

— THE CARE OF FANCY RATS —

THE SHED RATTERY

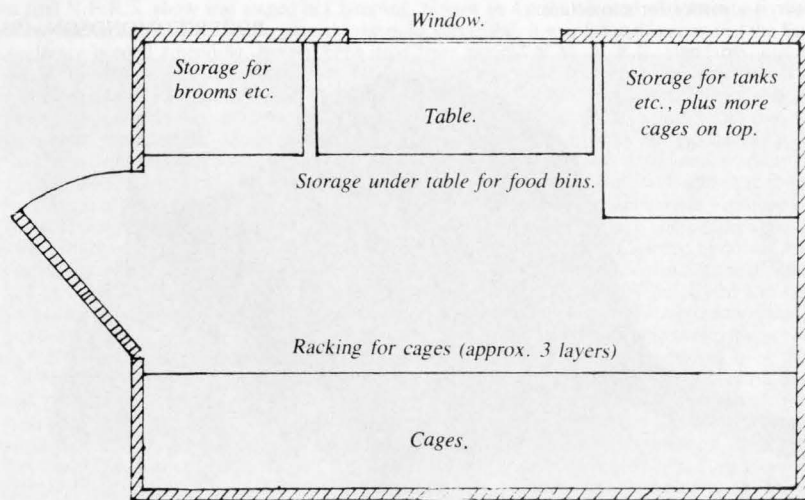
By Ann Storey

If you are keeping your Fancy Rats as pets, or are only considering keeping a small stud of animals it is alright to keep them in the house. Keeping them in the house does have certain advantages such as lighting laid on, less problems with condensation, good ventilation etc and is convenient for feeding and cleaning out. The main disadvantage however, is smell. Now, people will tell you that rats don't smell. This is true-ish if you don't keep too many (say twenty) in the house **and** clean them out twice a week, otherwise I am afraid they **can** smell. Also, it is very tedious going round continuously vacuuming because all the carpets are permanently encrusted in sawdust and rat droppings. Therefore, for anybody who wants to breed rats seriously, I would suggest that you keep them in a shed.

Design of the shed is important, i.e. the size determined by the number of rats you wish to keep, room available and your pocket. The best are large, airy, brick built, hardwood or cedar sheds. Although these are apt to be expensive, they do give value for money and if looked after well should last a lifetime.

Catalogues for sheds are advertised in newspapers and it is worth obtaining some and comparing prices and designs. The smallest shed useful for keeping rats is six foot by four foot (1.82m x 1.22m) and at least five foot (1.52m) at the eaves. The door should open outwards and a stable type door is preferable. The shed must have windows but these should only open along one side. The windows must open — again outwards. Also necessary is a floor. This may sound elementary but I can assure you that some sheds are supplied without them! Pine and other soft wood floors are okay for sheds but do not last as long as hardwood or cedar. Tongue and groove planking is preferable to lapping. All-wood sheds need painting or coating with a wood preservative every two years or so. Also the roof covering should be checked occasionally and replaced before rain water gets in through any damaged areas.

The shed should be set on a level, solid base and raised up on bricks etc. around six inches (15.25cms). A smaller gap will encourage vermin to breed under there. Setting the shed directly on the ground can encourage damp.



The Shed Rattery.

It is a good idea to make a wire mesh screen of both the door and the window(s). This will enable you to leave them open in hot weather without cats or other predators getting in.

Inside the shed you need a table of some sort, set under the window, which can be used for examining rats on. Cages should be put on racks or shelving along the walls. Make sure the shelving is put up well! If all your cages are of one standard type, it looks much neater.

It is a good idea to put lino on the floor — this helps keep the shed clean and is easy to sweep. Feeds or cupboards are useful for storing grooming equipment, medicines, food bowls etc.

It is necessary to have electric lighting in the shed as stumbling around with a torch at night is no fun. Gas or oil lamps are not to be recommended with lots of hay and sawdust around. If you can afford it, fluorescent strip lighting is the best.

Heating is not necessary unless you are likely to be put off going down to the shed in cold weather. In this case, it is better to provide minimal heat. Small electric space heaters can be bought that use very little electricity. If possible, purchase one with a thermostat and set it at 50°F (15°C). Please ensure that all wiring is fitted by someone who knows what they are doing.

Some people like to insulate their sheds because it helps stop condensation and keeps down draughts. However, this means that alternative ventilation must be provided, usually via the window or door. Commercial ventilators such as 'Ventaxia' or 'Expelair' are nice, but must be seen as an expensive luxury.

A well set-up shed can add greatly to the enjoyment of your hobby. Try to keep it looking as smart as possible so that when visitors come you have something to be proud of. It is also true that the animals themselves will look better than they would if tucked away in the corner of a garage and you will probably look after them better too.

HOUSING

By Sara Handley

When searching for suitable ways of housing rats, several important points should be borne in mind.

A cage should be large enough for the rat to exercise in, unless he is going to be out of it more often than in it. It should be easy to clean and keep free from disease and parasites. It should be secure enough to keep the rat in, but keep undesirables out (cats, mice, other rats etc.). It should contain no sharp edges on which a rat may damage himself, and should be draught proof, but well ventilated.

Many sorts of cages are available from pet shops and these should be carefully examined before purchasing to see if they fulfil the requirements of your pet. They are not cheap, so consideration may be given to purchasing a second-hand cage if available (if purchasing a cage second-hand make sure it is thoroughly disinfected before use).

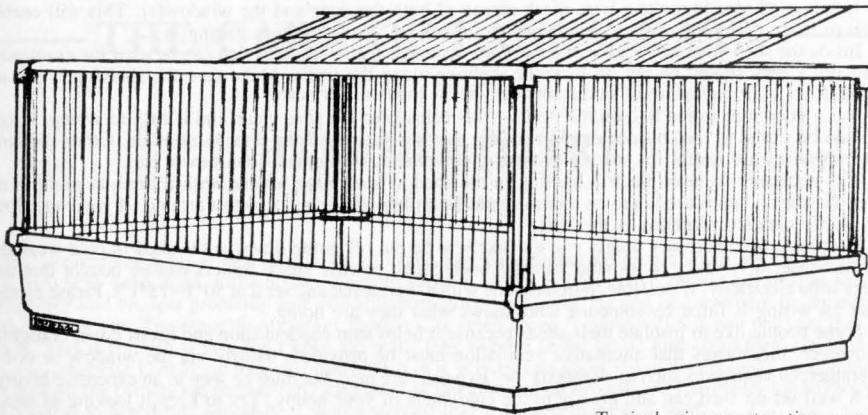
Metal Cages

These are the most usual ones sold by pet shops. They are generally designed with hamsters, mice, gerbils or caviae in mind — very rarely rats! Many contain exercise wheels which are of doubtful use. Rats can be very thoughtless about their tails when using exercise wheels and once a rat has achieved full size the wheel will no longer fit him even if he is inclined to use it. Removal of this item of furniture will give a little extra floor space and give them less corners for stuffing unwanted food into. Metal houses bolted onto the side of the cage are okay while the rat is young but are soon outgrown. They may well have sharp edges which will need filing down, as the rat gets older he will find the door far too small to squeeze through and will go over the top to get into bed.

They can be awkward to clean and dry thoroughly. When cleaning a metal cage it should be dried completely before returning the rat to it. This can sometimes be difficult although placing the empty cage in front of a fan heater can speed up the process. This will help prevent the cage from becoming rusty, but as rat urine is extremely corrosive it will not prevent the cage from rotting eventually! A second-hand cage may well be rusty, this can be cleaned off with various rust removers and should then be painted with a rust resistant paint. If repainting a cage use a non-toxic paint and leave it empty until all trace of paint smell is gone.

Wooden Cages

These are generally classed as small rabbit or cavy houses. They have the advantage of being warm for the rat and less likely to suffer from condensation, but are correspondingly more difficult to get clean and dry. The wood can be sealed with varnish which will help prevent the urine etc. soaking in and rotting it.



Typical wire construction cage

Aquariums

Made from glass or plastic, these have the advantage of being draught-proof but can become damp from condensation. The glass ones can be very heavy to lift and awkward for cleaning out. Either are fairly easy to break! The corners and seams on the glass tanks can become very dirty and are almost impossible to clean. The glass makes it nice and easy to view the rat but soon becomes soiled by numerous dirty hand prints as the rat uses the glass as a wall to lean on. A secure wire lid will be necessary to allow adequate ventilation.

Plastic Cages

These are generally just a tray with a wire mesh top. The rat can feel very exposed and unless he is supplied with a box to sleep in he has very little protection from draughts. They are, however, very easy to clean and dry and can be back in use within a matter of minutes. Care must be taken to ensure the wire top is fitted back carefully as some of them are clipped on very loosely and can easily be worked off by a determined rat.

The ideal kind of cage would be about 12 inches deep, 14 inches high and 24 inches wide. This would provide ample space for two bucks or three does. The wire mesh would be on one side only, the mesh being big enough for the rat to be able to see out, but small enough that a youngster cannot get through. There should be space enough to hang a water bottle from it.

D.I.Y. Cages

One of the best materials for making cages for yourself is melamine faced chipboard. This can often be purchased quite cheaply as small offcuts or damaged pieces that are of little commercial value.

Choose a simple design that will be easy to clean with no awkward corners or sharp edges. Make sure doorways etc. are big enough to accommodate the rat when full grown. Butt the joints so the urine won't sink in and use a sealing compound in the joints. Weldmesh 3/4 inch mesh or similar can be used for the doors. The cage can be built to fit a particular space if required.

The main disadvantage of this is that the cage can be quite heavy and correspondingly difficult to move.

Bedding

Bedding should be sawdust (not too fine) or wood shavings (not too coarse). Be careful to avoid sawdust/shavings of wood that has been stained — the stain will transfer itself to the rat's fur. Peat would be okay if dry but most is sold damp and is very difficult to get dry. Cat litter makes clean but very uncomfortable bedding and should be avoided if possible. Clean shredded paper is a very acceptable nest material and has the advantage of being nearly sterile. Newspaper should not be used as it will stain the fur. Hamster 'wool' from the pet shops can get tangled up with the rats claws and is not very good. Hay can also be used but can be very dusty and carry parasites, the seeds may work into the skin and cause skin problems such as abscesses. Straw is too coarse and not very absorbant. Bedding should be changed regularly.

Siting

Almost as important is where to site the cage — it must be placed somewhere safe from other animals or small children. Not in direct sunlight or too high up, where it will become hot, but not in a cramped, dark corner either. There should be good ventilation, but no draughts.

Rats enjoy company, keep their cage where they can see what's going on and where you can get at them easily for feeding, cleaning and outings.



Ropes provide good exercise for rats to climb on.

FEEDING

By Ann Storey

Rats are natural omnivores and must receive a correctly balanced diet to keep fit and healthy.

Most fanciers feed a staple diet and supplement it with other foods, depending upon the age and fitness of the rat. Good staple diets are: rabbit mix, dry brown or wholemeal bread, dog biscuits, Vitalin, hamster mix etc. For adult stock that is not being used for breeding or showing it is okay to feed these most of the time with supplements being fed once or twice a week; show stock, breeding stock and young stock need extra nearly every day.

The best supplements are table scraps — especially those containing meat and potato, although anything can be fed. These scraps can be fed as they are or mixed in with bread or Vitalin and milk. This is an excellent way of feeding them. Another good one is porridge, made with milk and any of the dog chow type foods. A visit to your pet shop will reveal many high protein foods and anything is worth a try.

Peanuts and sunflower seeds are often fed but I think that they are of limited value, except as a conditioner. They are not as nutritious as people make out and cause overheating, which leads to spots and scabs.

Any fruit and vegetables may be fed with the exception of beetroot and carrot, which can stain the coat of light coloured rats.

Conditioners include hemp, sunflower seed, linseed and cod liver oil. These are good to give to rats sparingly a fortnight before a show, although if your rats are properly fed they should not need any extras.

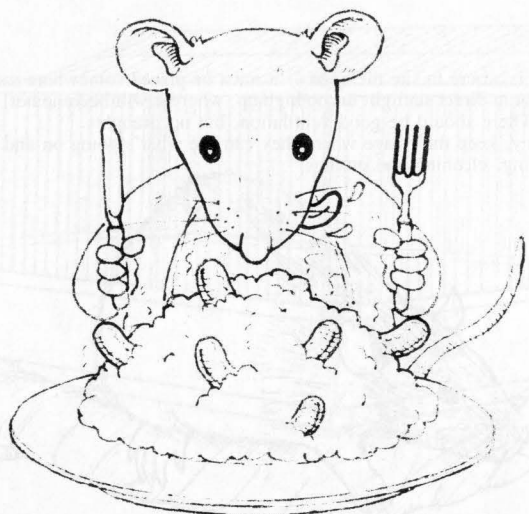
Feed young stock ad lib, to stint their feed now may mean small, stunted adults. However, care should be taken that adults do not become overweight. If they do, put them on a diet.

If you can get them, try laboratory rat pellets. These are very good for hopper feeding, although not all rats will eat as many as they need for rapid growth. It is not necessary to put food in pots. If it is scattered on the ground it will give them something to do.

Water can be given via gravity feed bottles, stone water pots or soaked bread. But in hot weather pregnant does will need more water.

Be sensible, do not feed greasy scraps to rats before a show.

Do not feed: very sweet things — because they cause tooth decay — or cottonseed and cottonseed meal — these are often found in bird food — they contain gossypol which causes sterility in mammals.



Yum-yum!

OBSERVATIONS ON THE BEHAVIOUR OF PET RATS

By Eric Wilkinson

My baby rats (kittens), like most young animals, spend their time in alternating bouts of sleeping, feeding and playing.

Their play consists mainly of jumping and climbing and mock fighting and mating. As they get a little older there are many playful contests in which dominance is established. Two or more kittens will have a skirmish which results in one 'submitting' by lying on its back in a defenceless attitude. This normally blocks aggression in its opponent and the 'battle' ceases, often changing to grooming. Very rarely a dominant rat will continue to attack a submitting one. If this happens I remove it from the group and never breed from it as this is definitely anti-social behaviour. Domination is normal and it is quite different from bullying. A lot of mock mating goes on in much the same way, with the dominant ones doing most of the mounting.

When they have matured I find my rats seem to be most content in pairs of either or both sexes. They do very well as single pets however, provided they are given a great deal of attention. A rat's normal lifestyle involves frequent body contact and, unlike many small animals, they thrive on constant handling.

With constant handling from babyhood nearly all rats become tame and gentle but they have individual characters and some make much more interesting pets than others. I think temperament may vary somewhat with the different colour varieties and with different strains within the varieties and that it is largely inherited. The varieties I keep at present are Himalayan and Silver Fawn. The Himalayans are particularly docile. Janet Gregory and Liz and Jo Hancock and I have all successfully kept mice in the same cages as adult Himalayans from this strain. If you intend to purchase some rats as pets for the first time, I strongly advise you to get newly weaned babies and handle them as much as possible. They will quickly adapt themselves to your ways and make more satisfying pets.

The adult males are usually slower and more content to set about than females, who like to be 'on the go'. Many males have a tendency to 'mark' their owners with little dabs of urine. This is mostly on the backs of one's hands and it easily sponges off clothing but it is not my favourite characteristic in rats! Both sexes are slightly cautious about stepping on to new territory but they are so inquisitive that they keep making little forays further and further afield. I find this very useful when 'training' my pets. First I allow the rat to explore my own body, which it quickly comes to regard as a sort of extension to its cage. I may then choose to let it explore the chair or sofa on which I usually sit and this system can be extended so that the rat has the run of a room or, in some cases, the whole house — and it will

return frequently to me as if checking that all is well at home so it is easy to catch again. Some individuals are much more anxious than others however and if I leave the room for a while and return they either 'freeze' or run into a corner. They are unable to recognise me by sight. I walk up to them and extend my hand and as soon as they catch my scent they 'unfreeze' and carry on their activities. Others carry on regardless of my presence. I own several dogs (whippets and papillons) and they all get on well with the rats. When I open the rat cages there is usually a scrummage of rats trying to get out — and dogs trying to get in (to pinch their food).

I have confined my remarks in this article to descriptions of behaviour observed in my own rats. They are very responsive to human beings and different owners might well have stimulated different behaviour in their animals.



Grooming is an important part of rats' social behaviour, learnt from an early age.

HANDREARING RAT KITTENS

By Marnie Mays

Your female rat has had a litter. Everything seems fine at first, but then, all of a sudden, perhaps after a week — something happens. The mother falls ill, starts neglecting her litter, or worse, dies. In one way or another, this leaves you with a litter of rat kittens with no mother to care for them. What do you do? The easiest way out is, of course, to cull the litter. But what if this litter is a very important one? What if the perfect Hooded/Variegated or whatever is in it? Or, what if you are opposed to culling on principle? In either case, you will want to save the kittens, or at least some of them. The very best way to do this is to foster the kittens to another nursing doe with a litter of similar age. However, this isn't always possible. This being the case, the only way out is to handrear the kittens. It is now that your hard work starts.

First of all, remove the kittens from the cage and place them in a smaller, safe cage — for example, a show tank. Put a towel, some tissue or any other warm bedding material on the bottom. Also place the cage in a warm place, preferably on a heated pad (on the lowest setting), as it is vital that the kittens are kept warm at all times.

Next, buy 'Lactol' milkpowder from your local petshop and set out to find a suitable bottle to feed the kittens with. Toyshops are a good bet, as very small dolls' bottles usually make ideal rat bottles. A small syringe (without needle!) will also work.

Prepare the lactol from the instructions on the tin and fill the bottle with it. The milk mixture is supposed to be **hand warm**, not hot or cold. Gently hold one kitten at a time and try to feed it. Don't force the milk down its throat, as this will suffocate the kitten. Just put one small drop of milk in the kitten's mouth and wait for it to swallow. Ensure that no milk bubbles out of the kitten's nose, as this means it has gone down the wrong way. It may take a little while at first before the kitten understands how to feed, but they usually learn after a couple of feeds. Feed the kitten until you can see that the tummy is getting white, which indicates that it is full of milk. This can be observed through the kitten's skin before any fur covers it, the stomach being plainly visible when full of milk. Sometimes, the kitten will decide when it has had enough and pull away from the bottle. It takes up to five minutes to feed each kitten individually. This now has to be repeated **every four hours, day and night**.



PHOTO: NICH. MANS

Close up of a kitten being hand fed.

Don't worry if the kittens seem to grow thin at first, this is normal and they soon start to gain weight after a little while. When the kittens have opened their eyes you can start cutting down the nightly feeds and give them some more solid food. Lactol mixed with baby rice is good as a start. If the kittens don't want to eat it, try getting them to lick it off your fingers, which usually works. Continue to bottle feed them until they are about three to three and a half weeks old. Then gradually cut down the feeds and give the milk mixed with baby rice on a plate, mixing this with various baby foods. Give the kittens at least three or four meals a day, replacing all uneaten food from the previous feeds. They are still without their real mother though, so you must act as their mother and clean them up when they get dirty after eating sloppy food. Rat kittens that are very dirty may actually lose their coats and go bald for a while, but don't worry, their fur will grow back eventually.

Your kittens will now be extremely tame, regarding you as their only mother and you can feel proud that your hard work (and sleepless nights) has paid off. They are alive and healthy! They may be slightly smaller than other kittens of the same age but this doesn't necessarily have to be a problem, just follow a prudent diet of nutritious foods and they will grow very much as normal.

Good luck!

DISEASES OF THE FANCY RAT

By Ann Storey, F.I.M.L.S.

Provided that your rats are properly looked after, kept in a clean, well aired environment, fed properly and not allowed to rear litters too often or when too young, your animals should rarely suffer serious illness. I am constantly amazed at some people who seem to spend a fortune on veterinary bills when the money would be better spent on improved husbandry. It must be said that there is a difference here between the person keeping a few pets and the person considered a stock breeder.

A pet keeper rarely has more than twenty rats at a time and is less likely to suffer from the epidemics a fancier is prey to, but because the rats normally live out their full lives, many will fall prey to the diseases of ageing — bronchitis, cancers, arthritis, heart disease etc. Here it must be remembered that while many of these conditions can be controlled, eventually there will come a time when the rat no longer finds living a pleasure. It is then much better to have the animal painlessly destroyed than to have it suffer.

It has often been said that there is very little information available on rat diseases. This is just not true, there are scientific journals stuffed full of information for the patient to sift through and it is not all of the 'what happens if you give a rat 50 grams of saccharine a day' kind, as the anti-vivisectionists would have you believe. It pays to have access to a modern and innovative veterinary surgeon who is willing to learn and try.

It is important to be able to recognise when your rat is off-colour so that appropriate steps can be taken. Any of the following symptoms may indicate trouble: staring coat, hunched appearance, diarrhoea, wet vent, sores and spots, red areas of skin, coat loss, sneezing, discharge from eyes, ears and nose. When infection is suspected it is a good idea to isolate the affected rat and its cage mates. This means preferably keeping them in another room and thoroughly washing your hands before touching the rest of your stock. Sick rats should not come into contact with your clothes or hair unless you want to wash them before you handle your other rats. Decide quickly whether (a) the rat needs a vet, (b) the rat should be put down, (c) it is a simple ailment you can handle yourself. It is never right to keep an animal suffering without taking some action. Some conditions are incurable and very unpleasant for the animal, in which case it should be quickly put down and not subjected to the trauma of pointless operations. Most vets will advise you on this.

Most fanciers are only going to want to cure an animal if it is going to make a complete recovery at no overall loss to its performance in the breeding pen and at no risk to the rest of the stock. An epidemic disease in a stud can wreak havoc, especially if it spreads to others at a show.

If you decide whether the rat has a good chance of recovery and if you embark on a course of treatment, it must be remembered that it is not good enough just to push a few drugs down its throat two or three times a day — a very sick rat will need nursing. For a start be sure the animal is comfortably bedded down in lots of clean bedding. The cage should be placed in a warm, draught free place but still with plenty of fresh air. If the rat is off its feet, especially if it has a respiratory complaint, you will have to turn it over every two or three hours or it will die of pneumonia. If it feels cold, give it a hot water bottle wrapped in a blanket. Make sure plenty of liquids are consumed — this is more important than food. If the rat will not drink you should encourage it to do so by using a pipette or syringe (minus needle!) several times a day. As regards food, tempt the rat with something appetizing, don't just sling in a bit of grain and expect it to be eaten. Discharging eyes and noses should be bathed gently in warm water and if the rat is incontinent you should wash its bum as well. If all this sounds like too much trouble it will be better to have the rat put down.

Rats can, and do, survive many illnesses, but their chances are much better if they are fit and well cared for. Also they convalesce quicker and are less likely to relapse.

A-Z OF RAT DISEASES

A

ABCESSES: These are pockets of infection with a wall of tissue around them. They appear as large lumps. The usual cause is a bite. Bathing them with warm water encourages them to open up and drain. Treat the cavity with Hydrogen Peroxide, available from the chemist. This bubbles up when it comes into contact with tissue and helps force out the pus and bacteria. If a very large abscess appears or if one recurs, seek veterinary advice.

ALOPECIA — Baldness: This has several causes and can be partial or complete. The two most common forms are Barbering and that occurring in some Homozygous Rexes.

Barbering is a condition where one rat (usually the cage alpha rat) will over-groom the other rats to the extent that first the guard hairs and then the under fur will be removed. The barbered rats usually present with bald shoulders, necks and cheeks. The barberer will, of course, have a complete coat. Barberers should **never** be bred from. Some rats barber themselves, usually in the groin and armpits — again, do not breed from these rats. Barbered rats will however make a complete recovery once it stops.

Homozygous (or 'double') Rexes are sometimes bald. The coat tends to fall out at around four weeks and then grows back, only to fall out again. Having said that, not all 'pure' Rexes lose their coats.

ASTHMA: See Respiratory Diseases.

ARTHRITIS: There are several types but the two most common in rats are **Osteo-arthritis**, suffered by old rats and **Septic Arthritis** which is commoner in young rats. Old rats over two years of age often get stiff and swollen joints due to Osteo-arthritis. In this case it is a good idea to keep the rat warm and to be careful when it is walking around. This is because it is more likely to fall off chairs etc. because its grip is not so good. Some people prefer to use steroids for this condition but I can't say I agree with this.

Septic arthritis, sometimes wrongly called Footrot, is commoner in mice and is caused by the organism *Streptobacillus moniliformis*. It is not caused by dirty conditions but by the bite of another rat (or mouse!). This organism lives in the nasopharynx of many animals. It also causes one type of 'Rat Bite Fever' in humans.

Septic arthritis usually infects the joints closest to the bite. The joint becomes swollen, red and painful

to the touch. The rat often sits huddled up. After a day or so, a hole appears and pus leaks out. Without antibiotic treatment the animal slowly deteriorates, as the infection will not clear up and often spreads to other joints. Antibiotics such as Penicillin and Tetracycline are good treatments for this disease. Penicillin is especially effective if it is injected.

ANTIBIOTICS: Antibiotics are chemicals that kill bacteria or prevent them from growing but are less damaging to the cells of the body. (This is only a vague definition, but it will suffice here.)

There are many different antibiotics available but only a handful are generally used on domestic pets. These are mostly **Broad Spectrum** antibiotics that work on a wide range of bacteria. This is generally because a vet is not sure what particular bacteria are causing an infection. Unless it is a specific disease caused by a specific organism it is impossible to know unless the organism is grown in a laboratory. This can take several days by which time the patient is often either better or dead. The most valuable antibiotics for rat treatment are tetracyclines (such as panmycin and aureomycin). Penicillin and ampicillin (Penbritin), amoxycillin, chloramphenicol and Co-trimoxazole (Septrin).

It is important to remember that antibiotics do not work on viruses — as yet, there are no good antiviral drugs for use on animals and only one or two for humans. Another thing to remember about them is that they only work if given regularly, in large enough doses and continued after the rat appears to have made a complete recovery. Personally, I think it is better to give a dose which is slightly too large than one which is slightly too small. The best way (again, in my opinion) is to give antibiotics mixed in mashed potato, porridge, custard etc. Mix up one dose at a time (your vet will advise) in a small amount of these foods and feed at least three times a day. Do not put antibiotics, especially tetracyclines, in the rats' drinking water. This is simply because they taste bad and rats will not drink them. When they are ill they should be encouraged to drink more, not less. It is possible to mix a dose with water and feed it through a syringe, but in my experience this just turns into a sort of battle with more of the medicine going over you and the rat, rather than down its throat. Some antibiotics are available as drops or sweet tasting syrups. These are very useful. Be careful of over-use. Bacteria quickly build up resistance if the same antibiotic is used regularly in a stud. If you know that regular use is likely it is better to alternate two or three different types to help reduce bacterial resistance.

Antibiotics should never be used prophylactically to prevent diseases or as growth promoters in your rats. This will just encourage the spread of resistant disease organisms. Antibiotics are available only through your vet.

B

BITES: Some rats, especially males, tend to go in for biting other rats. If this happens frequently, it is better to keep the errant rat by himself. It is not normal for numbers of male animals to live together without some scrapping, however. Bites should be bathed in any antiseptic solution. They do not normally need veterinary assistance unless the rat has lost a lot of blood or the bite needs suturing.

C

CANCER: About a third of rats would eventually die from cancer if allowed to live a full life span, (this is about the same for dogs and humans — two other cancer-prone species). It usually occurs in rats aged over eighteen months of age. There are many types of cancer, but the majority tend to start with a lump somewhere in the body which develops quickly. Weight loss and death follows within weeks or months. The primary tumour can be removed but it is rare that the cancer stops there. It is not kindness in my opinion to keep a rat alive with advanced cancer.

Cancerous lumps are usually quite hard and attached firmly to underlying tissues. Benign tumours, such as **Lipomas** can be large but are not usually firmly attached to tissues. These can be removed very satisfactorily by a vet.

Murine Leukaemia Virus is in the same group of viruses as Human Immunodeficiency Virus, M.L.V. is transmitted by direct contact between rats. If you have several cases of malignant disease amongst rats in the same cage, especially if they are all young, it may be possible that it has a viral origin. The incubation time of such viruses can be quite long. It is also known that cancers can have a genetic origin. If you have a line of rats that regularly produces tumour-prone rats it is best not to sell them as pets.

D

DIARRHOEA or SCOURS: This is a sign that all is not well with the animal's gut. In rats it is normally a sign of infection with one of a number of pathogenic organisms. Weaned rats are more prone to infection with **Enteropathogenic E. Coli (E.P.E.C.)**. This causes an infection sometimes known as 'Wet Tail'.

This bacteria causes severe diarrhoea in a number of young animals species, including hamsters, dogs and humans. Each species, however, has its own specific strains of this bacteria. Rats are normally infected between 4–8 weeks of age. They appear with wet rumps, vents and stomachs. Severe cases have blown stomachs, staring coats and are very lethargic. Without treatment 50% will die — usually from dehydration. The best antibiotic to use is the gut sterilizer **Neomycin**, plus force feeding with one of the **Electro-Lyte** solutions available from the chemist. If you like, you can make your own: 3oz (85g) of glucose in one pint (0.60 litres) of boiled water and one teaspoon of salt. However, it should be remembered that the majority of does after this infection are sterile. This infection is commoner for some reason in August and once it occurs in a stud it may recur every year. For this reason, I believe it is better to put an infected litter down and thoroughly sterilise the cage they were in.

Rats sometimes get mild diarrhoea from eating the wrong food — especially greenfood. This is easily cured by simply changing the diet.

Coccidiosis occasionally infects rats. The symptoms are chronic scours with weight loss in older rats or the same symptoms as E. Coli in kittens. The parasite responsible, (*Eimeria sp*) is carried by wild rats. This condition can be cured with tetracycline or Metronidazole (Flagyl). Animal feed can be bought with an anti-coccidiostat added, although I don't like this sort of thing to be fed on a regular basis.

There are other organisms responsible for Scours in rats including **Salmonella**. In most acute cases **Neomycin** affects a recovery. In order to prevent infection do not feed raw or partly cooked meat products and keep wild rodents out. Some animal feeds have been shown to harbour Salmonella but this is extremely rare.

DEHYDRATION: Many sick rats die from dehydration. Any rat that is unwell, especially those with Pneumonia, Diarrhoea or other serious illnesses are prone to this. The symptoms are staring coat, sudden weight loss, suddenly thin feet and tails, sunken eyes. If you pinch the skin of a mammal with dehydration the skin stays pinched up instead of reverting to its normal shape. Encourage or force an affected rat to take liquids or it will die.

E

EAR INFECTIONS: The most common ear infection suffered by rats is the wrongly called **Middle Ear Disease**. This is a virus infection of the semi-circular canals of the **Inner** ear. These organs control balance and so it is not surprising that infected rats hold their heads to one side. It sometimes follows an outbreak of snuffles and may be mild or severe. Some rats recover but it is rare that any make a complete recovery. There is no treatment that works, although some fanciers have used **Chloramphenicol**. Rats with this condition cannot be shown but are in themselves completely fit. Both bucks and does will breed successfully and there is no evidence that they pass the infection on to their offspring. When these rats are held it is well to remember that their balance is poor however. This infection is more common in the Spring.

True middle ear infections occasionally occur. This is usually bacterial and the rat may be seen scratching and rubbing at the affected ear. Eventually the ear drum with burst and the rat feels better. Treatment is with **Chloramphenicol** until the discharge has completely cleared up.

ENCEPHALITIS: Inflammation of the brain. The commonest symptom in rats is sudden, partial paralysis of the hind legs. Affected rats sway and stagger about. It often follows snuffles and is commoner in young rats. Treatment has been attempted with antibiotics such as **Gentamicin** and **Chloramphenicol** but without success so far. The rat usually dies in about a fortnight.

EYE INFECTIONS: Are shown by discharge around the eye. Bathe the eye with warm salt water. The usual antibiotic treatment is **Chloramphenicol**. Sometimes discharge is not caused by an infection at all but dust in the eye. Pink eyed rats are also prone to be affected by sunlight as well.

G

GENETIC DISORDERS & CONGENITAL DEFORMITIES: These are relatively rare in rats but there are one or two which occasionally crop up.

Cartilage Hypertrophy has occurred occasionally in the Fancy. This recessive condition affects young rats at around ten days old. Up until then they are perfectly normal but then suddenly they begin to leave the nest and wander about. Their nostrils become caked in discharge and they die in about five days. This is because the cartilage in their chest becomes solid, preventing them from breathing.

Staggers also affects rats aged around ten to twenty days old. The young rats do not walk normally but progress diagonally or sideways, usually dragging a leg. These rats also die.

Other conditions include **Kinked Tails**, **Stubby** and lack of tail. **Malocclusion (deformed teeth)**

Hydrocephalus, Pug face, lack of one or more testicles, **Imperforate Vaginas** (commoner in Black Eyed Whites), **Missing ears, feet** and many others.

Any rat suffering from a genetic or congenital deformity should not be bred from and if the strain that produced it does so often then that strain should be discontinued.

H

HEAT STROKE: This occurs when the rat's body is unable to keep itself cool due to excessively hot surroundings. The rat lays down, becomes limp, pants and the eyes become wide and staring. It is commoner in bucks than in does and is liable to happen whenever the rat's surroundings' temperature goes above 80°F (25°C).

Sponge the rat down in cold water and put him in a cool, dark place. As soon as he will take it, give him water with a small pinch of salt added. Do not pull him around or handle him unnecessarily. Sometimes a rat will appear to recover only to die later. This is often due to heart or kidney failure brought on by the overheating.

Care should be taken to keep sheds and rat rooms cool in summer by leaving doors and windows open. Also, make sure water is always available. When you take rats to shows in hot weather, leave big bucks at home and make sure the others have plenty of ventilation. Do not leave them in cars! Take a water spray and drinking water with you. Spray them two or three times throughout the day to keep them cool.

HYPOTHERMIA: This happens when a rat's body temperature drops below a certain level. The rat becomes progressively more lethargic and cold to the touch. The coat stares, the eyes appear sunken and the ears are carried flat to the hand. Eventually the rat becomes unconscious and dies.

If the rat is still conscious, put him in a **very** warm place in a box of bedding, either in front of a fire or radiator or in the oven (gas mark ¼ with the door open!). Give him a hot drink. When he wakes up give him a shot of brandy.

If he is unconscious you will have to do something pretty drastic to save him. The only way I have found of doing this is again to put him somewhere hot, but also to get him to swallow some brandy by using a pipette and rubbing his throat. This is not meant to work but I assure you that it does!

This condition usually only occurs in young rats that get **damp** and cold. I have seen it happen when a water bottle has leaked during the winter. Provided that the rats are given plenty of dry bedding and good, high calorie food, cold does not affect them as much as heat does. It is important to keep an eye out for this condition. Treated rats usually make a quick and complete recovery.

I

INFERTILITY: The commonest type of infertility is that encountered in older virgin does — especially if they are overweight. For this reason it is always best to mate does before they are eight months old — they are usually okay up till then. If you have a doe which you think is infertile, then pair her up with a proven buck. If you have a buck which you think is infertile, then pair him up with a young doe. In both cases the pair should be left together for about a month. After this, if there is no result you could try them with another partner. Some does do take a long time to become pregnant. In this case, I don't think it is a good idea to breed from these animals.

Some rats will not breed in the late Autumn or early winter. There is not much you can do about this except to wait. This happens with many animals including rabbits. One cure is said to be leaving the lights on until 10pm every day but I haven't actually tried this.

Both bucks and does can be responsible for small litter size — you can find this out by careful record keeping. Any rat that produces small litters of five or less should not be bred from.

Vitamin 'E' shortage will also cause infertility.

M

MITES: Mites, Lice and other external parasites affect rats as much as they affect all animals, hence the old adage:

Big fleas have little fleas
Upon their backs to bite 'em
And little fleas have littler fleas
And so on, ad infinitum.

There are many different species of mites but the commonest cause of concern among rat fanciers are the burrowing mites responsible for one type of spots and scabs.

It must be said that not all rats are prone to mite infestations for reasons that are not entirely clear.

Infested rats can be quite severely affected with considerable damage to the skin and coat. Prevention is better than cure. I use fly killers such as 'Vapona' or 'Mafu' as routine in my shed. These contain 'dichlorvos' insecticide and, providing they are used continuously, they will deliver good protection, even if you use hay (as I do) for bedding. Reptile keepers use these to keep mites off their animals.

Any infested rats should be dipped in either **Alugan** — available from the vet — or **Tetmasol** — available from the chemist. Do not get any of these mixtures into the rats' eyes but all their fur should be treated and it is more effective if you don't wash it all off. In addition, the toe nails on the rats' hind feet should be trimmed to prevent them scratching themselves. There is a drug available for treating mites called '**Ivomectin 1**'. This is still restricted for use on small livestock but seems to work well when injected. Some cavy fanciers are trying an oral type but most of them have told me that it is not very effective.

Another type of mite causes the disease **Demodectic Mange**. This is a terrible condition, causing progressive hair loss, thickened skin and infections. Without treatment it is fatal. It is not curable by conventional methods and is a job for the vet. It is not contagious except to related stock. As rats are inbred, it is best that any infested rats are put down.

MALOCCLUSION: This is a deformity of the teeth or jaw. It is either congenital or caused by an injury. Unfortunately, any form of misalignment of the front incisors of the rat causes the teeth no longer meeting to grow — usually into the cheeks or jaw. In kittens it appears around five to six weeks of age. The affected kittens will suddenly lose weight and often the upper lip will appear mishapen or swollen. Technically, it is possible to have the affected teeth removed or have them clipped back every ten days. There is no evidence that the commonest form of malocclusion (one tooth growing sideways causing the appraising tooth to over grow) is hereditary but it is probably better safe than sorry, do not breed from affected rats. An affected animal cannot be shown.

N

NEUTERING: Adult pet male rats that suddenly turn aggressive and vicious can usually be rendered docile by being neutered or castrated. The operation — which must be performed by a vet — usually costs the same as for cat neutering.

P

PYOMETRA: This is an infection of the womb which causes excessive amounts of pus to collect. A chronic discharge is seen issuing from the doe's vagina that is often blood stained. Sometimes the rat is obviously ill and may drink often — other times the rat appears normal. This condition does not respond well to antibiotics. If the animal is a pet it can be spayed, otherwise it should be put down.

R

RESPIRATORY INFECTIONS: These conditions, often called **Snuffles** are one of the biggest headaches of small livestock fanciers. If it is any consolation they are a problem to **all** livestock breeders and one of the major reasons for racehorses 'breaking down'. In rats it ranges from a mild, frequent sneezing through to pneumonia and there are many possible causes.

The mild sneezing illness which can be a precursor to Snuffles proper, usually strikes suddenly and attacks most of the stock simultaneously. The condition is usually minor, however and rights itself within a fortnight. It's symptoms are frequent sneezing of a clear fluid with no loss of condition and clear sounding lung. (Fine sawdust or other dust can cause rats to sneeze. The symptoms are the same, but do not last as long.) Good food and bedding is the answer to this. If liked, you can use '**Aspro Clear**' — half a tablet in one pint (0.60 litres) of water between twenty rats which will help. The cause is usually viral.

About one in twenty rats may develop sinus chest infections after this. This is a Snuffle proper. The rats will make a 'rattling' or 'snuffling' sound. This is caused by secondary bacterial infection and is **not** contagious. The bacteria causing it are normally present in the respiratory tract but are normally harmless. Common bacteria causing this are *Streptobacillus sp.*, *Pasteurella sp.*, and *Bordetella bronchiseptica*. Rats with this are often in good condition and will breed normally, although they cannot be shown. Treatment can be attempted with **Tetracycline, Chloramphenicol, Cotrimoxazole** or **Ampicillin** but treatment needs to be continued for at least a month. Rarely, one of these rats will develop pneumonia. This is desperately difficult to treat and requires veterinary advice and very thorough nursing. It's symptoms are prostration, wheezing, staring eyes and coat and high fever. Often it is better to have the animal put down as relapses are common.

Another form of Snuffle is caused by *Mycoplasma sp.* This produces similar symptoms but tends to be more severe with a large number developing pneumonia. It often appears to cause epidemics, especially

in new studs and is commoner in the Spring. It will respond to **Tetracycline** providing enough is given.

I do not believe in culling snuffling rats because either it is a case of locking the stable door after the horse has bolted or the rat is not infectious anyway and is perfectly capable of breeding. In the case of epidemics it could mean culling the whole stud. In the last case it is probably best to cull the worst affected rats that are unlikely to make a good recovery. The others, however, should develop immunity. It is so widespread in the Fancy that as a means of disease control culling is doomed to failure. However, if you have an infectious disease in the stud you must **not** show or sell any of them in case you pass the disease on.

RINGWORM: This is not caused by a worm but a fungus. The skin becomes scaly, raised and sometimes discoloured. In rats, it is commoner on the ears, tail and feet. This was common in the old Rat Fancy when it was called **Scaly Tail** or **Ear**. It is extremely rare now which is good as it is very contagious. Traditionally it was cured by the use of an ointment made up of vaseline, flowers of sulphur and 'Jeyes Fluid'! Now very good anti-fungal creams can be used such as **Tinaderm**, which is available from the chemist. Alternatively a vet can prescribe a drug such as **Griseofulvin**. Infected ears are unfortunately left with a ragged edge even after treatment.

RINGTAIL: This condition does not occur to my knowledge in the U.K., but in countries with low humidity. The tail end becomes dead and drops off. Various lengths of tail can be affected. The areas of tail just before the dead end often swell up.

S
SPOTS: These occur on the head, neck, shoulders and back of the affected rat and are scratches caused by the rat's claws. Rats scratch themselves for two main reasons; Mites (see Mites) and high fat foods. Too many sunflower seeds or peanuts in a rat's diet causes skin irritation. These should only be fed as a treat. Affected rats should have their claws cut, be dipped in an anti-mite preparation (see Mites) and be fed a low fat diet for a couple of weeks.

SCALY TAIL: See Ringworm.

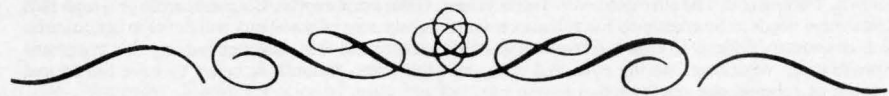
T
TAPEWORM: There are several species of Tapeworm that pets can get but only if they have access to wild rats' fleas. Rats with Tapeworm may be **Asymptomatic** or be 'non-doers'. Tapeworm segments, that resemble grains of rice, may be seen in the rats' droppings. Cat Tapeworm treatment tablets may be used but a vet can provide better treatments. Rat Tapeworms of the genus *Hymenolepis* can infect humans.

V
VITAMINS: Rats need Vitamins A, B, D, E and K, but not C. Most of these are freely available in the rats' normal diet (see Feeding). Vitamin K, which may be available in low amounts in the diet, is available in the rats' droppings, as Bacteria present in the colon produce it.

Shortage of vitamins can cause many symptoms, depending on the ones that are lacking. Commonest symptoms are sparse or dull coat and infertility.

If liked, a vitamin and mineral supplement can be used. Best are '**Vitapet**' (A, D and E) and one of the Seaweed powders (which contain lots of minerals). Remember, however that most commercial feeds (Vitalin, Winalot, Rabbit Mix, Dog Chow) contain added vitamins and so a supplement is not really necessary if you use one of these.

That's all for now. This is not a comprehensive list of rat illnesses and cures and I intend to update and enlarge it at some future point.



BREEDING FANCY RATS

BREEDING

By Ann Storey

In the beginning . . . there was a buck and a doe. Fair enough, some may say, that is all that needs to be said regarding breeding. If, however, one wants to rear good healthy kittens or if you are trying to breed show stock, it helps to know a bit more.

A rat can reach puberty as early as six weeks, although seven is more usual. At this age a doe is not anywhere near physically mature enough to raise a litter and it is best to keep them separate until they are at least five months old, when they are old enough for breeding.

BUCKS

Like other mammals, male rats are provided with two testicles which, in the rat, descend into the scrotal sacs from cavities in the abdomen at the age of three to four weeks. For another two weeks they are still liable to 'disappear' upwards at times of stress. Testicles have to hang outside the body cavity because spermatozoa do not grow if they are kept at body temperature; requiring a cooler environment. This is the reason why bucks are not quite as fertile during the hot summer months as during cooler times of the year.

Sperm production begins shortly after the testicles have descended, as does production of a hormone — testosterone — which brings about changes to make the buck rat look different from the doe.

Compared to the doe, bucks have a larger, heavier frame and a greater tendency to put on weight. Their heads are broader, muzzles blunter and coats considerably coarser. Adult bucks have a brown layer of skin under the coat.

As regards breeding for show, a stud should aim to have as few stud bucks as possible; 10–15% of the total rat population should be about right. These should be the cream. As a contrast to the athletic, racey doe, a buck should be heavy and muscular, without being fat. Never use small 'seven stone weaking' type bucks, only use large boned bucks with a broad skull and a fairly blunt nose. When viewed from the side there should be a definite shoulder and smoothly arched back and from the top a broad back without too much suggestion of a waist. This large thickset animal should, by the time it reaches full maturity at seven to eight months, be about 37cm in length and weigh in the region of 500g.

A buck should excel in as many departments as possible and any doe that he mates with should excel where he fails. If this all sounds like a tall order, remember that a stud is like a stallion or a bull, he will have a profound effect on your stud simply because of the number of offspring he is capable of siring. A poor buck can ruin a stud and just as not all male calves make bulls, not all male kittens make stud bucks. Never use a second rate buck. If you can't find a good buck amongst your own rats, borrow someone else's.

DOES

Does have a five day oestrus cycle. This means that every five days an adult doe releases several eggs from her ovaries down into her two-horned uterus (if she only had a human type uterus she would be unable to have as many kittens). At this time a doe comes on heat. Normally, a doe will not allow a buck to mount her, however, ovulation coincides with the release of a hormone designed to make her more receptive. A doe on heat will, from time to time, 'freeze', jump sideways and vibrate her body — especially the head and neck region. If you examine a doe's vagina when she is on heat the area will probably be a mauvish colour and the mouth of the vagina gaping open as opposed to the normal pinkish colour and almost unnoticeable entrance. This is the time to mate your doe.

If you are breeding for show, choose a doe who is fully adult, about five to six months for a first litter and not over eighteen months (when a doe reaches the menopause). Only breed from a fit doe with a glossy coat, no fat and looking as though she could run a marathon. A fit animal has a firm, lively feel when picked up. Do not use does in poor condition, heavy moult, snuffles or other illnesses. Another thing is that it is very easy to overfeed and most older does are carrying a bit of surplus. Any suggestion of tummy lessens a rat's chances of pregnancy, because fat builds up around the ovaries and the eggs may not find the entrance to the oviducts.