop, it requires no capital to start outside of purchasing the spawn and perhaps the manure, and a crop will pay just as big and grow just as well in a cellar, or old shed, stable, etc., at home as in a regularly equipped mushroom plant.

A cellar is one of the best places to grow mushrooms, as it usually has a fairly moist atmosphere and a moderate, even temperature.



-Courtesy of National Spawn & Mushroom Co.

#### A HEALTHY GROWTH OF MUSHROOMS

It can be under a dwelling house, stable, barn or shed, or any kind of building. It may be either light or dark. The beds can be made on the floor, or if more space is desired one or two tiers of shelves can be put up.

The sides of both can be boarded in so as to keep the materials of the bed from falling out, or in the case of floor beds simply banked up at the sides. These beds can be made so as to fill up the whole cellar, leaving, of course, sufficient space to get in the material and allow watering and picking of the crop.

The profits in the mushroom business are most satisfactory to the grower. As practically no capital is required and no special building is necessary, and as most everybody has some unused place suitable for their culture, they may be profitably grown, the field is open to all, either as a means of livelihood or the source of profitable recreation. They are, however, held back by the fact that reliable spawn and practical instructions are hard to obtain, and those already engaged in the business refuse to open mouths or doors, either to give information or to allow inspection of their methods of cultivation.

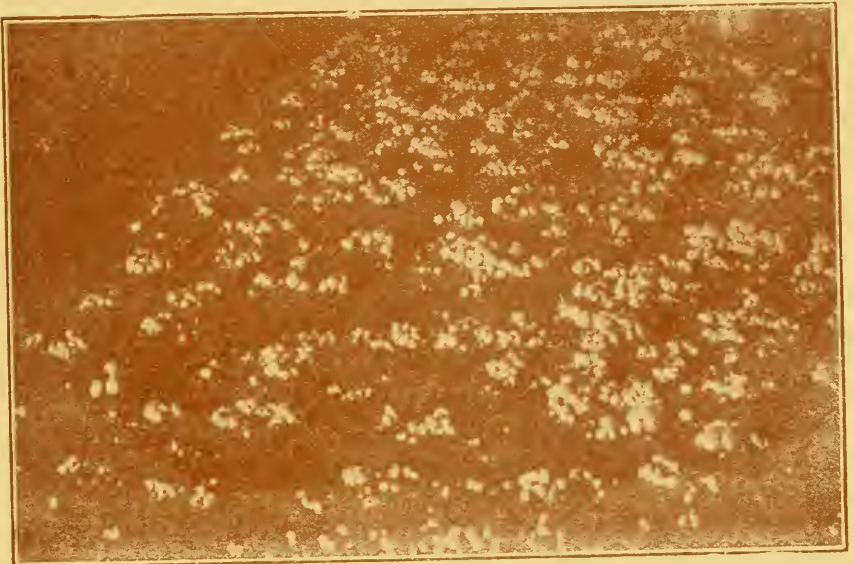
Some growers will not admit visitors to their plants and others who are willing to show their beds to callers seeking information but deliberately give false answers to questions regarding culture. What is the result? The mushroom industry records another failure from the person thus falsely informed, and the unsuccessful grower in many cases starts out to give the business a black eye. This has happened not once but many times. It is simply a question of having the right facts and materials and applying them in the proper way that begets success.

The profit of growing may be estimated from the following:

Beds will yield from one to two pounds of mushrooms to the square foot. The crop will last from two to five months, oftentimes seven and nine months. As fast as a bed is through bearing it is immediately remade. Beds should be started at intervals of a month or so in order to keep a crop coming continuously.

Suppose for instance for a first trial a bed of 100 square feet is prepared and spawned. This amount of spawn will cost about \$3.75. The horse dressing needed for a bed of this size will cost you at most only \$4.50 delivered. In many places you can get it free for the asking, if you will take it away. From the bed we will estimate that 100 pounds of mushrooms are gathered. This would be but one pound to the square foot of bed and is extremely conservative. A good bed rightly made should yield 2 pounds of mushrooms to the square foot, or 200 pounds from a bed of 100 square feet. The average selling price is around or between 50 cents and 75 cents a pound. At certain seasons of the year they will

sell for \$1.00 and \$1.25 a pound. (The average price we get for our mushrooms by the year is \$1.00 a pound.) We will infer that the low price of 50 cents a pound is paid you, viz., 100 pounds of mushrooms at 50 cents a pound is \$50.00, less cost of spawn, \$3.75, and manure, \$4.50 (manure may have cost you nothing), which amounts to \$8.25, leaving a net profit of \$41.75.



—Courtesy of National Spawn & Mushroom Co.

#### A REMARKABLE BED OF MUSHROOMS

Mind you we are figuring only on 100 pounds from the bed, sold at the low price of 50 cents. Should you get 200 pounds of mushrooms from the bed and sell them for 75 cents a pound, your profit would be \$100 or \$141.75 net. Figure on the smaller profit, however, and you will be pleasantly disappointed if you make more. A bed 10 feet long by 10 feet wide containing 100 square feet is a small bed, comparatively speaking. If you have space that will accommodate larger beds your profits will be larger in proportion.

Do not start too small a bed if you have plenty of space as the heat of the dressing holds better in a bed of a fair size than in a small one and results are more satisfactory.

The mushroom industry is not crowded and the supply cannot equal the demand for many years.

Remember this is an occupation that can be readily undertaken by either sex.

Women and children can grow mushrooms as easily as flowers and plants and besides the business will yield a handsome profit for time expended. The bed could be made by some male member of the family and after that they could do all the work themselves. If there, however, is no one to do this, a man could be hired at small expense as the operation only consists of watering and heaping the horse dressing and putting it in the bed. After that, it is nothing hard or dirty to do.

No lady in the land would hesitate to pick mushrooms in the open field. How much less then, should she hesitate to gather the fresh mushrooms from the clean beds in her own cellar.

Many people are content to plod along in the same old rut and dislike to undertake anything new. They wait and keep putting off and finally when they awake the chance is gone. You know the old adage, "Fortune knocks but once at each man's door." This may be your opportunity. Don't let it go by.

One man in a suburb of Boston sold a three months' crop for \$1,100, and made extensive additions to his plant. Another grower was offered \$1,200 for his crop, still to come, but preferred to wait and increase his profits. Similar profits, only smaller, from smaller investments, occur daily, but pass unnoticed because unknown. This publication of the facts by us is for the purpose of making people acquainted with the wonderful possibilities of this business.



MUSHROOM

## HISTORY OF GINSENG

By DOUGLAS E. McDOWELL.

### Ginseng Is a Chinese Word Meaning Man-Shaped

THE American Ginseng is a plant closely related to the Parsley family, in which family are included the parsnip, carrot and celery. The American plant is a very near relation of the Chinese and Corean root—Panax Ginseng—which is so highly prized by the Chinese. The root has been used constantly in China for centuries. A report of the high estimation in which it was held in China reached America early in the eighteenth century. Father Jartoux, a missionary in China, gave a description of the plant and sent samples of the roots, seeds and leaves to Father Lafitau, who was a missionary among the Iroquois Indians in Canada, and who thereupon began a search for it. He soon found roots answering the description of those sent by his brother missionary, and after due time it proved to be a near relative of the Chinese root—Panax Ginseng. This discovery was made near Montreal, Canada, in the year 1716.

Soon after its discovery, the French, who then controlled Canada, began to gather it for export to China through their Indian agencies. The demand in this way created grew so large that Ginseng soon became a very important article of export. The first shipments were very profitable to the traders, the roots costing 40 cents per pound in Quebec and selling for \$10 per pound in China. At that time the Company of the Indies controlled the trade between Canada and China. At first the exportation of the root was looked upon with so little favor that the business was given to the sailors as an extra inducement to remain in the service. The business, however, soon grew to such proportions and the profits were so great that the Company took control of it in 1751. At this time Ginseng in Canada was worth \$2.40 per pound, but the Company soon "boomed" the price to \$10 or more per pound. This high price caused the Canadian hunters to gather the root out of season, improperly to clean and

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dry it and doubtless to adulterate it with other and similar roots. A large lot of this inferior root was shipped to China. The Chinese refused to purchase it at any price. A few shipments of inferior roots soon lost the Chinese trade and ruined the reputation of American Ginseng. This occurred in 1754, and for several years thereafter the Ginseng trade from America entirely ceased.

### Its Propagation

Ginseng is propagated by its seed. In a few cases roots have branches, sometimes three or four roots springing from



GINSENG ROOT  
(Human Form)

—Courtesy Douglas E. McDowell



FIG. No. 2

one root-stalk. These may be cut off close to the stalk and each root will make a separate plant. Very few roots may be secured in this way, however. The grower must depend upon the seed for its extension. The seeds do not germinate for eighteen months. For instance, seeds gathered and planted in the autumn of 1922 will not come up until the spring of 1923. Regular Ginseng growers, as a rule, plant the seeds when gathered. They plant the seed while it is still in the berry, before the pulp in the berry has decayed. If for any reason the grower does not desire to plant the seed when gathered, they are placed in moist earth or sand in a box in a cellar, or the box is buried in the ground. Seed so kept one year and planted in the fall will germinate

the following spring. Or they may be kept eighteen months and planted in the early spring, in which event they will come up the same spring they are planted. Seed kept in moist earth, for want of a better name, are called "stratified" seed.

### Natural Home of the Plant

The natural home of Ginseng is in the wilds of the forest. Those who commence the cultivation of the mysterious root should always bear this in mind, and make the environments of the garden as near like the primeval forest as possible. In other words, make the surroundings shady and cool and the soil rich. In its wild state it thrives best in the rich, moist, but well-drained soil in which the oak, hickory, beech, maple, basswood and similar timber thrive, but will not grow in low, wet, marshy soil. Forest soil in which there is a wealth of leaf-mould and has a fairly light texture is the kind of soil for Ginseng. However, the character of the soil need not deter the beginner, for any soil can be easily and cheaply made as rich as any forest. In the absence of leaf-mould, well-rotted horse manure does as well. In the absence of these fertilizers get some of the rich dirt around the base of an old straw stack. In other words, if the reader intends to grow Ginseng, let him make the soil rich. A garden that will produce vegetables will produce Ginseng. Go into the woods where the May-apple thrives and study conditions there.

### Ginseng in the United States

About the time Ginseng was commanding such a high price in Canada, the Yankee, never to be outdone, made discoveries of the root in the American Colonies, first in the western part of New England generally, afterwards in New York, Massachusetts, and indeed in all the colonies. These discoveries were made prior to the American Revolution and the price at that time was about 25 cents per pound.

As the population moved west, Ginseng was found in the timber sections of all the states east of the Rocky Mountains. It may still be found wild in small quantities in all these states. Whether Ginseng has ever been found wild west of the Rocky Mountains the writer is not informed. It is, however, being cultivated successfully in that section.

## Description—Botany

When the Ginseng plant is old enough to produce fruit (seed berries) it is quite conspicuous in the forest, especially about the month of August, on account of the cluster of red berries at the forks of the stem. Until the plants are three years old they are small and not conspicuous. In the State of Missouri (later of course further north and a little earlier



—Courtesy of Douglas E. McDowell

FIG. 1—FRESH ROOTS OF GINSENG FROM CULTIVATED PLANT.  
 (a), ONE YEAR OLD; (b), TWO YEARS OLD; (c), THREE  
 YEARS OLD; (d), FOUR YEARS OLD; (e), BUD;  
 (f), LEAF SCAR.

farther south) the seedlings appear about the first of May, some years earlier and some later, the time depending upon the season. When they first come up they resemble newly sprouted beans on account of having one little leaf-stem and three leaves. The first year the plant attains a height of

about two and one-half to three inches. The work of the plant the first year seems to be to develop the bud at the top of the root which produces the next season's stem and leaves. In the autumn, usually after the first frost, sometimes before, the stem dies and breaks off, leaving a scar on the root, at the side of which is a single bud. The spring of the second year this bud produces a single straight stem which has two to three leaf-stems on it and three leaves to a stem. The second year the plant rises 4 to 5 inches from the ground. The third year ten or fifteen leaves are usually put out and the plant grows from 6 to 9 inches high. After the third year the plant may produce from four to seven leaf-stems with twenty to twenty-five or more leaves. They grow from 10 to 24 inches high. After the second year each fork of the leaf-stem has five leaves. From this regular number of leaves the plant derives its botanical name—quinque folia.

### The Seed

The third year and each year thereafter, at the point where the leaf-stalks meet, the stem is continued straight up, and at the end of it, late in June or early in July, is a small cluster of yellowish-green flowers. These flowers soon turn into little green berries about the size of a small pea (Fig. 2). There are from 15 to 80 berries in a cluster. In August these berries turn a bright red. In September they begin to fall off, and should then be gathered, for the berries contain the seeds. A part of the berries contain two seeds and a few three seeds; the others contain but one. Sometimes plants will bear the seeds the second year, but such plants are rare. The third year they produce a good crop and continue to do so for years.

### The Roots

The part of the Ginseng plant which is of commercial value is the root. The root is composed of two parts, the root-stalk and the root proper. The former is a slender, rough, usually crooked stem, running from the root to the leaf-stem. It is of no commercial value. It is full of scars. Each scar indicates one year's growth. There are roots now on exhibition with sixty-four scars on the root-stalk. The size of a root does not indicate its age, for after several years' growth the root seems to shrivel up and get smaller. The

writer has seen Ginseng roots a quarter of a century old not more than one-third of an inch in diameter, others five years old an inch in diameter and weighing several ounces dried. Sometimes new roots form on the root-stalk of an old one and thrive as well as seedlings, while the old one dies and sloughs off.

The Ginseng root is spindle-shaped, simple and almost straight at first, but when three or more years old usually branches. Its size is from  $\frac{1}{4}$  inch to nearly 2 inches in diameter and from  $2\frac{1}{2}$  to 8 inches long, the size depending upon the food it lives on and the care in its cultivation. Its color is a light yellow.

### The Profits

Ginseng is the most valuable and profitable crop in the world. More money can be made from a few square rods of ground than from the average farm, and with one-tenth of the labor. As a safe estimate, 1,000 roots will grow on one square rod of ground, which makes 160,000 to the acre. Some growers claim as many as 200,000 and even more to the acre, but the writer's experience shows 160,000 to be about right. Setting the roots 6 inches apart in rows, making due allowance for paths between the beds, an acre will be found to contain about 160,000 roots.

One square rod of ground produces 1,000 roots, set 6 inches apart each way, allowing for walks between the beds. Estimating ten roots to the pound (at the age of five years) gives 100 pounds; when dried 33 1-3 pounds. At \$6.00 per pound, it makes \$200. While making the five years' growth, the roots would produce 200,000 seeds, or at present wholesale prices, \$500.00 worth of seeds. But, leaving the seeds out of the count, for one square rod of Ginseng five years old, we have \$200.00; or for an acre we have \$32,000. This estimate looks unreasonable and most people will not believe it, but it is a conservative estimate, nevertheless.

There are many ways to make money in giving Ginseng a trial on a small space which will grow into a valuable crop in a few years.

## GOLDEN SEAL

Grown in America and Consumed in America

**G**OLDEN SEAL is a perennial plant, the same as Ginseng. It is known by a dozen different names, but the most common ones are as follows: Golden Seal, yellow root, yellow puccoon, orange root, Indian dye, curcuma, wild tumeric, jaundice root and ground raspberry. The medical name is *Hydrastis*.

The plant is found wild in nearly all the timbered parts of the United States east of the Missouri River, and in Ontario and Quebec, Canada. Like Ginseng, it has rapidly faded away from most parts of the country, as the timber was cut down, for, like Ginseng again, it grows in the shade.

The plant grows about a foot high, and has two leaves (in rare cases three). Each leaf has from five to seven lobes, and the lobes are sharply and usually unevenly toothed. The leaves on a good healthy plant are from 6 to 8 inches in diameter. It comes out very early in the spring, but it takes a month or more for the leaves to expand and come true to the above description. For this reason it takes an experienced person to locate the plant in the woods in the early spring. About the time the leaves are fully expanded the plant blooms, but very few ever see the bloom, for it lasts but two or four days. The bloom or yellowish flower turns into a berry-like head and in July and August turns a bright red, resembling a large raspberry. This is why the plant got the name of ground raspberry. Unless the season is a wet one the plant dies down sooner than other vegetation.

The root is the part used in medicine, always being prescribed as *Hydrastis*. The full-grown root is a bright yellow, the inside being the brightest of lemon color and the outside darker. A matured root is  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches long and  $\frac{1}{4}$  to  $\frac{3}{4}$  of an inch in diameter. Each root has dozens of little rootlets or fibrous roots. When broken, the fresh root gives off a rank, nauseating odor. It is crooked, knotty and wrinkled. On the upper part of the root are several depressions, left by former annual stems, which resemble the imprint of a seal, hence the name Golden Seal.

Golden Seal is propagated in three ways: (1) by seeds; (2) by the division of the large roots, and (3) by suckers or small roots which form on the largest fibrous roots. The seeds are gathered when ripe and treated the same as Ginseng seeds. They germinate the first spring. The best way to succeed with Golden Seal seed is to plant them as soon as they are gathered. The truth is that very few people succeed in getting results from Golden Seal seeds.

The second method is the really sure and successful one of propagating Golden Seal, namely: by a division of the roots. This is done by taking a large root and cutting it into pieces about one-third of an inch long. Do this in the fall. Put these pieces in a box with rich, moist earth, place the box in a cellar or other place where it will not freeze, keeping it moist, but not wet, and in the spring each piece of root will have a nice bud on it, ready to grow when set out. In the third method the little roots which form on the fibrous roots send up a plant. These plants are dug up and set out into regular beds.

Golden Seal needs a rich, loose and moist soil, but well drained, and a bed of it should be mulched. Indeed, it is grown under the conditions as Ginseng, but will thrive under less shade. About half the sun should be excluded from a Golden Seal garden, though it does all right in a denser shade. In truth, the writer grows his Golden Seal right inside the Ginseng gardens under exactly the same conditions as Ginseng.

The production of Golden Seal is about the same as Ginseng—about 5,000 pounds of dry root to the acre—but it matures a year or two sooner. Most growers claim that the time to dig it for the dry root market is at the age of three years. The writer's experience is four years. It does not increase in size much after the fourth year, and after that it deteriorates.

Twelve years ago the price of Golden Seal was about 40 cents per pound. It has gradually gone up until now it is in good demand at \$4.75 per pound. It is used as a medicine principally in the United States and Canada. Any physician can tell you its uses.



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