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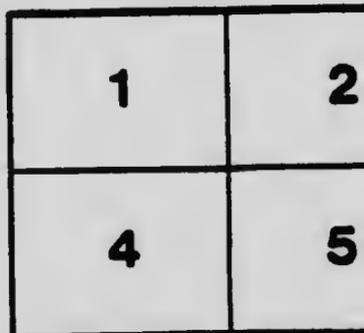
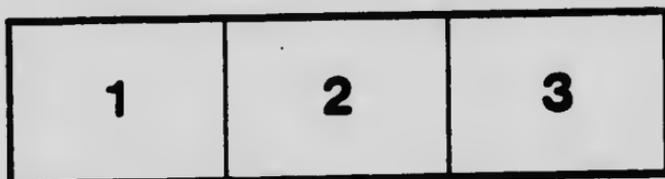
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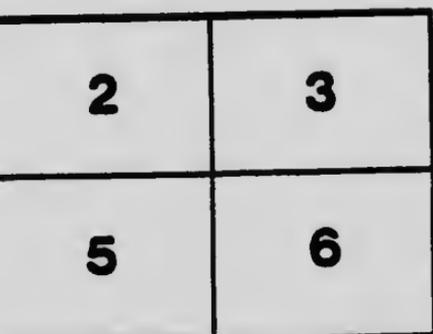
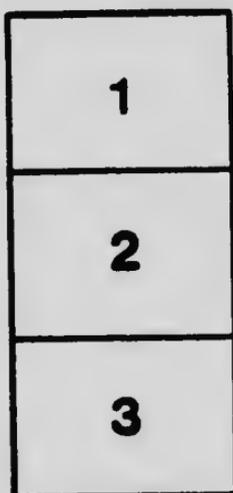
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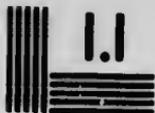
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FOX FARMING

**Instructions issued by The Game
and Inland Fisheries Board of
Newfoundland relative to
the Propogation of
Foxes**



**ST. JOHN'S, N.F.
Robinson & Company., Limited, Press
1913**

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PREFACE

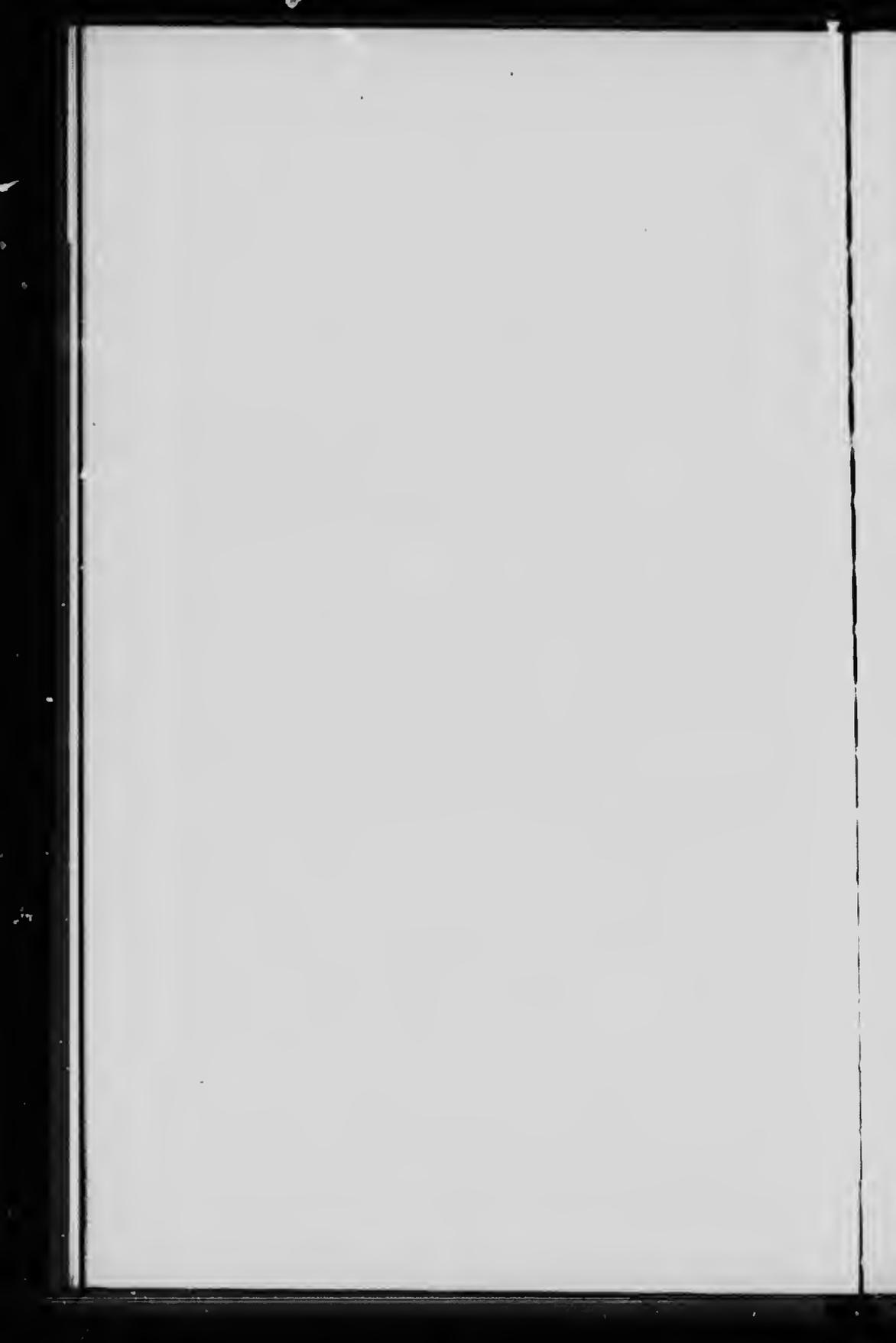
The information contained herein has been extracted from a pamphlet recently printed by the Department of Colonization, Mines and Fisheries, Quebec, entitled, "Fur Farming in the Province of Quebec," and issued under the direction of the Honourable C. R. Devlin, Minister of that Department.

The paper containing this information is the work of E. T. D. Chambers, Esq., Special Officer Fish and Game Branch, and the thanks of the Newfoundland Inland Game and Fisheries Board have been forwarded to the Department of Colonization, Mines and Fisheries and to Mr. Chambers for their kind permission to reprint the valuable instructions contained herein.

Fox raising has proved a money making business to those who have engaged in it, and the acquirement of wealth by those who may undertake the business is assured, provided ordinary intelligent management is exercised in carrying out the instructions which will be found herein.

This industry may within a few years rival in value our combined Cod and Seal fisheries, and can be engaged in by our people in many cases without interfering with their usual occupations.

The careful perusal of this pamphlet is earnestly suggested by this Board.



FOX FARMING

The supply of fur-bearing animals is gradually decreasing everywhere, with the exception of the extreme North, and this decrease is concurrent with a constantly increasing demand for the highest priced and finest qualities of furs.

The only practical proposal yet made for the preservation of valuable species and for meeting the continually increasing demand for the higher quality of furs, seems to be the raising in captivity of fur-bearing animals upon the same lines as the farming of domestic cattle.

Fur farming is no longer an experiment, at least so far as foxes and muskrat are concerned. Unless these animals are raised in captivity in considerable numbers, they will be unable in the not-far-distant future to hold their own against the constantly increasing number of trappers and fur dealers.

The Hon. Chas. A. Dalton, of Tignish, P. E. I., was one of the pioneers in the industry, out of which he has accumulated a large fortune. Commencing a score of years ago with two Black foxes, he has cleared as much as \$42,000 of net profit in one year out of his ranch, and in 1912 formed a joint stock company to take over his fox raising property and stock at a valuation of \$600,000.

Only a short time ago, Mr. James Tuplin, of Black Bank, P. E. I., sold his Silver fox ranch for \$250,000 for removal to New Brunswick. Many other large fortunes have also been made in this industry, both in New Brunswick and Prince Edward Island.

The Silver fox ranch of Mr. Bectz is valued at over \$200,000.

It is a question for those without much experience of wild animals, who may desire to undertake the farming of foxes, to consider in the first place whether they should not experiment for one year with Red foxes, even if they had the means of commencing with a pair of Black or Silver foxes, costing perhaps from \$7,000 to \$10,000; for it must be well understood that the difference between a Black or Silver fox and a Red fox is less than skin deep, being simply one of color and not of variety; the habits, the treatment, the food and all other requirements of the animal being the same, no matter whether the fur be red or black.

As a matter of fact, there is a large profit to be made out of the farming of Red foxes. A good skin is worth \$8.00 to \$9.00, so that when it is considered that a fox may be kept for about a cent a day, it will be seen that it is more profitable to rear these animals than to farm sheep or hogs.

There would seem to be no reason why this Colony should not be the scene of the largest and most important fox ranches in the world. Hundreds of thousands of acres might be devoted to the industry here, and it is a well known fact

that the farther north the skins are grown, the richer is both the texture and the lustre. At present it is claimed that the richest black and silver fox skins in captivity are raised in Prince Edward Island. A similar industry established here, in our north country, with parent stock of superior strain, will not only equal, but will easily excel the best of the fur now raised in the island province.

CHOICE OF A LOCATION.

In selecting the location of a farm or ranch for fox farming, it is desirable to avoid limited quarters in or near a city or town, or even in a small village where foxes might be disturbed by visitors, for in such cases they become restless and suspicious and do not breed well. Foxes require very little space and sometimes thrive in enclosures not more than forty feet square. Some have been successfully raised in stables or other small buildings, but the fur only attains its richest, thickest and most valuable qualities when the animal is kept out-of-doors, and when kind nature furnishes the necessary degree of warmth in the superior quality of the fur. The enclosures may be but a few yards from a farm-house, or even if visitors are excluded, in a quiet place on the outskirts of a village.

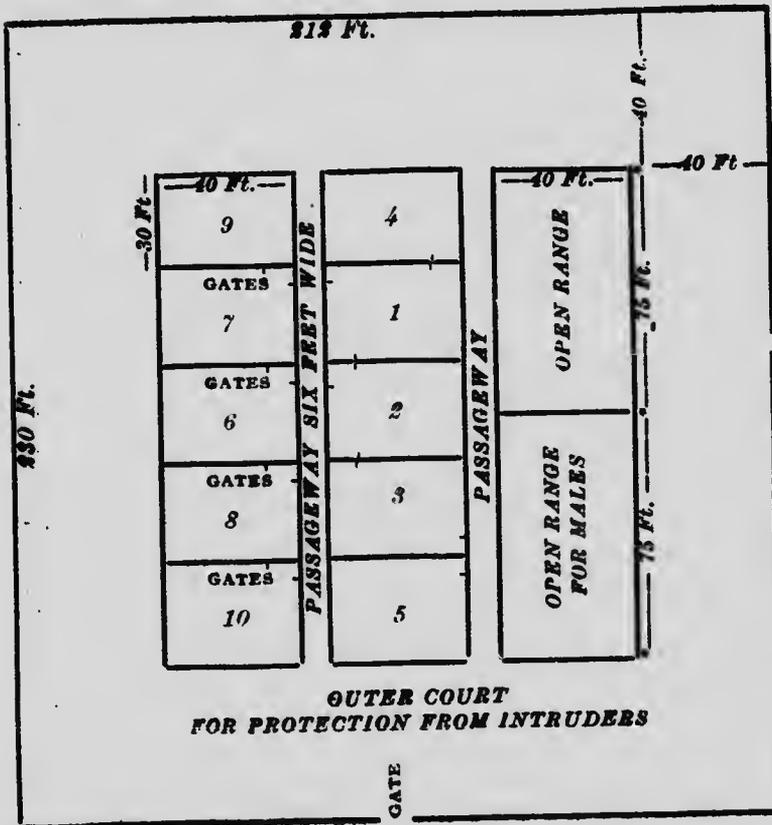
A total space of 5 acres is ample for extensive operations, and it is not likely that more than 2 acres will be needed for any except a large and long-established business. A half acre will accommodate about 6 pairs of foxes, which is quite as many as a beginner should attempt to handle.

The selection of ground may depend upon circumstances, but effort should be made to include a few trees or small shrubs. These afford shade and a feeling of seclusion and security to the animals, but should not be high enough or near enough to the fence to enable the foxes to jump from them out of the enclosure. Perfectly open ground has been used with fair success, and in other cases yards have been situated in thick woods. Neither extreme is to be desired, but many trees are better than none at all. For the sake of cleanliness, sandy soil should be selected wherever possible.

ENCLOSURE AND EQUIPMENT.

Enclosures for foxes are generally made with some of the many varieties of woven-wire fencing. No. 16 galvanized wire is strong enough, but not so durable as No. 14. The mesh should be not greater than 2 inches, for young foxes are able to wriggle through an opening 3 inches square. The fencing should be about 10 feet high and sunk into the ground 2 feet, while at the top, 2 feet should be allowed for an inward overhang to prevent the animals from climbing out. The sunken part may be turned in 1 foot or more, and flat stones may be laid at the edge to prevent escape by digging. Experience shows that this precaution is rather more than is necessary, for since the foxes try to escape only by digging at the edge of the wire, sufficient security is obtained by merely sinking the wire directly into the ground. The use of stones, however, is usually but little additional expense. The over-

hanging horizontal wire is easily adjusted along the top of the fence by means of cross pieces on the posts. This is essential, for foxes are good climbers, and in winter snow often greatly reduces the distance to the top of the fence. The arrangement of subdivisions will necessarily depend somewhat upon circumstances, but the general plan should in most cases conform to that shown in the accompanying diagram. Here a wide outer court is provided, separating the smaller enclosures in which the foxes are actually kept, from the unfenced area.



The court shown in the diagram is only 40 feet wide, but it might well be much wider, since its object is not so much to give additional security as to prevent curious visitors or stray domestic animals from annoying the foxes. As the foxes may be annoyed merely by seeing persons or animals at a distance, it is best to have a wide outer court containing, if possible, bushes and trees. This outer court may be kept locked, and the inner enclosures visited only by regular keepers, to whom the foxes are accustomed. If the locality be sufficiently quiet, the outer court may be narrow, or, in some cases, no doubt, it may safely be omitted, but the importance of preventing annoyance of the animals can scarcely be overestimated. Often the enclosures may be situated within a fenced pasture. Other means for obtaining seclusion also may be employed, as the training of hedges, or the building of solid board fences about 6 feet high, immediately outside the wire fences.

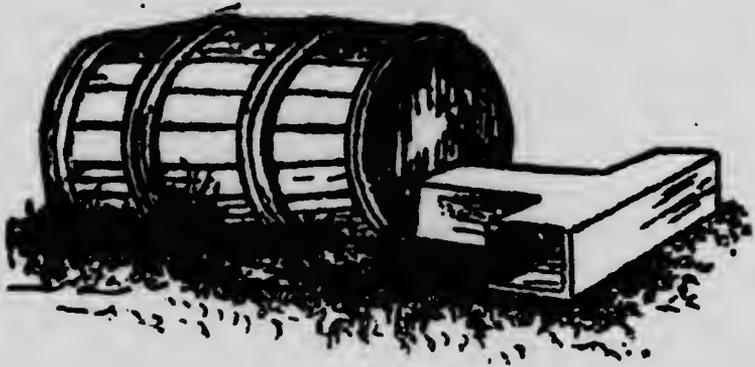
The inner enclosures are of two kinds, most of them small and designed for single animals or pairs, but one or more are somewhat larger and intended to accommodate a number of foxes at one time. Every compartment should be provided with doors so arranged that animals may be transferred readily. The beginner with only one pair of foxes may start with two of the small compartments and gradually add others as needed, meanwhile keeping in mind some general plan insuring a systematic and convenient whole. The small compartments should be at least 30 feet square. Those shown in the diagram are 30

feet, and the larger runs 75 by 40 feet. Passage ways giving free access to all compartments should be 4 to 6 feet wide. Each compartment should contain a small house or shelter box, for although the foxes often dig natural dens in the ground, they usually accustom themselves readily to artificial shelters. A common form of these is much like a dog kennel and about the same size. They are ordinarily made 4 or 5 feet square and 2 or 3 feet high, with an entrance about 6 inches square. A small hinged trap-door 8 inches square, giving the keeper access to the inside, may be provided on the back of the house, but this is seldom needed, and its absence removes the temptation to disturb a parent fox at a critical time. Several other forms also are used, especially some contrived with reference to the exclusion of light. These may be made of boxes or barrels to which are attached closed passages about 2 feet long, with a single or a double elbow at the end. (See next page.) These furnish retreats more nearly like a natural fox den than the kennels, but it is doubtful if they are superior. No nesting material is needed inside the boxes, as the old foxes either do without or provide it themselves from refuse in their enclosure.

HABITS AND BREEDING.

Foxes attain maturity at the age of one year and even before. They breed only once a year, and the mating or rutting season includes the months of February and March. The period of gestation is about fifty-one 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. The male has only one consort, at least only one in a sea-



son, and while 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. In certain cases this may be desirable, and at an advanced stage of the business may offer no difficulties, but at first it is advisable to 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 inclosures continuously and the young removed when weaned. 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 inclosures. The separation of the sexes is not, as many suppose, to prevent the male from viciously killing the young; for, unless suffering from hunger, he usually is a model parent, and has even been known to climb a high fence in the effort to carry food to his offspring. But the presence of the male often results in injury to the female during pregnancy, resulting in abortion; or it excites her unduly after the young are born, leading to rougher treatment than they are able to stand.

Mr. Frank F. Tuplin, of Prince Edward Island, adopts the following methods of dealing with his breeding animals:—"The male and female or females are put together as soon as possible in October, so as to get properly mated before breeding time, as it takes weeks of mating before two strange foxes will breed. It might happen otherwise, but the rule is as above stated. They romp together all winter and must be properly fed with a variety of food, such as meat, fish, etc., no potatoes, no rats, but an occasional

feed once a week of bread crusts. All young breeders should be well fed, not stuffed. The skin of a fat fox will sell in London, but over feeding will lessen its chances to have young and is very bad for a breeder. In March the male is removed, and let me state right here that you want to be more cautious at this than at any other time. The period of gestation with the female is half gone and she must not be excited nor aroused. Many a young female has aborted at this time owing to the carelessness or ignorance of the attendant. The idea is to get Mr. Male away without any undue excitement. The attendant must establish between himself and the pregnant female a confidence that must not be broken. When the female finds that she is going to have young, she begins to regard her attendant with a lot of suspicion. Her foxy instinct tells her that he may take away her young as he did her mate, and as the time draws nearer and nearer for her to give birth, she watches him very closely. Every movement out of the ordinary is observed by her and he must assume a careless attitude as though he does not notice her. Day after day he goes to feed her, each day bringing the pregnant fox nearer to birth, but some morning he will go to the ranch and she does not appear as usual to get her food, and from this he will know that she has, or is having her young. Remember she is a wild animal and not a domestic one and if she is a valuable fox, no man who is not thoroughly conversant with fox-raising has any business around at this time. However, the attendant has to come daily, and do his best, for she must be

fed, and if he will do his part properly, she will reward him by bringing her litter out with her at the proper time; otherwise she may take offence and carry them out, her constant fear being that this man will take away her young. Perhaps she may hide them in the snow to save them, as she thinks, and scores of young foxes are lost in this way."

Young foxes taken from early litters will be more apt to breed the first year, than young foxes taken from late litters; but the raiser of early litters generally has many a sad story to tell of loss occasioned by frost and cold. By early litters is meant March litters. Breeding foxes will give you less trouble if they bring forth their young between 10th April and 10th May.

The life of a fox is about twelve years and they will breed until they are about nine or ten years old.

When born the young are small and weak and about the size of kittens, but if all is well they grow rapidly, and when about six weeks old begin to come out to play and to lap a little milk or to take an occasional bit of solid food. If allowed to do so, they will continue to nurse for nearly six months. They breed the first season, when a little less than a year old, but usually produce only two or three young.

Foxes in confinement, as in their natural state, show considerable individuality. Some are much better breeders than others; some can never be induced even to mate, and others mate but do not produce young. Their wild nature dominates most of their actions, and it is rare

that one becomes really tame. They are constantly in a state of fear, and it is only by the greatest care that confidential relations can be established between them and their keepers. This fear is probably the chief cause of the failure to breed regularly. It may cause the female to refuse the attentions of the male, or having received them, she may prove infertile, or she may become excited, so as to injure herself and give birth prematurely. But worst of all, even after producing a litter of healthy young, she may be so solicitous for their safety that in her effort to get them out of imaginary harm's way, she maltreats or kills them. Often when her young are just born or only a few days old, she will carry them about the inclosure all day, apparently seeking a place to hide them. Perhaps she digs a den in the ground and removes the young one by one from the warm box to the cold ground. Thus they may be moved successively to a number of freshly dug dens and to and from these and the box until the little things are so mauled and exposed that they die.

Keeping the foxes in a secluded place free from visitors is not sufficient alone to overcome these difficulties. Although strangers should be kept away, a regular attendant should visit the animals daily and use every effort to gain their confidence. This is not easy and a great deal depends upon the personality of the man in charge. One not thoroughly interested or not naturally fond of animals, and therefore slow to understand their ways, is not likely to succeed. Careful observation and a faculty of intuition

enables a good keeper to anticipate the moods of the animals and to interpret their actions at critical times so as to act quickly and without violence. He knows just when the foxes are getting too much food, just when the sexes should be brought together or separated, when the female becomes pregnant, when the young should be born, when they need special attention, and when they may safely be left to the exclusive care of the mother. He is not over-inquisitive as to the number of young that are born, and seldom needs to disturb the anxious parent, relying on her actions to show whether or not the little ones are thriving. It is a good precaution for the attendant to avoid changing the appearance or color of his clothing during his visits to the animals at the most critical periods of their history.

Aside from the matter of propagation, the mere keeping of foxes in confinement has proved simple. It is true that they do not become very tame, or only in exceptional cases. Even the offspring of several generations of foxes reared in captivity remain wild and, except when young, evince more or less distrust of human beings. Still, life in the wire inclosures does not seem unpleasant to them. When thinking themselves unobserved they play together or lie contentedly stretched at length in the sun. Cold weather has no terrors for them and snow is a delight. At times of alternate freezing and thawing it is dangerous to allow them to lie down on snow, as they may thus seriously injure their coats. They rarely make determined efforts to escape from the inclosures, except during the first few days.

captivity. Then they dig for perhaps a foot at the extreme edge of the inclosure where the wire enters the ground. If the wire does not enter the ground, but is merely turned in at the bottom for some 2 feet, they only dig in the angle, and obviously cannot accomplish much, as they must work by thrusting their paws through the mesh of the wire. If stones are placed along the edge of the wire, they make no effort to dig at all, as tunneling under seems never to occur to them. So far as known none have escaped by digging, but a few have managed to climb out. The overhanging wire at the top effectually prevents this at most times, but an unusually heavy drift of snow in winter sometimes enables them to reach an elevation from which they can leap to the top and scramble out. In several cases, however, they have returned to the inclosures and climbed back or have been caught in traps set for them near by. When at large, foxes do not often climb trees, but in confinement they do so readily and voluntarily, often lying curled up in the thick branches of a spruce or fir for hours.

Although in general of suspicious nature and inclined to be unfriendly to man, foxes in confinement usually maintain good relations among themselves. If well fed, they seldom fight, or if they do it is without fatalities. In a few cases two or more have turned upon a fellow captive and killed or badly crippled it, but usually this has been due to underfeeding or to improper handling during the rutting season. Except when young, they snap and bite at their keeper if he attempts to handle them; so they are separated or

transferred by driving them from one inclosure to another through gates arranged for this purpose. When this is not feasible, they may be driven into boxes and so moved. They stand shipment well and may be boxed and sent on a journey of several days by rail with perfect safety.

For a long time the silver fox was thought to be only a freak of nature, but by a careful selection it now breeds in captivity true to its immediate parent stock, and the business has developed into a fine scientific art. Sometimes an occasional silver pelt of a wild fox will command a high price, but such occasions are very rare, and the vendor of foxes which have been bred in captivity, has manifold advantages over the man who offers the wild fox skin. The former has complete control over his animal; he fattens and feeds him after an improved method and in the month of December, when he is at his best and before the fur commences to rub or chafe, he kills him in a scientific manner, and thus has his fur in perfect condition. The hunter is glad to get his trophy as early as October or as late as March, or in fact whenever he can get cunning Reynard straight for his gun, or within the jaws of his cruel trap, or by means of the alluring poison which he seductively places for him, and thus perhaps when the skin is mutilated or the fur in an imperfect condition; but under such circumstances the fur will not command one-half its proper value.

An experienced farmer of foxes urges the beginner to start with as many foxes as possible, for the more natural one can make the surround-

ings of his ranch, the better his chances of success. Foxes are the more contented in captivity, the more numerous they are. There should be no board fences between them, for if allowed to see one another, they will become contented and quite happy.

Care should be taken to build the outside or guard fence sufficiently large to contain all the fox pens that will be required for some time to come. Each pair of foxes or each two females and one male which are as good as two pair if properly managed, should occupy a pen or pens as the case may require, measuring about 30 feet by 40 feet.

It is not considered advisable to try to stop the foxes from digging in the ground, which is their natural exercise, for exercise is very essential to their well-being. Some people cement the surface of the ground, but this is a mistake, for burrowing in the clay helps to keep them free from vermin. They also roll their food in the clay before eating it. This helps to exterminate worms, to which they have a great tendency.

FOOD.

Wild foxes eat a great variety of food, including mice, rabbits, birds and insects, such as grasshoppers, crickets and beetles. At certain seasons large quantities of berries are eaten. Meat, therefore, is only part of their natural diet. Many fox breeders, failing to recognize this fact, have fed meat largely or exclusively. Although this is not always followed by bad results, it is much better to supply the foxes with a mixed

diet, including, besides meat, such food as bread, milk, table scraps, or manufactured dog biscuits, all of which are relished. Indeed, foxes, like dogs, are almost omnivorous, and there is less danger in any particular kind of food than in too large quantities at irregular intervals. Overfeeding is a very common trouble and produces fat, sluggish animals that do not breed well. The normal weight of a healthy fox is from 6 to 9 pounds; so animals weighing more than 10 pounds are too fat. When excessively fat they may weigh as much as 16 pounds. Over fat animals are sometimes produced by keeping a number in one inclosure, making it possible for the boldest or tamest to get more than his share of food.

It is always to be remembered that foxes in confinement require as much care as other animals. But it is a strange fact that the experienced stock raiser, who knows full well what disastrous results follow when his horses or cattle get free access to the grain bin, will unhesitatingly throw a whole carcass to his foxes and let them gorge. Since this does not kill them at once, or make them visibly sick, and since they are supposed to feed in this way in the wild state, he sees nothing wrong in it, especially as it saves the trouble of daily attendance. If for no other reason, a regular daily ration is preferable to irregular feeding, because it necessitates a more constant and intimate relation between the keeper and his charge. It is a good plan, however, to give them bones with little meat on them now and then, upon which they may gnaw indefinite-

ly. Occasionally they may be regaled with tidbits consisting of small wild animals, rabbits, woodchucks, rats, mice, and other animals likely to be captured about the farm. Fresh drinking water, of course, should be supplied regularly. If a spring or other natural water supply can be included within the yards, much labor is saved.

A fair daily allowance for each fox is one-fourth of a pound of meat and a small handful of miscellaneous scraps. One of the most successful breeders feeds a quarter of a pound of meat and a quart of skim milk daily. Another varies the meat diet with a sort of cake made of corn meal and sour milk. The meat used is beef or mutton in the form of butcher's scraps, unsalable parts, and the like, or, most commonly, horse meat procured especially for the purpose. Horse meat is very satisfactory food for foxes and especially commends itself on account of its cheapness. In all rural districts it is a very simple matter to procure a worn-out but perfectly healthy horse, and after slaughtering it, to keep the carcass on ice, furnishing a supply of meat for months. When located on the sea coast, near fishing settlements, fox raisers supply fish, lobsters and other sea foods to their foxes at little or no cost, and find them satisfactory. The expense of feeding is thus comparatively small. According to an estimate of one of the most experienced fox breeders, who fed butcher's meat and skim milk, the cost of feeding one fox, when everything is purchased, is 1 cent per day. In actual practice, however, the cost in his case was much less, since he was able to utilize the scraps

from his own table and to obtain much other material from his neighbors.

Summarizing all that has been said on the subject it will be found that the points most necessary of consideration to insure success are proper feeding, particular attention to the animals during breeding season, special care to prevent them from being frightened and the winning of their confidence by their keeper. A careful study of their nature is necessary, and it should always be kept in mind that foxes are wild animals and therefore require more attention than is necessary with domestic ones.

Fatal diseases are almost unknown among foxes in captivity, but undoubtedly unless well fed and constantly supplied with clean fresh water, they would become liable to such ills as neglect would encourage. Foxes as well as dogs are bothered with their common enemy, the flea, and sometimes with mange. The *pulex irritans* (the flea), is a small species of pest that annoy them and make them scratch and bite, in this way destroying their coat, which assumes an unhealthy, ragged and unkempt appearance. These propagate in the bedding, sand, in the foxes' coats, or they may get them by coming in contact with other freshly killed animals. Any mange remedy will kill the fleas. Salt is also good to scatter around the pens.

The kennels should be kept sprayed and disinfected inside and out, the pens clear of all decaying animal matter, and this will greatly overcome the difficulty. Old bones, putrified meat,

etc., besides having an offensive odor, will attract fleas and parasites.

Burrs and thistles must not be allowed in or near the enclosures, as they not only get into the fur and tail, but also destroy their beauty.

The character of the coat is a good indication of the condition of the fox. In a healthy animal the skin is soft and elastic, the fur thick and glossy and soft to touch. There are many things that influence the fur, such as the effect of exposure to cold, heat, moisture and shelter; also the character of their food.

BREEDING FOR IMPROVED STOCK.

Hope for increased profits in fox raising lies almost entirely in improving the stock by selective breeding. The darker the animal, the more valuable its pelt. Hence the object of every breeder should be to produce pure black foxes, or as nearly pure black as possible. To do this he must retain his darkest and most valuable animals for breeding, selling only the poorer ones. The temptation to sell animals of high value is often very great, but in the long run such animals are likely to be more profitable if kept for breeding. The possibilities of modification and improvement by selection are fully as great with wild animals as with domestic, and already have been demonstrated in the case of foxes. Some of the highest priced fox skins ever put on the market have been from animals reared in confinement and improved by selective breeding.

Since the silver fox is only a color phase of the red fox, its progeny might be expected often

to revert to the red color. As a matter of fact, however, silver foxes bred in confinement have almost invariably produced only silver offsprings. Moreover, it is believed that in silver foxes of known red ancestry any tendency to red offspring may be bred out in a few generations. Evidence on this important point is scanty, but the experience of one breeder may be cited. Beginning with a red female and a silver male, five pups were raised—two red, two cross, and one silver. The silver produced from this mating was then bred to an unrelated silver, the result being two cross and one silver. The silver thus produced was then bred for two seasons and gave birth to seven young, all of which were silvers.

Breeding for disposition is perhaps fully as important as breeding for color. So far this has not been attempted to any extent, but evidently it may be of great importance in overcoming some of the principal difficulties now encountered. By selecting those animals which show the least aversion to man, due regard being paid to other qualities, as prolificness a strain may be obtained which will breed with the certainty of our domestic animals. This in time should produce a thoroughly domesticated race of foxes, a result of inestimable value, amply justifying the utmost efforts. Although it may not be fully accomplished by those who begin it, every breeder should keep its importance in mind, for every slight improvement will be to his advantage and in the end the unqualified success of the business will be assured.



