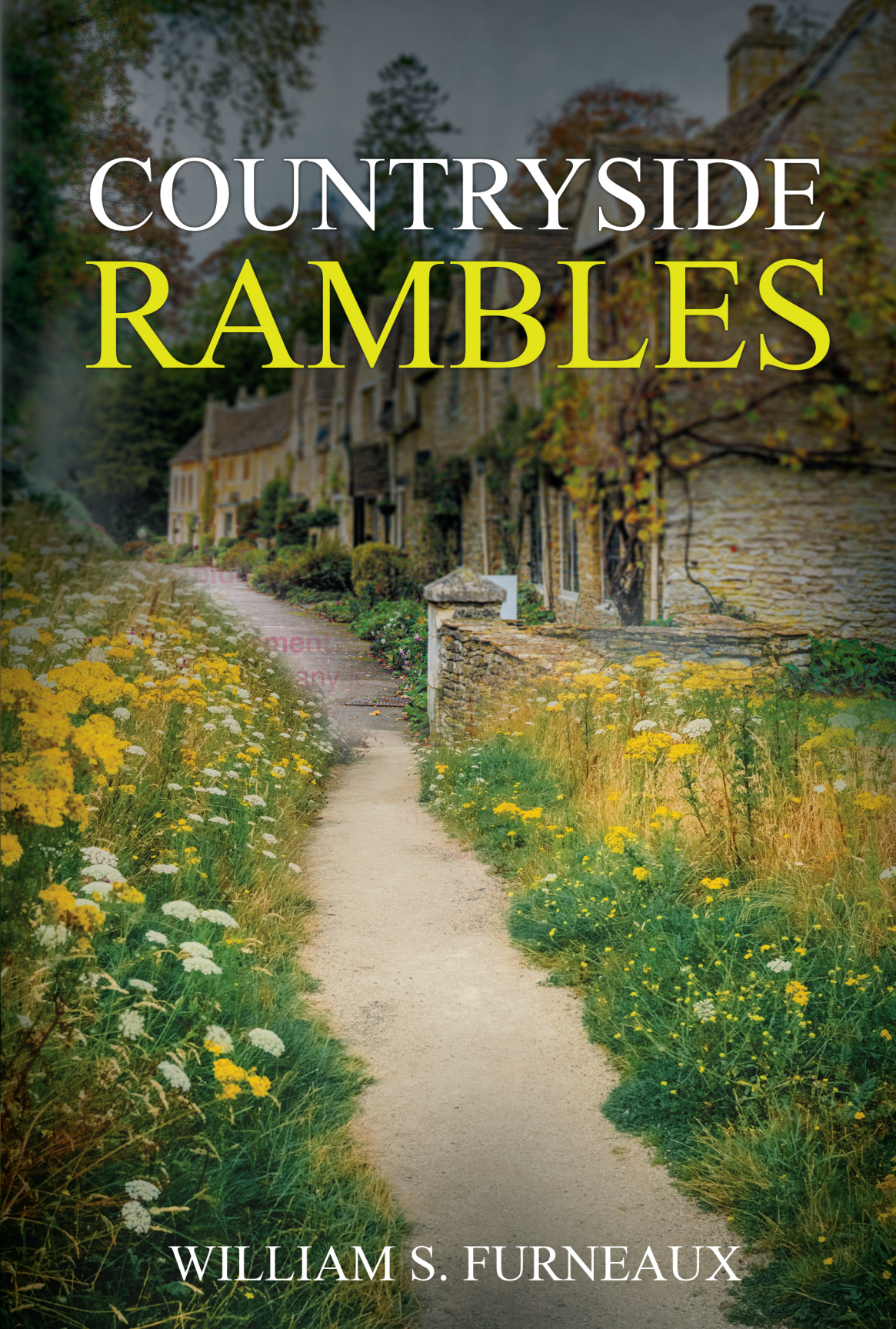
COUNTRYSIDE
RAMBLES
WILLIAM S. FURNEAUX

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Countryside Rambles

by

William S. Furneaux

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PART I:
Spring

I

The Awakening of Nature

SPRING is the season of the general awakening of Nature. During the cold months of late autumn and winter, many of Nature's creatures have been in repose; but now, called forth by the gradually increasing power of the sun's rays, they resume their life of activity. Thus spring, with all its promises of renewed life and vigor, following a comparatively dull season of chilly sleep, is welcomed by all, but especially by the lover of Nature, who delights to watch the ever-increasing response to the call of the ascending sun.

The first signs of returning life are visible long before the winter is really over; for although the night frosts are still keen, and the atmosphere by day often very cold, yet the occasional intervals of bright sunshine arouse many slumberers from their necessary rest. So we find the hazel in full bloom, and often the yew, elm, alder, and other trees; while many of our favorite spring flowers lift their blossoms before the snows have ceased to fall. Many hibernating creatures, too, leave their winter homes under the influence of a genial sun, perhaps only to return on the approach of another spell of wintry weather.

But with the real advent of spring, new changes are to be witnessed every day. New vegetable growth appears in great abundance. The ground herbage shoots upward with astonishing rapidity, soon overtopping the dead stalks and leaves of the previous year. The trees and shrubs, one after another, are tipped with green as their bud scales expand and reveal the tender leaves they enclosed, and new flowers are constantly appearing everywhere.

Some plants died to the roots before the winter set in, but not until they had scattered seeds for the perpetuation of their species;

and now we see hundreds and thousands of their offspring thrusting their tiny leaves above the soil. Even the seeds of these plants must necessarily take their period of rest, and as some require a longer sleep than others, we find some of the seedlings appearing long after others have made a sturdy growth.

Many plants died down to the ground while the portions beneath the surface continued to live. Most of these laid up a store of food material in their stocks, tubers, bulbs, or creeping underground stems; and thus they are able to produce strong growths with great rapidity as soon as the temperature becomes favorable.

In woodlands, it is interesting to watch the growth of seedling forest trees. Here we see hundreds, even thousands, of little beech trees, oaks, birches, ash, etc., just peeping above the soil; often so thickly placed that they could not possibly attain any great size. But they are exposed to so many dangers that, regardless of position, only a very small proportion are able to survive. In many cases, these seedlings are far from their parent trees, but this is due to the fact that the seeds (or fruits) were so constructed that they were easily carried by the breeze, or that they were scattered by the agency of wild birds or quadrupeds.

As regards animal life, there are many creatures that do not spend the winter in repose, for they are able to obtain their natural food throughout the cold season. Thus the herbivorous rabbit can always find a meal of green food except when the ground is covered with snow, and then it will attack the bark of young trees; birds can nearly always obtain the seeds, berries, grubs, etc., which form their winter diet; and the carnivorous fox, stoat, and weasel seldom search in vain for their prey. But most of our other wild creatures are compelled to sleep through the cold season, either because their natural food is not to be found, or because they are unable to withstand the severe winter weather.

And now, in early spring, these creatures are aroused by the warm rays that have penetrated to their hiding places, and one by one, they reveal themselves to us as we take our rambles.

Frogs and toads return to their ponds while yet they may be

imprisoned by a barrier of thick ice, and even on a frosty night, their croakings fill the air. A bit later in the season, the little hibernating and winter-hiding quadrupeds resume their active life. Soon we hear the familiar rustle of the little lizards as they rapidly dart away amongst the herbage of a sunny bank, and again observe the gliding movement of the snake as it rapidly seeks cover when we intrude in its haunts.

Then the air becomes more and more thickly peopled with insect life day by day. The very first warm and bright spell of sunshine entices the hibernating butterflies and other insects from their winter retreats, among them the queen wasps and wild bees which are, in most cases, the sole survivors of the large families of the previous summer. And as soon as the warmth of the sun has penetrated an inch or so into the soil, the numerous pupae, which have escaped the ravages of insectivorous creatures, burst open their brittle cases and emerge with new-formed wings, soon filling the air with myriads of flies, butterflies, moths, and other denizens of the air.

These early insects soon find their mates, and it is not long before millions of tiny eggs give rise to as many little grubs which immediately commence their ravages on the new tender leaves and flowers of herbs and trees.

So, as the spring advances, fields, hedgerows, woodlands, and wild wastes teem with increasing animal and vegetable life, newly aroused from its winter sleep by the genial sun; and the air is filled with the soft hum of insect life, the twitterings and joy-peals of birds, and the sweet odours of opening flowers.

We ourselves are influenced by the warmth and brightness of this enchanting season, and we long to ramble over the countryside where freshness breathes and all sleeping things are brought to active life again.

II

Opening Buds

FEW features of the spring attract more attention than the bursting of the buds on our forest trees and shrubs. In fact, the appearance of the little touches of delicate green on the tips and sides of twigs which, for several months, have revealed no outward signs of life, is often regarded as one of the principal indications of the opening of the season. And the general effect of these numerous patches of green, standing out in bold contrast with the sombre background, is so pleasing to the eye, and, withal, so full of promise, that one may well wander by hedgerows and through wood and copse with no other object than to enjoy an open view of the swelling verdure.

It is interesting, too, to note the varied tints of the new foliage of different trees, ranging from a very pale yellowish green to olive and bronze; to watch the rapid progress of the young leaves as they emerge from the grasp of the brown scales which have enclosed them since the previous summer; and to observe the order in which different species respond to the call of spring. But we shall do more than this, for we wish to watch the gradual expanding of individual buds in order to see how the young leaves were folded so compactly in their winter homes; to observe them as they slowly expand; and to see the wonderful provisions made to shield the tender leaves from the dangers to which they are at first exposed.

To carry out such observations, we must either pay frequent visits to the budding trees or adopt some means by which we can watch the expansion of buds at home.

Very frequently, we are able to find buds in various stages of development all on the same branch; and when this is the case,

we have a good opportunity of studying the history of the opening buds by passing our attention from one to another in proper order. Thus you may often see a small twig of the beech tree bearing buds that show no signs of opening beyond the loosening of the outer brown scales, together with several others in which the young leaves have emerged and commenced to unfold.

But quite a large number of buds will open if the twigs bearing them are placed in water or wet sand, and these may be closely watched at home. Yet twigs selected for this purpose should not be cut too early in the season. Buds must have their natural period of rest, and it is best not to cut twigs for the purpose suggested until the loosening of the scales shows that the buds are ready to expand.

Among the buds that may be successfully treated in this manner, we may especially mention the horse-chestnut, beech, sycamore, poplar, and willow. But it must be remembered that there are limits to the growth of young leaves when treated in this way, for they are not supplied with their natural food. Yet the progress they make is quite sufficient for our present purpose, which is to see how the leaves are folded in the bud, and to watch them as they gradually assume their later forms and positions.

It is remarkable that the twigs of some trees, particularly those of poplars and willows, readily form roots when placed in a vessel of water; and these, if supplied with an ordinary mineral fertilizer, or transferred to damp soil, will soon develop into perfect, self-supporting trees; and their leaves will then grow to their full size.

Now let us examine some of the more interesting of the opening buds. Here (Plate I) are some of the beech tree, in different stages. At first, the overlapping brown scales which tightly embraced the embryo leaves gradually relax themselves and, shortly after, a peculiar little mass of closely folded leaves, covered with silky hair, protrudes at the tip.

When a little farther advanced, we see that the young leaves, which are of a very light and delicate green color, are folded in a manner that suggests the concertina or the bellows of a photographic camera, that there is a vein at each projecting angle, and

that the whole is protected by a dense covering of tiny hairs. Later still, each leaf widens, so that the veins are slightly separated, and the green tissue is rather more exposed. Even when the leaf has almost assumed its full size, it still retains an indication of its former folds, and now we are aware that the silky hairs, which at first formed a complete covering, occupy the edges and the lower sides of the veins only, while the delicate green tissue between is bare and glossy.

Now let us see the reason for this. In the first place, we must note that the space within the scales of the leaf buds, not only of the beech, but of all our trees, is very limited, so that it is necessary for the little leaves within to be compactly folded, crumpled, or rolled. At the same time, the veins of these young leaves are always very prominent and well-formed, while the thin tissue between them is at present only slightly developed. This latter feature is a valuable protection to the leaves for the thin skin or epidermis covering the blades of the leaves is, as yet, very thin, and not impermeable to water. If there were a considerable surface of this imperfectly protected tissue, the young leaves would lose much of their moisture and die on dry sunny days. Further, all young leaves retain their folds, crinkles, or scrolls for a time after they have become free; for, in this condition, the thin substance between the veins, still covered with an exceedingly thin epidermis, is less exposed to sun and wind.

In the case of the opening buds of the beech, while the above conditions hold, there is a further protection against drying up afforded by the hairs. We have seen that these hairs exist only on the veins and margins of the young leaves; but at first, when the thin tissue is completely hidden within the folds, and the veins and margins only are exposed, the silky covering is complete. After the leaves have partially expanded, and the outer wall of the epidermis is becoming thicker, the covering of hairs, so necessary at first to shield them from dry winds, is now not so essential. Later still, when the leaves are fully extended, and sufficiently protected by their perfectly formed epidermis, the hairs, being no

longer required, gradually fall, so that old beech leaves are quite or almost free from them.

The leaves of the hornbeam tree are very like those of the beech, with the same strong, parallel veins; and they are folded in the same manner within the bud, so that the above remarks apply also to them (Plate I).

If you examine the opening buds of our common forest trees, you will find that in several of them, the young leaves are protected from sun and wind by a covering of hairs. Among them, we may mention the white poplar, mountain ash, wild pear, and the wayfaring tree — a shrub rather than a tree, very common in the hedgerows of South England, more especially in chalky districts — and, as in the case of the beech, the hairs partially or entirely disappear as the leaves become older. The hairy coat of the last named (the wayfaring tree) reveals a wonderful structure when examined under the microscope; for each hair has several branches all radiating from one point, like the rays of a star, and the branches intermingle so thickly that they form a natural felt.

Some young leaves, not provided with a hairy coat, are protected against loss of moisture by a thin covering of natural varnish that is waterproof; but this, like the hairs, disappears when such protection is no longer necessary.

Again, some newly exposed leaves, not protected or not sufficiently protected by the means above mentioned, adopt curious devices for the prevention of loss of moisture. One interesting example will be seen in the young leaves of the horse-chestnut. These leaves are compound, each consisting of five or seven leaflets. As they first issue from the bud, the leaflets stand erect and close together, thus sheltering one another from the sun. Then, after becoming so long that this position is no longer possible, the leaflets sink and hang perpendicularly with their points towards the ground. In this position, they do not catch so many of the sun's rays. Finally, when the epidermis is well formed, and the light and heat of the sun become necessary for the functions the leaves have to perform, the leaflets rise and spread themselves horizontally.

These precautions appear to be necessary even though the young leaves have a rather dense covering of woolly hair (Plate I).

Another protective device will be observed in the young foliage of the wild cherry. Here the new leaves are folded only down the middle - along the midrib, and for a time they remain flatly folded in this manner, so that much of their surface is shielded from the sun.

A still more interesting example is afforded by the opening buds of the wayfaring tree already mentioned. When first the leaves appear, they stand erect, as is the case with many other species, because in that position they are less exposed to the sun. At this time, too, they are much folded, and the veins are so strongly developed that they touch one another, completely hiding and protecting the deep folds of the green tissue between them. Then the leaves are also arranged in pairs, and are convex on the outer side, so that the margins of each pair fit closely together, forming a closed case around the growing apex of the new shoot (Plate II). In addition to all these protective measures, there is the thick, felted coat of hairs already mentioned covering the outer surfaces. As the leaves further develop, and the epidermis is well formed, the veins become farther apart, and the leaves lose their folds and take a horizontal position.

After observing a variety of opening buds, we soon come to the conclusion that the so-called "leaf-buds" are really undeveloped branches, for each one eventually gives rise to a complete branch or twig. In many instances, the branches bear flowers in addition to leaves, while some buds give flower-clusters only, or flowers with only a few scale-like leaves. We also learn that while some trees produce their leaves before their flowers, others, like the oak, bring forth leaves and flowers at the same time; and others, again, produce their flowers before their leaves, like the hazel, ash, elm, sloe, and some of the willows and poplars.

It may appear strange that some of our trees should produce their flowers so early in the year - often long before the winter is at an end; but there are various reasons why this should be so.

Opening Buds of the Beech

Hornbeam

PLATE I

Horse-Chestnut

Young leaves of the Horse-Chestnut

Young Leaves of the Wayfaring Tree

The Field-mouse

PLATE II

The skull of a rabbit

The Shrew

In not a few instances, the fruits ripen so slowly that the coming winter frosts would destroy them before they were mature if they had not a very early start. Again, the very early flowers that come before the leaves probably have a much better chance of being fertilized in the absence of foliage. If their pollen is distributed by the wind, they are so exposed to the breeze that the process is more likely to be successful; and even if they require the aid of insects, it is probable that their prominence compensates for the comparatively small number of insects at present on the wing.

III

The Reappearance of Hibernating Creatures

THE genial warmth of early spring, which calls the young leaves from their winter homes, also entices numberless animal creatures from their respective hiding places. But the latter do not, as a rule, attract so much attention as the bursting buds. They do not form a distinctive feature of the landscape and are generally so shy or so skillfully hidden by their surroundings that they are not often seen except by those who search for them. Yet they are all exceedingly interesting; for, in addition to their varied forms and colorings, often really beautiful, they exhibit a variety of movements that render them especially attractive.

If you wish to make the acquaintance of these creatures, you must be prepared to exercise some amount of patience, but you will seldom do so without reward. A noiseless saunter beside a sunny bank, the weedy border of a field, or along the edge of a wood or coppice will often enable you to see a timid creature that would dart under cover at an abrupt intrusion. Or, remain quietly at rest in a favorable spot, and, sooner or later, some little animal will approach you so closely that you can observe its every movement. If you are previously acquainted with the haunts of certain creatures you wish to observe, so much the better; but, even without such knowledge, a careful selection of a post of observation will almost surely lead to success.

A few of the so-called hibernating animals are really only partial hibernators or winter hiders. These generally lay up a store of food for the cold season and, awaking from their slumbers on a mild day, indulge in a meal and a certain amount of exercise. When, however, the frosts are all over, they commence a life of almost unbroken activity.

The squirrel is one of these partial hibernators. In very early spring, you may see it — or, rather, them, for they generally live in pairs — running and leaping among the branches of trees, and occasionally descending to the ground to unearth some of the remains of their winter store. When the latter is exhausted, they will feed on young shoots, buds, and the bark of young branches until a fresh supply of nuts and beech mast has ripened. All their movements are graceful and interesting; and if you approach their haunts cautiously, and remain quite still, they will proceed with their antics just as if unobserved. Before the spring is quite over, they build their summer nest, usually in the fork of a tree, intertwining dead grass and thin twigs with moss and dead leaves. The whole mass so closely resembles the bark of the tree in color that frequently the nest is scarcely noticeable from below. Here, in or about June, the female brings forth three or four blind and naked youngsters.

The pretty little dormouse, another partial hibernator, is just like a tiny squirrel in appearance, but its tail is not quite so bushy. Like the latter, it lives chiefly in trees and feeds in a sitting posture on its haunches, holding its food between its hands but it is chiefly nocturnal in its habits, so that it should be looked for in the evening at dusk. It has a beautiful tawny coat, against which the large black eyes are very conspicuous. Dormice leave their winter quarters permanently in late March or in April, and it is not long before they build their summer nests, either in underwood, two or three feet from the ground, or in a dense tuft of dead grass or other herbage. Towards the end of the present season, you may see in each nest three or four young, blind and naked.

In fields and hedgebanks, we may meet with another of the partial hibernators — the common field-mouse. This creature is very like the mouse which infests town houses, but is distinctly reddish above and whitish beneath. Its tail is about as long as head and body together. Although chiefly nocturnal in its habits, it is often at large in broad daylight. Frequently, it spends the whole winter in country houses, or in barns, corn stacks, and haystacks, and then does not appear to hibernate at all (Plate II).

Now let us note the principal of the true hibernators, remembering that even these do not spend the whole of the winter in a continuous state of torpidity. A temperature of about fifty degrees is sufficient to arouse most of them from their winter sleep, although the additional stimulus of bright sunshine is necessary to restore the diurnal species to a state of real activity. They are often enticed from their winter quarters by mild weather in very early spring, only to be driven back again by late frosts and snows; but, as a rule, they bid a permanent farewell to their hiding places about the end of March or the beginning of April.

One of these is the beautiful little harvest mouse, which measures not much more than four inches in length, including the tail of about two inches. It is of a reddish yellow color above and white beneath; and may often be seen in cornfields and rough pastures. Sometimes, it will spend the winter in stacks of hay or straw, and is then kept sufficiently warm to remain active throughout the season, feeding on such seeds or grain as it can find. It does not usually construct its summer nest till the end of spring or early summer; and this nest is a wonderful structure — a globular mass of intertwined grass blades, usually suspended from stalks of corn, with the aperture so artfully concealed that it is by no means easily found. Should you succeed in finding one of these nests, take up a position from which you can watch the owners, if only to see the manner in which they climb the smooth straws, curling their little tails round the latter to increase their hold.

Strolling over meadows or rough pastures, and intently keeping your eyes on the ground, you are almost sure to make the acquaintance of the little shrew, also known as the shrew-mouse and the short-tailed field-mouse. But it is not a mouse, nor does it belong to the same order. The creatures we have previously named belong to the group of animals known as rodents or gnawers and are easily known by the few sharp, chisel-like teeth in the front of each jaw, separated by a considerable space from the grinding teeth at the back, as may be seen in the skull of a rabbit (Plate II). All these rodents live principally, if not entirely, on vegetable

substances. But the shrew has pointed teeth, the front ones long and somewhat sickle-shaped; and it feeds entirely on an animal diet, consisting principally of insects, worms, slugs, and snails. It may easily be distinguished from field-mice by its long, pointed snout and its short tail which is not so long as the body. Shrews live in holes in the ground; and at the present season, are engaged in rearing their young. It is remarkable that dogs, cats, and other carnivorous animals which devour mice readily will not eat shrews. The reason is that shrews have a strong, repulsive scent which, although it preserves them from the attacks of some creatures, does not prevent them from being worried or tortured to death by cats and dogs (Plate II).

Hedgehogs are also now at large after their winter sleep. They belong to the same order as the shrew; but, being larger and stronger, they attack larger game in addition to insects and worms, even feeding on lizards, snakes, mice, and young birds from the nest. Since hedgehogs are chiefly nocturnal in their habits, the best time to look for them is the evening, just about sundown; but they often come out to feed during the brighter hours of the day. Although the hedgehog can run fairly quickly, it will generally put itself on the defensive when surprised, curling up its body, with head, tail, and feet all tucked away out of sight, so that it becomes a ball with sharp spines radiating in every direction. Should you want to take it for future examination, roll it into a handkerchief spread on the ground, and pick it up by the corners of the latter. If kept in captivity, it soon becomes very tame, will cease to curl itself into a ball when touched, and will feed from the hand (Plate III).

As soon as the air is sufficiently mild to call many insects on the wing, bats are aroused from their winter sleep, and come out every evening to feed. They may be seen soon after sunset flitting through the air in search of their insect food, which they always catch on the wing. At the same time, you may hear their piercing squeak, so high-pitched, by the way, that some human ears cannot perceive it; and also the crunching of beetles and other hard-skinned insects as they are crushed in the creatures' jaws.

Bats, of which there are many British species, are strange animals. They are not birds, but insectivorous mammals, bringing forth their young alive, and suckling them with their milk. Their bodies are covered with fur much like that of a mouse, and their wings consist of a very thin membrane extending between long, slender fingers, the sides of the body, and the tail.

If it is desired to examine a bat closely, one can best be secured by searching in its hiding place during the day. Church towers, barns, hollow trees, and dark spaces under the roofs of houses are favorite resorts; and here bats may be found hanging, head downwards, by their hooked hind claws, fast asleep. They may often be caught in an ordinary butterfly-net while in flight, but this method of capture not unfrequently leads to the breaking of the delicate wings.

Now let us wander beside a sunny bank on a bright day, or on the sunny slopes of ground partially covered with clumps of heather and furze, walking very slowly and cautiously with eyes on the ground. At times we hear a rustling sound as of a rapid retreat, and may just catch a glimpse of a lizard as it darts away to a safe cover. But, continuing our search, proceeding very slowly, we at last find one which is undecided as to the presence of actual danger, and remains perfectly still as we look at it, yet always on the alert and ready to scamper away at the slightest threatening movement (Plate IV).

These little creatures are true reptiles, recently aroused from their winter sleep. They are often confused with newts or efts, from which they are quite distinct. Lizards have a dry, scaly skin, and never live in water, while newts have a soft, moist skin like that of a frog, and, when young, live entirely in water, breathing by means of gills like a fish.

Should you desire to catch a lizard, you may do so by a very quick movement of the hand; but grasp it bodily, avoiding the long tail, for the creature has a way of rendering its tail very brittle, snapping it off by a sharp movement, and darting away, leaving the still wriggling tail in your grasp. The lizard will probably bite

Hedgehog defensive

PLATE III

Hedgehog feeding