

by hanging a perch an inch thick and eight inches long by swing-wires from the roof; and in some corner rather high up fix a nest-box.

In such a cage as this a squirrel will not only be far more healthy and happy, but there is a fair chance that, if a pair can be procured, they may *breed* in captivity, which is a great triumph for the proprietor. The best chance of this will be to leave the mother pretty much to herself, only providing some cotton-wool or other material, such as soft clean hay, some days before the young ones are expected; and if any are born, providing rather more bread and milk than usual. The usual number of young ones is four.

And that brings us to the last thing—the diet. Squirrels may be given nuts, acorns, chestnuts, walnuts, and such-like, with some drier food, like maize or wheat, or pieces of dry bread-crust, and avoiding oily seeds like hempseed, except a grain now and then. Besides this, give a little bread and milk squeezed rather dry, and never left to go sour. This will be the staple diet; and, as above noted, if the female has young, a little more bread and milk should be added. For tit-bits, occasionally some little bits of meat are often relished, but must be given sparingly.

The cage must be kept clean, and shells and all other refuse regularly cleared away, and some clean dry earth strewn on the bottom. Some people say that a small turf put in every day or two helps to keep them in health, and it is far from improbable. A loose piece of wood or two should always be about the cage for the squirrel to gnaw.

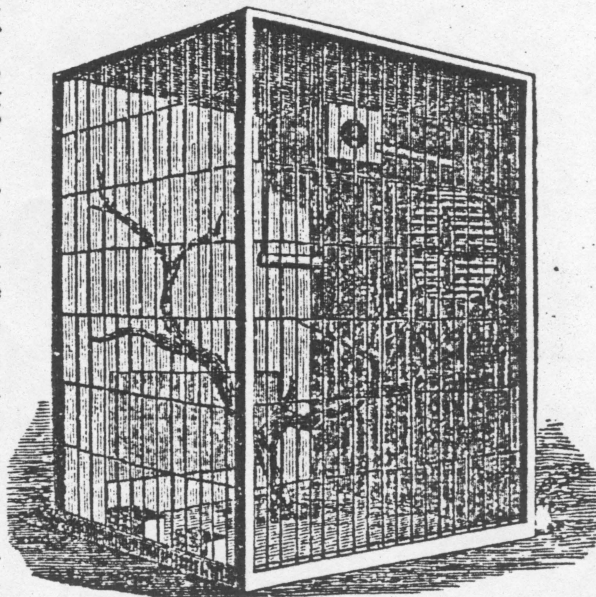


Fig. 84.—LARGE SQUIRREL CAGE.

RATS AND MICE.

MERELY as pets few animals are more attractive than these, on account of the facility with which they may be handled. A thing does not seem really your own unless you can take it in hand and look at it, and pull it about in all sorts of ways; and these animals lend themselves to such proceedings more readily than almost any other—in fact most of them evidently enjoy it.

We will take first the *Dormouse*, since this animal is a sort of connecting link between the rat and the mouse tribe, and the squirrel. It resembles the squirrel in many habits, and in its method of feeding—sitting up on its hind legs and holding its food in its paws; but the teeth are more like those of the mouse. It is a fat, plump little animal, considerably larger than a common mouse; it has much more fur, and the tail, which is rather short for the size of its body, has more fur at the end, which makes it look almost tufted. In the winter it hibernates, or goes to sleep, in a nest made of moss, hair, soft leaves, &c., and this period is the best time to catch it; in fact it is not easy to catch a dormouse in any other way.

It is rather difficult to keep in health, and we expect the reason is generally a want of study of its habits. If kept in a warm place it will wake out of its sleep; but it is pretty certain that this must be bad for it, and that when the

cold autumn days come on it would be far better to give it plenty of nest material, put it in an unwarmed place, and let it follow the instincts of its nature. The food, again, is not always judicious. The dormouse will eat nuts and apples and such like readily enough, and such food, with dry seeds, must make a better staple diet than the bread and milk we have seen solely given. This latter may be given in limited quantity, but the teeth and habits of the animal point to the necessity of a diet partly of seeds and nuts, avoiding, however, much hempseed, which is too oily to be used except in moderation. Dormice, again, should be kept in a roomy cage, where they can have space to jump from perch to perch—in fact their general management much resembles that of the squirrel. They much enjoy occasional liberty, when they will run up curtains and play about in a very attractive manner.

Dormice have sometimes bred in captivity, but it is rarely any are brought up. It is, in fact, rather difficult to procure a pair. Plenty of space, and several nest-boxes round the cage, hung on outside and entered by holes, so that the female can take her choice, are most likely to result in such a triumph for the owner. We have often thought that a bit of turf put in the cage every day, and a little water in a shallow vessel, would probably keep these animals in better health, especially at breeding time. The most extreme cleanliness is necessary at all times, but the mother must not be disturbed should she have young.

The *Common Rat* can be tamed without any particular difficulty, if desired, by a little judicious starvation. Leave them a couple of days without food, then give them some, and stand by for a while whether the rat eats or not. After a fair meal, starve for another day, and the chances are that when you go with food again the rat will be eager enough to welcome you. The matter will be still easier if you rub on your fingers a drop or two of oil of aniseed, of which both rats and mice are passionately fond. On the whole, however, the common rat is not a very handsome pet, and will sometimes bite when least expected. In some parts of England the generally extinct old *black rat* can still be found occasionally, and this animal is better worth keeping, both as a rarity and on account of its

milder disposition. We are inclined to think that the fancy (Fig. 85), or as we may almost call it, the *Domestic Rat*, is a descendant of this variety, as black is one of the colours known.

What we have called the *Domestic Rat* really deserves the name, being now a tame breed bred in captivity for many successive generations. It takes to petting quite naturally, and is a very intelligent animal, capable of being taught many tricks. The best known and most plentiful colour is white, with pink eyes like other albinos. There is also a black, really black all over, though the feet and belly are apt to go off grey or rusty: of course a really shiny black is much more valuable. Then there is a fawn or yellow; and occasionally greys are

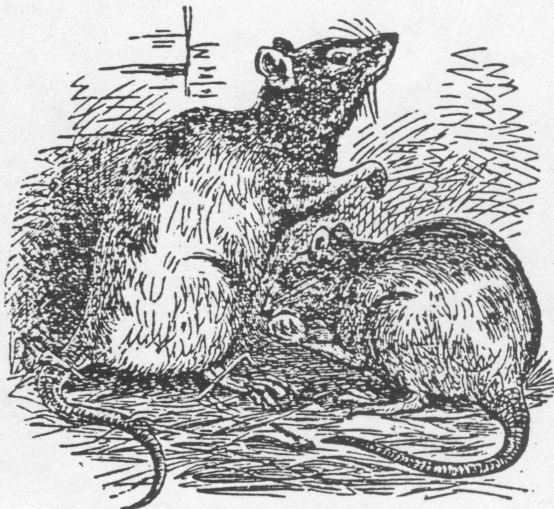


Fig. 85.—FANCY RATS.

bred. From these colours patched rats have been bred, black and white being pretty common; and there is every probability that by crossing black, white, and yellow, using black and yellow most, and keeping the white blood down, true tortoiseshells might be bred, as they have been in fancy mice. A really perfect tortoiseshell rat would probably be worth ten to twenty shillings as a rarity, and we

do not believe there would be any great difficulty after the first careful mingling of the strains was done. The white rats can generally be bought for a shilling each, and enough can usually be sold at sixpence each to pay their way in food, &c. Yellows and blacks are generally dearer, but much depends on what happens to be bred in any particular neighbourhood. And this leads us to a remark that will apply to mice and some other animals as well. In keeping *any* creatures which multiply rapidly, but are not good for food, there will often be too many at times when there is no market among friends or at the shops (many shops will put a ticket in the window to say such and such pet animals are for sale). Now, remember, boys, this one thing—to *neglect* such little creatures because they are crowding and troublesome will not only bring disease and make your pets a nuisance, but is *gross cruelty*, while, on the other hand, to kill them mercifully and quickly is not cruelty: they have had, if well cared for, a happy life, and know nothing of the fate in store for them. To mere sentimental humanity it is hard to kill downright any living little creature, which may be the truest mercy; while the same sentimental people will perhaps, by mere neglect, cause the greatest suffering. So remember, boys, if you have to kill them, *kill* them quickly, and with a firm hand; but take constant and good care of all you keep alive.

A breeding-cage for a couple of rats (Fig. 86) should not be less than eighteen inches long and twelve from front to back; longer will not only be better for the rats, but will give you far more pleasure in watching their climbing and other antics. Remember that a rat is as comical and has as many queer tricks as a monkey, and in being able to see him well lies all the fun. Six inches of the cage must be partitioned off as a dark-box or nest, communicating by a round hole large enough for a rat to go in comfortably; the opposite or outer end, or else the top, must be made to open entirely, to clean out and renew the bedding. The rest of the cage must be fronted with wire, but should be covered at top, back, and end, remembering that rats are not fond of too much light. The wires may be five-eighths of an inch apart. At the bottom of the outer cage must be a sliding-floor or tray, which must be drawn out *every day*. It is best to paint it well, as it ought to be washed occasionally in water containing a little carbolic acid, as well as scraped clean every time. When replaced, strew over it pretty thickly fresh coarse pine sawdust—the reddish turpentine sort, or, if that cannot be had, the common kind, in which a few drops of turps have been kneaded up. If this is done, and the bedding changed every four or five days, there will be none of that smell so often complained of, and little trouble from vermin. For bedding there is the choice of hay, soft straw, coarse wadding, dry moss, and cowhair.

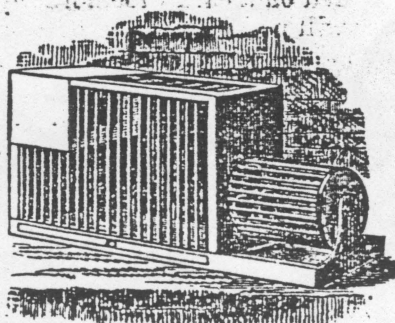


Fig. 86.—RAT CAGE.

The outer cage should have several perches, and a wire ladder or two and a swing will all be used to advantage. Near the back ends of the perches must be three tray-tins, projecting in from the outside, and fastened by a flange and button in the usual way. One of these will have the food, another milk occasionally, and the other water, which must *always* be supplied, as rats drink regularly. The cage must be in a rather sheltered and dry place.

We have not described the revolving cage, because it is totally unfit for either rats or mice. We have often seen the poor creatures with sore feet from this cause. Moreover, you only see them in this way taking one monotonous exercise, whereas by giving a roomy cage, and putting in perches, ladders, swings, &c.,

you see them doing all sorts of things. Give them a wheel as well if you like, so long as it is optional for them to use it without going into the nest. A great deal of ingenuity may be expended in fitting up the cage with all sorts of little dodges, which not only look pretty, but give pleasure to the rats, and show off their gymnastic powers. By cutting a lot of circles out of stiff card, snipping them all through as at A, and gumming them end to end with a little overlap as at B, then pulling the whole out, a spiral may be made (as in Fig. 87), which can

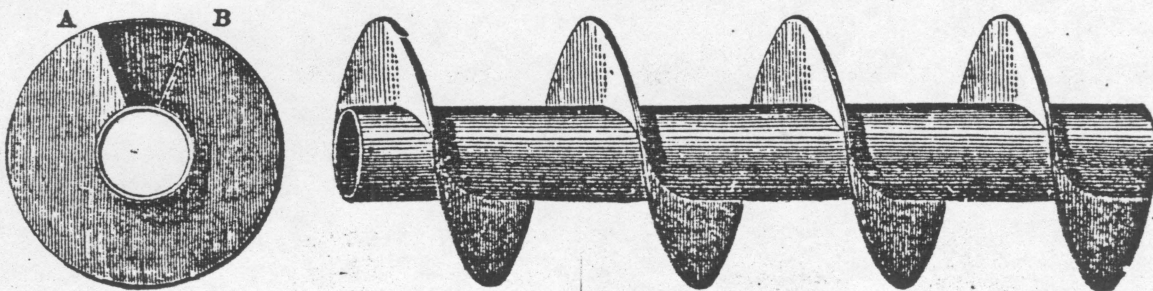


Fig. 87.—RAT STAIRCASE.

be fixed on a card tube, and set up vertically as a staircase in a wire tower. The rats will make good use of this piece of apparatus, especially if it opens into a wire turret higher than all the rest, from which they can look round.

The food should be rather varied. A little bread and milk, squeezed rather dry, may be given every day. When boiled rice is used for dinner, they may have a bit of that, or almost any other farinaceous dish; also bits of dry crust, canary-seed, millet, barley, wheat, or other seed, but do not give *much* hempseed at a time. A nut now and then is no harm, or a very little meat from the dinner-table; but much meat is bad. The food-tins must be kept rigorously clean; in fact, a double set is best, so that one may be kept in water. A little green food every couple of days—which they will not always eat, perhaps—is also well. By the way, it must not be forgotten that they are gnawing creatures, and *must* gnaw to keep their teeth the right length. For this reason there must be no edges of wood left about the cage, and the edges of the nest-hole need to be protected with thin zinc; but a piece of wood should always be kept in the cage for them to operate upon, and renewed when necessary.

Rats should not be allowed to breed under six months old, and relations should be avoided, which can be done by keeping up separate families, or exchanging. The easiest way to manage breeding is to put a male with two or three females for ten days, and then to put each female by herself into a smaller cage. But this is not always possible, on account of the number of cages; and several females will generally agree very well in one largish cage with a wire front, if separate little nests are fixed on outside, with an entrance-hole to each: each will *generally* choose and keep her nest. Two or three days after the male is gone, fresh hay should be placed in the nest, mixed with some cotton or wadding; and the compartment ought not to be disturbed afterwards till the young are a week old. The suckling mother, and the young ones when they come out, should have rather more bread and milk than usual.

Rats—at least the domestic kind—are usually very tame and affectionate when they once know their owner, which they soon do after feeding them a few times. They scarcely ever bite—we may say never, if fairly treated—unless a doe is handled when she has kindled, which ought never to be done. They may readily be taught many tricks, in which great help may be had from their great fondness for oil of rhodium, or oil of aniseed. Thus, if any small wooden article be smeared with a few drops, and put at the top of a rough pole, or such a staircase

as just now described, a rat will almost always bring it down, and in this way, rewarding each time with some little delicacy beside, they can readily be taught to bring down a little flag from the top of a flagstaff, and such things. Other tricks demand more patience; but it is well to let them run at liberty as often as possible, as it keeps them in better health and vigour.

Rats (and mice too) get "pot-belly" sometimes, like rabbits, if fed on bad or sour food. They sometimes get a sort of eruption like mange, which can generally be cured by anointing with glycerine containing a little sulphur. Sore feet are chiefly caused by the detestable wheel cages, which must be removed or fixed immovable, when a small quantity of zinc ointment will cure. They are, however, very little subject to disease of any kind. Fleas and lice will be unknown if sawdust is used as directed.

The tame or fancy mouse is even more hardy and prolific than the animals just described, if properly treated. The general management will be precisely the same, and a cage (Fig. 88) of the same general description, but smaller, will be the best. Mice do, however, quite as well if five or six females are kept with one male, provided sufficient nesting-places are made, which should be about three or four inches square. Four nest-places are generally enough for six females, as they often go two together; but it is as well to have six, or to make one or two larger. A very good plan is to have the nest-places at both ends of the cage, with the wired front in the middle; this plan keeps too strong a light off the cage, and mice are even fonder of darkness than rats. The same precautions must be taken as to a sliding bottom, and renewing bedding, except when a female has kindled, when her bed must not be disturbed for at least ten days after. The wires of a mouse-cage should not be over a quarter of an inch apart, or they will get through.

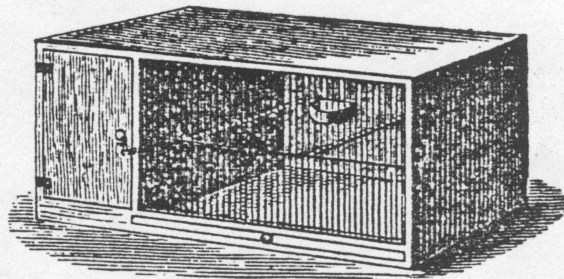


Fig. 88.—MOUSE CAGE.

Owing to their numbers, if bred largely, mice are rather apt to get infested with a sort of mite, very similar to the one which attacks the canary. For this reason it is absolutely necessary to have one or two spare cages, in order that each at intervals may be either scalded out with boiling carbolised water, or fumigated with sulphur or chlorine. In any case a wash with carbolised water will deodorize the cage, but it must not be inhabited again till perfectly dry. Only two tins are necessary, one for food, and the other for a drop of milk occasionally.

It does not answer to give the mouse quite such a variety of food as the rat will thrive upon. Every morning before breakfast give bread and milk squeezed rather dry. After breakfast take away that tin and soak it, and put in another with seeds, using oats, canary, millet, barley, and now and then a few grains of wheat. Only a grain or two of hempseed may be given now and then as a treat, but is too oily, as is linseed. This will last the rest of the day. A few blades of grass will often be eaten and do good, and in the winter a small morsel or two of sweet fat or suet, or a very little finely minced cooked meat, should be added twice a week. Avoid religiously sugar and salt, and, if you want the mice not to smell, bacon, cheese, and such things. The mice will not be the worse for a little of such things, but the *mistress* may! A few drops of milk or water should be given in the other tin—milk when any females have recently kindled, as it helps them to suckle. When the young come out, some crushed grits should be put in the seed-pan for a week or so with the other seeds. It is well to throw some

bran on the floor on top of the sawdust; they will eat some, which will tend to make bone and keep up the size, and the rest will absorb moisture, and give freer play to the smell of the sawdust. The cages must be kept in a well-sheltered, dry place; if warmish in the winter, all the better.

Fancy mice are most commonly white, which are most familiar of any, and can readily be made very tame. There are also black ones, but the black is rarely so rich as in rats. There are also fawns or yellows, which are larger than the others. We have also seen silver-greys, the colour of the chinchilla or silver-grey rabbit. By crossing and selection, piebalds are produced readily enough; and some of these, such as whites with black feet and ears, like the Himalayan rabbit, are very pretty. There are also blues, a kind of slaty lavender. By careful crossing true tortoiseshells have been produced, and these have been known to sell for as much as thirty shillings a pair; but there is much of luck about such a market, or any market.

The mouse goes twelve days with young. Breeding should not be allowed till three months old, and will continue in full swing till the doe is about two years old, or a little more. In that time, if unchecked, she may very likely have produced a hundred young ones.

Mice may be taught tricks in just the same way as rats. Little ladders and devices made of twine, and arranged in the cages, will be well used, and seldom gnawed if a piece of wood be fixed to give occupation to the teeth. In arranging the "mousery" care must of course be taken to exclude cats or other predatory animals; also rats and the common house mouse, which, if it can get to the fancy ones, will often attack and kill its weaker relatives.

SILKWORMS.

To keep silkworms for any time it is absolutely necessary to have a supply of mulberry leaves; that is, to be in the near neighbourhood of a mulberry tree, what sort does not matter. Silkworms *will* eat lettuce leaves if used from the first to that diet; but successive generations are found to dwindle away when thus fed, and the worms are also very subject to disease. They will not *thrive*, especially for more than one generation, upon other than their proper diet.

Eggs are readily obtainable by the ounce or the half-ounce, and often young people are glad to make a few pence by selling to acquaintances or people who hear of their stock, in which case it is almost always by number. They are sold adhering to pieces of paper, which should be placed in paper or cardboard trays in a warmish place, about the first of May, depending on the weather. In the sun is perhaps best, when the trays should be covered with gauze to protect the eggs from birds; but they may also be hatched on the mantle-piece over a kitchen fire. The eggs are yellow when first laid, but the fertile ones soon turn dark grey. When actual hatching approaches they get still darker, and a fresh and tender mulberry leaf should be placed under them at short intervals, so as to provide food in case any hatch before the next visit. As they hatch, they should be gently lifted into another cardboard tray by a slip of card or the end of a paper-knife, never taking them in the fingers.

The young worms are almost black, but gradually become, first grey, and then creamy white, growing very rapidly. About five weeks elapse from hatching until the worm is full grown and ready to spin, and during that time it casts its skin five times. Before each moult of this kind the silkworm appears torpid and ill, but when the skin is cast soon recommences eating with increased voracity.