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Rabbit Management in Woodlands

H W Pepper



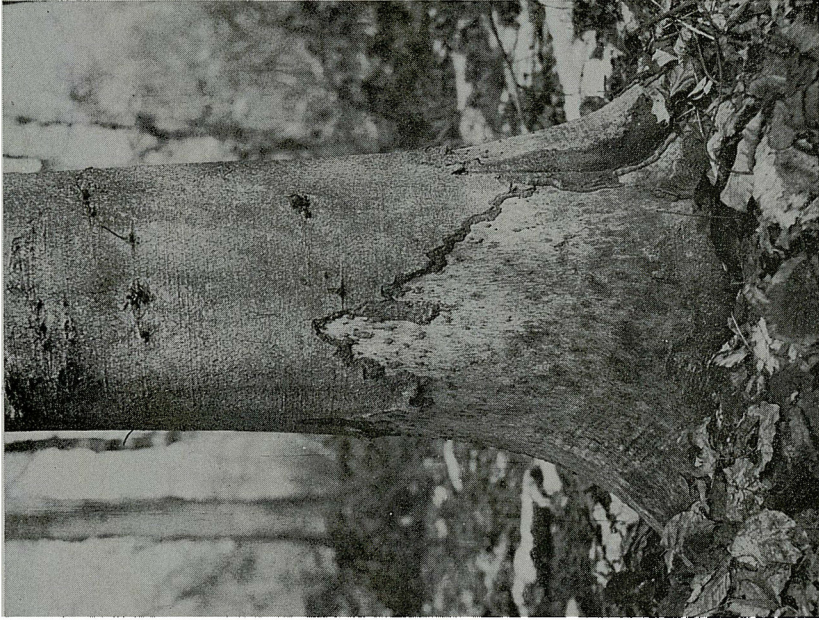


Plate 2. Winter bark-stripping damage on beech. Grey squirrel damage can be similar but is caused during May, June and July.

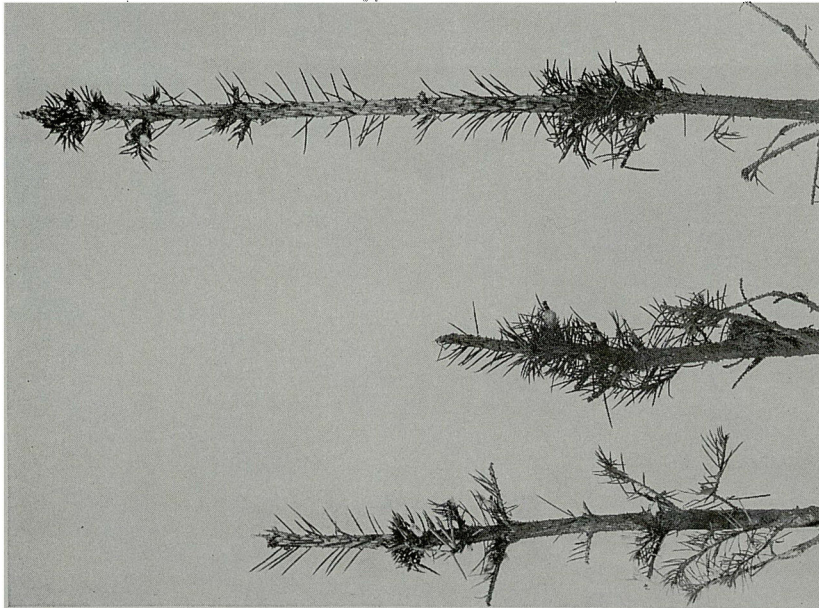


Plate 1. Sitka spruce (actual size—after browsing by rabbits) were 300 mm tall when planted a few months earlier.

RABBIT MANAGEMENT IN WOODLANDS

By H. W. Pepper

Forestry Commission

INTRODUCTION

Before the advent of myxomatosis both the Forestry Commission and private woodland owners spent large sums of money on protecting their plantations against rabbits. The myxomatosis outbreak of 1953–1955 had a devastating effect on the rabbit population in Britain, and it is unlikely that rabbits will, in the future, reach the pre-1953 population levels of 50 rabbits per ha on many areas (Lloyd 1970). Since 1955 some rabbit colonies have increased in size considerably and then been reduced to low numbers by an outbreak of myxomatosis. In other colonies they suffer the disease annually, keeping the numbers generally low (Vaughan & Vaughan 1968). The latter is the more usual occurrence. However, the possibility of a myxomatosis outbreak cannot be relied upon as a control method.

In 1973 the Forestry Commission had rabbits present on 253 of its 255 forests and 184 forests had suffered some damage to trees. Woodlands in private ownership were also damaged by rabbits. The damage was mainly browsing and bark stripping on young conifer and broadleaved trees (plates 1 and 2). There is a legal obligation upon the occupier under section 1 of the Pests Act 1954, the Agricultural Act 1947 and the Agricultural (Scotland) Act 1948 to control rabbits wherever present, as well as a necessity when the animals are inflicting damage of economic importance to woodlands and farm crops. Shooting rabbits for sport cannot on its own be considered as a method of control.

THE RABBIT

The European rabbit *Oryctolagus cuniculus* L. is a native of S.W. Europe, North West

Africa and the western Mediterranean Islands. It was introduced into Britain during the 11th and 12th centuries and is now to be found throughout the British Isles. Rabbits are gregarious animals and live in groups or colonies, usually in warrens. There is little interchange of animals between colonies. It has been suggested that some rabbit colonies have changed their habits and are now entirely surface dwelling. There is, as yet, no evidence to substantiate this belief. It has always been known that a proportion of rabbits are surface living and that some rabbits live both above and below ground at different times of the year. The rabbit colony has a well-defined social structure. The does are territorial within the warren and are higher in number than the dominant bucks. Most dominant bucks are old. The younger males take little part in the affairs of the warren and are usually surface dwelling. Breeding by dominant does takes place in blind ends in the main warren. Subordinate does frequently construct blind burrows, or breeding "stops" away from the main warren. The young born in the main warren probably contribute most to the subsequent rabbit population as the litter in the breeding stop is more exposed to predation particularly by badgers on light soils.

The main period for births is from February to July with sporadic births in all other months. An adult doe will produce 2–5 litters in a year and 2–8 young are born in a litter. The period of gestation is 28–30 days. Under adverse weather conditions, if there is overcrowding in the warren, or if food is short, the doe may lose the litter during pregnancy, thereby increasing the period between births of litters. The number of young produced per litter may also drop.

The young are born naked and blind in a

nest of grass lined with fur plucked from the female's body. They weigh about 30–40 g at birth and do not venture out of the nest until they are about 3 weeks old, at about 150–200 g. When they reach sexual maturity, at about 3 to 4 months, they may leave the home warren. These juvenile animals will frequently group and form a new colony.

An adult rabbit can consume as much as 450 g of green food a day. The variety of edible herbage is wide and includes cereals, pasture grasses, roots, the shoots of young trees and the bark from the stems of older trees.

RABBIT MANAGEMENT PLAN

The estate rabbit management plan should be drawn up to cover all woodlands and surrounding agricultural land. The plan should have three objectives: to comply with the legal requirements of the 1954 Pest Act, to prevent damage of economic importance to forestry plantations and to prevent rabbit colonies, resident on forestry land, from damaging neighbouring farm crops.

The basis of the plan should be an evaluation of the rabbit problem. This should be based on the size of the rabbit population, the extent of vulnerable crops and the intensity of damage. The rabbit problem should not be looked at in isolation but within the overall strategy for wildlife conservation and control. With the basic evaluation data the plan can justify and lay down a protection and control programme utilising the available manpower and equipment.

It is not practicable to exterminate rabbits completely from a wood, nor can natural recurrences of myxomatosis be relied upon for rabbit control. (It is illegal to translocate myxomatosis-infected rabbits). Therefore where damage of economic proportions is either occurring or expected, protection of the tree crop must be obtained by one of the following approaches or by a combination of both:

(a) Putting a physical or chemical barrier

around the trees, such as a rabbit-proof fence, individual rabbit-proof tree guards or, in certain circumstances, chemical repellants.

(b) Reducing the rabbit population to as low a level as possible with the various control measures available. The basis of rabbit control should be to use gassing powders wherever possible. Snaring, trapping, ferreting and perhaps shooting with dazzling are labour-intensive techniques that require considerable expertise and are best utilised for small infestations, "mopping up" after gassing or on areas where gassing is inappropriate.

On some of the larger forested areas it may be unnecessary or economically undesirable to reduce the whole population to the lowest possible level provided the population is contained to a level where damage is acceptable and there is no emigration of juveniles on to neighbouring land. Sporadic control is usually ineffective. The plan will normally be based on systematic control on a block basis to create damage-free areas. The blocks should include neighbouring farms as well as woodlands. In these circumstances co-operation with the farmers is essential and it will be desirable to involve the local Pest Officer of the Ministry of Agriculture, Fisheries and Food or Department of Agriculture and Fisheries for Scotland to help co-ordinate the control activities.

The rabbit management plan should make provision for the destruction, wherever possible, of sites that are known to harbour colonies of rabbits, i.e. the removal of burrow systems, in particular unwanted and broken-down banks, and the clearance of dense cover such as bramble patches, gorse or shrubs. The removal of cover will encourage rabbits to use holes, making control that much easier. However, it is important that any clearance of cover does not conflict with either the management or conservation interests of any other wildlife. The cover that is being utilised by the rabbit may be a fundamental part of another

animal's habitat. Care should be taken to avoid creating cover by leaving heaps of brash on a clear-felled area. The systematic blocking of all rabbit holes will enable recolonisation, after myxomatosis or control, to be pinpointed. Broken ground such as old quarries, sea cliffs and railway cuttings are likely to harbour colonies of rabbits. In such places the cost of eradication may be quite uneconomic and it will be necessary to fence in the colony. Rabbits may be resident on neighbouring land outside the jurisdiction of the forester and in these instances particular attention must be paid to the boundary fences.

Normal forest operations should also be complementary to the rabbit plan in order to allow protection measures, in particular fencing, to be carried out as economically as possible. The size and shape of a felling area for example should be determined to facilitate fencing economies.

PROTECTION

PHYSICAL AND CHEMICAL BARRIERS

I. Fences

Although the initial cost of fencing is high, the fence is currently the only method of protection that will allow the successful establishment of a tree crop on many areas. The methods and general principles of fencing under forest conditions are to be found in the Forestry Commission *Forest Record No. 80* (Pepper & Tee, 1972). Figure 1 shows the specification for a rabbit-proof fence while Table 1 lists the suppliers of the metal components required for the fence.

The bottom 150 mm of the netting is turned out towards the rabbit colony and held down by turves. Under certain conditions it may be necessary to dig the netting into the ground.

It is advisable when siting the fence line to avoid tree stumps and rock outcrops as these can be difficult to make rabbit-proof.

TABLE 1
SUPPLIERS OF METAL COMPONENTS FOR A RABBIT FENCE

Component	Supplier/Manufacturer
<u>Line wire</u> Galvanised spring steel fencing wire 2.63 mm 8400 Newtons.	Rylands Whitecross Ltd. Warrington, Lancashire.
<u>Netting</u> Galvanised hexagonal mesh 1050 mm wide 31 mm mesh 1.25 mm wire.	Rylands Whitecross Ltd. Richard Johnson & Nephew (Steel) Ltd. Forge Lane, Manchester M11 3EH. Tinsley Wire Industries Ltd. Agricultural Division P.O. Box 119, Sheffield S9 1TY.
<u>Ring fastenings</u> Gordian gun and rings.	Michael Sharp & Co. Ltd. The Old Rectory Benton Grantham, Lincs.

The number of gates in a fence should be kept to a minimum as they make the task of maintaining a rabbit-proof barrier more difficult. A wooden sill is dug in between the gate posts to prevent burrowing under the gate—Figure 1 (top). The gate posts should also be independent of the fence straining posts. This will prevent the slight but unavoidable movement of the straining posts affecting the hang of the gate.

It must be emphasised that regular inspection of the rabbit fence is essential to ensure that gates are kept shut and that the fence itself remains rabbit-proof for as long as

necessary. It may be necessary to clear the vegetation from one side of the fence to provide an inspection path. Badger gates are a valuable addition to the fence in the vicinity of badger setts (Rowe 1976).

II. Individual Tree Guards

It may not always be practical or economically desirable to erect a rabbit fence to protect young trees that are widely spaced, for example trees planted for amenity in parks, gardens and roadsides. Under these circumstances each tree may be individually protected with a rabbit-proof guard. These guards

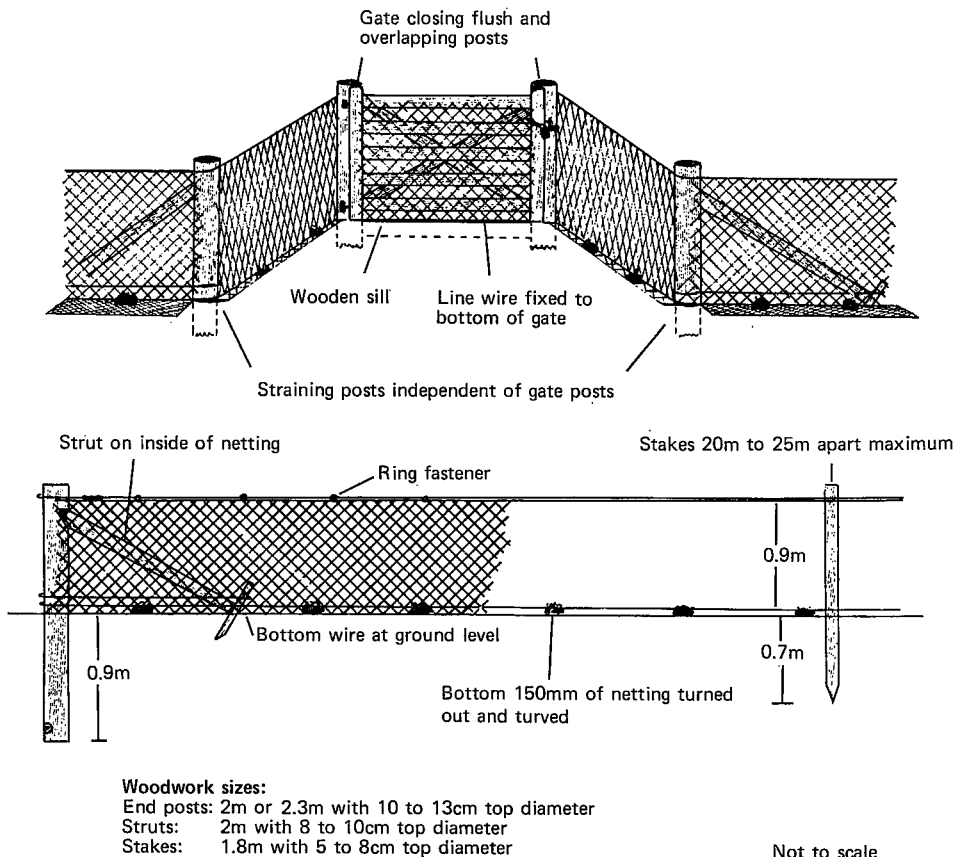
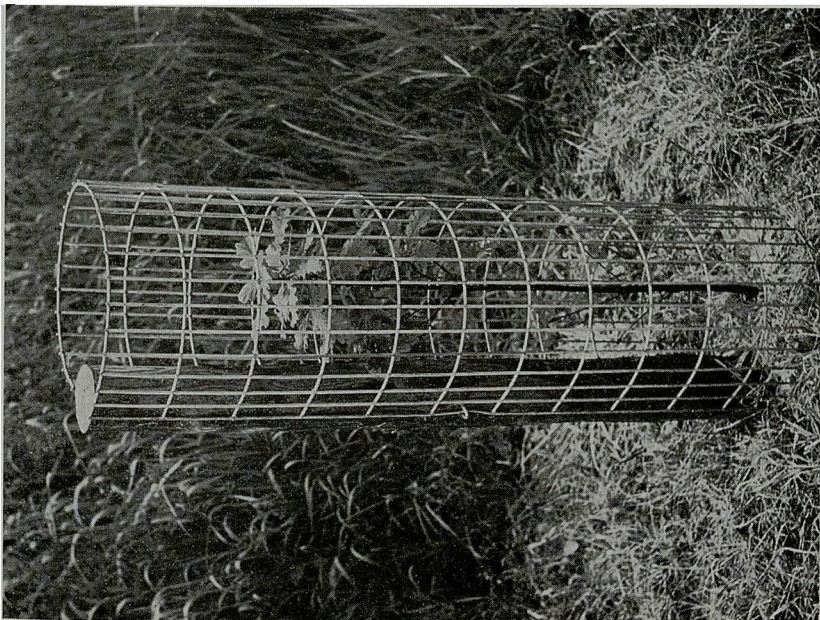
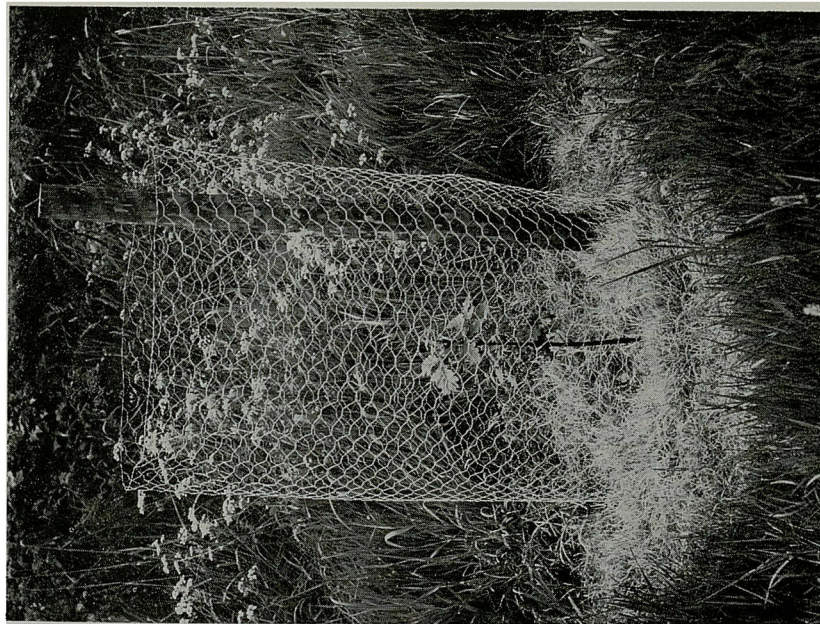


Figure 1. Specification of a rabbit fence and (top) construction of a rabbit-proof gate.



A factory-produced tree guard of welded mesh.



A guard made with rabbit netting.

Plate 3

may either be a commercially available product, usually manufactured from welded mesh netting, or made up on site using rabbit netting and wooden stakes (Plate 3). Welded netting guards are manufactured by BRC Ltd. of Stafford and Tinsley Wire Industries Ltd. and can be obtained direct or via a merchant.

III. Chemical Repellants

The protection of the young shoots of trees against rabbits with chemical repellants is expensive and results are often disappointing. Their use should therefore be restricted to individual trees in small plantations, less than 2 ha in area, that cannot be protected in any other way. Most of the chemical repellants that are available are ineffective. The Dutch repellant "Aaprotect", if applied in November, has proved to be the most effective of the

repellants tested by the Forestry Commission. Aaprotect, which contains 32 per cent of the active ingredient ziram, can be applied by painting, dipping or spraying. One application of repellant will reduce winter browsing of young shoots by 95 per cent. Unfortunately, it is often not suitable for application to young spring growth and treatment must be repeated annually until the trees have outgrown the vulnerable stage. It is available from Arable and Bulb Chemicals Ltd. of Market Way, Spalding, Lincs. and Dufar-Midox of Smarden, Kent.

POPULATION CONTROL

I. Gassing

The technique of cyanide gassing under suitable conditions is a highly efficient and



Plate 4. Spoon gassing of burrow.

humane way of killing rabbits and is recommended for control wherever practicable.

Gassing is not suitable for either burrows situated in soils with a high stone content or where large tree roots are present, or when the carcasses are required for sale. Gassed rabbits, even if recoverable, cannot be sold for meat. Powdered cyanide compounds are used which give off hydrocyanic acid gas when in contact with moist air. The cyanide powder is introduced into the burrows with either a spoon or a pump.

All personnel involved in gassing must be trained in the safe handling of the powder and be able to recognise and treat the symptoms of poisoning (see p. 10). At least two trained people should be present when gassing powder is being used and they should have with them capsules of the antidote amyl nitrite, together

with a clean handkerchief or preferably a Kelocyanor pack with the amyl nitrite capsules attached.

Prior to commencing gassing operations it is essential to drive any rabbits on the surface into the burrows to be gassed, after which all dogs should then be removed and kept upwind of the area to be gassed.

Spoon gassing is more economical for small infestations and mopping-up rabbits surviving pump gassing. Except in woodlands where systematic blocking of rabbit holes is regularly carried out, all rabbit holes are searched for and blocked with earth 2 or 3 days before gassing. Approximately 28 g (a level teaspoon) of powder is placed in a heap 150 mm down every hole that has been reopened by rabbits (plate 4). Each hole is sealed with a sod, grass side downwards. Care should be taken not to

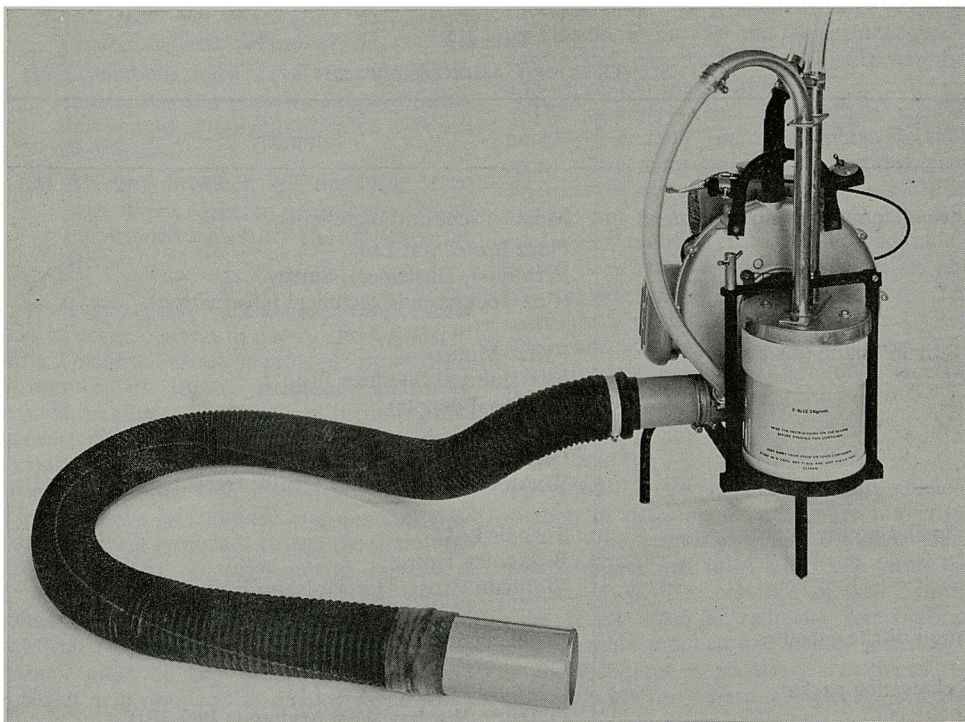


Plate 5. The Impeller power pump.

cover the powder with soil. A concentration of cyanide gas builds up about 300 mm down the burrow and any rabbit attempting to dig its way out will be overcome. The gas remains in the burrows for at least 24 hours.

Pump gassing is more suitable for large well-populated warrens. In general, warrens with less than 50 holes are best dealt with by hand-pump (front cover), whereas large warrens in excess of 50 holes are beyond the capacity of the handpump and a power pump should be used (plate 5).

The objective of pump gassing is to fill the entire burrow system with a lethal concentration of gas. Therefore no preliminary blocking of holes is done because holes that are closed inhibit penetration of the powder. The hose from the pump is placed well down a rabbit hole and sealed with soil. Holes are systematically blocked with a sod only when

powder is seen to emerge. A supply of ready cut tubes will enable the holes to be blocked without delay. It may be necessary to pump powder into several different areas of the burrow before powder appears at all the holes. Table 2 lists suppliers of pumping equipment and powders.

Hydrocyanic acid gas can be lethal to humans if ingested or inhaled, and therefore it is imperative that the following simple safety precautions are observed at all times:

- (a) The powder must be kept in an air-tight tin with an air-tight lid, clearly labelled to show contents and give a warning. The lid must be kept firmly in place at all times other than when the powder is being dispensed.
- (b) Powder and equipment must be kept in a cool, dry, well-ventilated and lockable

TABLE 2
SUPPLIERS OF GASSING EQUIPMENT

Item	Supplier
Cyanide powder (sold as Cymag)	Most agricultural merchants Plant Protection Ltd. Fernhurst, Haslemere, Surrey. (For stockists and technical information).
"Burrin" hand gas pump	Fyffes-Munro Horticultural Sundries Ltd. (Regional depots) and Gilbertson & Page Ltd. Roestock Lane, Colney Heath, Herts.
Impeller power pump	Turbair Ltd. Britannica House Waltham Cross, Hertfordshire EN8 7DR.
Amyl nitrite capsules	Local chemists.
Kelocyanor packs	Cuxson Gerrard & Co. Ltd. Oldbury, Warley, West Midlands B69 3BB.

store. The store must not be inhabited by humans or animals. Ventilation is also essential when transporting equipment and powder in a vehicle.

- (c) All equipment should be regularly checked and maintained.
- (d) During gassing, operators should always stand with their backs to the wind and never work in strong winds, wet weather or in or near buildings. During pump gassing never work downwind of unblocked holes.
- (e) Operators must not smoke whilst using the powder and must always wash their hands thoroughly before smoking, eating or attending to personal needs.
- (f) Open cuts should be protected. Avoid getting powder on the skin and clothing. *Gauze masks must not be worn as these will trap and concentrate the powder around the nose and mouth.*
- (g) Equipment must never be washed in ponds, lakes or streams. Empty powder tins should be punctured, filled with soil and buried.
- (h) All farm livestock and dogs should be kept clear of gassing operations, and all but trained operators should leave the area.

Hydrogen cyanide will cause partial or total loss of consciousness in a very short space of time. Unconsciousness is preceded by warning symptoms of throat irritation, dizziness, nausea, palpitation, difficulty of breathing and general weakness. Any person showing these symptoms must immediately be moved away from the gassing area into clean, fresh air. Clothing must be loosened and any contaminated garment removed. Unless the symptoms are very slight an amyl nitrite capsule is broken into a handkerchief and the vapour inhaled. If respiration is difficult or has stopped artificial respiration must be given and the patient must be kept warm and quiet and medical help obtained as quickly as possible. Under these circumstances the provision of a "Kelocyanor" pack enables treatment to be

administered as soon as medical help is available.

The Kelocyanor pack is sealed and *it may be opened and its contents administered only by a qualified medical practitioner.* Two amyl nitrite capsules should be attached to the outside of the pack, together with an instruction sheet for first aid use. Amyl nitrite capsules must not be kept for more than 3 years. The Kelocyanor packs must also be returned after 3 years to the suppliers for their contents to be replaced.

II. Rabbit Control Cartridges

These cartridges give off phosphine gas when ignited by striking them on a safety match box. They can be an alternative to spoon gassing for the occasional small burrow system. The procedure is similar to that employed for spoon gassing. The ignited cartridge is placed well inside the burrow and the entrance closed with a sod, care being taken not to smother and extinguish the cartridge.

The cartridges cost more than cyanide powder but their main advantage is their safety. There is no container disposal problem. They can be carried around safely at all times and do not deteriorate in storage. The only equipment required is a spade and safety match box. The phosphine gas is visible and has a characteristic smell of rotten fish. The cartridges are marketed as RCR Arrex Cartridges and are obtainable in containers of 10 from Rodent Control Ltd., 70/78 Queen's Road, Reading, Berkshire.

III. Snaring

The rabbit snare is a quick and efficient method of catching if rabbits are numerous and weather conditions are suitable. Dark windy nights are ideal and will yield the highest catch. The presence of well defined runs is an essential requisite for snaring. Considerable practice and expert instruction in the technique is necessary to achieve the skill required to snare effectively. Snaring should be used where the rabbit population is predominantly surface dwelling or on a wind-

blown area where the lifted root systems provide sufficient cover to make burrowing unnecessary. The snares are set in well-used rabbit runs, which in forests are frequently along internal rides and the forest boundaries. Snares must not be set in fields containing livestock or areas of forest where public access is encouraged. Snaring should be aimed at catching rabbits either leaving the cover of the plantation or warren to feed on the rides and surrounding fields or on their return after feeding. Most rabbits are caught at night and the snares should be visited at least once daily but ideally soon after dawn and at dusk.

The snare is made from stranded brass cable wire that runs freely through an "eye" which is fixed in one end of the wire. Rabbits when using a run put their fore and hind feet in the same places making characteristic marks. The

snare should be set in front or in the middle of the mark made by the forefeet (plate 6). The noose of 100 mm diameter is held approximately 90 mm from the ground with a stick (pricker or teeler) and the free end of the wire is securely tethered to a peg. The peg should be long enough to be driven firmly into the ground to prevent a captured rabbit dragging it up.

It is desirable to "weather" new snares by hanging them up outside before they are used. Great care should be exercised to avoid tainting snares with human or other rabbit-repellant odours.

There is some controversy as to whether the snare with a knot or "stop", 140 mm from the eye to prevent strangulation, is more humane than the free running snare. It is considered by some that a captured animal in



Plate 6. A snare set on the edge of a young plantation.

a "stop" snare is more likely to struggle and cause unnecessary distress and suffering. The struggling may be sufficiently vigorous to break the wire. Snares are available from Gilbertson and Page Ltd., S. Young & Sons (Misterton), Enterprise Works, Misterton, Somerset, and some agricultural merchants and hardware stores.

IV. Spring Trapping

Gassing should be used in preference to spring trapping wherever possible. If gas is not suitable, snaring should be considered as an alternative which is less time-consuming and will catch both surface as well as burrow-dwelling animals. Trapping should only be used where the conditions are unsuitable for using gas, and it is also undesirable to snare because of livestock or human activity in the area.

The Pests Act 1954 only allows the use of spring-traps (also referred to as humane traps) that have been approved by the Ministry of Agriculture. The Spring Traps Approval Order 1975 specifies that the Mark I and II Imbra, Fenn Rabbit Mark I and the Juby trap may be used for killing or taking rabbits. A full description of the approved spring traps is given in Forestry Commission Leaflet No. 56, *Grey Squirrel Control* (Rowe 1973). It is illegal under the 1954 Pests Act to set spring traps for rabbits other than in burrows. The traps must be placed within the overhang of the hole. The 1911 Protection of Animals Act requires all traps to be visited at least once every day. The traps should be set firmly in position with the treadle plate set flush to the floor. Soil should be placed around the trap and over most of the jaws. Care should be taken not to get soil under the treadle. Some holes will need enlarging with a small spade whereas others will require to be narrowed with stones or sticks. Not all burrow entrances are suitable for spring trapping, for example, a hole that is too small and cannot be enlarged because it is amongst the root spurs of a mature tree. Control of rabbits with spring traps is a laborious and time-consuming

operation requiring considerable expertise in the trapping technique.

V. Ferreting

Gassing and trapping operations sometimes leave a residue of rabbits and ferreting can be a useful technique for "mopping-up" these rabbits. It is advisable to allow at least a week before ferreting a gassed area. Animals that are to be used for ferreting should be selected from a strain of ferrets exhibiting a good working ability. One or more ferrets are put down the burrow to chase out or bolt rabbits either into a purse-net or for shooting. Purse-nets are carefully put over all the holes and pegged. A well-trained dog will mark the holes most likely to house rabbits and will also run down any rabbit that escapes a purse-net. When ferreting it is imperative to work as silently as possible as unfamiliar noises will cause the rabbits to sit tight. Rabbits captured in nets should be killed quickly and silently and the net replaced.

A ferret will sometimes kill or corner a rabbit underground and it will have to be dug out. This is a laborious task but it does have the advantage of destroying the burrow. An iron bar is used to locate the burrow. Specialised spades of various shapes and sizes for different soil types are available to aid digging. A ferret on a line marked at metre intervals with tape can be used to pinpoint where the ferret is "laid up". Electronic locaters can also be used. A small transmitter is placed around the ferret's neck and a hand receiver is used to home onto the transmitted signal. Ferrets are sometimes muzzled to prevent them killing underground. Ferreting is best carried out during the months of October to March when there are no young in the burrows to distract the ferrets and less vegetation to conceal exit holes. This method is labour intensive not only in the actual ferreting operations but in the time required to breed, keep and train ferrets.

Equipment for ferreting can be obtained from Gilbertson and Page Ltd., S. Young & Sons and some agricultural merchants and

hardware stores. An account of these interesting animals is given in Forest Record 76 (Poole 1975).

VI. Dogs and Guns

The organised shoot with the assistance of dogs should be primarily considered as a sport although it can be usefully employed to clear surface-living animals, in particular, from scrub woodland. It is more economical wherever possible to drive surface living rabbits to earth and gas them.

A man on his own with a dog and gun will have little effect on a rabbit population. The use of firearms discharging single bullets such as a .22 rifle is not recommended. Only really expert shots can be sure of hitting even a stationary rabbit and therefore the practice of shooting rabbits from a high seat or with spotlights (see section VIII—below) should only be done in exceptional circumstances when all the alternative control methods have been considered and proved to be unacceptable.

VII. Biological control

The translocation of rabbits infected with myxomatosis as a method of obtaining control is illegal. Artificially raising the population of predators on an area is unlikely to have more than a marginal short-term effect on a rabbit population. Young, non-breeding rabbits are most likely to be caught. Such a strategy would also be unpopular with gamekeepers and shepherds.

VIII. Dazzling at night

This method of control can only be carried out safely on open ground and is therefore less likely to be suitable for woodland rabbit control. A beam of light is directed near or onto a rabbit. When in the light the rabbit crouches and can be shot. This method is ineffective on clear moonlit nights and requires, for best results, to be carried out on dark, windy and damp nights. A battery and car spotlight are all that is required.

Shooting at night with lights can be dangerous and comes within the Ground Game Act of 1880. The Act restricts the right to shoot at night to owner-occupier, shooting tenant and landlord. They must also have the shooting rights. This method can cause considerable disturbance to domestic stock, game birds and wildlife and can provide a cover for poachers on areas where they are active. It is therefore not a recommended technique for use in forest conditions. When this method is contemplated, it is often helpful to discuss the proposal with local police and some neighbours.

IX. Long Netting

Successful long netting is dependent on the two following conditions:

- (1) That there is a good number of rabbits feeding in the surrounding fields.
- (2) The rabbits are far enough away from the boundary to allow the nets to be erected without disturbing the feeding activities.

A high degree of skill is required to operate this method of control. It is also expensive in labour and materials. Nets 50 to 150 metres long and 900 mm high and with 25 to 40 mm mesh are supported on 800 mm sticks 5–10 m apart. A line along the top of the net is kept taut between the sticks and the net is allowed to hang loosely from it. The nets are best set at night around woodland approximately 15 m from the boundary so that they are between the cover and the feeding grounds. Windy nights should be used to prevent the noise of erecting the nets reducing the effectiveness of the operation. The rabbits are driven, by man and dogs, from the fields into the nets. The necks of captured rabbits are dislocated before removing from the nets.

Alternatively, drop netting can be used. The nets are set out during the day and left in a raised position, sometimes for several days to allow the rabbits to become accustomed to their presence. The nets are then dropped on a night when conditions are ideal. When rabbits are numerous nets will take more rabbits than snares. Because the nets are set outside the

forest boundary permission from the neighbouring farmer must be obtained before operating on his land.

Long nets may be erected during the day along rides of young, unbrushed plantations and the rabbits driven from the wood into these nets. Ferrets may prove useful in some conditions for driving the rabbits into the nets. Long nets can be obtained from Gilbertson & Page Ltd., and S. Young & Sons Ltd.

X. Poisoning

It is illegal to lay down poison baits for rabbits.

XI. Humane killing of captured rabbits

There are two physical methods of killing rabbits recommended by the Universities Federation for Animal Welfare (Scott and

Ray, 1972) and both involve dislocating the animals' necks.

Method 1 The hind legs should be held firmly in the left hand. With fingers extended and rigid the heel of the right hand should strike violently downwards on the back of the rabbit's neck. A heavy stick may be used as an alternative to the hand.

Method 2 The hind legs should again be held firmly in the left hand. The thumb of the right hand should be placed on the head with the fingers under the lower jaw. The head should be turned back and the rabbit stretched until the neck is dislocated.

With both these methods death is quick and suffering minimal.

REFERENCES

- LLOYD, H. G. (1970) *Post-myxomatosis Rabbit Populations in England and Wales*. EPPO Public Ser. A. **58**, 197-215.
- PEPPER, H. W. and TEE, L. A. (1972) *Forest Fencing*. Forestry Commission Record 80.
- POOLE, T. B. (1975) *Polecats*. Forestry Commission Record 76.
- ROWE, J. J. (1973) *Grey Squirrel Control*. Forestry Commission Leaflet 56.
- ROWE, J. J. (1976) *Badger Gates*. Forestry Commission Leaflet 68.
- SCOTT, W. N. and RAY, P. M. (1972) *Euthanasia*. In the UFAW Handbook on the Care and Management of Laboratory Animals 4th ed., pp. 159-160.
- VAUGHAN, H. E. N. and VAUGHAN, J. A. (1968) *Some aspects of the epizootiology of myxomatosis*. Symposium of the Zoological Society of London. **24**, 289-309.

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