VERTEBRATES

Gillfield Wood is quite different from most other woods within the Sheffield city boundary in that there is open access to rural areas in all directions. Creatures which shun the noise and presence of man can find a refuge here, amongst the thick impenetrable areas of Bracken, Blackberry and Dog Rose undershrub. It is unfortunate for these animals that this present condition is not permanent, for, as the wood matures, so the shrub layer will be overshadowed and eventually destroyed by the trees now in their infancy. An area of natural woodland would have trees of varying ages, and hence a far more varied shrub - and so animal - population since open glades would occur naturally as the trees die and fall.

MAMMALS

The resident mammal populations in the wood are difficult to assess on a numerical basis. I have seen many species in the wood, but there are few which could be proven members of the woodland community here.

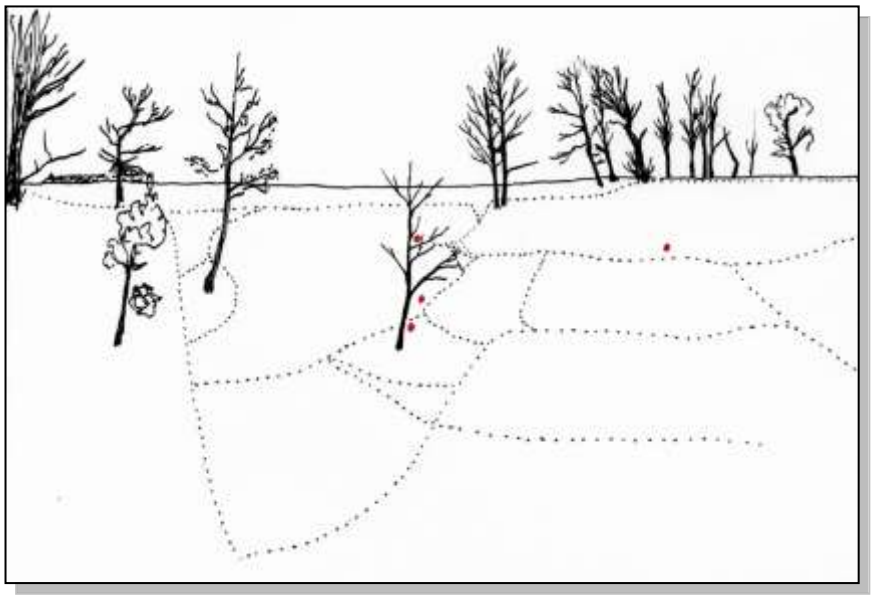
The Red Fox (*Vulpes vulpes*) is a frequent visitor to the wood, and I have seen these shy creatures occasionally during casual visits or on specific investigations. There was an active earth in Area B some years ago, but this is no longer used. Regular scenting places can be detected quite easily on most visits, the pungent smell being quite distinctive (a regular place was the Larch copse by the Totley-Fanshawe Gate footpath). There are a-few Rabbits, and many other small mammals and birds in the surrounding area, so there would appear to be no shortage of food for the Fox. One local farmer reported that 'foxes' had killed and partly eaten a new-born calf in fields adjoining the wood, in early summer 1973. The Fox seen on December 10th, 1974 (see report in Appendix) seemed to be in excellent condition, with lustrous fur and a clean, well-groomed coat. Its behaviour was that of an animal not too frightened by the presence of humans, possibly because it had been aware of my presence and had been watching me for some time. Since there is no earth in the wood, any quantitative study or study of food would seem to be virtually impossible.

The presence of the Badger (*Meles meles*) in the wood is one of the more obvious observations to be made, and tracks, dung pits and diggings can be seen throughout the year. The local earth-stopper to the Barlow Hunt informed me that there had never been Badgers in the wood, and for many years I held the same opinion myself. However, on February 21st, 1975 (see Appendix for report), I found the well-concealed entrance to at least one Badger sett near the western end of the wood. ‘This was a logical find, since the wood seems to satisfy all the creature's needs: a supply of water nearby; a sloping bank (equals a dry sett); and a plentiful supply of food (mainly vegetable in nature, but

supplemented by animal food, insects, worms, small mammals etc.). The dung-pits are found throughout the wood and, in my experience, are never located very far from the sett (the Badger is fastidiously clean and will not foul the entrance to the sett with its droppings). Having observed these overt signs of quite intense Badger activity for several years, it gave me great pleasure to find that there were indeed Badgers in the wood. The setts were obviously used, but showed no sign of any recent excavations, the usual heap of excavated soil was obviously quite undisturbed as there were plants growing from it and helping to conceal the sett entrance. There is a very healthy Badger population in the district as a whole, and ample evidence of their activity in the form of very long inter-connecting paths between setts and stream crossing places.

The paths in the immediate vicinity were roughly mapped on March 7th, 1974 and can be seen below. The full extent of the paths cannot be shown since some of them extend many hundreds of yards from the sett. The principal paths in this case connect the entrances: lead away from the sett to the top of the Ridge (where they run parallel to the

PLATE 32: Badger Setts and Tracks near Western Gateway 08/04/75



KEY:
……paths
• position of setts

boundary wall for a considerable distance in both directions); and lead to the stream (for drinking). The sett entrances and runs are very well camouflaged with Bracken, and I can envisage that they will be virtually undetectable in summer, when the Bracken will be high enough to cover all traces of activity. The paths and sett are quite impossible to see from the main path, and the nature of the undergrowth and the steep slope make this area quite difficult to search thoroughly. It seems quite possible that this sett has remained and will remain undetected by the majority of human visitors for many years.

The photograph above gives some indication why the setts have remained undiscovered for so long. This was taken in early spring when ground cover is at a minimum; the situation in high summer, with the Bracken fully grown, is such that very little trace of the paths can be found. The path which leads along the top of the photograph, leads off to the right into the young Oak trees, and it there that the toilet may be found.

Plate 33 shows this ‘toilet’ which is a peculiar feature to the Badger, the same site being used for long periods. This ensures that the sett is clean and also helps the observer locate a sett, since the dung and sett are rarely more than one or two hundred yards apart.

PLATE 33 Badger Dung Pits
This photograph shows four dungs pits at the base of a sapling. These had all been used quite recently and consist of a small pit which the Badger digs and then defecates into. There is no attempt to cover the pits as happens in domestic dogs and cats.

PLATE 34: Badger Paths on the Ridge

The whole of the area called the Ridge is criss-crossed with paths which all emanate from the sett shown in plate 32 above (see page 71). The main path of this pattern is the one which leads from the bottom right-hand corner to the middle distance. One of the difficulties of following these paths is the uncertainty as to how to interpret their direction and significance.

Plate 35 shows the 'new' sett discovered on April 6th, 1975 after following the main Badger path along the Ridge. This is a re-excavated, disused rabbit burrow.

PLATE 35: New Badger Sett
Photographed 6th April 1975.

I have seen the Stoat (*Mustela erminea*) once only in six years of visiting Gillfield Wood regularly. There seems little reason why it should not be present in reasonable numbers, since there would seem to be an adequate food supply, plenty of cover, and little or no persecution

by man. The one animal I have seen was crossing the main path early one Sunday morning. It seemed unaware of my presence and bounded along the path in its peculiar sinuous manner for a short distance, pausing for a few seconds and then disappearing into a tangle of Dog Rose.

The Mole (*Talpa europaea*) is a resident of the wood, but the numbers appear to be small. Molehills have been noted near the main path on many occasions, but the number which lie undetected amongst the very dense Blackberry and Dog Rose thickets is almost impossible to estimate. The decomposed carcase of a dead Mole was found in a Larch plantation on December 10th, 1974 (see Appendix). The teeth were sharp and unworn, which would suggest that the animal was fairly young at the time of death (Southern suggests that the normal adult lifespan is about three years, by which time the teeth show signs of considerable wear from the diet of earthworms). The cause of death was indeterminate, but the skeleton was intact.

The Rabbit (*Oryctolagus cuniculus*) may be resident in the wood only occasionally (a breeding hole was found in 1974) but tracks and associated droppings indicate that there is a small and regular influx into the wood to feed. The surrounding fields are used only as pasture, so it might well be that the better food is to be found within the wood. There is a small warren near Little Wood, and this is the probable source of the visitors.

Bats (Chiroptera) may be seen flying over the wood during the summer months, but no identification can definitely be made, with the exception of the Pipistrelle (*Pipistrellus pipistrellus*), which can usually be picked out by its extremely small size.

Shrews (Soricidae) have been heard on several occasions, but not one specimen has been seen yet within the wood. A Water Shrew (*Neomys fodiens*) was observed two years ago some distance downstream, but this species has not yet been recorded from the woodland section of the stream.

The Grey Squirrel (*Sciurus carolinensis*) is found only on the fringes of the wood, where the mature trees form a suitable habitat. The Squirrels make occasional sorties into the wood for food, but there is little chance of them building their dreys there until at least some of the trees have reached maturity.

Evidence of the existence of two small mammals in Gillfield Wood came from an owl pellet found in Area B, to the south of the study area on 26th of November 1977. This was dissected and the contents examined and identified.

The pellet was found under a large Oak tree, and judging by the size, colour and shape, the bird most likely to have regurgitated this pellet would seem to be the Tawny Owl (*Strix aluco*). Although there is no guarantee that the contents of this pellet have necessarily come from the study area, I think that it is reasonable to assume that they are there, since the wood has ready access to the surrounding area in any direction.

Dissection of the pellet revealed several totally unidentifiable bones such as ribs, many leg bones, and a fine tilth of bone fragments. There were no complete skulls, but eight pieces of upper and lower jaws, including the teeth. These were identified by referring to the key in "Handbook of British Mammals" by H. N. Southern, (published by Blackwell). The species identified were Wood Mouse (*Apodemus sylvaticus*) and Short-Tailed or Field Vole (*Microtus agrestis*).

The Wood Mouse remains suggest that only one specimen had been caught since there were only two lower jaw fragments, and these were of equal size and opposite sides of the jaw. One upper jaw fragment was found of the same species. There may have been more than one Wood Mouse caught, but the evidence must be taken to give the minimum proven number.

The Short-Tailed Vole remains lead me to believe that at least two animals had been taken. There were three pieces of lower jaw (one matching pair), and two matching pieces of upper jaw.

BIRDS

I have probably neglected the study of the birds of Gillfield Wood more than any other section over the past few years. However, certain species have been noted during the course of the study, and it is hoped to add quite significantly to the lists in the coming months. I am including in this section, birds which have been seen flying over the area, not merely those species which are resident

The Tit family (Paridae) are well represented, with four members which can be found within the wood's boundary, although one of these, the Coal Tit (*Parus* [=*Periparus*] *ater*), is not nearly so common as the others. The Great Tit (*Parus major*) and the Blue Tit (*Parus* [=*Cyanistes*] *caeruleus*) are common all the year round but are most apparent in winter. The Long-Tailed Tit (*Aegithalos caudatus*) can be seen most often in winter, when groups of these most attractive birds may be seen, quite close at hand, moving slowly through the wood from tree to tree.

The Robin (*Erithacus rubecula*) is a resident and may be seen or heard at almost any time of the year if one walks through the wood along the main path. Blackbirds (*Turdus merula*) are common throughout the year and may be heard searching noisily in the undergrowth for food. There seems to be quite noticeable imbalances in the usual ratio of males to females in the winter months, with many more males evident. These birds do nest in the wood, and their nests may sometimes be found in the tangles of Blackberry and Dog Rose. 'The closely-related Song Thrush (*Turdus philomelos*) is also a resident and although never as common as the Blackbird, its nests are, if anything, more conspicuous, as the favourite site seems to be-a fork in a sapling, which offers little or no cover. Very few of the well-known 'anvils' of this species are to be found, due mainly to the lack of loose stones, the only suitable places being along the Ridge wall, and in occasional places on the main path. 'The larger, and more aggressive Mistle Thrush (*Turdus viscivorus*) is only rarely seen, most commonly in winter, but also very infrequently, in summer. No nests of this species have been found. The only other member of this family to be seen within the boundary of the wood is the Fieldfare (*Turdus pilaris*) which is a common winter visitor to the area, if not to the wood in particular. On February 1st, 1975, for example, I observed a large flock of these birds on the Ridge, when disturbed they moved off into the old copse on the south of Totley Brook known as Area B. The status of this species is that of winter visitor only.

The Yellow Hammer (*Emberiza citrinella*) is to be seen quite commonly towards the western end of the wood, and especially in the new Larch plantation (Area A). Occasional specimens do fly through the wood, but these seem to be the exceptions. Goldfinches (*Carduelis carduelis*) are quite common, and large flocks may be seen, especially in autumn and winter, searching out the seeds of plants - usually members of the Compositae. Bullfinches (*Pyrrhula pyrrhula*) are never common but are seen more regularly in the winter months than at any other time. The Greenfinch (*Chloris chloris*), and the Chaffinch (*Fringilla coelebs*) are likewise rarely seen, but a few are present throughout much of the year. Whether these finches actually nest in Gillfield Wood has yet to be proved, but I would be extremely surprised if they did not.

Of the tiny unobtrusive birds, the commonest is probably the Wren (*Troglodytes troglodytes*) which is most difficult to see in its favourite habitat, around the stream banks. The even tinier Goldcrest (*Regulus regulus*) is a rare inhabitant of the wood and is seen very infrequently particularly near the Larch plantations. These two birds seem to be quite unafraid of man and can be approached to within a few feet without showing any sign of nervousness or alarm. Three species more often associated with gardens than woods are found infrequently in Gillfield; these are the Hedge Sparrow or Dunnock (*Prunella modularis*), the House Sparrow (*Passer domesticus*) and the Starling (*Sturnus vulgaris*). The latter bird occasionally visits the wood in the now celebrated swarms but

does not appear to use it as a roosting place. The Tree Sparrow (*Passer montanus*) is occasionally seen and may indeed be resident, but this shy bird, so unlike its more familiar cousin is very difficult to observe closely.

Rooks (*Corvus frugilegus*) frequently overfly the wood or land in the mature trees around its periphery. The rookery is on Baslow Road, Totley, opposite Totley County School [Totley Primary School], and there is a further nesting site, rather smaller, about one mile away on Penny Lane, Totley Bents. These birds rarely settle in the wood and seem to prefer the open fields where the food and the clearer field of vision are probably the attractions. The raucous Jay (*Garrulus glandarius*) on the other hand, is a frequent visitor and may even be a resident in one of the large trees skirting the southern boundary. Scarcely a visit passes without hearing a Jay, and patience often is rewarded with a glimpse of their beautiful plumage amongst the branches. These birds are extremely shy of humans, and to get a really good view of the Jay requires patience and concealment. The most common member of the Corvidae in the district is the Magpie (*Pica pica*). The characteristic shape and weak flight of this bird are to be seen almost every time the wood is visited. Rather strangely, the Carrion Crow (*Corvus corone*) is very rarely seen in this locality, although there would seem to be ample food and suitable nesting sites nearby.

Grey Herons (*Ardea cinerea*) occasionally visit Totley Brook in winter, but none have yet been seen during the spring and summer months. Curlew (*Numenius arquata*) similarly seem to be winter visitors only, and then very rarely are they seen within the boundary of the wood. A pair of Woodcock (*Scolopax rusticola*) were disturbed in early winter (see report of November 26th, 1974. in Appendix), and subsequently one was caught by hand. It panicked upon my approach and became entangled in some old wire-netting. The bird was freed, photographed, examined for a ring or possible injury, and then released. Until this most fortunate occurrence, there was no definite proof that this secretive bird was a resident or visitor to the wood, even though one had been seen "roding"[1] in nearby Holmesfield Park Wood.

The Wood Pigeon (*Columba palumbus*) has nested in the wood on several occasions, but would appear to prefer the older and larger trees of Area B. A nest was found in a Holly tree (see report November 26th in Appendix) and seemed undamaged as though it was a relic of the previous summer.

A pair of Mallard (*Anas platyrhynchos*) raised a brood of ducklings on Totley Brook in 1972 and were seen on the stream again on February 1st 1975 (see Appendix), which

[1] Roding: a flight around a regular circuit at dawn or dusk

gives hope that they may repeat the process. Moorhen (*Gallinula chloropus*) have been disturbed on several occasions, but no nest of this species has yet been found.

The Hawks are poorly represented in Totley, and the only species seen regularly in the vicinity of the wood is the Kestrel (*Falco tinnunculus*). At least one pels have nested in the neighbourhood for the past few years, and they have been observed hovering over the wood on a few occasions. A Buzzard (*Buteo buteo*) was seen circling high above the wood in June 1974, but there was no evidence to suggest other than that this was a bird of passage. It is interesting to speculate that the Sparrow Hawk (*Accipiter nisus*) may once again be seen in the district since this species is now resident on Totley Moss, less than a mile away from Gillfield Wood.

REPTILES AND AMPHIBIANS

I have seen no reptiles on any of my visits to Gillfield Wood. I did release a family of very young Slow Worms in the wood in the autumn of 1972, but no sign of these creatures has been seen since (two adults were kept as pets and produced a clutch of babies which were too small to feed). They may have survived, but the chances of seeing such a shy reptile in the comparatively vast area of the wood are remote indeed. Common Lizards (*Lacerta* [=*Zootoca*] *vivipara*), Grass Snakes (*Natrix natrix*) [=*Natrix helvetica*] and Adders (*Vipera berus*) have all been reported within three miles of the wood, but so far, no trace of these animals has been found in the study area.

Two amphibians have been found in the wood during the past few years, but they have been the sole representatives of their Class. A single female Smooth Newt (*Triturus vulgaris*) was found under a rotten log on the ground two years ago, and a single immature Common Toad (*Bufo bufo*) was found in the same type of situation. These are the only Amphibians to have been recorded from the wood, to my knowledge. Possible breeding sites are very few in Totley, as there are no permanent ponds. The 'swimming pool' in the wood is the only possible site where these animals could have bred, and this is prone to drying up at any time of the year, when the local youths decide to dam up the entry channel. Conversely, they may dam up the outflow when the pool becomes deep enough to hold Trout. Newts and Toads may breed here, but I think it unlikely that they accomplish this successfully each year.

FISH

Only two species of Fish have been found in the streams in Gillfield. These are the Brown or SeaTrout (*Salmo trutta*), and the Bullhead (*Cottus gobio*). The Trout is by far the commonest of the two and reaches a maximum size of about 10 inches. There is plenty of food available in the form of the many nymphs and larvae of aquatic insects,

and few predators (the herons which visit the stream, do so too infrequently to be a cause of serious depletion). children rarely fish this stretch, since the banks are an inhospitable tangle of Alder thickets, Thistles and Blackberry bushes. The Bullhead is almost never seen on a casual visit but is present under flat stones in small numbers. The Stone Loach is quite common in some parts of Totley Brook, downstream from the wood, but so far, has not been found within the wood.

There is an absence of other varieties of fish, especially the Common Eel (*Anguilla anguilla*) because of the very polluted state of the rivers which eventually join Totley Brook to the sea. This forms a most effective barrier to the migratory fish.

INVERTEBRATES

INSECTA

The invertebrate life of the wood is varied and numerous. The obvious Orders such as the Lepidoptera are quite easy to find and identify, but some very interesting Diptera were discovered during the summer of 1974, when proportionately more time was spent on this Order. The difficulty of finding simple field-keys for the more obscure groups has proved quite a problem, and since it has been my policy to take no specimens of any description, identification has been made, in the majority of cases, from photographs of the insects (and other Classes) taken in situ.

The list which follows cannot be described as comprehensive, as it merely comprises those creatures which have proved identifiable within each Class or Order. For this reason, each Order studied will be taken on a separate page so that additions do not cause a major reconstruction of the section involved.

Details of the creature's life-history have been included wherever this has seemed relevant to the understanding of the animal's presence in the wood. References to books used for reference during the work have been included at the end of the particular section.

Aquatic species have not been included in this section as they should exhibit more cohesion if they are included in the Stream Survey where their inter-relationship is far more relevant than if they were included in the Orders listed here.

LEPIDOPTERA

Fourteen species of Butterfly have been recorded in the wood to date, and although the number of moth species is liable to outnumber this by a large margin, little work has been done on this group, although a programme of investigation has been planned for the summer months using a mercury-vapour lamp.

Of the Family Hesperiidae, only two species have been recorded in the woodland, one of these, the Small Skipper (*Thymelicus sylvestris*) has been recorded on a single occasion. There is ample supply of the food-plants in Gillfield, including *Holcus mollis*, which is one of several plants listed as being frequently used.

The Large Skipper (*Ochlodes venata*) is common and may be found in June and July throughout the area. The food-plants are again common members of the Gramineae including Cock's Foot Grass (*Dactylis glomerata*) which is said to be eaten in preference to other species when it is available.

The Pieridae are represented by four species, of which two could be said to be resident in the wood, the other two probably casual visitors from the nearby gardens in Totley. The earliest species to be found in the wood is the Orange Tip (*Anthocharis cardamines*) which is a common sight fluttering restlessly along the open areas. The food-plants are all members of the Cruciferae, especially Lady's Smock or Cuckoo flower (*Cardamine pratensis*) from which the insect derives its specific name. This plant is present in some numbers in the wetter regions.

The Green-veined White (*Pieris napi*) is a common butterfly, and unlike the other two members of its genus (see below) found here, is a typical woodland species. Plants of the family Cruciferae again form the staple diet of the larvae, in this case the plants specifically mentioned are Garlic Mustard, Horse Radish, Mignonette and Water Cress.

The Large White (*Pieris brassicae*) is never common and sightings are usually restricted to a few specimens which probably wander from the more urban areas of Totley, although it is possible that a few manage to complete their lifecycle on suitable plants of the Cruciferae. The same comments apply equally to the Small White (*Pieris rapae*) which seems to hold the same status within the wood.

Two members of the Lycaenidae are present within the wood, these are the Common Blue (*Polyommatus icarus*) and the Small Copper (*Lycaena phlaeas*). The former is never abundant within the wood but may be seen in the open spaces on occasions throughout the summer months. The food-plants are all members of the Papilionacae [=Fabaceae], especially Common Bird's Foot Trefoil (*Lotus corniculatus*). This plant does occur in the wood, but not in numbers approaching those in the surrounding meadows.

PLATE 36: Common Blues (*Polyommatus icarus*) copulating. The upper butterfly is the male, the lower, the female. (Magnification x2)

The Small Copper is an unobtrusive butterfly and is probably present in larger numbers than sightings may suggest. The food-plants are members of the Dock family (*Rumex spp*.) and these are present in some numbers throughout the area.

Three of the splendid members of the Nymphalidae may be found in good years although the presence of one of these depends upon an influx from the Continent.

The commonest of the family is the Small Tortoiseshell (*Aglais urticae*) which emerges from hibernation in early spring (February 2lst is the earliest personal record). The larvae feed almost exclusively upon Nettle (*Urtica dioica*), and there are two broods per year, which means that specimens may be seen throughout the year, with additional numbers migrating from the Continent during the summer

PLATE 37: Small Tortoiseshell magnified x2

The Peacock (*Inachis io*), arguably our most attractive butterfly, is always rare and one or two per season is the usual count. The food-plant is again Nettle and there seems little reason why this species is not as common as the preceding one. It may be that it is nearing the northern limit of its range, for it is noticeable that the distribution maps for the species thin out rapidly northwards, until there is a virtual absence from Scotland.

PLATE 38: Peacock magnified x2.

Numbers of the beautiful Red Admiral (*Vanessa atalanta*) are liable to fluctuate quite severely from year to year, although there are usually one or two specimens seen each year in autumn. The adult insect arrives in spring from the Continent although it is accepted that a few may survive the winter in hibernation. The larvae feed upon Stinging Nettle, and the adults emerge in late summer.

Since these three species feed upon the Stinging Nettle (*Urtica dioica*), there seems little reason why they should be seen frequently in Gillfield, as there are few plants of that species to be found. All three are, however, known to visit Thistle flowers and the Red Admiral and, to a lesser extent, the Peacock, are known to be attracted to the sap from a wounded tree. It may be therefore, that the adults are attracted to the wood not as a possible site for egg-deposition, but merely for feeding from highly prized sources.

The Satyridae [Nymphalidae – Satyrinae] are represented by three species: the Wall Brown or Wall (*Lasiommata megera*), Meadow Brown (*Maniola jurtina*) and Small Heath (*Coenonympha pamphilus*).

The Small Heath is inconspicuous and although fairly common, its presence often can go undetected even by the trained eye. The foodplants are recorded as *Poa annua*, *Poa nemoralis* and *Festuca pratensis*.

The commonest by far is the Meadow Brown which may be seen during most fine summer days fluttering feebly along the paths and open spaces. The food-plant is a grass of the genus *Poa*, several species of which may be found in and around the wood.

PLATE 39: Meadow Brown butterfly (*Maniola jurtina*)
magnification x2

The Wall Brown (or just Wall) is usually found sunning on the main path or on fence posts around the wood's margin. Grasses again form the food-plants, *Poa annua* and *Dactylis glomerata* being particularly noted. The status of this species within Gillfield Wood is confirmed each year, but the numbers seem quite small for what is usually regarded as a common species. Its northern limit seems to be very much further north

than Sheffield, and the wood's favourable location would tend to counteract any thinning-out of numbers if it were near the limit of its range.

Lepidopteran Bibliography

Howard T.G.	South's British Butterflies	Warne 1973
Ford E.B.	Butterflies	Collins 1945
Higgins & Riley	Butterflies of Britain and Europe	Collins 1970
Beaufoy S.&E.M.	Butterflies of the Wood	Collins 1953

DIPTERA

A great deal of time has been spent since early last summer (1974) in an attempt to identify some of the members of this Order, which seems sadly neglected by the majority of entomologists. This has proved very time-consuming and only the more prominent members of the group have been attempted. The difficulty has been finding an expert locally who could give advice and help when necessary, so it was very gratifying to visit Doncaster Museum and be able to verify my own identification with Peter Skidmore of the Museum's staff.

The following species have been positively identified from photographs or from detailed descriptions when photography proved impossible.

Tipula paludosa is a member of the Suborder Nematocera and is one of the Tipulidae or Craneflies. This species is quite common in the wetter areas of the wood, and the larvae ('leatherjackets') live in the soil, where they feed upon the roots and stems of a wide range of plants.

Painfully obvious, but by no means common, is the Cleg or Horsefly, *Haematopota pluvialis*, which inhabits many areas of the wood, but seems to prefer the damp parts.

PLATE 40: Horsefly (Haematopota pluvialis) magnified x6.

Only the female feeds upon blood, and these insects can give a very painful bite which causes discomfort for several days on occasions. The

male is said to feed upon nectar, although I have not yet seen one in Gillfield. The larvae are carnivorous and live in the soil or under the bark of dead trees. This species is worthy of note because of the beautiful iridescent colours of the eyes, found in other members of the Tabanidae.

Several members of the family Syrphidae may be found in the wood during the summer months. These are those conspicuous flies which go under the umbrella title of Hover Flies; there are almost 250 species in this family. One of the most colourful and abundant is *Syrphus ribesii* which is to be found on most flowers during the summer. A closely related species is the Marmalade hoverfly, *Syrphus balteatus*, is also common in the same localities. The larvae feed upon aphids (such as the common greenfly).

Two striking species are *Volucella bombylans* and *V. pellucens*, which both frequent flowers of Dog Rose. The life history of these species is quite fascinating, and totally different to any other flies found in the area.

PLATE 41: Hoverfly (*Volucella pellucens*). Magnification x 2.5

These large and very fine insects spend their larval stage in the nest of Bumblebees (*Bombus spp*.) and Wasps (*Vespa spp*.) respectively. *Volucella bombylans* is very variable in colouring, and this enables it to mimic the species of bee very closely. The larva of this species acts as a scavenger in the nest of *Bombus* spp., feeding upon the droppings of the bee larvae and also any of these which fall out of their cells. *V. pellucens* enters the nests of wasps quite unmolested and lays her eggs on the outside of the comb. The larvae hatch and fall into the space below the nest, which acts as a midden for the wasps, and in which they deposit their dead. Apparently, some larvae enter the nest proper and are allowed ready access by the normally vigilant and formidably armed wasps. The fly larvae apparently stimulate the wasp larvae to excrete and then feed upon this. They pupate in the nest and are allowed to emerge unharmed.

A very common species, which flies slowly around low plants, in contrast to the mercurial flight of the preceding species, is *Rhingia campestris*. This species may be easily distinguished by the oddly shaped head, which has a quite prominent ‘snout’. The larvae feed on cow dung, which can be found in all the fields surrounding Gillfield Wood.

Eristalis tenax, and *E. horticola* are species which are usually referred to as Drone Flies, and the larvae are the familiar 'rat-tailed maggots' of old water-butts and similar sites containing stagnant, organically rich water. The adults are quite large flies and splendid hoverers, their predominant colours are shades of dark and light brown/yellow.

Helophilus pendulus, is fairly common and a striking sight with its brilliant colour scheme of yellow and black on flowers on a sunny day.

PLATE 42: Sunfly, (*Helohilus pendulus*), magnified x2.5

The most uncommon of the Syrphids in the wood is also the largest, this is *Sericomyia borealis*, [=*S. silentis*] a most difficult insect to photograph, partly because of its rarity, but also because of its extremely shy nature and fast flight. The larvae are similar in appearance to those of *Eristalis spp*. and in habits although *S. borealis* [=*S. silentis*] is recorded as being from “decomposing peat-sods and peaty, moorland pools" (Colyer and Hammond 1951).

PLATE 43: *Sericomyia borealis* [=*Sericomyia silentis*] magnified x2.2

A species which could easily be taken for a member of the Hymenoptera is *Xylota segnis*. This insect has the habit of folding its wings over its back rather like a sawfly or wasp and is coloured black and yellow brown to complete the illusion. In the context of Gillfield Wood this must be regarded as quite rare and has been recorded on very few occasions.

Another mimic of the Bumble Bee is *Merodon equestris*, which is the pest of gardens known as the Narcissus Fly. This is very similar in build and to *V. bombylans*, and the adults have the same habits and flight. The larvae however, feed upon the bulbs of Narcissus and allied plants.

These are the members of the Syrphidae which have been identified thus far in Gillfield. I am anticipating many more to add to this list, but the full range of these fine insects will not be available for study until June at the earliest. I find that they are extremely interesting as a group, especially the fascinating and widely divergent life-histories, so unlike the Lepidoptera, which all, (with the exception of the Large Blue), conform to the same basic pattern.

The first flies to be seen each year seem always to be Dung Flies (*Scathophaga spp*). These are very interesting, since they do not live exclusively on dung, as their name would tend to suggest. The adults are known to be predators of other species of Diptera, and I have seen some of these species with freshly caught prey, although as yet I have not witnessed the actual catch.

PLATE 44: A fly of the genus Scathophaga was taken in late March 1975.

The most interesting fly found so far is a Tachinid, *Servillea ursina* [*Tachina ursina*]. Flies of this family are parasitic, and their life-history is often incompletely documented. This latter point is certainly the case with this species. The adult emerges in very early spring, and I have recorded one in late March and early April for three successive years. This is a large fly, slightly like a very large and robust bluebottle, but rich brown in colour and very hairy. Its hosts are said to include Spurge Hawk Moth, Sycamore Moth, Common Quaker, and Mullein Moth. Since there are very few larvae of the Lepidoptera around so early in the season, and the imago has disappeared by April, it would seem that either the eggs or the larvae may undergo a dormant period before becoming active and finding a suitable host. There is no information available on this topic (this was the conclusion reached by Mr. Skidmore and myself after investigation of all the likely sources of information at Doncaster Museum - see report for April 16th 1975 page 133) for although the fly has been bred *from* larvae, apparently no-one has ever observed the deposition of the eggs.

PLATE 45: Tachinid fly, (*Servillea ursina* [=*Tachina ursina*]) magnification x2.5

The Bluebottle (*Calliphor vomitoria* [*or C. vicina?*]) is common throughout the months from spring to late autumn and may be seen sunning itself on trees or the path, or else visiting the droppings of animals. The other member of this Family Calliphoridae found in large numbers and identified, is the Flesh Fly, *Sarcophaga carnaria*, which is large and grey and has much the same habits as the preceding species.

The commonest large fly is *Mesembrina meridiana*, which is most easily found by searching the trunks of trees in fine weather, when the adults will be sunning. This is a large black fly with distinctive orange patches at the base of each wing. This and the two following species belong to the Muscidae, which includes such common species as the House Fly.

Graphomya maculata is a rather common species which is remarkable in that sexual dimorphism is much more marked than in the majority of flies (minor differences, such as the proportions of the head and eyes are quite common in this Order), with the male predominantly brown on the abdomen, while the female has grey and black markings. The larvae are carnivorous and live in muddy puddles, in contrast to the last species, which is yet another in the long list of the Diptera which spend the larval stages in dung.

The last species in this family to be included, is likely to make its presence felt, and this is the Biting House Fly, or Stable Fly, *Stomoxys calcitrans*. This is almost identical in size and colouring to the well-known House Fly (*Musca domestica*) but is equipped with a rigid and non-retractile proboscis with which it pierces the skin of mammals for blood.

Dipteran Bibliography

Colyer & Hammond	Flies of the British Isles	Warne 1951
Burton J.	Oxford Book of Insects	O.U.P. 1968

COLEOPTERA

The Order Coleoptera is quite well-represented in the wood, but again, a self-imposed ban on collection has hindered the identification of many species. Further work on this point should provide many more species during the coming season.

Of the Adephaga, the sub-order of carnivorous beetles, two specimens may be found and identified fairly easily. The first of these is the Violet Ground Beetle (*Carabus violaceus*). This is a large insect with a distinctive violet sheen on the margins of the thorax and elytra. It is entirely carnivorous in habits, as is the larva, preying upon caterpillars and any insect which can be subdued. (The famous French naturalist, Fabre, said of this subfamily "they are frenzied murderers"). The other Ground Beetle identified is *Harpalus rufipes* which, although much smaller and dull black with red legs, has much the same habits as its larger relation.

The other sub-order of the Coleoptera, the Polyphaga, contains insects which show a great variety in size, shape, colour, and life-history. The most unusual of these found in Gillfield was the Burying Beetle (*Nicrophorus humator*). This is a large beetle, entirely black in colour except for the antennae, which are reddish yellow. Although the beetle is very robust in build, it can nevertheless fly very well, and reaches its objective, usually carrion, guided by its keen sense of smell. This insect is almost unique, in that it not only buries small animals to form a food supply for the larvae, but also exercises considerable maternal (?) care over the eggs, and subsequently actually provides the first

instar larvae with pre-digested food. This species is a member of the family Staphylinidea which, contains the small Staphylinid beetles, typically with small rectangular elytra and an exposed abdomen.

The Diversicornia include the familiar Skipjack and Soldier beetles, both of which have representatives in the wood. Soldier beetles (*Cantharis spp*.) may be seen on almost every head of Umbelliferous flowers during good weather. These are carnivorous beetles, although I have never actually seen one of these soft-bodied insects with its prey.

The fascinating Skipjacks, with their unique ability to right themselves from an inverted position by a tension mechanism between thorax and abdomen, are the adult stage of the well-known 'wire-worm', although the two species found in the wood are quite innocent of any damage to growing crops. The larger of the two is *Melanotus rufipes* [=*M. villosus*] which is dark brown and occurs in rotten wood. *Corymbites cupreus* [=*Ctenicera cuprea*] is slightly smaller and described as “local in distribution" (Linssen E.F, ‘Beetles of the British Isles’ Warne 1959). It lives in grass and is easily distinguished by its conspicuous pectinate antennae.

PLATE 46: Skipjack Beetle (*Corymbites cupreus*) [=*Ctenicera cuprea*] magnified x3.

The familiar and common Ladybird belong to the super-family Clavicornia, and two of these, *Coccinella septempunctata* (7-spot Ladybird); and *Adalia decempunctata* (10-spot Ladybird), have been identified. The closely related *A. bipunctata* (2-spot Ladybird) has not been recorded, but it seems hardly likely, in view of its abundance elsewhere in the district, that it is not present in some numbers. The life-history of this familiar insect is very well-documented, both the adult and larva being rapacious predators of aphids. Another member of this group found on one occasion is *Librodor hortensis*, [=*Glischrochilus hortensis*] a small black beetle with four reddish spots on the elytra.

This insect was found under bark on a dead tree and is described by Linssen as "rather local in distribution". Further visits to the same stump have produced no specimens.

A common insect is the Cardinal Beetle (*Pyrochroa serraticornis*) which may be found as an adult, larva, or pupa with regularity under bark on dead tree stumps. As its name suggests, the adult is brilliant red, and a most attractive insect.

Less attractive, not least in its habits, is *Aphodius rufipes*. This is a medium sized Dung Beetle which can sometimes be seen flying clumsily along the path. It is brown in colour and is often found to be carrying several small mites which are parasitic and feed from the flexible joints between the tough exoskeleton. This is the only member of the Lameliicornia which has been found so far in the study area, although another species, *Sinodendron cylindricum*, has been taken from rotten wood not far away.

The Longhorn Beetles, the Cerambycidae, have but two species in the wood, *Rhagium mordax* and *Strangalia maculata* [=*Rutpela maculata*]. Several larvae of the former have been taken from old stumps, but only one adult has been seen so far. This species, unlike many of the Longhorns, has not been proved to do any damage to living trees. *S. maculata* is found on flowers, especially those of the Umbelliferae and Dog Rose. It is a rather variable beetle in colour, the brightest specimens being bright yellow and black, and the dullest, light and dark brown. Although I was familiar with this species, 1975 was the first year that I have seen it in Gillfield Wood, similar sunny weather and the same localities in previous years revealing no trace of this conspicuous beetle.

Coleoptera Bibliography

Linssen E.F.	Beetles of the British Isles	Warne 1959
Burton J.	Oxford Book of Insects	O.U.P.1968

PLATE 47: Mining bee (Andrena armata [=Andrena fulva]) magnified x3.

Photographed at the entrance to its hole. The specimen figured here is a female. The male is not so densely hairy.

ARTHROPOD SPECIES LIST

SNHS - Totley (VC57) 09/09/1979

A = Totley (43/3079) - verge and meadow B to D Gillfield Wood

B = 43/3078 C = 43/3178 D = 43/3179

Centipede	*Lithobius variegatus* A
Millipede	*Tachypodoiulus niger* D
Mite Galls	*Eriophyes megalonyx* [? Not in NBN data] on Sycamore B, D *E. macrorhynchus aceribus* [=*Aceria macrorhynca*] on Sycamore B, D *E. laevis inaugulis* on Alder B, C, D *E. axillare* on Alder B, C *E. aucupariae* [? Not in NBN data] on Rowan C *E. brevitarsis* [=*Acalitus brevitarsus*] on Alder C *E. goniothorax typicus* on Hawthorn D
Earwig	*Forficula auricularia* A, B
Froghoppers	*Aphrophora alni* D (Derbyshire) *Neophilaenus lineatus* B *Philaenus spumarius* A, B, C *Oncopsis carpini* C
Psyllid Gall	*Psyllopsis fraxini* on Ash B, C
Damselbugs	*Dolichonabis limbatus* [=*Nabis* (*D.*) *limbatus*] B *Nabis flavomarginatus* B
Flower Bug	*Anthocoris nemorum* B, C
Capsid Bugs	*Lygocoris contaminatus* [=*Neolygus contaminates*] B *L. lucorum* [=*Apolygus lucorum*] D *L. pabulinus* B, C, D *Monalocoris filicis* B *Plagiognathus arbustorum* D
Grassbug	*Stenodema holsatum* B, C
Ground Beetles	*Pterostichus diligens* A *P. madidus* A *Trechus quadristriatus* A
Soldier Beetle	*Rhagonycha fulva* B

Ladybirds	*Coccinella septempunctata* A, B, C, D
	Propylea quattuordecimpunctata D
	Thea 22-punctata [=*Psyllobora vigintiduopunctata*] A
Rove Beetle	*Anaspis frontalis* B
	Staphylinus olens [=*Ocypus olens*] A
Large White Butterfly	*Pieris brassicae* B
Craneflles	*Tipula lateralis* C
	Tipula marmorata [=*Tipula confusa*] A
	Tipula paludosa A, B, C, B
Biblonid flies	*Dilophus febrilis* A, B
Gall Midges	*Asphondylia sarothamni* gall on Broom B
	Dasineura crataegi gall on Hawthorn A
	D. filicana [? Not in NBN data] gall on Bracken B
	D. kiefferiana gall on Rosebay Willowherb B, C, D
	D. ulmaria gall on Meadowsweet D
	D. urticae gall on Nettle A, D
	Hartigiola annulipes gall on Beech B
	Macrodiplosis dryobia [=*Macrodiplosis pustularis*] gall on Oak B, C
Snipefly	*Rhagio tringarius* C
Empids	*Hybos culiciformis* B, C
	Platypalpus nigritarsis B
Big-headed Fly	*Cephalops semifumosus* [=*Cephalops varipes*] B
Pointed-wing Flies	*Lonchoptera furcata* D
	L. lutea B
Hoverflies	*Baccha elongata* D
	Dasysyrphus albostriatus D (Derbyshire)
	Episyrphus balteatus A, B, C
	Eristalis arbustorum D
	E. pertinax C
	E. tenax B
	Melanostoma scalare B (including killed by fungus)
	Meliscaeva cinctella D
	Neoascia podagrica B
	Platycheirus albimanus D
	P. clypeatus B (killed by fungus), D

Hoverflies (cont'd)	*P. peltatus* B, D
	Syritta pipiens B, D
	Syrphus ribesii B, D
	Volucella pellucens B
Acalypterates	*Lyciella decipiens* [=*Meiosimyza decipiens*] C
	Opomyza germinationis B
	Phytomyza ilicis [+*agg.*] B (gall on Holly)
	Suillia imberbis C
	S. laevifrons D
	Tetanocera robusta C
Fleshfly	*Sarcophaga aratrix* D
Muscids	*Mesembrina meridionalis* [? *Mesembrina meridiana*] B
	Morellia simplex A, C
	Orthellia cornicina [=*Neomyia cornicina*] B
	Polietes albolineatus [=*Polietes domitor*] B
	P. lardarius C
Sawflies	*Aneugmenus padi* C
	Tenthredo schaefferi [=*Tenthredo notha*] A
Wasp Galls	*Andricus foecundatrix* gall on Oak B
	A. kollari gall on Oak B
	Cynips divisa gall on Oak B, D
	C. quercusfolii gall on Oak 8
	N. numismalis gall on Oak D
	Neuroterus quercusbaccarum gall on Oak B, D
Red Ant	*Myrmica scabrinedis* B, C
Social Wasps	*Vespula rufa* A, B
	V. vulgaris A
Bumblebees	*Bombus lapidarius* A
	B. lucorum A
	B. pascuorum B, D
	B. terrestris A

This is the full list of animals observed in Gillfield Wood.

Group	Animal (*Scientific Name*)	Common Name/Label
PLATYHELMINTHES (Flatworms)	*Polycelis felina*	
ANNELIDA (Worms & Leeches)	*Glossiphonia complanata*	Leech
ARTHROPODA		
CRUSTACEA	*Gammarus pulex*	Freshwater Shrimp
	Oniscus asellus	Woodlouse
MYRIAPODA	*Glomeris marginata* *Polydesmus complanata* *Lithobius forficatus*	Pill Millipede Flat-Backed Millipede Centipede
INSECTA (EXOPTERYGOTA) – INSECTS WITH NYMPHS		
Odonata (Dragonflies & Damselflies)		
Ephemeroptera (Mayflies)	*Baetis sp.* *Ecdyonurus sp.* *Heptagenia sp.*	
Plecoptera (Stoneflies)	*Isoperla sp.* *Perla sp.*	
Dermaptera (Earwigs)	N/A	
Orthoptera (Grasshoppers, Crickets, Bush-Crickets)	*Chorthippus brunneus*	
Psocoptera (Booklice)	N/A	
Hemiptera (Bugs)	*Gercopis vulnerata* *Philaenus spumarius* *Velia caprai*	 Water Cricket

Group	**Animal (*Scientific Name*)**	**Common Name/Label**
INSECTA (ENDOPTERYGOTA) – INSECTS WITH LARVAE SHOWING METAMORPHOSIS		
Megaloptera (Alderflies & Snakeflies)	N/A	
Neuroptera (Lacewings)	*Chrysopa sp.*	
Mecoptera (Scorpion-Flies)	*Panorpa communis*	
Trichoptera (Caddisflies)	*Philopotamus sp.*	Web-Spinning Caddis
Lepidoptera (Butterflies & Moths)		
Sub-Order Rhopalocera	*Ochlodes venata* *Thymelicus sylvestris* *Anthocharis cardamines* *Pieris brassicae* *P. rapae* *P. napi* *Lycaena phlaeas* *Polyommatus icarus* *Aglais urticae* *Inachis io* *Vanessa atalanta* *Coenonympha pamphilus* *Lasiommata megera* *Maniola jurtina*	Large Skipper Small Skipper Orange Tip Large White Small White Green-Veined White Small Copper Common Blue Small Tortoiseshell Peacock Red Admiral Small Heath Wall Brown Meadow Brown
Sub-Order Heterocera	*Hepialis humuli* *Zygaena filipendulae*	Ghost Swift Six-Spot Burnet
Diptera (True Flies)	*Haematopota pluvialis* *Pedicia rivosa* *Tipula paludosa*	Horsefly Cranefly Cranefly

Group	Animal (*Scientific Name*)	Common Name/Label
INSECTA – (ENDOPTERYGOTA) – INSECTS WITH LARVAE SHOWING METAMORPHOSIS		
Diptera (True Flies)	*Eristalis horticola*	Drone-Fly
	E. tenax	Drone-Fly
	Rhingia campestris	Hoverfly
	Sericomia borealis	Hoverfly
	Syrphus balteatus	Hoverfly
	S. ribesii	Hoverfly
	Volucella bombylans var. plumata	Hoverfly
	V. pellucens	Hoverfly
	Xylota lenta	Hoverfly
	Helophilus pendulus	Sun-Fly
	Merodon equestris	Narcissus -Fly
	Conops sp.	
	Calliphora vomitoria	Blowfly
	Mesembrina meridiana	
	Sarcophaga carnaria	Flesh-Fly
	Scatophaga sp.	Dung-Fly
	Servillea ursina	Parasitic Fly
	Stomoxys calcitrans	Stable-Fly
Hymenoptera (Bees, Wasps, Ants, Sawflies)		
Sub-Order Symphyta (Sawflies)	N/A	
Sub-Order Apocrita	*Andricus kollari*	Marble Gall Wasp
(Gall Wasps on Oak)	*Biorhiza pallida*	Oak Apple Gall Wasp
	Diplolepis quercusbaccarum	Spangle Gall Wasp
	Neuroterus numismalis	Silk-Button Gall Wasp
	N. quercus	Common Spangle Gall Wasp
(Gall Wasps on Dog Rose)	*D. rosae*	Bedeguar Gall Wasp

Group	**Animal (*Scientific Name*)**	**Common Name/Label**
Hymenoptera (Bees, Wasps, Ants, Sawflies)		
Sub-Order Apocrita (Bees & Wasps)	*Andrena armata* *Bombus muscorum* *B. terrestris* *Vespa vulgaris*	Mining Bee Carder Bee Bumble Bee Common Wasp
Coleoptera (Beetles)		
Sub-Order Adephaga	*Carabus violaceus* *Harpalus affinis* *Laccophilus hyalinus*	Violet Ground Beetle Ground Beetle Water Beetle
Sub-Order Polyphaga	*Cantharis sp.* *Corymbites cupreus var.aeruginosus* *Melanotus rufipes* *Necrophorus humator*	Soldier Beetle Skipjack Skipjack Burying Beetle
	Adalia decempunctata *Aphodius rufipes* *Coccinella septempunctata* *Librodor hortensis* *Pyrochroa serraticornis* *Rhagium mordax* *Strangalia maculata*	*10-Spot Ladybird* *Dung Beetle* *7-Spot Ladybird* *Cardinal Beetle* *Longhorn Beetle* *Longhorn Beetle*
MOLLUSCA		
GASTROPODA (Snails)	*Ancylastrum fluviatile* [=*Ancylus fluviatilis*] *Hydrobia jenkinsi* [=*Potamopyrgus antipodarum*] *Limnea pereger* [=*Radix balthica*]	Freshwater River Limpet Jenkin's Spire Shell Wandering Snail

Group	Animal (*Scientific Name*)	Common Name
CHORDATA		
Osteichthyes (Bony Fish)	*Cottus gobio* *Salmo trutta*	Miller's Thumb Brown Trout
AMPHIBIA		
Order Caudata	*Triturus vulgaris*	Common Newt
Order Anura	*Bufo bufo*	Common Toad
REPTILIA		
Order Squamata	*Anguis fragilis*	Slow-Worm
AVES - BIRDS	*Ardea cinerea* *Anas platyrhynchos* *Buteo buteo* *Falco tinnunculus* *Scolopax rusticola* *Columba palumba* *Streptopelia decaocto* *Cuculus canorus* *Gallinula chloropus* *Numenius arquata* *Strix aluco* *Dendrocopus major* *Corvus frugilegus* *Corvus monedula* *Garrulus glandarius* *Pica pica*	Heron Mallard Buzzard Kestrel Woodcock Wood Pigeon Collared Dove Cuckoo Moorhen Curlew Tawny Owl Pied Woodpecker Rook Jackdaw Jay Magpie

Group	**Animal (*Scientific Name*)**	**Common Name**
AVES - BIRDS	*Parus* [=*Periparus*] *ater*	Coal Tit
	Parus [=*Cyanistes*] *caeruleus*	Blue Tit
	Parus major	Great Tit
	Aegithalos caudatus	Long-Tailed Tit
	Certhia familiaris	Tree Creeper
	Troglodytes troglodytes	Wren
	Turdus merula	Blackbird
	T. philomelos	Song Thrush
	T. pilaris	Fieldfare
	T. viscivorus	Mistle Thrush
	Erithracus rubecula	Robin
	Sturnus vulgaris	Starling
	Prunella modularis	Hedge Accentor ("Sparrow")
	Carduelis carduelis	Goldfinch
	Chloris chloris	Greenfinch
	Emberiza citrinella	Yellow-Hammer
	Fringilla coelebs	Chaffinch
	Pyrrhula pyrrhula	Bullfinch
	Passer montanus	Tree Sparrow
MAMMALIA	*Pipistrellus pipistrellus*	Pipistrelle
	Apodemus sylvaticus	Wood Mouse
	Microus agrestis	Short-Tailed Vole
	Talpa europaeus	Mole
	Sciurus carolinensis	Grey Squirrel
	Oryctolagus cuniculus	Rabbit
	Mustela ermina	Stoat
	Meles meles	Badger
	Vulpes vulpes	Red Fox