

THE ROE DEER

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HABITAT AND DISTRIBUTION

The roe is essentially a woodland deer. Although it feeds in the open at dusk and dawn, in clearings and along the edges of forests, it is rarely found far from cover. Under natural conditions it is an inhabitant of thicket and scrub and the earlier stages of forest succession, and it tends to shun pole stands and the more heavily stocked areas of mature timber where undergrowth is sparse.

Because of these preferences it is well adapted to living in young plantations, and in Britain the extensive legacy of cut-over woodlands resulting from two world wars, and the ensuing large scale programmes of replanting and afforestation, have lately provided this attractive animal with conditions that are ideal for it. In many places its resultant spread and increase have led to it becoming a forest pest.

The European roe deer (*Capreolus capreolus*,

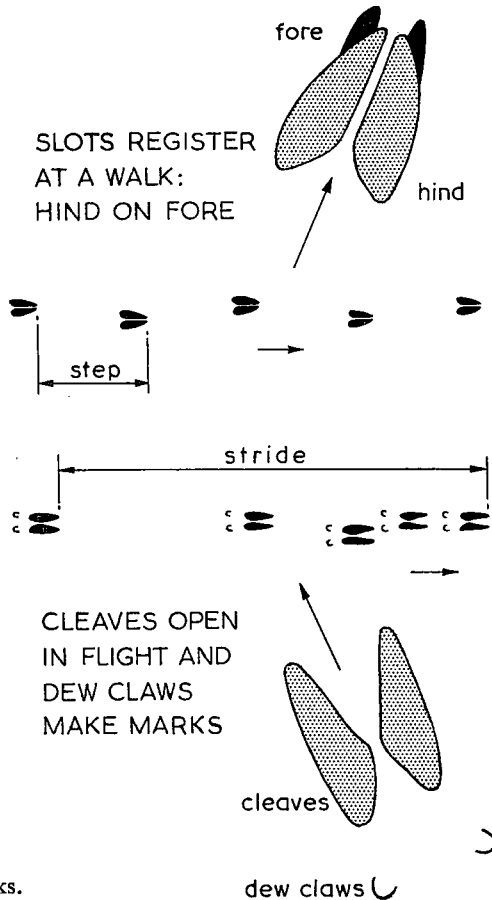


Figure 1. Roe deer tracks.

L.) is native to Britain but apparently not to Ireland. It occurs over most of Europe in suitable habitats and extends to western Russia and parts of Asia Minor. In Scandinavia it is gradually pushing northwards, and as in the Alps and other mountain areas, the limit to its range seems to be set by the depth and duration of snow cover. Scandinavian and Polish roe show some adaptation to snow conditions in increased size, and the two other species of roe deer, from Siberia and Manchuria, are both much larger in body and horn, probably for the same reason.

In Britain the native stock was progressively reduced by the clearing of forest and seems to have reached its lowest ebb during the middle of last century, when wild roe were virtually restricted to the Highlands and to one or two localities on either side of the Scottish border. In Sussex, however, there is some evidence that roe formerly preserved in the deer park at Petworth were of local origin, and animals of this stock, with other introductions from Scotland, were subsequently released near Milton Abbas in Dorset, from whence they have now spread eastwards into the New Forest, and westwards as far as Devon. Local escapes from Petworth have also repopulated an extensive area covering adjoining parts of Sussex, Surrey, Hampshire and Berkshire, and in the latter county these were supplemented by the release of Scottish roe near Bagshot.

In East Anglia the existing roe are of German origin. They were imported originally to Elveden and having multiplied in the new plantations at Thetford Chase, they are now extending their range elsewhere. Some other importations were less successful or have been less well recorded. In Bedfordshire, Siberian roe were released at Woburn but have died out.

There are at present no confirmed occurrences of roe deer in Wales; though cast antlers have been found in Denbighshire, there are at present no reports of roe deer surviving there. In central England only one small pocket is known. But the native race has spread down from the north, in suitable localities, as far south as Lancashire and York-

shire, while north of the Border roe are now strongly re-established in every county of the Scottish mainland. They also survive on the two islands of Islay and Bute.

SIGNS OF ROE DEER

Because of their wariness and addiction to cover the presence of roe is usually deduced from *signs* before the animals themselves are actually seen.

The most revealing of these are the tracks, found on bare soil in ruts and drain bottoms, on their *racks* or pathways, at *passes* where they regularly cross rides or streams, or at *entries* where they get through fences, and most widely during snow. A series of foot-prints is called the *trace* and an individual print the *slot*. The two halves of the hoof representing the principal toes are *cleaves*, and vestiges of two other toes, whose impression is seen only in soft ground or during flight, form the dew-claws or *sur-cleaves*. The slot of a full grown roe is rather wider than a man's thumb, and when walking normally the hind foot is placed in the slot left by the fore. The prints are then said to *register*. The trace thus consists of a series of paired impressions and when this regular *pattern* is formed the step is constant and measures about $1\frac{1}{4}$ feet. In flight the prints show separately, in groups of four, the cleaves open, and the marks of dew-claws are prominent (Figure 1).

The slots of a young deer are short, shallow, and sharp cut; those of an old one are long and deep, the edges of the cleaves are thick, and the step is lengthened. Once age is thus assessed, an experienced tracker can usually distinguish among older animals the larger and outward pointing slots, the stronger dew-claws and the longer and more regular step of the male. These differences are however less pronounced in roe than in the tracks of larger species of deer.

The droppings or *fewmets* of roe are black, smaller and more elongated than those of sheep, and non-adherent. They are a useful sign on grass and other vegetation where



Figure 2. Roe buck, with his antlers "in velvet" and roe doe, in Grizedale Forest, Lancashire. Both are in winter coat and the buck shows a white throat patch. March.

slots are *foiled* and do not show, as their relative abundance and freshness indicate how intensively an area is being used.

To a forester the most obvious signs of roe deer activity will be *grazing*, *browsing*, and *fraying*, and all these types of damage are described more fully below. In common with other deer roe have no incisors in the upper jaw, where these teeth are replaced by a horny pad. They therefore prefer to pluck only the more tender portions of growth and where they do sever woody shoots the underneath cut is sharp but the upper side tends to be torn or shredded. Sheep and hares on the other hand are less selective and make a perfectly clean bite; the latter often deliberately clip hard stems to grind their teeth and then characteristically discard them as they move on.

These distinctions are critical in any

objective assessment that may be made of the damage caused by roe deer alone.

DESCRIPTION

The male roe is called a *buck* or roebuck, the female is a *doe*, and the young while still dependent on their mother are known as *kids*, and thereafter until the end of the following summer as *yearlings*. Antlers begin to grow, on the buck only, in December, and remain "in velvet" until April or May. They are shed in November.

The normal full grown buck (3 years old) should stand about 26 inches at the withers, and weigh at least 38 lbs. clean (without entrails but including heart, lungs and liver). The doe (Figure 13) may be 8 to 10 lbs. less, and an inch or two smaller. In Britain very few data have been collected on this and

similar subjects, and where control is carried out it is very desirable that proper records should be kept of all deer shot.

In winter the colour of the roe is grey brown with one, or sometimes two, white patches on the throat (Figure 2), but in summer the body, though not the face, shows various shades of foxy red, which tend to become browner with age. A yellowish tinge at this season may indicate internal parasites, or that the animal is otherwise ailing. The kid is reddish in colour, and is spotted with white (Figs. 8, 14); these spots disappear towards autumn, and the hair becomes a dull brown until it eventually changes to the winter coat.

In adults the change from summer to winter *pelage* takes place between the end of September and about mid-October. The longer winter hair grows through the short coat of summer and so this change is remarkably fast

and appears to take place almost overnight. In the reverse change which takes place from May to June the old hair comes out in tufts and the whole process may take six to eight weeks. Old animals change colour more slowly than young, and sick beasts may have no hair change at all.

Roe have only a rudimentary tail which is not visible externally, although the does in winter show a tuft of hair which is sometimes mistaken for one. The characteristic and conspicuous rump patch is called the *target*. It is yellowish, or even orange, in summer and turns white in winter. The target of the buck is smaller than that of the doe. The hairs round the edges of the target are erectile, and expand it to form a rough circle. This happens particularly when the deer are alarmed, and acts as a guide to the young, or to other roe which may be following through thick cover.

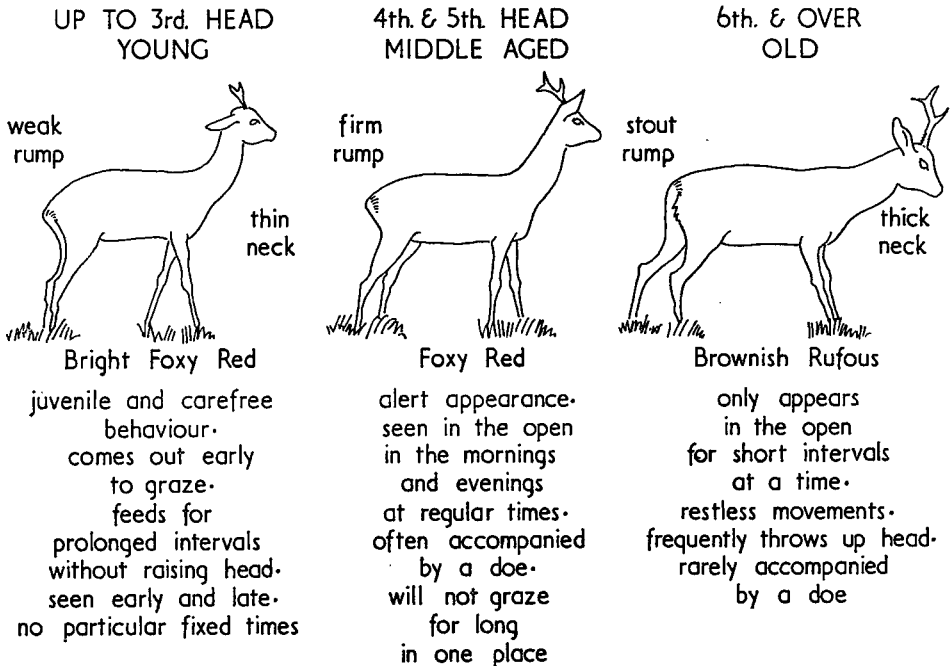


Figure 3. The age of a roe buck may be judged by his appearance.

YOUNG BUCK BORN IN JUNE















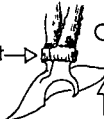
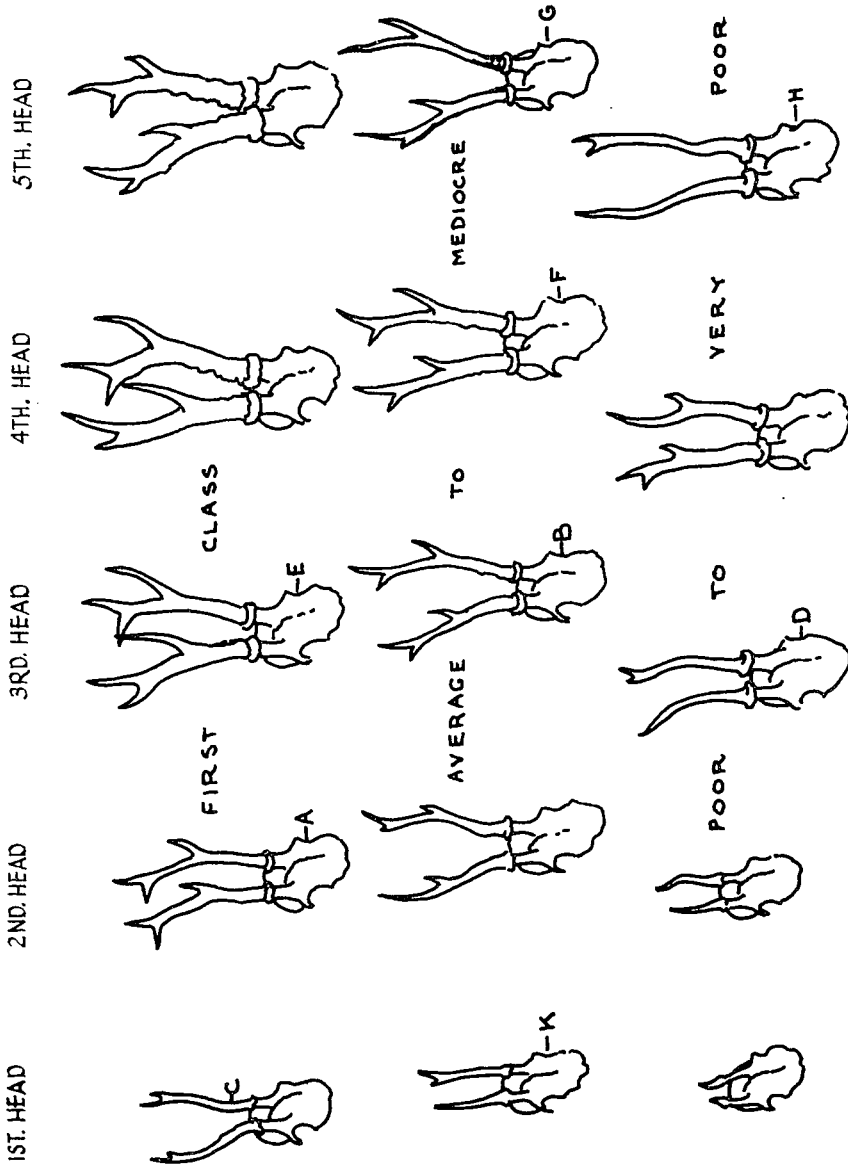
| AUGUST • SEPTEMBER | NOVEMBER • DECEMBER | FEBRUARY |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p style="text-align: center;">AT ABOUT 3 MONTHS</p> |  <p style="text-align: center;">AT ABOUT 6 MONTHS</p> |  <p style="text-align: center;">Buttons are rubbed off</p> |
| <p style="text-align: center;">BY END OF APRIL IN VELVET</p> <p>after buttons are shed the yearling buck commences to grow his first head- a buck at this stage may show any of the following:</p> | <p style="text-align: center;">ABOVE AVERAGE</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  good </div> <div style="text-align: center;">  very good </div> <div style="text-align: center;">  excellent </div> </div> | <p style="text-align: center;">BELOW AVERAGE</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  fair </div> <div style="text-align: center;">  poor </div> <div style="text-align: center;">  bad </div> </div> |
| <p style="text-align: center;">TOWARDS END OF MAY clean or burnished</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  normal </div> <div style="text-align: center;">  very good </div> <div style="text-align: center;">  excellent </div> </div> | <p style="text-align: center;">LATER the young buck usually casts or sheds from mid November to mid December the old buck often by mid October- a first class old buck sometimes has fully developed antlers in velvet by the end of January</p> | <p style="text-align: center;">Pedicles shorten and thicken with age</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>no coronet →</p>  YOUNG </div> <div style="text-align: center;">  MIDDLE AGED </div> <div style="text-align: center;"> <p>coronet →</p>  thick skull OLD </div> </div> |

Figure 4. Development of antlers in a young roe buck.



THE APPROXIMATE AGE OF A LIVING BUCK MUST BE KNOWN BEFORE HIS "HEAD" IS JUDGED
 NOTE WELL A&B, C&D, E&F, A&G, H&K • BULK IN AN OLD HEAD IS AT THE BASE

Figure 5. How to judge the head of a roe buck.

It is only by practice that the observer can assess the age of a roe with accuracy. The assessment of a buck is easier than that of a doe (Figure 3). Apart from behaviour and robustness of body, an additional pointer to a buck's age is by the colour of the forehead. The yearling has, during summer, the forehead coloured an even dark grey, showing no white. The two-year-old has a broad grey forehead with a very distinctive white patch over the nose, reaching sometimes half way to the eyes. The three- to four-year-old has the same dark grey forehead, but the white over the nose is not so sharply defined and tends towards pale grey. As age progresses the dark grey of the forehead tends to lighten in colour and the whole foreface gradually

becomes grizzled. The popular idea that antler development is a measure of age must be used with great caution (Figures 4 and 5). The best guide is given by the teeth, but these can only be seen when the animal is dead.

The roebuck carries his antlers during several months when those of other deer are still growing, or *in velvet*. The annual shedding or *casting* of the antlers starts with the old bucks first, and the growth of the next year's set begins almost at once. The antlers of roe are small (9 inches or more is above average) and simple, rarely showing more than three points or *tines* (Figure 6). Their beauty lies in sturdiness, roughness or *pearling*, colour and thick *coronets*, and there is great interest in the fact that scarcely two are alike. This enables individual bucks to be recognised and located, and is an important aid to control. Once the buck is full grown his antler pattern, barring accidents, is carried forward from year to year until he passes his prime, when the points begin to shorten or *go back*.

Antlers can often signify from where a buck originally came. Colour will indicate type of vegetation, and general weight and appearance, the type of subsoil and district. Those from limestone areas generally are well pearly, thick and heavy, those from bleak moorland thin and spindly. Typical moor buck have porous, almost black antlers with rounded points and pearly. Abnormalities are mainly caused by internal parasites, resulting in twists or abrupt taper, but sometimes by frost during growth. Wounding while in velvet often results in extra tines or even horns, and monstrosities such as "hang horn" and "peruque" heads.

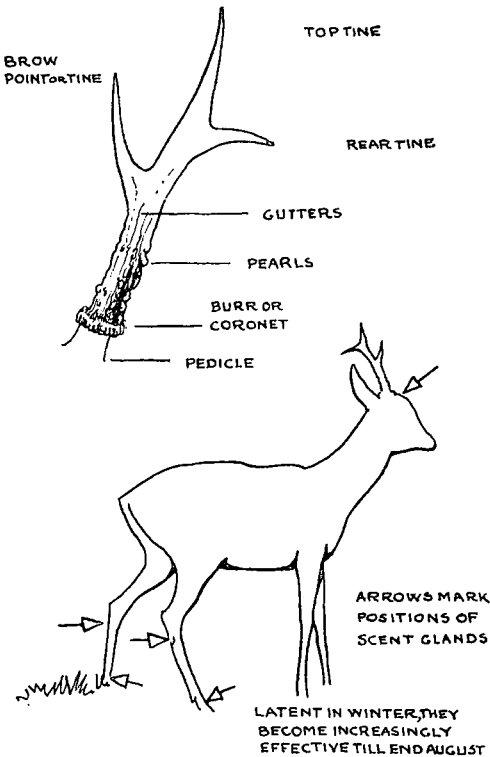


Figure 6. *Above:* Details of an antler.
Below: Situation of scent glands.

BEHAVIOUR AND ROUTINE

The more leisurely movements of roe are remarkably graceful and poised. They skulk by nature and prefer to slink away or squat rather than break into abrupt flight, but when this does occur their agile bouncing gait takes them quickly back into cover. Roe are very good swimmers and will readily take to water;

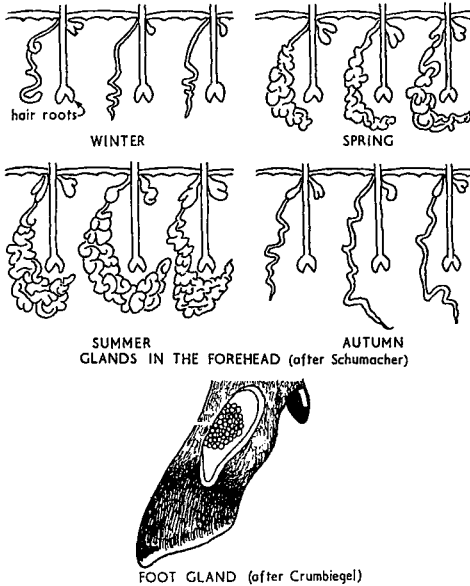


Figure 7. Scent glands of a roe buck.

their buoyancy is no doubt due to the high internal air content of their hair.

Unlike the larger species of deer, roe cannot be called gregarious, although they will gather into small herds or *bevies* when forced to do so in inclement weather during the winter. At other times the bucks will scarcely tolerate each other's presence. Old buck gradually lead a more and more solitary existence as the summer advances. Old does with their previous year's young also keep to themselves. Younger animals may, however, be seen in twos and threes. On the whole each individual can be said to be true to a locality, and if undisturbed will be found year after year in almost the same place. Even during the mating season or *rut*, when he is inclined to wander a little, the buck will return to his familiar *stand* at frequent intervals.

Roe normally come out to feed before sunrise and about an hour before sunset. Old animals usually appear somewhat later. When undisturbed they will show themselves at most times of the day and in the case of adults

all their movements become extremely regular, so that, if a note is made of the time, they can be found again at a particular spot almost to the minute. Ordinary forest work such as brashing, thinning, haulage and so on does not disturb them, whereas people with dogs tend to make them shy and wary.

While their powers of sight and scent are well developed, that of hearing is probably keenest of all, and its selectiveness enables them to pinpoint any unusual sound. It is perhaps reliance on hearing which makes them dislike strong winds and the drops of rain which fall from trees after a heavy downpour. To avoid these drops they will even come out into the open. During snow and very cold weather, or at times of great heat, drought or approaching thunder, roe change their routine and are then seen at unexpected times and in unusual places.

Roe deer are dainty feeders, and where they have the choice prefer to eat only freshly unfurled leaves. They rarely stay long at any particular plant, but sample most things as they go, so that the normal diet is extremely varied. They drink very little and are quite capable of existing for long periods on dew.

SEASONAL ACTIVITY

The roe deer's yearly round can be said to start in spring, when the bucks clean their newly grown antlers of velvet and begin to take up the stands or territories which they will strive to occupy from then until the end of the rut.

The velvet is cleaned by rubbing the antlers against the stem of a small bush or tree, which is called the *fraying stock*. This act is accomplished very quickly, sometimes in a few minutes. The outside is first cleaned, then the inner side. Occasionally the velvet comes off in one piece. Its removal is however only a preliminary to the main purpose of fraying, which is to mark territory. The pearling strips bark from the fraying stock to leave a conspicuous white stem (Figure 12), and when this is held between the antlers each upward movement smears it with scent secreted from



Figure 8. Roe deer kids in Grizedale Forest, Lancashire. June.

glands in the skin of the buck's forehead (Figures 6 and 7). These glands become more and more pronounced as the rutting season approaches. Additional fraying stocks are made near the edges of the buck's stand and beside the paths by which he travels to and from his feeding ground, and these are revisited and re-anointed regularly. The strongest bucks select and engage the stoutest stems. In front of these stocks the buck will later make *scrapes*; that is to say he will strike out a bare patch with his forefeet in the way he often does in preparing his *bed*.

Other scent glands are situated in the hind legs and feet of both bucks and does (Figures 6 and 7).

The rut or *tourning* of roe normally falls

between the 20th of July and the 20th of August. It tends to start earlier in the south than in the north, and good and bad weather will affect its peak although this is usually in the first week in August. During this time the buck seeks out the doe as she comes into season and then proceeds to drive her until she will stand. The heat of the doe lasts three or four days and is denoted partly by scent and partly by her call. Young does normally come into season first. Whilst they are driving, roe frequently run in a circle or even a figure of eight. The same track is used time after time, and eventually forms a visible pattern on the ground which is known as a *ring*.

After the rut, fraying stops abruptly, and the older bucks are hardly ever seen till the

end of September, as they lie up for long hours in sequestered places. The rings are however brought into use again in the so-called false rut in November, and in play, by does and their previous year kids during the spring. The amount of driving seen in November varies greatly with the season, but in the case of a doe not effectively covered in August, a true mating may take place.

The most remarkable feature of the breeding cycle in roe deer is that the development of the embryo within the doe's womb does not begin before December; from February on its growth is rapid, and birth usually takes place towards the end of May and in June. Delayed development is shortened with a late mating, from which the doe will give birth about the second half of June. Two kids are normally dropped, rarely one and even more rarely three. Female kids are usually larger than the males.

The young remain with or near their mother until the following season, but a yearling buck will be driven off any established stand as soon as he shows his horns, and must then find fresh territory of his own. A yearling doe may still be present when the next kids are dropped, but is usually driven out by her mother before the rut. Nevertheless the young does mature early and can become gravid at fifteen months, giving birth to another generation in only two years. A two-year-old buck meanwhile cannot yet compete with older bucks and will not normally mate until he is three.

ROE CALLS

Roe are more vocal than most deer and a knowledge of the various calls is helpful in determining what is going on and where. In times past, bucks were said to *bell* and does and kids to *pipe*, but the former term is now obsolete.

Roe "alarm" when they have seen or heard something they do not understand. If man is recognised as man, then the roe will normally not alarm. There is some controversy on the subject of whether roe alarm less during winter. This is due no doubt to the

fact that recognition by the roe is easier when the woods lack foliage.

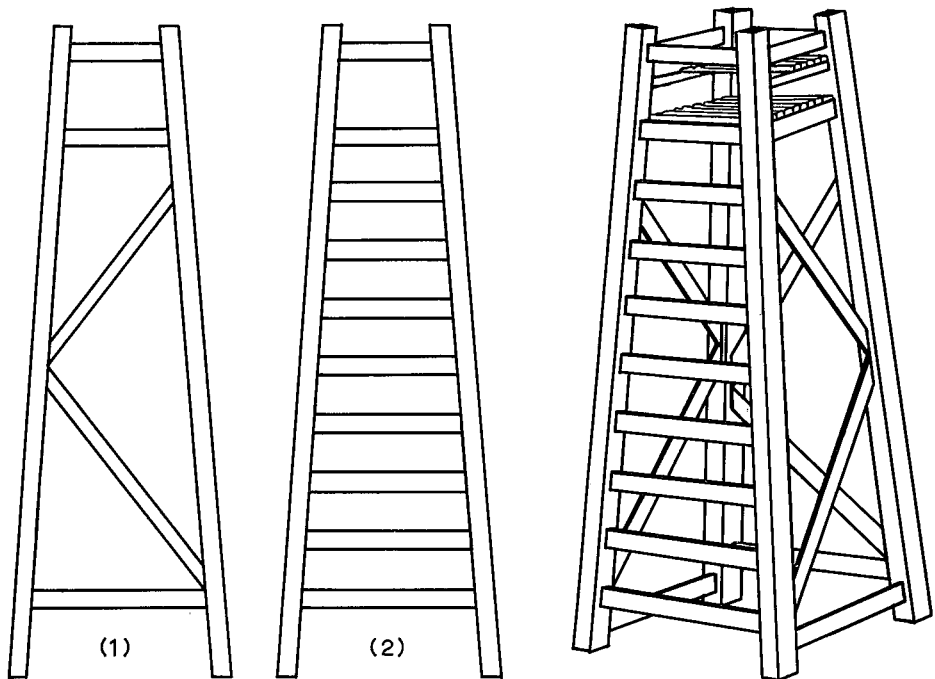
Occasionally an animal will alarm when it has been missed with a rifle, and also on occasion when it has been hit. In the latter case it is not a cry of pain but of surprise—pain usually comes later, as is known by most people who have been wounded.

Short alarm: A staccato call which differs with sex and age. Old buck will alarm with "Böh" given three or four times—no more. Younger bucks will alarm in the same way, only at a slightly higher pitch. The latter bark more frequently, and do not confine themselves to a few barks only. With the female the tone is lighter or higher still, and more resembles "Bah". Young males and females have similar pitch. Exact judgement of the sex and age of the giver of the call is only acquired by constant practice.

Long alarm: The short alarm call often turns into the long alarm when the object is recognised — "Bao — Bao — Boh — Bao — Bo — Bo — Bo", and may continue for a quarter of an hour. It is frequently given when either a human is recognised, or a fox or even red deer. Old does will often continue grazing and every minute or so give the call. This call seems to be catching as it will often be taken up by the other roe in the vicinity, and can be heard from several directions at once.

Fighting call: This is only given by fully mature bucks, and is a deep "Böh". The call is given singly at intervals. It may normally be heard when two fully grown buck take up their stands fairly close together, and bark at each other as they move out to graze; or occasionally when a wandering buck "bumps" into another buck's territory.

Mating call: This is another call whose pitch alters with the age of the animal. It can be rendered as "Pee-ay". Kids call the doe with a high pitched "Pee", to which she will answer with a subdued "Pee-ay". During the rut the doe uses the call to signify her heat to the buck. In the yearling doe the pitch is higher and in the more elderly doe, lower. In both cases it is quite soft and bird-like, and



1 and 2 are made first - not less than 10 feet to floor. Use bolts for frame

Figure 9. Building a High Seat or Stall.

given either at intervals, or more often at three or four second intervals for a minute or two, then renewed after a pause and so on. These prolonged calls are given when a buck is being sought, and the doe wanders around.

The mating call can be imitated artificially, and if correctly given during the rut an unaccompanied buck will readily spring to it, from a distance of anything up to a quarter of a mile.

Fear call: This is given by both does and young bucks when they are driven by a strong buck. It can also be heard when roe are chased by a dog. It is a call given rarely; and mostly during the rutting season. It sounds like a high pitched, long drawn out "Peeay", with the accent on the "ee".

Terror call: This is deeper than the fear call, and just as prolonged; it may be either

"Peeooo" or a sheep-like "Baah" but with a more unmistakable tone of terror. The call is far reaching. It can be heard when a dog actually seizes and is killing a roe, or when a victorious buck is goring the vanquished; or sometimes when the hunter comes on a fallen deer and is about to give it the *coup de grâce*; or again when a bone is broken and the roe is unable to make its get-away on account of it.

FOREST DAMAGE

In Britain, roe are rarely seen *feeding* in corn and other crops, as they are on the Continent. So long as forage in the forest is sufficient, its cover is preferred, and agricultural damage is generally negligible. Roe are not known to resort to the gnawing or *stripping* of bark like other deer, and the damage done by them to forestry is of three types:

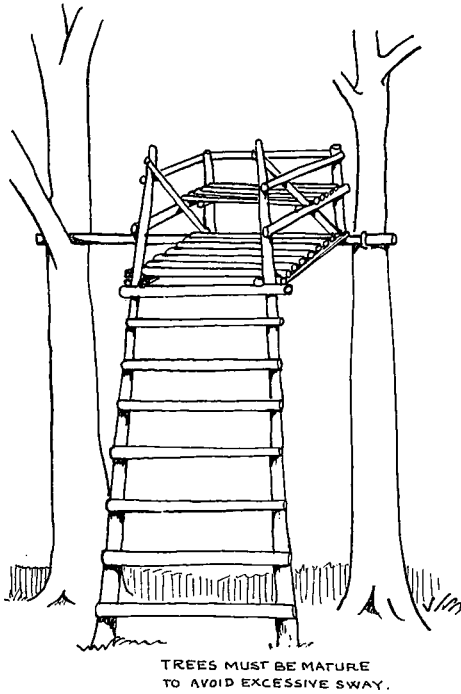


Figure 10. A Stall built between trees.

Grazing is the eating of grass and herbs to ground level, and in the process small seedling trees are effectively destroyed. Intensive grazing can thus prevent the self seeding or natural regeneration of forest crops. Where this development is not looked for, grazing may actually be beneficial, on rides and such places, by reducing fire hazard.

Browsing is the nibbling of the shoots and buds of newly established trees, which although it may not kill them, is often sufficient to cripple their growth. It is the most widespread type of damage, and its effects are insidious and cumulative. It is the leading or growing shoot that matters, and once this has extended beyond the reach of the deer, continued browsing of the side shoots is relatively unimportant. Thus the crops vulnerable to browsing by roe are

only those under three feet in height, and depending on the species of tree, the danger period is normally passed within four seasons after planting, and sometimes sooner. Patches which do not "get away" within this period may however be held back for years (Figure 11).

The incidence of browsing is markedly seasonal in character, and reaches a peak in late winter and spring when other food is scarce, and the first buds begin to swell. It also tends to be highly selective. Hardwoods are always more susceptible to it than conifers, being attacked later into the growing season and taking longer to grow out of danger, but any small patch of a different species to the main crop inevitably attracts damage, if only out of curiosity. So do any sorts of trees put in to fill gaps or clearings in which deer have become accustomed to graze. Browsing is heaviest in such areas, on banks and hillsides which are swept bare of snow in winter, and against the edges of older crops in which the animals habitually shelter.

Fraying is the most prominent type of damage, but in most cases the least in quantity. The stocks are usually killed back near to ground level (Figure 12). The intensity of fraying increases from the time the antlers are cleaned, up to the rut, and then virtually ceases; obviously none can occur when the antlers are cast or in velvet. Since the object of fraying is to draw attention to the buck's presence, it usually occurs near places where he comes into the open. A deer's world is one of scent as well as sight, and in fraying they are thus again attracted to any small patches, or even individual trees, which are of a different species to the main crop, and particularly to any which have an aromatic bark or foliage. Roebucks select as fraying stocks stems around three to five feet in height, but the ages at which crops are vulnerable vary much more than with browsing, because in a young plantation the most vigorous trees are selected, and in an older one the most backward.

The forester has not merely to be able to recognise damage and assess it quantitatively—he has the much more difficult task of

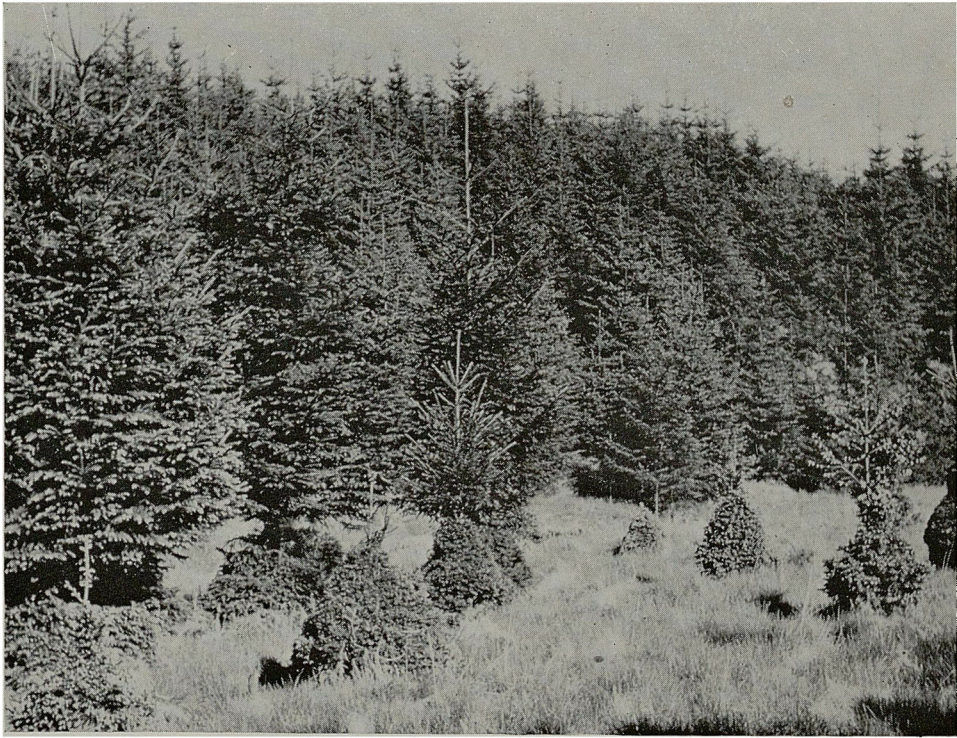


Figure 11. Effect of persistent browsing by roe deer on 12-year-old Norway spruce in a Border Forest. Beyond, Sitka spruce of the same age shows no significant damage, thanks to its prickly foliage. April.

judging its significance, which may vary greatly according to circumstances. In most cases the criterion will be, not how many trees are destroyed or deformed, but whether enough can remain, undamaged and well distributed, to form a satisfactory crop. A great deal depends on how many were on the ground to start with, what other injuries they are exposed to, and how quickly the survivors will grow past the stage in which they are still vulnerable. As usual, experience is the surest guide, but in general terms it can be said that so long as roe have a succession of new areas to colonise, damage is rarely intensive; the most dangerous time is at the end of a progressive planting programme, when their num-

bers have increased, and the grazing area begins to decrease as the older crops close up. A second phase of difficulty arises when small gaps or clearings are made amongst these older crops, and have to be restocked.

The potentially high rates of damage that may be inflicted by roe, compared with other deer, arise from a combination of circumstances, which can be summarised as follows:

Because they are smaller, they are able to invade plantations at a younger and therefore more vulnerable stage of growth. They are more localised in their habits, and return persistently to favourite spots, which may thus sustain repeated damage over several years. They are more prolific, starting to

breed at an earlier age and normally bearing twins. Finally the bucks fray not in autumn but in spring when the sap is running and the bark slips freely, and this practice continues over a much longer period before being concluded by the rut.

PROTECTION AND CONTROL

The prevention of damage involves protecting trees or killing deer. Generally the solution is or should be a compromise. Protection rarely remains effective unless supplemented by some control of numbers, and control cannot prevent localised or individual damage unless it is aided by protection.

Total protection is expensive and only justified where little or no margin can be allowed for losses, as with specimen trees in

avenues and arboreta, with experimental plots, and in trial plantations of rare or unusual species. Generally in these cases it is folly not to give it.

Full individual protection is best provided by a sleeve of wire netting, firmly staked and four feet high. A large measure of protection against fraying can be secured by twisting a ribbon of metal foil spirally round the stem. A similar twist of sheep's wool will give fairly good protection against browsing to the leading shoot and bud, but needs regular adjustment, particularly during the growing season. On the continent various smears and sprays, both traditional and proprietary, are used as deterrents to winter browsing. They are tedious and therefore expensive to apply, they will not stop fraying, and they lose their efficiency as soon as the new growth starts.

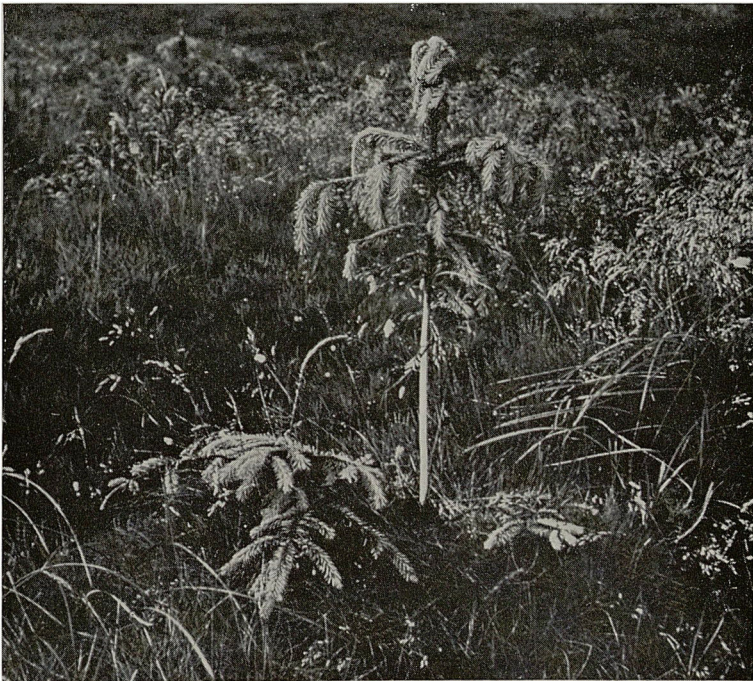


Figure 12. A Sitka spruce tree, three years after planting, which has recently been used as a fraying-stock by a roe buck. June.

For any sizeable plot or plantation all these methods become uneconomic, and if full protection is considered essential there is no alternative but to fence. The larger the area, and the more square it is in shape, the lower the costs of fencing per acre, but large enclosures are always more difficult to keep deer-proof. Where only roe are concerned, and farm stock have not to be excluded also, traditional style deer fencing is unnecessarily elaborate and not always effective. A height of five feet and a life of five years will generally be adequate, and a suitable specification is two widths of sheep netting well overlapped in the middle and clipped along the top to a plain 8-gauge straining wire; the stakes to be 6 to 6½ feet x 2 inch top, spaced at three to four yards. A few extra stakes should be used as struts on the inside at a height of 4 feet, and the top wire strained to 4 to 5 inch corner posts. Barbed wire should on no account be used. It does not deter deer and can only injure them. Roe can jump sideways through gaps of more than 12 inches. They will also creep and so the bottom net must always touch the ground. Once the crop is safe from damage, the netting should be recovered and used again.

The traditional method of giving temporary protection to small clearings was to string them round with *sewels* of twine tied with tarred rags and bunches of feathers to twist in the wind, but these only serve their purpose if moved or changed at fairly frequent intervals. The problem has been simplified in the last few years with the advent of synthetic netting. Black polystyrene is the most durable. A 400 yard length of this, 6 feet wide (and with 3 inch mesh), can be carried by one man, and if tied to standing trees, erected in a few hours. Given regular inspection, it will if necessary remain effective for several years. Alternatively, like *sewels*, it can be used as a stop-gap until control measures are brought into force. When first erected, and if left up during the rut, or when hounds pass through the forest, watch must be kept in case deer are driven against this netting and entangled.

Although prolonged snow still takes its toll, natural control of roe deer really went out with the wolf. Stray dogs kill more roe than most people realise, and foxes, and in Scotland the wild cat and the eagle, will take the newly born kids, but on the whole their numbers are now regulated primarily by man. A net increase of 50 per cent. per annum is not unusual in favourable seasons and habitats, and around 25 to 30 per cent. may be normal. More data are needed on the subject but this gives a measure of the problem. Unfortunately many do not realise that a mere reduction in numbers is insufficient. If incorrectly done it may have little or no effect in reducing damage, and can even aggravate it.

The common practice of driving roe in winter is not a satisfactory method of control unless done by experienced men under strict supervision. Apart from the risk of only wounding when shot guns are used, it is very difficult to be selective, and the older bucks in particular generally escape. In any case there is no certainty that the deer shot are the actual culprits.

Wounded deer lie up in a quiet spot and can cause a heavy concentration of damage in a short time. If the balance of sexes is drastically upset, the remaining stand of roe becomes restless and nervy. Stray buck will disturb the "standing" buck with an established territory, particularly during the rut, and there will be a marked increase in fraying activity. The vanquished will wander far and wide to seek a doe. New pockets of roe will be formed where none or only few had been seen before; and in such circumstances very little exact knowledge can be formed of the population of a forest. *Venison* is a valuable by-product of control and should be properly used. If in deference to sporting tenants deer drives are left until after the pheasant season, the venison is then in its poorest condition and will gain an undeservedly bad reputation.

The better method, though more difficult to start with, is to leave the deer to settle quietly on their chosen areas, and then to remove selectively the ones that are doing the most damage, at times and in a manner that will be

most effective. Once control is established on these lines, many half-measures of protection will become worth while, that previously were just a waste of time.

The operations which fall readily into this category are all modifications of existing forestry practice, designed to avoid exposing young trees unnecessarily to danger. Thus care in weeding is important, particularly late in the season, to avoid leaving clean rows for deer to walk along, and not to promote grass at the expense of bramble, or even bracken. If weed growth is light, lop and top can be spread to conceal plants when restocking fellings or windblow, and many similar ideas will suggest themselves to a forester who has familiarised himself with roe habits.

A final consideration is that in most forests certain areas are vital to roe during hard weather, such as sunny banks swept bare of snow, and any sheltered corners of scrub which can provide natural browse. It is generally prudent, as well as humane, to leave the restocking of these sites until some alternative develops to take their place. In general, the complete removal of natural browse, and especially of bramble, may oblige the deer to feed on young trees; overweeding may thus encourage damage. So, too the removal of every "weed" tree may leave no fraying stocks apart from the trees of the planted crop; an odd willow or birch on the edge of a ride, where deer prefer to fray, may reduce crop damage considerably.

SOME BASIC PRINCIPLES

The primary object of control is to reduce or restrict the roe deer population to a level at which the damage done by it can reasonably be tolerated. Put another way, this is the point at which the cost of further efforts would exceed the crop value of the trees saved, or the cost of preventing damage to them, by other means.

There is no worthwhile formula for a tolerable or "safe" density of population. Forests change and deer can move! The only yard-stick is the amount of damage done and

whether it is significant. One roe to every ten acres might be acceptable if there was no substantial damage; one to a hundred acres will be too many if there is.

The main assessment of damage must be made when it is at its maximum and the deer population at its minimum. This is in late winter and early spring: from mid-February through March, and well on into April if the weather is severe. The forest must be kept quiet at this time and advantage taken of snow to track deer and to *view* them as they gather together. Deer in poor condition have a craving for minerals, and rock salt, put down at a few key points in plantations safe from browsing, will now draw them regularly. This facilitates counting and may help to reduce damage elsewhere.

The critical factors are first, the number of does that have survived the winter, and secondly the proportion of does to each buck. When the calculated net increase is added, these figures, set against the level of damage sustained during the past year, enable judgement to be made of the number of animals of each sex which ought to be removed before the end of the next one.

It is pointless to seek this quota over the whole forest. Control must be concentrated upon the areas which are vulnerable to damage; where, as deer are shot, others will try to move in and take their place; the numbers are made up from elsewhere only if they no longer do so. This reduces the whole problem to manageable proportions.

The initial step is to note where the first fraying stocks appear in April. These mark the stands of the oldest and strongest bucks, and the younger bucks will fill in between them later. Fraying intensity is more or less proportional to the competition for stands, and is relieved by taking out a selection of the younger animals, and leaving the master bucks as far as possible, each to hold the maximum size of territory until the end of the season.

This culling of bucks will start in May, as soon as the majority are in hard horn, and as much as possible should be done before midsummer when the vegetation becomes too

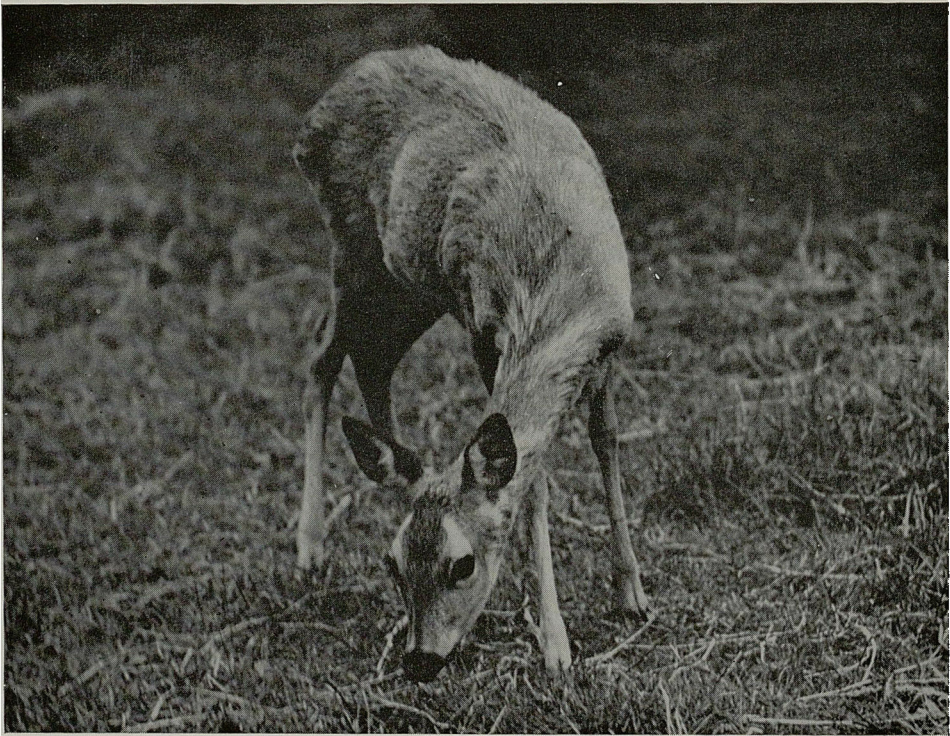


Figure 13. A young roe doe grazing. The change from winter coat is just starting on neck and limbs. May.

rank and observation more difficult. It should be directed in the first place to eliminating all ailing and late developing animals, and those with poor heads (Figures 4 and 5). Bucks with good heads should be spared unless they are doing excessive damage or there is a clear surplus in that age group; generally, although not always, it is the animal with a good head that provides a master buck for the future.

The quota for bucks is normally completed by making a selection among the master bucks towards the end of the rut, when this shooting will no longer open their stands to incomers. Those taken will be the ones whose heads have started to go back, and which can now provide trophies for the sportsman. They are the wildest and hardest to stalk, and if brought to

the call, will provide the most exciting shooting.

The urgency for control diminishes after the rut because fraying is now ended. It is also more difficult because the bucks lie up. But if the number killed is seriously below quota they can continue to be shot until the antlers are cast. After that it is not possible to be selective and the operation should stop.

The culling of does cannot start until the kids are weaned, and the vegetation is down again so that they are more readily seen. This means late October at the earliest. The task must be completed before mid-February when they again grow heavy with young. It is not so easy to select does, or to shoot them in short days and bad weather, but ailing

animals should be taken first, and any surplus of two-year-olds. As winter wears on other weaklings will gradually declare themselves. The oldest does will have late kids and should be shot towards the end of the season. Sometimes the kids are better taken as well.

It is the number of does, not bucks, that decides the rate of increase of the population, and it is therefore most important that enough are removed to check it. Unless this is realised the efforts of the previous summer will be largely wasted; however, no culling should be so drastic that it will eventually upset the balance between sexes. This lies between one buck to one doe and one buck to two does. The natural mortality of does seems to be rather higher than that of bucks, particularly in time of snow, and if heavy losses occur, further control should then stop.

It is evident from the foregoing that the rational basis of control is not only selective but seasonal.

In England and Wales the Deer Act, 1963 now imposes a legal close season for roe does, in common with other female deer, **from 1st March to 31st October inclusive**. Exemption is allowed only for the purpose of preventing suffering by an injured or diseased animal, or in the case of an occupier, or a person acting with written authority of the occupier, if he can prove that his action was necessary to prevent serious damage to crops and growing timber. In Scotland, the Deer (Close Seasons) (Scotland) Order 1966, made under the Deer (Scotland) Act 1959, lays down a close season for roe does **from 1st March to 20th October inclusive**; this Order does not apply to action by occupiers against deer on enclosed farm land or woodland, and injured or diseased deer may be killed elsewhere for the prevention of suffering.

For roebucks, the Deer (Close Seasons) (Scotland) Order 1966 now imposes a close season in Scotland **from 21st October to 30th April inclusive**. Exemptions are allowed for the prevention of suffering or damage, and the Order does not apply to action by occupiers against deer on enclosed farm land or woodland. There is no legal close season for roebucks in

England and Wales, but the Forestry Commission has for some time adopted its own close season **from 1st October to 30th April inclusive**, with similar exceptions. On purely humanitarian grounds there is no overwhelming case for a close season for bucks, but it does facilitate control if bucks and does are shot separately. The arguments in support of this restriction can be re-stated as follows:

The key to control lies with the does, and the entire effort should be concentrated upon them during the relatively short period when they are shootable. At this season bucks cause only the same damage as does. If any bucks are shot they will soon be replaced from outside, whereas if only does are shot the surplus bucks will tend to leave. This helps to bring numbers to a minimum before browsing reaches its peak. Later the main concern is to reduce fraying and this can only be done selectively. Resident bucks whose habits are already known are fairly easy to cull, but the movements of incomers are less predictable. If through indiscriminate shooting in winter, the latter provide the main stock in the locality, or if the older bucks have been shot first, fraying will be intensified because there is no established precedence for "stands".

Thus, paradoxically, the main reason for having a close season for roebucks is to reduce damage. To most woodland owners at the present time, and particularly in Scotland, the conservation of roe as a sporting asset or wild life resource must of necessity be a secondary consideration, but in areas where this is desired, a ban on shooting bucks "in velvet" is essential.

The dates are selected to fit the breeding cycle of roe, and the general pattern of control, and also to ensure that the chief by-product, venison, can be marketed in prime condition.

OBSERVATION AND EQUIPMENT

The essence of control is to be able to know where to find the animals. This is only possible when there is a minimum of disturbance, and requires long periods of reconnaissance, observation, and assessment. However, when

these have been accomplished it should be possible to remove any particular roebuck in a matter of a few hours; if not the same day then in most cases by the following morning. Once the routine habits of the deer have been established, and the times of their appearance in certain areas noted, it only becomes necessary to check up periodically later on.

Experience cannot be gained quickly, and a novice in training should really spend a full year of study and practice before he starts regular shooting. Next year the pattern of behaviour is repeated, and if he has kept records he will know what to expect and when to look for it.

Observation in woodland is greatly facilitated by the erection of high seats or *stalls* (Figures 9 and 10). These enable the watcher to look down into a young plantation, which from ground level appears impenetrable. The sites for them must be carefully chosen, preferably within the edge of an adjoining stand of older trees to give cover and background, and they should be so placed that they can be approached without noise, and without giving the wind to deer which may be approaching the area at the same time. Once in the seat, scent is usually carried clear, but it is often better to put up two stalls in complement to each other so that a choice can be made. In contrast to wind, the sun should be behind the observer, and this in any case requires a change of position between morning and evening.

It is a frequent practice to watch from stalls in the evening, and to stalk ground which cannot be covered from them in the morning. If this is also followed in shooting it adds greatly to safety. A shot taken from a high seat is downwards into the ground, the whole field of fire can be seen, and the action of a deer after it has been hit is much more easily followed. The trainee should pace distances to a number of fixed points beforehand, so that he can be certain when deer come within range.

Whether watching or stalking roe, a pair of field glasses is indispensable. Recognition and assessment of individual deer is almost

impossible with the naked eye. Magnification need not be over 8; 8 x 30 or 7 x 50 will do very well. A telescope is cumbersome in the woods, and takes too long to focus. Rubber- or crepe-soled shoes should be used, and clothes should be of some material which does not make a noise when pushing through cover. Too light coloured clothing is better for concealment than too dark. A commando type camouflage smock is excellent, and a camouflage net, or a mask, is useful to pull over the face at close quarters. In summer, a good anti-midge cream is almost essential!

Although more entertaining and certainly more comfortable on a cold day, stalking on foot is not so effective as sitting up in a stall. At any rate, stalking is necessary during initial reconnaissance, and a curb must be put on the desire to cover a great deal of ground. The trainee must learn to move slowly, to stop often to look and listen, to keep the wind ever in his face, and the light, as far as possible, at his back. He must avoid skylines, and develop an instinct for the best use of cover, background, and the lie of the land. As he gets closer he must move only when the deer's head is down, and learn the art of "freezing" immediately in any position the moment it looks up or stands *at gaze*. Gusty wind is the most difficult, and makes deer nervous. It is possible to stalk straight down wind if it is strong enough, and there are known to be no deer directly ahead.

During reconnaissance it is important not only to stalk close enough to deer for proper observation, but to be able to withdraw again without disturbing them. If deer are disturbed it is good practice to pace the distance to where they were standing, to check the range, and set a standard to improve upon next time. Different *approaches* must be tried until the best is found for each area and every shift of circumstance. When the main *vantage points* are established it is helpful to develop their approaches as regular stalking paths or *pads*, which follow soft ground, and can be kept clear of such hazards as loose stones and dead sticks. They need only be six inches wide.

It will be found that the more one learns,

the more one's thirst for knowledge of deer increases. One's keenness is whetted, and there comes a pride in forecasting their movements with accuracy.

No large amount of walking is entailed; in fact the more one gets to know the habits of deer, the less one has to walk in order to see them. It is surprising how much more one sees of woodland life generally from an elevated stall, in a position ten or twelve feet from the ground.

CHOICE OF WEAPON

A shot-gun loaded with the usual No. 5 or No. 6 shot, and the ordinary .22 rim-fire or .300 rook rifle are all quite unsuitable for shooting roe. They wound but do not often kill, and can cause great cruelty.

The Deer Act, 1963 has now prohibited the use of the following firearms and ammunition against all species of deer in England and Wales:

- (a) Shot guns smaller than 12 bore.
- (b) Rifles below .240 calibre or having a muzzle energy under 1,700 foot pounds.
- (c) Air guns, rifles or pistols.
- (d) Shot smaller than .269 inches (SSG).
- (e) Bullets other than soft-nosed or hollow-pointed.

In Scotland these restrictions do not have the force of law, but on humane grounds, and with a stronger tradition of deer management, they already enjoy a wide observance voluntarily.

When a shotgun has to be used against roe, the range should be limited strictly to 20 yards, and aim taken only at the neck. For selective shooting, however, a rifle is almost essential, and in most forests, and for nearly all sportsmen, the need is really for a general-purpose weapon which can deal effectively with the larger deer as well. As far as roe shooting is concerned the choice of calibre will therefore generally be a compromise.

The calibre in most general use in Europe is probably 7 mm. or .276. Such a weapon is suitable for all European big game except elk, and is backed by experience and development over a period of some fifty years. An important

advantage is that several types of ammunition are available and supply is not dependent on one manufacturer. The trend of development is towards rifles of smaller calibre firing lighter bullets at a higher velocity, and in this respect the modern equivalent of the 7 mm. is .270. Other rifles from this size down to .243 are all suitable for roe but become rather less so for the larger deer under woodland conditions. The final choice will no doubt depend both on the purchaser's fancy, and the depth of his purse. A disadvantage of all high-velocity rifles is the chance of the bullet shattering on some small twig or leaf, and this needs extra care when making the approach, and is against the smaller calibres where undergrowth is rank or the cover unbroken.

Game sights—a bead foresight and a broad V backsight fixed and zeroed at 100 yards—should be standard; but telescopic sights are essential for maximum efficiency and a rifle should have the necessary fittings for them even if they are not acquired immediately. The use of a suitable "scope" will extend the period for shooting in poor light at either end of the day by at least half an hour, and this can make all the difference between success and repeated waste of effort, particularly in areas where deer are much disturbed and tend to become nocturnal. Telescopic sights also make for easier aiming and greater accuracy, but they must not be used to increase the range. An important requirement is that they should be readily demountable, both for safe keeping, and to permit alternative use of the rifle with open sights when necessary, e.g. in wet weather. The best magnification is generally considered to be 4 x, and for roe shooting in particular the graticule should have a thick vertical post, preferably pointed, with a finer split horizontal.

Probably ninety per cent. of control will always be carried out by keepers and stalkers, and the type of weapon provided by an employer has to be reasonably cheap, and simple and reliable in use. Nevertheless economy can be taken too far, and in making a choice, it should be remembered that time is the ruling factor, and that opportunities

missed or misused from having an inadequate rifle will also cost money.

Whatever kind of firearm is used, the person carrying it must hold a gun licence. If a rifle is used, the holder, unless he is a servant of the Crown, must have a Fire Arms Certificate for it. The prudent sportsman will take out an insurance policy as well.

It should be noted that a game licence is needed by any person who goes in pursuit of deer elsewhere than on land in his own ownership or occupation.

TAKING THE SHOT

The thing to practise on is a target, not a live animal! An acceptable standard is a four inch group at 100 yards, fired from all positions. A sling should be used and a thumbstick helps to steady a standing shot. But target practice alone is insufficient, and training should include going out with an experienced stalker on many occasions.

Unless the shot is taken from a high seat the deer selected must first be approached against a safe background, that is to say from above or with a rising slope close behind, never across the crest of a hill. Next it must be within safe range. 75 yards should be the maximum for roe, and if the animal is near to cover every effort must be made to get closer. In woodland most shots are still taken at bow-and-arrow range—between 40 and 60 yards. Finally the deer must be broadside on and standing still. If these maxims are followed and care taken, the proportion of deer collected to shots fired should be one hundred per cent.; certainly not less than ninety-five.

Before taking aim, it is most important to note the exact position in which the deer is standing. On the level the point of aim is about a third of the way up the body from the crook of the fore-leg, and a little forward of this rather than behind. From above it needs to be higher. If it is possible to get really close, a neck shot can be taken.

To confirm a hit, the smack of the bullet must be listened for almost simultaneously with the recoil, and the deer watched closely

while re-loading. It will usually only drop immediately if hit in the neck or with a high velocity rifle. A heart shot characteristically produces a forward leap, followed by a head-long rush of 20 or anything up to 80 yards, during which the animal will possibly be lost sight of. If hit too far back it will pause and move slowly away and another shot is needed at once.

If the deer disappears from sight the spot on which it was originally standing should be carefully inspected, first for the *pins* or tufts of hair which can show not only that it was hit, but where it has been hit, and then for the *paint* or blood splashes which will help to show where it has gone. Dark blood confirms a heart shot and pale frothy blood shows a hit in the lungs. If none of these signs is present, the search must be extended and continued until it is sure beyond all doubt that the shot has missed.

Finding the kill is simplified and the chances of unnecessary cruelty are very much cut down if the roe shooter has a dog. Almost any dog will follow the blood trail of a deer, and should be tried in an emergency. If the deer is not mortally wounded it is generally better to wait about half an hour for it to stiffen before the dog is laid on, as this will shorten the actual chase. All further stalking must stop until a wounded animal has been accounted for. When it is overtaken a second shot must never be spared. If the knife is used on a fallen deer, place one foot firmly on its neck before making the *coup de grâce*.

For a keeper's dog there is some advantage in a general purpose "working" terrier, which is small enough to lift into a high seat, and to remain largely out of sight when on the ground. It should be dark (and preferably rough) coated, and trained to run strictly to heel and sit where required. It must keep its distance and bark at a wounded roe, not attack it.

DISPOSAL

The job of control does not end with the shot. No one should set out to kill an animal as

large as a roe deer until he knows what to do with it when dead. How this is done affects the condition of the venison and can make all the difference to its value.

A cool, well ventilated and completely fly-proof larder must be available or prepared beforehand. If necessary a frame can be set up in the shade of trees and covered with perforated zinc; its floor must be clear of the ground and it should be large enough and strong enough to hold at least two carcasses hanging full length. A beam is required nearby to hold these while they are being dressed.

Until they have been cultivated, local outlets for venison are generally soon satisfied, and before deer are shot in any numbers arrangements should be made with one of the large firms now specialising in venison for an open order so that the surplus can be despatched direct to cold store.

The main requirement, particularly in summer, is to cool the meat quickly, and to keep it from contamination, and the animal must therefore be drawn immediately it is killed. To do this it is first laid on its back and the skin is slit and pulled apart from crutch to midriff. The belly is then opened on the same line; only the skirt must be severed, and as soon as the cut is large enough, two fingers are inserted and the point of the knife is carried forward between them to avoid puncturing the entrails. If the bladder is full it is twisted, held closed, and removed, but other internal organs must on no account be detached separately. The animal is now turned on to its side and a hand thrust to the back to tear away the supporting tissues. The whole of the entrails are drawn carefully clear of the body until they remain attached only at the vent and to the gullet, which should be felt for between paunch and liver; these points must be grasped firmly and kept closed as they are cut away, and the liver left tied to the midriff. The "gralloch" or *pod* is then buried.

A roe carcass is always *hurdled* by tying the feet together, and may be carried by them from one shoulder. It must not be wrapped or

enclosed in any way that will exclude air and delay cooling. On arrival at the larder it should be weighed on a spring balance and the weight recorded. Then it is hung by a stretcher inserted between the sinews of the hind legs, and all four legs are severed at the mid joint and the feet discarded. The liver is removed, and unless the meat is to be used locally, so are the kidneys. The skin is next slit and pulled apart as far as the neck, and also back to the vent, which is cut out, the aitch-bone being separated with a meat saw. This tool is also used to open the chest along the breast-bone. Throttle, gullet, lungs and heart are drawn out and discarded, the blood drained and the midriff trimmed away. The whole body cavity is then wiped clean with a damp cloth and spread well open with wooden stretchers. It should not be washed or unduly wetted.

At this stage the carcass is rehung by the point of the jaw from a meat hook, and can go into the larder, leaving the head to be dealt with at leisure. If this has been removed the hook is placed through the neck. In warm weather the floor and walls of the larder should be sluiced with water to reduce the temperature, and this repeated as often as necessary.

Normally the neck is slit down the front and then ringed close behind the jaw and ears. The head is severed at the base of the skull. However if a trophy is required to be mounted in the skin this must be ringed close to the shoulders and the slit taken up the back of the neck to a point between the antlers. The neck is then skinned out completely and the head severed as before.

Apart from those required as trophies the heads of all bucks shot should be kept until the end of the next season at least, both as a record and for comparison, so that, taken with average weights, the impact of control can be analysed. For this purpose it is sufficient to saw through the skull near the top of the eye sockets; the frontlet or *cap* carrying the antlers is boiled clean and bleached with peroxide, and if desired can then be mounted on a plaque.

Carcases despatched to a distance should be sewn up in clean hessian as soon as stiff, and are best sent to travel overnight when it is cooler. Those retained for local consumption need to hang for three to five days before the venison is ready for eating, and should keep well for quite as long again.

COOKING ROE VENISON

The meat of roe is superior to that of red deer and can be a great delicacy. It has a closer texture than mutton, but like most venison is deficient in fat. It therefore needs care in cooking to prevent it becoming dry, and when roasted must be served with a suitable sauce. In the days of spit roasts the matter was solved by continual basting. With oven roasts the joint must be well buttered or larded, and then "cased" to keep the juices in. The traditional casing is huff paste, made of flour and water; nowadays greased or oiled paper and metal foil are also used. In stews, pies, and patties, pieces of fat pork or bacon are generally added.

Because of the tendency to dryness, joints are best skinned out from the carcass as required. If they cannot be used immediately, they should not be laid flat, but hung where air can circulate, and covered with a damp cloth.

The liver should be eaten really fresh, and is regarded as the stalkers' perquisite. The first cuts ready are the two tenderloin filets, taken out with the kidneys attached; there is always some fat on them and they will grill or fry. A *haunch* is the hind leg and half the rump, and to separate the haunches the rump-bone or pelvis is sawn down the middle. Where the haunch is too large for a modern family, legs and rump can be jointed separately. The next piece between rump and ribs is the "saddle", and this is perhaps the best cut of all. The shoulders each make a small roast but if damaged by the shot are perhaps better in pie or stew. The two back filets along the top of the ribs can be rolled and braised. The last piece on the hook is the *scrag*—it generally goes to the dog.

SOME RECIPES FOR COOKING ROE

*Contributed by
Mrs. Margaret K. Hamilton*

ROAST HAUNCH OF VENISON

Trim the haunch, salt, pepper and lard. Cover with slices of fat bacon, completely wrap in aluminium foil, place in preheated oven (400/425°F.) and allow 25 minutes to the 1 lb. Fifteen minutes before ready open the foil, baste well and allow to brown. Thicken the juice with a little flour and season to taste. Serve with Cumberland or cranberry sauce.

ROE VENISON IN WINE

Trim a haunch, saddle or shoulder, lard well with fat bacon; salt and pepper. Brown the venison well on all sides in hot fat. Lay on a bed of diced root vegetables and onions, to which have been added juice and rind of a lemon, two tablespoonsful of brown sugar, one tablespoonful of tomato purée, four tomatoes, six juniper berries, thyme, bay leaf, parsley, salt and pepper and a little stock. Cover and cook until tender. Remove venison and keep warm. Make brown roux with flour and dripping and thicken the gravy with this. Add some red currant jelly, cook well and strain. Adjust seasoning, and add one wine-glassful of red wine before serving with cranberry sauce.

ROE VENISON ON MUSHROOMS

Toss diced celery, carrots and onion in hot fat and remove. Brown cubed venison from the shoulder in the same fat. Return the vegetables to the pan and add a bay leaf, parsley, thyme, a little grated lemon rind, a dash of vinegar and a little stock, and braise until tender. Lift out the venison and thicken the gravy with a brown roux; add a wine-glassful of red wine and a little lemon juice. Cook well, strain, adjust seasoning, add the venison and reheat.

Simmer sliced mushrooms in butter and add before serving.

ESCALOPES OF VENISON

Beat well thin slices of venison carved from a haunch, roll in seasoned flour and fry quickly in hot fat. Put fried onions on the escalopes, add a little stock, salt and paprika, and simmer covered, until tender. Thicken the gravy with flour, add cream, mustard, the juice and rind of a lemon, cook well and strain. Serve garnished with pickled cucumber.

VENISON GOULASH

Cut venison in cubes and brown in hot fat, remove, and fry onions in the same fat until golden brown. Return venison to the pan, add stock, and simmer for about 1 hour.

Fry lightly diced turnips, carrots and celery in hot fat and add to the venison with a tomato, parsley, thyme, bay leaf, salt and pepper. Simmer for a further $\frac{3}{4}$ hour or until tender. Remove parsley, thyme and bay leaf, adjust seasoning, thicken gravy with flour and serve with pickled vegetables.

SPICED VENISON

Bone a haunch of venison (about 5 lbs.) and rub into the skin a mixture of $\frac{1}{2}$ oz. saltpetre and $\frac{1}{2}$ oz. bay salt crushed together to a powder. Leave the venison overnight in a covered earthenware bowl. The next day a mixture of the following spices is well rubbed into the venison: $\frac{1}{2}$ oz. black pepper, $\frac{1}{4}$ oz. powdered allspice, 1 level teaspoonful each of ground mace, ground ginger, ground cloves. Three oz. of brown sugar mixed with 3 oz. salt is sprinkled on the top of the venison. Each day the venison is turned and basted with the liquid which forms. After five days the venison is washed well in cold water, tied securely, covered with cold water and brought slowly to the boil. The liquid is skimmed well as it is brought to the boil. A carrot, turnip and onion are added and the venison boiled for $2\frac{1}{2}$ / 3 hours until tender; it is then pressed between two boards until the next day. It is served with horseradish sauce.

VENISON BROTH

Make stock by covering the bones with

water, boiling with the trimmings from the carcass with carrot, onion stuck with three cloves, bay leaf, parsley and thyme, salt and pepper. Strain and use as required for broth, sauces.

Boil barley in stock for $\frac{3}{4}$ hour; add diced carrot, turnip and the white part of a leek and boil together for a further $\frac{1}{2}$ hour. Shred the green part of the leek and add with sliced celery (or celery salt) and grated carrot about 10 minutes before required. Adjust seasoning and serve garnished with chopped parsley.

ROE LIVER PÂTÉ

Braise half a roe's liver in butter with the tongue, heart, 6 oz. fat pork and onions. When tender mince with the other half of the liver, raw, with two slices of bread soaked in milk; add salt, pepper, pinch of nutmeg, grated rind of a lemon, 6 oz. diced streaky bacon. Mix well with two well beaten raw eggs.

Line a bread tin with slices of streaky bacon, fill with mixture and cover with aluminium foil. Bake in a moderate oven for $1\frac{1}{2}$ / 2 hours. Serve with hot buttered toast. (The bread tin should be placed in a roasting tin filled with hot water, so that the water comes about half way up the sides of the bread tin.)

VENISON ROLL

Mince together about 1 lb. roe venison, the heart, liver, one onion and two tomatoes. Mix well together with $\frac{1}{2}$ lb. diced streaky bacon, grated rind of lemon, two tablespoonsful fresh breadcrumbs, one well beaten egg, salt and pepper. Grease a bread tin and fill with mixture. Cover with aluminium foil and cook in over Mk. 5 for $1\frac{1}{2}$ / 2 hours. Serve cold with salad.

ROE VENISON STEAK

The steak from saddle, neck or haunch is cut in $\frac{1}{2}$ " thick pieces, covered well with butter and grilled quickly on each side under a pre-heated grill. Baste frequently with the butter—do not overcook. Serve with chips and mushrooms simmered in butter or a purée of chestnuts.

ROEBURGERS

As for venison roll, but the diced bacon is omitted and $\frac{1}{2}$ lb. pork sausage meat is substituted: the mixture is put through the mincer twice; formed into flat round cakes, dipped in raw beaten egg, breadcrumbs, and fried in hot fat until well browned on each side. The gravy is thickened with a little flour, a tablespoonful of red currant jelly, and a squeeze of a lemon is added. Season to taste.

TERMS OF VENERY

The Forest Laws of Norman England classed the roebuck and doe as beasts of the *chase*,

and not of the *forest*. Thus unlike red deer, the right to hunt them was not restricted to the Crown. The legal seasons for hunting were, for the roebuck, from Easter (roughly mid-April) until Michaelmas (29th September), and for the doe, from Michaelmas until Candlemas (2nd February).

Foresters in those days were not directly concerned with the *vert* or trees, but were engaged to protect the venison—"all beasts fit for the food of man". Much of the information in this leaflet would therefore have been commonplace to them. The old hunting terms, once the daily jargon of their profession, have been preserved by sportsmen, and by the

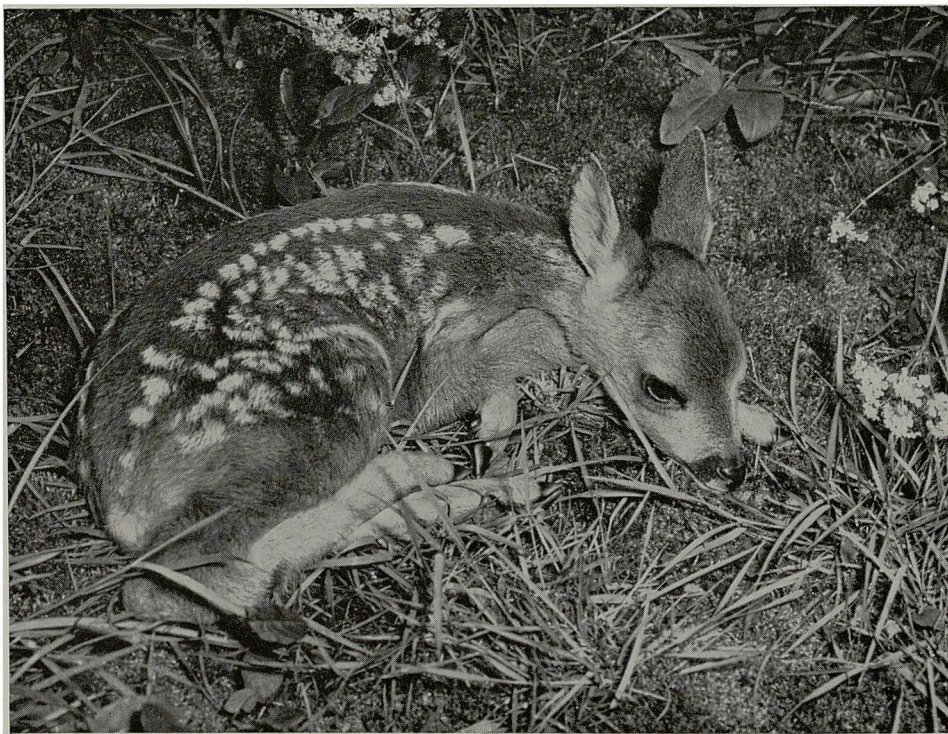


Figure 14. Roe deer kid, two days old. June.

traditional lore of keepers in such places as the New Forest, and as interest in deer revives, they are gradually coming back into use. Where any of these is introduced in the present text, it is shown on the first occasion in *italics*.

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the text of this leaflet, for this 1964 edition. The cover picture is reproduced from a water colour by Mr. Frank Wallace. The photographs of wild deer at Grizedale forest, Figures 2 and 8, are by Dr. Peter Delap. The author provided the sketch for Figure 1 and the photos of deer damage which appear as Figures 11 and 12, while Figure 13 was taken by Geoffrey Kims, Figure 14 by Jane Burton and Figure 15 by David Stephen. All the other figures were drawn by Mr. H. A. Fooks.

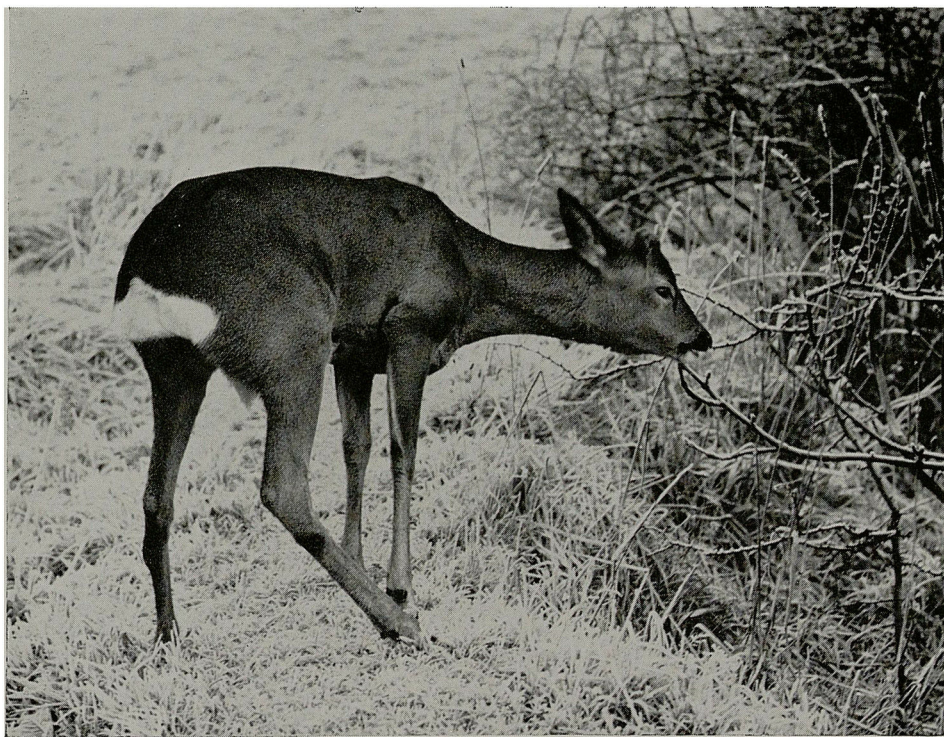


Figure 15. Roe buck in winter, showing antlers just sprouting from the pedicles.

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