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MINK RAISING

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Contents

	Page	:		Page
Preliminary considerations	1	:	The young	5
Pens	2	:	Hints on management	6
Nest boxes and other equipment	3	:	Sanitation	6
Breeding stock	3	:	Animals to be pelted	6
Food	4	:	Killing	7
Feeding	5	:	Pelting	7
Mating	5	:	Periodicals useful to mink farmers.	8

Preliminary Considerations

The raising of minks in captivity for their furs dates back in the United States to 1866. The degree of interest in the enterprise was for a time dependent more upon the pressure applied by promoters than upon the prices received from the skins. In later years, however, the accumulated knowledge of proper methods of breeding, feeding, and management has put operations on a sounder basis because of the greater number of minks that can be produced and saved to pelting time, the improved quality of pelts, and the lower costs resulting therefrom. The first ranch-raised mink skins were decidedly inferior to the wild-caught, but at the present time (1937) the average quality of skins of minks raised on farms is superior to that of skins taken in the wild. This is to be expected because observant and efficient mink raisers have the opportunity to improve the quality of their animals by controlled selective matings, proper and regular feeding, and intelligent management.

It is estimated that about 100,000 ranch-raised mink skins are now produced annually in the United States. Whether the market will be over supplied in the near future no one can now predict. Naturally there will be a constantly increasing number of mink raisers as long as a good profit can be derived from the enterprise. The history of all business undertakings demonstrates that eventually the number of persons interested reaches the point where a certain percentage who are inefficient

invariably produce at a loss, but there is always a good market for high quality goods. Mink raising is no exception. A person who contemplates entering the business of raising minks should keep definitely in mind that quick riches are not to be found in it, and though it might look most promising (always the case with new industries), the permanent basis is found only in the market skin produced under constantly increased and keener competition.

Good judgment dictates, therefore, that a person should start raising minks only if he is determined to make the undertaking permanent on the basis of marketable pelts. Mink skins are a quality fur used at the present time primarily for coats, capes, and trimmings. Prosperous times are conducive to increased utilization, and new uses will expand the market. The diminishing wild supply makes it imperative that increased numbers of skins be supplied from mink ranches.

Certain other fundamentals must be borne in mind. In the United States most of the ranch-raised minks are produced in the northern half of the country or elsewhere at high altitudes, the colder climates apparently tending toward a better development of fur. Until more definite information is obtained it might be advisable for the beginner to be guided by this general tendency. Some States require licenses for raising fur animals in captivity. Information on this matter can be had from the State game commissions. Some towns have restrictive ordinances. Minks do not require running water in which to swim, in fact, many mink raisers believe it to be harmful to the production of good pelts. Mink pens need not be large. As raw meat should constitute more than 50 percent of the mink ration, a cheap source of supply should be available. If after due consideration these general points have been satisfactorily determined, the prospective mink raiser can then consider the details of mink raising.

Pens

Many types of pens are in use and have proved satisfactory. It is best to provide a pen for each breeding animal, male or female. Individual pens can be made by stretching 16 gage, 1-inch mesh, woven wire, galvanized after weaving, over a wooden frame 5 or 6 feet long, 2 feet wide, and 1 1/2 to 2 feet high. These pens are placed on the ground during the week before and the three weeks after whelping so that the young may not fall through the wire and die. During the rest of the year the pen is elevated 6 inches or more above the ground for sanitary reasons.

A colony house or shed with a 6-foot escape-proof alley has given good results at the United States Fur Animal Experiment Station maintained by the Biological Survey at Saratoga Springs, N. Y. These pens, which have a solid wooden partition, made from 1-inch shiplap, are approximately 6 feet long, 2 feet wide, and 1 1/2 feet high. They are made of 16-gage, 1-inch hexagonal-mesh wire, galvanized after weaving, and the floors are approximately 2 feet above the ground. About two-thirds of each pen extends beyond the roof of the colony house, thus providing sunshine for the health and sanitation of the breeding

stock. Artificial shade when needed may be provided by roofing paper. A wire-hinged lid for that part of each pen under the roof facilitates watering, feeding, or, when necessary, catching the minks. If the sides of the pens are made of wire they should be about 4 inches apart, to prevent the animals from fighting through the wire. The end part of the pen under the roof is made of lumber to provide a place for hanging the nest boxes. A hole 3 1/2 inches square is made about 5 inches from the floor as an entrance to the nest box. The edges are covered with metal to prevent chewing the wood and rubbing the fur. A metal slide should be provided for confining the minks to the nest box if desired and a solid temporary floor for these elevated pens during the first 4 weeks after whelping.

Nest Boxes and Other Equipment

A wooden nest box that has proved satisfactory at the Fur Animal Experiment Station for the colony-type house is 10 inches square and 18 inches deep, with the entrance 11 inches from the bottom. This depth prevents the young minks from crawling out before they can take care of themselves. The inner removable lid to the nest box is made of wire on a wooden frame. This is fastened down with metal buttons. The solid outer lid is fitted so as to leave a ventilation space on each side. The darkness thus provided gives seclusion to the minks. These nest boxes rest on a 2 by 4 at the required height and are hooked to the front of the pen.

A commonly used type of outdoor nest box has a gable roof with entrances at the peak on each side. One side of the roof is hinged so as to be lifted for putting in bedding or for examining the animals. The body of the nest box is about 10 inches square and somewhat deeper than wide. It is set inside the individual outdoor pens and may be laid on its side to make it easier for the young minks to enter.

An elevated wooden feeding table or a 6-inch aluminum pan should be securely fastened on the floor. Fresh drinking water should be available and this can be most easily provided by so designing the drinking pan or the opening that the animal cannot get into the water. The details of a sanitary drinking fountain for summer use is described in a mimeographed leaflet (BS-40) obtainable from the Biological Survey on request. A wire catching box narrow enough to keep the minks from turning around is useful in examining the fur. A catching net should also be handy to recapture any minks that may get loose in the alley way.

Breeding Stock

The original stock should be purchased from some good, reliable breeder. The Department of Agriculture does not maintain a list of breeders, but the names and addresses may be obtained from State, regional, or national fur farmers' organizations, a list of which (Bi-1357) can be had from the Biological Survey. Furthermore, the Department does not furnish information as to the integrity or financial standing of any individual or concern.

There is much controversy on the various strains of minks. The two most common, however, are the Yukon and the Eastern. The Yukon is considered to be a large, prolific mink, and the fur is rather coarse and long. The Eastern mink possesses a better quality of fur and a thinner skin, but doe not breed so readily as the Yukon. Male minks are much larger than females. Dark chocolate colored, fine quality, densely furred, thin-skinned animals are desired. These points can best be judged in fall just before pelting time. Beginners in mink raising will do well to rely upon the judgment of reliable experienced mink ranchers for selection of the best type of animals. Much valuable information can be obtained by visiting some of the best ranches, attending live mink and pelt shows, fur auction sales, and raw-fur houses making a specialty of mink skins.

In the selection of stock, in addition to knowing the individuality of the animals, particular attention should be given to an adult's past breeding performance, or in the case of a kit, to the prolificacy of the parents, and to constitutional vigor and freedom from disease. Most satisfactory results will be attained by the beginner if one male is bought for every two females. Later it may be found that fewer males are needed. Good selected breeding stock will cost from two to three times the value of the pelt it carries. It will pay to invest only in high-class animals.

Food

From 50 to 70 percent of the mink's ration, depending upon season of the year, should consist of muscle meat (2 parts) and viscera (1 part) of horse, cow, or sheep. The viscera may be heart, liver, lungs, kidneys, spleen, or brains in varying proportions. A variety is desirable. Some tripe can be fed in summer and fall. Whole fresh-ground fish or canned fish may be substituted for 35 to 40 percent of the raw meat. Contaminated fish or meat should never be used. Chicken or rabbit heads or rabbit carcasses can be used if fresh.

If the meat is ground it can be readily mixed with other parts of the ration and will also prevent the minks from carrying large portions into the nest box or wasting it. Proper refrigeration should be available on the ranch or in nearby cities for preserving quantities of meat and feed.

A satisfactory dry mixture is as follows:

	<u>Pounds</u>
Bread meal (whole wheat)	150
Catmeal	150
Alfalfa leaf meal	50
Wheat germ	50
Fish meal (nonoily, vacuum dried). . . .	100
Skim milk powder	50
Total	550

Byproducts of cereal-food manufacturing companies if procurable at a reasonable price are desirable. The dry mixture should constitute from 15 to 20 percent of the ration. The ground green bone should be 5 percent, and such ground vegetables as tomatoes, carrots, turnips, and green lettuce, 5 percent. Add salt to

the extent of about one-half of 1 percent of the ration as fed. The remainder, about 15 to 20 percent, should be of water or clean fresh skim milk, sufficient to make the entire ration of a hamburger consistency. Very little experimental work has yet been done on feeding minks, so it is not definitely known to what degree desiccated packing-house products and other protein meals can replace the raw meat.

Feeding

The quantity to be fed each mature mink daily will vary from 5 to 9 ounces, depending upon individual and sex. The animals should be kept thrifty but not overly fat. One feeding a day in the evening is sufficient for mature minks except during lactation, when two a day are desirable. A female will eat very little a day or so before and after whelping. Young growing minks should be fed twice a day and will readily eat more than mature minks. About one-third of the daily food allowed is given at 8 a.m. and two-thirds at 4 p.m. It is desirable to collect rejected food two or three hours after feeding.

Many large breeders have adopted the practice of feeding on the wire above a feeding table or in winter on the wire above the nest box. This, of course, can be done only if the feed is of the right consistency. These producers consider that no more food is lost in the nest box by feeding above the wire than would occur when the mink runs to the nest box with a large mouthful. The nest box should not be allowed to become contaminated with food. Poorly or sick minks should receive special consideration in the way of choice rations of meat, milk, or eggs at the rate of 1 egg per 10 minks. Young orphan minks may be suckled by a cat, or fed a good mixed porridge with whole milk.

Mating

The mating season in the mink occurs principally during March. Eastern minks breed about 10 days earlier than Yukons. The oestrus, or heat period, occurs once a year, but its length is not definitely known. A good rancher can tell by the actions of the female when this period is approaching, but it will pay a beginner to start testing each female about the first of March by placing a male with her every second or third day. Some breeders prefer the practice followed at the United States Fur Animal Experiment Station of taking the female to the male's pen. The mink can be caught in the nest box or in a special catching box and carried to the desired pen. An aggressive male will pursue his mate and attempt service if she is in heat. If in heat she will not strongly resist, but if a fight ensues the pair should be separated and a retrial made a day or two later. A service may last 30 to 40 minutes or even longer. After one mating the pair should be put together about 6 days later to determine whether the female is already pregnant. She should be tried then at two or three day intervals until she shows a rather savage attitude toward the male. This action usually indicates pregnancy. Kits should not be mated with pugnacious older animals.

The Young

A record should be made of the breeding date. The gestation period extends 45 to 60 days. The mewling of the kittens will indicate that whelping has

occurred. From 4 to 10 kittens are born to a litter. Unless something unforeseen develops they should not be disturbed for a week or so, though the experience of the rancher and his knowledge of the individual animal should be the final deciding factor in this matter. The young minks grow rapidly and when they are about 3 weeks old will begin eating their mother's ration, which she carries to them. They will come out of the nest box when four or five weeks old and should be weaned at seven or eight weeks of age. Litter mates of one sex may be kept in the same pen for a few weeks if it is large enough. An average of four weaned minks for every adult female on the farm is a satisfactory proportion. Some females, of course, do not breed, and others lose their litters.

Hints on Management

The keeping of records is most important to good management in the minkery. Recorded information will assist in selecting breeders and in making the desired matings for improvement. An identification tag should be on every pen and should be transferred to the new quarters when the mink is moved. Nest boxes should always be kept dry and warm by frequent regular changes of the fine absorbent bedding. The last cleaning of the nest box before whelping should be not later than 10 days before that event. The bedding should be changed more frequently when it is full of partly grown minks. Careful management, based upon a knowledge of the characteristics of individual animals, is necessary for the greatest success in mink raising.

Sanitation

Sanitation is also most essential for profitable mink raising because it is largely responsible for the health and well-being of the stock. Regular, frequent, and thorough cleaning of pens and nest boxes is highly important in controlling insects and parasites. (See leaflet Bi-1235 of the Biological Survey, entitled "Parasites of Minks and Their Control.") The free use of a good disinfectant assists materially in controlling parasites and the outbreak or spread of disease. Clean feeding rooms and dishes help prevent digestive disturbances. Precautions in all these matters will be highly profitable. A leaflet (No. 47) on Hygiene in Fox Farming, obtainable free from the Department, gives general information of value to mink raisers.

Animals to be Pelted

Some time during August animals to be pelted should be put into individual pens entirely protected from sunlight. Some of the more successful mink farmers have provided suitable furring pens by bending woven wire to form an oblong pen, of proper size placing these on two logs to raise the pens about 6 to 8 inches off the ground and then covering the entire row of pens with tar paper. After pelting, the pens can be stacked and the premises cleaned and disinfected.

It is considered desirable to reduce the percentage of muscle meat in the ration for animals to be pelted and substitute tripe and other non-glandular organs. The proportion of dry mixture also should be increased. The time of pelting will vary with location and season, but is usually in December. The fur then appears to be full of life, glossy and dense, and completely grown out.

Killing

There are several methods of killing, but most of them are based upon the principle of confinement in a small, air-tight box having a small hole through which some kind of lethal gas, such as carbon monoxide, cyanogas, chloroform, or carbon tetrachloride, can be introduced.

Pelting

The mink is more easily skinned if this is done while the carcass is still warm. A slit is made with a sharp pocket knife up the back of each hind leg, starting at the inside of the paw and running to the hock, then from the hock to a point just below the root of the tail. The back of each front leg is slit in the same manner from the paw to the first joint. The skin is then worked free from the flesh from the first joint to the claws. The bones of the foot, including also the claws, are cut free from the pelt. Then a slit is made in the tail from the root about half its length, so that the bone can be pulled out. The carcass is then hung on a hook or nail by the tendon of the hock joint and the pelt is pulled down, the knife being used whenever necessary to free it, until it is removed as far as the neck. Careful work is then necessary to cut around the base of the ears, including them in the pelt, around the eyes, and around the mouth and lips.

The pelt should be kept as free as possible from blood and dirt during these operations. All loose fat and flesh should be removed at once and the pelt properly scraped. This may be done with a special instrument purchased for this purpose, the dull edge of a stick, or even a large spoon, the skin having first been slipped over a stationary board of the proper size and set at the desired angle for satisfactory work. The use of an abundance of fine hardwood sawdust sprinkled over the flesh side will aid materially in absorbing surplus blood and fat and will also cause the scraping instrument to take hold better.

Some breeders put the pelt on a drying board and set it aside over night before scraping. By this time the fat will have hardened and will therefore be much more easily removed.

Scraping is a most important operation. Too close scraping exposes the roots of the guard hairs and fur and causes them to come out. It is much better not to scrape enough than to overscrape. The proper technique can be acquired only by experience, consulting with successful breeders, and discussing this point with those who have previously used some of your own dressed skins.

The pelt is pulled fur side in over a special board for drying. Boards of the proper size and shape can be obtained from supply houses. Do not over-

stretch the skin as this tends to make it flat in fur. Tack it to the board and set aside to dry away from stove and open blaze.

Periodicals Useful to Mink Farmers

Mink farming on a commercial scale is of such recent growth that new and better methods of feeding, breeding, and management are being continually developed through research and in practice on fur farms. Many bits of information along these lines are to be found in fur farming journals, to one or more of which every mink raiser would do well to subscribe. Undoubtedly the publishers would be glad to send sample copies upon request. A partial list with addresses and annual subscription prices follows in alphabetic order:

- American Fur Breeder, Manhattan Building, Duluth, Minn. \$1.
- Black Fox Magazine, 404 Fourth Avenue, New York, N. Y. \$2.
- Canadian Silver Fox and Fur, 134 Adelaide Street, W. Toronto, Canada. \$1.
- Fur Journal, 72 Columbia Street, Seattle, Wash. \$1.
- Fur of Canada, McIntyre Building, Winnipeg, Canada. \$1.
- Fur Trade Journal of Canada, Box 31, Toronto, Canada. \$1.
- National Fur News, 2133 Blake Street, Denver, Colo. \$1.