

Mucklestone Spring Walks and Nature trails

– notes for group leaders , parents and teachers.

Please return copies to the Nursery. Available to download from our website . together with route plan

Please make sure you have –wellington boots, warm waterproof clothes,

The route may be walked at any time during April or early May during normal nursery opening hours Walkers must check in , and out at the Nursery before closing. Entry Free .

An open day is held each year on the first Saturday afternoon after Easter, teas are provided by Mucklestone W.I. / Friends of St. Mary's , and stewards along the route provided by the Turner Hodgkiss Nature reserve volunteers.

Parking in Nursery Car Park, Entry via Nursery.

1 Go through the wicket gate by the water tank and bear left.

2 Camellias

In the border on your right are many different ornamental plants, used to take cuttings from. The glossy leaved plants are camellias. Camellias are from China, they flower in late winter and early spring with red, pink or white flowers. Tea (Camellia Sinensis) is the best known variety, but can only be grown in the very mildest areas of the U.K., like Cornwall. Camellias don't like very hard frosts. Go down the slope to your left .

Q What Hot drink is made from a type of Camellia?

A Tea.

3 Water garden

The area around the small pond on your right is used to grow stock of some of our ornamental meadow and marginal plants. Feel free to return, to visit the nursery and stroll around this area, during the summer, as the different flowers come out. The field beyond is available as a picnic or camping area. Please enquire.

4 The 'Marl Pit'

The ponds on your left and the surrounding 'workings' were left following the extraction of 'Marl' a red calcareous clay, used for making bricks , earthenware pots, and for soil improvement on light acidic soils. 'Marling' the land was one of the key methods of 'improvement' used in the 18th C., together with the enclosure of the land with hedges. Clay is made up of very fine particles which stick together becoming waterproof, so that the water in the pond cannot escape. Sand consists of coarse particles with gaps between, allowing water to pass through; silt is between the two and the best for crops. Loam is a mixture and is also good for crops- not too dry and not too wet, with minerals and nutrients available to the plants .

Q. What is the sticky red clay around the ponds called?

A. Marl.

5 Fishing

The ponds are stocked with a variety of course fish. Mucklestone Fishing Club Season tickets and Guest tickets are available from the nursery, Children under 16 free when supervised by adult member. – Please enquire .

6 Oak (*Quercus Robor*)

The large trees on your left dotted by the Marl Pit are Oak trees. The branches are generally quite 'twisty'. The wood is very hard and was used for building the strongest ships and houses. The leaves have rounded 'lobes' along the edges. The seeds are quite large, called Acorns, (from the anglo saxon Ac-Oak, corn - seed) each one in a little cup. The acorns are very nutritious, although bitter tasting, and eaten by lots of birds and animals in the autumn to fatten up before the winter.

Q What is the seed of an oak tree called A Acorn

7 Ash (*Fraxinus elatior*)

The trees growing along the hedge to your right are Ash Trees . Ash trees have smooth silvery grey bark , thick grey twigs and distinctive large black buds. The buds are in pairs –opposite each other, alternately arranged at right angles to each other up the stem. The leaves are 'pinnate' several pairs of leaves along a central 'rib' and one on the end. The seeds are called 'keys' because they hang in bunches. A new disease has broken out around the country called 'ash dieback'. This is very serious because ash trees are the commonest large tree in the countryside- nobody knows how bad it will be , but in the 1970's and 80's nearly all our elm trees were killed by a disease called Dutch Elm Disease.

Q What are bunches of ash seeds called A Keys.

8 Brickmaking

The small field to the right is known as 'pots meadow'. Together with the nursery area this field is littered with bits of coal, clinker and misshaped bricks etc. showing that it was the site for brickmaking. All the red bricks of the houses in Mucklestone would have been made here from the red Marl, and then 'fired' in a kiln with coal brought by cart from Silverdale/ Audley. The proximity of this red clay and the coal gave rise to the North Staffordshire pottery industry , although most 'china' was later made of Kaolin-white china clay found in Cornwall.

Q What fuel was used to heat the clay to 'fire' the bricks made here. A Coal.

9 Wheat and Barley

The field to the Left (/ahead) is sown with Barley. Barley is a type of 'corn' or 'cereal' – a grass which grows for one year, producing edible seeds in late summer, which are harvested with a combine harvester. Barley has a hard husk and is normally fed to animals, but is also used for making beer and whiskey. Wheat is similar, and the plants are slightly darker green. Wheat has no husk and is ground up to make flour, which is baked into bread and biscuits, but can also be fed to animals.

Q What cereal is use to make bread?

A Wheat.

10 Maize

Some fields are also sown with maize. Manure is applied in spring to provide fertiliser for the crop which grows very fast and needs very fertile soil. Maize came from North America – it is also called Indian corn and is used to make ‘cornflakes’. In this country the cobs do not always fully ripen, but the whole crop is harvested in October/November as silage for dairy cows . Extra Sweet tasting varieties for people to eat are called ‘Sweetcorn’. Forage Maize is a popular food for badgers, and its increase in the acreage since the 1980’s, has led to a sharp increase in badger numbers. This can be a problem because Badgers can be infected with a deadly disease of cows, badgers and humans called Tuberculosis or TB.

Q What wild animal likes to eat Maize cobs?

A Badgers

Q What are cornflakes made from ?

A Maize

11 Arboretum

These two fenced corner areas and the bank above the pond, the area around 'George's Pond', and other areas around the business centre are being planted up with collections of rare trees and shrubs as an arboretum. Please contact us if you wish to adopt or plant a tree as a memorial etc. A full list of plants planted in the gardens and grounds is kept, . The collection allows the opportunity to see how the different plants we grow perform in local conditions. Plants from our collections are used as propagation material, etc. on the nursery. We grow around 3,000 species and varieties of plants in our two botanical collections here and in Kent. Both areas have different soils , rainfall and climate - allowing a great range of different types of plants to be grown each sites, in suitable conditions .

12 Rabbits and Hares

Rabbits and hares are both found here. Rabbits are smaller and live in burrows , they need soft sandy soil that is well drained, so they can dig their holes which don’t fill with water. The entrances to the burrows, or warrens are normally in the hedges or under bushes like gorse. Rabbits were introduced to Britain from Southern Europe by the Romans for food. They never stray too far from the entrances and run back quickly when predators approach. They are the main food of foxes and buzzards, who numbers rise and fall in a cycle with the numbers of rabbits.

Hares are larger with long legs and long ears - they do not make holes but live in large open fields, their nests in the grass are called ‘forms’- the young hares are called leverets. In March they can be seen running about and fighting in the fields, they are finding mates and choosing their territories. The hedges, field margins and wild bird areas on the farm all help hares.

Q Which is larger , a hare or a rabbit ?

A Hare.

13 Bird Feed Areas.

On the top of the hill in front of you is a one of the patches of wild bird mixture planted around the farm. A range of species are sown in small patches around the farm to provide a continuity of food supply and cover for as wide a range of species as possible, by producing a continuous supply of edible foliage, nectar, and edible seeds using species such as Sunflowers, kale, chicory , Rye, ‘quinoa’ and buckwheat. These patches also provide a home for threatened annual and biennial arable ‘weeds’ – such as fat hen, red shank, mayweeds, nodding thistle which are normally controlled by modern farm weedkillers but provide flowers and seeds for species such as bumblebees, small birds and small rodents, and food for insect larvae , that in turn are eaten threatened farmland bird species like the grey partridge.

14 Turn right here

15 Dogwood

The shrub with red stems is called dogwood- the wild species is called *Cornus sanguinea*. *Sanguinea* with means ‘blood coloured’ in Latin. This one is from Siberia has very bright red stems, but is called *Cornus alba*, the name *alba*, refers to the colour of the berries which are white.(instead of black or red for most species)

Q What colour are the stems (twigs) of *Cornus alba and sanguinea*? A Red.

16 New Hedge

We have planted this new hedge using a mixture of species- but mostly hawthorn. The plants were seedlings, grown for 3-4 years on a nursery, before being dug up and transplanted. The plants were marked with a cane and protected by a guard. This stops them being ‘lost’ in the grass. The tube protects them from being eaten by rabbits hares or mice and also acts like a little greenhouse –protecting them from being dried out from the wind until they can grow new roots into the surrounding soil. Hedges are used to create ‘living fences’ between fields. This hedge has now been 'laid' - bent over at the age of about 5-10 years old to create an impenetrable barrier of living horizontal stems and branches. This job was done by hand during the winter . What used to take weeks or months can now be done with a mini digger and a hedge cutter in a few hours. They are a traditional feature of the English countryside in areas like Staffordshire with lots of cattle and sheep. They provide shelter from the wind for both the livestock (farm animals) and for the crops. They are in effect small strips of woodland, and create ‘wildlife corridor’s’ connecting the different wooded areas. This is very important for woodland species such as the ‘Common’ or Hazel Dormouse (in fact quite rare.)

17 Stream

At the base of the old hedge to the right is a small stream. There are various meadow plants growing here including meadowsweet, wild angelica, valerian, hoary willow herb, hogweed, and cow parsley, as well as brambles and nettles –which are all important food

plants for butterflies and moths. Streams and ditches interconnect areas of wetland. This 'strip' of wetland helps in creating wildlife corridors for water life between different ponds and marshy areas, in the same way that hedges connect areas of woodland.

18 Old Hedge

This section of hedge on the left of the track is very old it has a very wide range of different species in it –holly , hawthorn, bramble, blackthorn, hawthorn, hazel, elder, honeysuckle to name a few. Generally the older the hedge the more species of plants grow in it. We allow the hedges to grow for several years before cutting them so they provide shelter and produce plenty of hips and haws as food for wild life in winter.

19 Hawthorn (Quickthorn, May)

Hawthorn *Crataegus monogyna* is the main component of most hedges. It is very thorny and strong. The young trees are cut half through and laid on their sides to create a living impenetrable fence. The name Hawthorn refers to its red fruits, haws, produced in autumn, quick thorn refers to the fact it quickly grows into a thorny hedge, and May refers to its white flowers which adorn the hedges and countryside in the month of May. The ship that took the first 'Pilgrim Fathers ' to America was called the 'Mayflower' . In Dutch the name is Maidorn - May-Thorn.

Q What month of the year does Hawthorn Flower. A May

20 Dog Rose

Dog Rose (*Rosa canina*) , this is the typical rose growing on the farm with very thorny bronze stems. Field roses, (*Rosa arvensis*) are also found – with less thorny greener stems. The Roses flower in June, and vary from nearly white on some plants, to pink, through to dark pink-nearly red on others. At the battle of Blore Heath in 1459, the emblems of the two sides were white roses for the Yorkists and Red roses for the Lancastrians- thus the conflict was called 'The War of the Roses'. Margaret of Anjou, the Queen, watched the battle from the tower at Mucklestone, but when she saw the Yorkists winning it is said she fled down the Rock Lane to Eccleshall Castle, after having had her horse's shoes put on back to front at the Smithy,- now Smithy Cottage , by the Cemetery, to confuse her pursuers.

Q What was the name of the War, during which the battle of Blore Heath was fought?

A War of the Roses.

Q What is the metal object near the road in the church yard called -used for shoeing horses?

A. An Anvil.

21 Blackthorn (Sloe)

Blackthorn (*prunus spinosa*) is a small wild plum. The bark is very dark -black. Small white flowers are produced on the bare twigs in March, hence a cold snowy period in March is known as a 'Blackthorn winter'. They can be a nuisance in a hedge as they spread by suckers out into the surrounding field. In the autumn it bears small purple plum like fruit. They are extremely sour, but are used to flavour 'sloe gin'.

Q. What colour are blackthorn flowers?

A. White

22 Beasley bank,

To your right is a hill called 'Beasley Bank'. This field is a traditionally grazed permanent pasture- it has many species of grasses and flowering plants. It has not been ploughed for at least 80 years. For many years it was used as a race course for the North Staffordshire 'Point to Point' on Easter Saturday. Fertiliser is not used here, so that the grass grows less vigorously and the broadleaved flowering plants can grow without being smothered by the grass. These provide food for many insects and other 'invertebrates'. The grass is eaten in the summer by Suckler Cows and young cattle. The grass from permanent pasture is not very nutritious, so is used for beef cattle that are reared for their meat, rather than dairy cows which need lots of very nutritious energy rich food to be able to produce lots of milk.

Sheep

We also have sheep on the farm . Normally the lambs are born in the early spring, they feed off their mothers milk until the grass begins to grow in May , They then grow very fast . Sheep keep the grass low and so are also useful in managing wild flower meadows, as too much grass would smother the other plants.

24 Silage

In the winter the grass stops growing and the ground is wet. To stop the cattle making too much mud and 'poaching' the field with their hooves, they spend the winter inside barns and eat silage- pickled grass and maize, cut in the previous summer. Dried grass is called 'hay', but needs good dry weather when it is made whereas silage can be made when the weather is changeable and preserves more of the goodness in the grass.

Q What food do the cattle eat in the winter when the grass stops growing?

A Silage.

25 Patches of Christmas trees and nursery stock are grown around the farm to help create additional areas of cover and long grass, adjacent to the areas of bird mixture and create 'wildlife corridors', that woodland species can use to travel between the areas of woodland, and that ground nesting birds such as Curlew , Plover and Partridge can use for nesting cover. It is important to control the numbers of predators such as Foxes and Mink , for nesting of ground nesting species to be successful.

26 On entering the 'Cowleasow Wood' follow straight on. To either side are more Christmas trees.

27 Christmas trees are small conifer trees which are cut or dug up at Christmas time and used for decoration in the house. They are specially grown. The money from selling Christmas trees help to pay for conservation work on the farm and woodlands, and for the tracks necessary to access the woods managing and enjoying them . The open areas provide a contrast to the densely shaded parts of the wood. -which is good for butterflies

and other wildlife, and ground flora species, such as foxgloves bluebells and wild daffodils. The trees are widely spaced to allow them to grow to a good shape, and they are removed before they grow too large, allowing the wild plants to grow between them. Two main types of tree used as Christmas trees are - Norway Spruce (*Picea abies*) and Nordman's Fir (*Abies Nordmanniana*).

28 Bluebells

The less shaded areas of Christmas Trees is also good for the bluebells. They do not grow in fields as they do not like being grazed or trampled.

29 Norway Spruce (*Picea abies*)

These are the most commonly used Christmas tree. It has short thin, sharp prickly, pale grassy green needles. The tree erected in Trafalgar Square is given each year by the people of Norway as a thankyou present to the British for our help in freeing their country in the Second World War. It grows wild in Northern parts of Europe particularly Norway, Sweden, and the Alps. A Serbian spruce is a thinner 'pointier' tree, with blue grey sharply pointed needles, from southeast Europe.

Q What is the type of traditional Christmas tree in London's Trafalgar Square called?
A Norway Spruce.

30 Noble Fir. (*Abies nobilis*)

The small grey tree in the middle is called a Noble Fir; This has very attractive bluey grey leaves, which smell of resin. The branches are used at Christmas for making wreaths. These trees grow wild in the cascade mountains of western USA and are named after a Scottish plant hunter who first introduced them to his estate at Loch Fyne, in the Highlands of Scotland.

31 Nordman Fir. (*Abies Nordmanniana*)

Nordman Firs are very slow growing, and therefore more expensive than Norway spruce, but they are a very attractive dark green and the needles do not fall off when they dry out after being kept in the house over Christmas and new year. They grow wild in the Caucasus Mountains in Georgia and Northern Turkey, and are named after a German plant hunter. The needles are not prickly. Each year the tree produces an extra ring of branches. Sometimes we prune them so they are bushier /less spindly.

They prefer to be grown at wide spacings under the light shade of 'standard' trees above. Aggressive ground cover plants such as brambles and bracken are controlled naturally by the shade of the trees above, by strimming and some 'spot treatment' with weed killer. This allows a range of wild flowers to thrive and increase between the Christmas trees, which are cut down at 6-8ft tall - before they shade out the plants underneath. The flowers here include bluebells, daffodils, foxgloves, wood sorrel, fumitory, Male Fern, Buckler Fern, wood anemone and stitchwort.

Q Which type of Christmas tree comes from the Caucasus Mountains and does not drop its needles?
A Nordman Fir.

32 Sycamore

The large trees in this area are Sycamores (*Acer Pseudoplanatus*). These are a type of maple tree. With a characteristic 5 pointed 'palmate' leaf. (like a hand). The bark on older trees forms small squares which peel off –like a plane tree, which is its name in Scotland. It produces pairs of seeds with 'wings' which fall from the tree like helicopters. These spring up everywhere –so they can be invasive –growing where they are not wanted, especially as they are not native but introduced from south east Europe. However they are fed upon by aphids (greenfly) which, together with the seeds and flowers are a food source for Dormice. The biblical 'Sycamore Tree' is an unrelated species of tropical, evergreen Fig tree and the american sycamore tree is also an unrelated type of plane tree.

Q Which tree is a type of Maple with seeds that spin to earth like little helicopters.

A Sycamore

33 Holly

Holly (*Ilex aquifolium*) is an evergreen small tree. Young trees have prickly leaves to protect them from being eaten by browsing animals during the winter. Mature trees have fewer prickles on the leaves higher up the tree- out of reach of the animals. There are male and female trees , both have small white flowers in late spring, The female trees (only) have bright red berries in winter – used to decorate homes at Christmas, Hollies are important as they will grow in the shade of taller deciduous trees. (that loose their leaves in winter) and provide a warm understory that provides a shelter from cold winds for woodland animals and birds in winter.

Q What is the name of the evergreen tree with red berries used to decorate the house at Christmas.

A Holly

34 Ivy

Ivy (*Hedera helix*) is also evergreen and provides winter shelter. It grows along the ground with small palmate (hand like) leaves. It then climbs up (the Dutch name is Climop!) other trees (or rocks or buildings) using them for support. Once off the ground at the top of a tree the leaves change, it grows small branches and produces bunches of small greeny yellow flowers in late summer –pollinated by lots of different insects, followed by black berries, which are eaten by birds and spreading the seeds around the woods, hedges and gardens. Ivy provides shelter for small birds and animals in winter.

35 Honeysuckle (*Lonicera periclymenum*)

This is a climbing plant that climbs through hedges and over small trees. It produces distinctive creamy pink flowers in clusters, wherever the stems are in enough sunlight, they are full of sweet nectar that can be sucked out, hence the common name. The other name is Woodbine- because it twists around other plants in woods- as here. The flowers are followed by clusters of red berries. The bark has a papery outer layer, which is used by Dormice to line their nests; they also eat the flowers and berries.

Q What is an alternative common name of honeysuckle? A Woodbine.

36 Rowan (*Sorbus aucuparia*)

The Rowan tree is also called a 'Mountain Ash' - it is no relation to an Ash, but it has similar, but smaller, pinnate leaves. It grows in northern areas and on poor acidic soils alongside Birch trees. Rowans were typically planted outside 'crofts' in Scotland to keep away bad luck. It has clusters of white flowers followed by clusters of red berries in autumn, so produces plenty of food for wildlife. There are many different garden species, mostly from China with red, white or yellow berries and good autumn colours. There is another group of *Sorbus* called 'Whitebeams' - *Sorbus aria* with single silvery grey leaves, which grow in southern areas on chalky soils.

Q What colour are Rowan berries?

A Red.

37 Wood Sorrel (*Oxalis acetosella*)

This plant grows from a small bulb. It has clover like leaves and small white flowers in late April. In the summer, when the leaf canopy opens, it dies back down like other woodland spring flowers. The leaves have a tangy taste from the oxalic acid in the leaves - found in common sorrel and rhubarb. It grows on the areas with dryer acidic soil with leaf mould.

38 Stitchwort. (*Stellaria holostea*)

This plant is related to garden pinks and gypsophila. It has grassy looking long narrow leaves in pairs and white flowers in May. It also grows on dryer acidic soils.

39 Crab apple (*Malus sylvestris*)

This is a wild relative of the domestic apple tree, with has lots of apple blossom in May and bears small apples in autumn, producing lots of food for other wildlife. In the nursery we sell many different species and forms of crab apples with different foliage and colours of small apples.

40 Wild Raspberry (*Rubus idaeus*)

This is the wild form of raspberry from which garden raspberries are descended. The fruit are much smaller - but they taste the same - or better! The plant consists of upright stems or canes, that each last for two years.

41 Bramble, Blackberry (*Rubus fruticosus*)

This is a thorny trailing plant, the stems root when they touch the ground. It is a valuable food plant, provides shelter and protection from predators for Dormice and many other birds and animals. It can be a problem weed in the Christmas trees, and smothers spring flowers such as daffodils.

Q What is the fruit of a bramble called?

A Blackberry

42 Hazel (*Corylus Avellana*)

This is a small tree that produces many thin straight stems from the base and gradually spreads from the thicker trunks. The hazel 'rods' were used to make pegs for thatching, for weaving into hurdles, etc. The tree produces long catkins in February, and tiny red

female flowers. The hazel nuts are produced in autumn. The hazelnuts are the favourite food of the dormice- which in Latin are called 'Hazel Dormice'

43 Dormouse. (*Muscardinus avellanarius*)

This is a rare small mammal that is found in these woods. It eats fruits and nuts and lives in the branches of trees. It looks a bit like a small orange hamster with a short furry tail. It hibernates through the winter, but 'wakes up' during mild spells. The name comes from the French word to sleep. If it does so, before there is enough food to eat it can die of starvation, so repeated unseasonably warm and cold spells, is very difficult for them. Small nest boxes on the trees are put up, in order to monitor them by Dr Derek Crawley of Rodbaston College/Staffordshire Mammal Group. The hole is on the inside, next to the tree trunk so the Dormice can climb up the trunk and into the nest box. The boxes are checked every year and any dormice found are weighed and measured. The name Dormouse come from the french word *Dormer* -to sleep.

Q What is the name of the small orange coloured mammal that lives in trees and bushes, likes hazelnuts, and hibernates in winter. A Dormouse.

44

To the right is a gully that cuts into the red marl- which is calcareous. This is very species rich, dominated by Cherry, Ash, Hazel and Wych Elm, and some bird cherry. This is the main home of the wild daffodils (in early April), bluebells (early May) wood anemone and wild garlic (along the stream). Rare mosses, liverworts are found here. Ferns include polypody, lady fern, hard and soft shield fern, and harts tongue fern.

45 Wild Daffodil (*Narcissus pseudonarcissus*)

These are our British truly wild daffodil; they are much smaller than garden daffodils which are hybrids of other species from southern Europe. The outer petals are slightly paler than the central 'trumpet'. They only grow on the moist, but well drained marl soil. They prefer to grow in the sunshine, but not when shaded by brambles and bracken. This colony was written about over 200 years ago. Because they are away from gardens they are completely 'pure' - not cross bred with garden forms. The old name for these is 'Lent Lily'

Q What is another name for Lent Lily A Wild Daffodil

46 Wood Anemone (*Anemone nemerosa*)

A single white flower is bourn on each stem with a ruff of green fingered leaves. They grow from a small corm (bulb) in the spring, flowering in late April/May, before the trees come into leaf. They grow on the same moist clay soil as the daffodils.

47 Wild Garlic/ Ramsons (*Allium ursinum*)

The wild garlic grows further down the bank on the wetter clay soil. It has broad leaves and heads of white flowers in early May.

Q What do the leaves of the wild garlic smell like? A Garlic.

48 Downy Birch (*Betula pubescens*)

To the left is an area of regenerated birch and rowan and some oak trees. This area has acidic soil, caused partly by the larch woods (which blue down around 1980)

The daffodils and other spring flowers do not grow here. There are two species of birch in Britain the other is *Betula pendula* with weeping shiny smooth twigs common in Scotland, but here we have *Betula pubescens*-. Downy birch, with downy twigs. On the nursery we grow many other species of birch with ornamental bark from North America and Asia.

Q What colour bark do birch trees have?

A Silver

49 Douglas Fir (*Pseudotsuga menziesii*) and Grand Fir (*Abies Grandis*)

The grand fir needles are in two rows , like a yew, and the Douglas Fir in a bottle brush pattern , like a spruce. These are both tall growing evergreen conifers from western north America, which produces strong straight tree trunks for cutting into planks and beams for making houses etc. They are planted about 10m apart with native birch etc. growing between. The birch trees (which are used for firewood) need thinning to allow the conifers more room to grow. Evergreen conifers do not leave enough light to allow the wild flowers to grow underneath (except a few bluebells) unless they are regularly 'thinned'. The needles fall to the ground making an acidic 'mulch' also preventing most wild flowers from growing.

By growing a mixture of conifers and broadleaves this mulching effect can be reduced. The dense evergreen canopies offer protection from the wind in winter, for birds and animals. The Blisters on the bark contain a sticky resin with a lemony scent.

Q What do the leaves and resin of the grand fir smell like?

A Lemony

50 Larch (*Larix Decidua*)

Larch trees are unusual conifers because they loose their leaves in the winter (deciduous). They grow in Northern Europe and the alps in the wild along side Norway spruce- as here.

Q Which type of conifer looses it needles in the winter.

A Larch

51 Removal of fallen timber.

Every year some of the trees in the wood blow over. These trees are cut up and dragged out using a winch on the back of the tractor. This process makes a mess , but the gap in the tree 'canopy' and disturbance of the soil allows the new flowers and trees to grow from seed and the 'holes' are quickly filled again , giving a variety of different aged trees through the wood.

52 Rides

The tracks trough the wood are know as 'rides' as horses used to be used to pull the logs out of the woods. Some of the rides are hard tracks, and others just grass. Stone and

gravel from the farm is used to make the hard tracks – reducing the amount of mud and disturbance made, but this is very expensive and can only be done a bit at time.

Q What are tracks through the woods called?

A Rides.

53 Cross the field- straight ahead to the wood on the other side of the field.

54 The waterfall or ‘Cowleasow Drumble’

The ‘Drumble’ (a local word for a ‘dingle’ or Dell’) is on a natural fault line where limy water rises to the surface. During the last ice age this water froze and gouged out this natural ‘bowl’ and the valley below. The small stream tumbles down a series of waterfalls as it enters the Drumble. The hard water springs deposit limescale onto the rocks, pebbles and even twigs. Flowers here include wood anemone, yellow archangel, town hall clock, woodruff and golden saxifrage as well as a variety of ferns mosses and liverworts.

55 Keele Sandstone

The rocks of the water fall are a hard sandstone layer, known as Keele sandstone. This was popular stone for building and was used to build Mucklestone church. On top of the Keele sandstone is the layer of red clay-Marl, and on top of that the gravel layer called ‘the bunter pebble beds’. On top of all of these is material know as Glacial drift, a mixture of all three mixed up and left behind by the retreating glaciers in the last ice age.

What type of stone is Mucklestone Church Made from ?

Sandstone.

56 Faults and springs.

Rocks are laid down over time in layers, like a sandwich or cake. As the earth is squeezed and pushed, cracks appear and one part is pushed up and another sinks. These cracks are known as Faults. On one side of the fault there is one layer of rock at the surface, and on the other side a different layer on the surface. This happened here hundreds of millions of years ago. The rocks at white house farm, at 600feet, are the same as at Mucklestone , 300ft above sea level, so the land on the Mucklestone side of the fault must have dropped by about 300ft (100m). Where these faults occur, water that is trapped under and the impervious clay layer, can escape and come out of the ground as spring water.

The fault line crosses the bottom of the ‘Drumble’ across the valley and the change of soil can be clearly seen where the vegetation suddenly changes. The rocks on the other side of the fault are quite different (bunter pebble beds) and support acid loving trees and plants – bracken, Yorkshire fog grass, oak, rowan, birch, crab-apple, woodrush, , golden rod, woodsage and even some bilberry and hard fern.

57 Hart’s tongue fern (*Asplenium scolopendrium*)

This is one of the more distinctive ferns growing here, it has long glossy evergreen ‘tongue like’ leaves, a hart is an old name for a male fallow deer- which still live in nearby woods at Whitmore and Swynnerton. Victorian collectors were always on the

lookout for unusual forms of ferns- Some have misshapen fronds (leaves) that are forked, 'crystate' or have wavy edges- which we sell at the nursery. Other ferns growing here are the uncommon hard and soft shield ferns- *Polystichum setiferum* and *P. aculeatum*

Q What type of fern has leaves shaped like an animal's tongue? A Hart's tongue fern

58 Mosses and Liverworts.

The rocks in the Drumble are kept damp by the spring water seeping from the ground all year round. The area is north west facing and shaded by tall trees. The resulting damp conditions are ideal for a wide variety of mosses and liverworts- small plants that were some of the earliest types to evolve, that cling to the soil and rocks. One distinctive species is *Polytrichum commune* which resemble little conifer trees.

Q Does moss grow best in damp or dry places? A Damp.

59 Follow the path to the right, straight across the field to the silver wicket gate beyond.

60 Buckley's Drumble

The wood to your left is called Buckley's Drumble- it is fed by springs making it very wet.

61 George's Pond.

On your right is 'George's Pond'. The muddy banks are popular with passing waders and ducks, such as greenshank, tufted duck. Curlew breed in the area and large numbers of teal (a small duck) visit the spring fed ponds during periods of icy weather- they return to Scandinavia and Siberia to breed. The area around the pond is planted with Christmas trees that provide cover for ground nesting birds and small mammals (which in turn are food for barn owls, kestrels etc.).

61 Primroses (*Primula vulgaris*) prefer to grow on Marl soil in shady conditions where they are not trampled, grazed or smothered by grass; there are some under the bushes to your left and more on the far side of the marl Pit on your right. – the name Primrose means first 'rose' or flower of spring from the Latin 'Prima' meaning '1st.' (April only)

Q. What colour are wild primroses A. pale yellow

62 Meadow Foxtail

The earliest grass to flower is Meadow Foxtail , (*Alopecanus pratensis*) it is the shape of a foxes 'brush' – or tail , with brown anthers (which carry pollen) giving it the same colour as a foxes tail as well.

63 Cuckoo Flower

or Lady's Smock (*Cardamine pratensis*) is an early flower of meadows – wet grassy fields- the latin '*pratensis*' means 'of meadows' . The white flowers each have 4 petals in a cross shape showing it is a 'crucifer' , a member of the cabbage family.

64 Pond Margins

Different rushes and reeds (of local provenance from the river tern) have been planted along the pond margin to your right to give 'cover' for water birds such as moorhens , coots and ducks- reed canary grass, greater sweet grass, floating sweet grass, greater pond sedge and yellow flag . Three species of rushes are found on the farm - hard, soft and jointed. The wet areas around the ponds are home to a variety of marsh and fenlands plants. The rush here with long thin stems- loose bunches of 'flowers' and a blue grey colour is called 'hard rush' (*Juncus inflexus*)

65 Gorse

Gorse, or 'Furze', (*Ulex europeus*) is a shrubby member of the legume family (peas, beans etc.) It has evergreen prickly stems (to stop it being eaten!). It provides an excellent place for small birds to make their nests out of reach and protected from predators. Gorse plants grow for around 10-20 years, and then regrow from seed – normally after a fire, or on soil disturbed by digging of animals etc. Clumps of gorse are now a threatened habitat in intensively farmed areas. It flowers on and off all through the year, with deep yellow flowers- hence the country saying 'When the gorse is in bloom it's kissing time'. Broom (*Cytisus scoparius*) is a similar plant growing on dry sandy banks which has no thorns.

Q. What colour are Gorse flowers?

A. Deep yellow

66 If you are attending on the open day - normally held the first Sat. after easter - then Carry Straight on towards the Church for tea! Very careful crossing the road. Then return to the car park by the same route. At other times turn left here to return to the Nursery Car Park .

67 Rhododendron

Around the car park many sorts of Rhododendron have been planted, *Rhodo* means red, and *dendron* is Greek for 'tree'. Rhododendrons (and azaleas) come from all over Europe, Asia, and north America- the usual purple one is called Rhododendron pontica – from northern Turkey. Most garden forms come from the Himalayas-mountains between, Nepal, India, Tibet and Western China. Plant hunters first brought these 'home' in the late 1800's and many new varieties have been grown by crossing different species together. Most sorts flower in May.

Q What does the name Rhodo-dendron mean.

A. 'Red Tree'

68 Bamboo

Around the car park many different sorts of Bamboo have been planted. Bamboos are large woody grasses. The canes are very light and strong. Bamboos are found in South America, Africa and Asia, mostly in tropical areas – but not in Europe. Most garden species are from Japan and China, where the climate is similar to ours.

Q What bear like animal from China only eats Bamboo shoots? A. Panda.

69 We have hundreds of ornamental trees shrub and perennials planted around the car parks and farmhouse gardens , you are welcome to go down and explore the gardens now or at your leisure later on a separate trip. Why not organise a guided walk on a summer evening for your garden group etc, or Mr. Friend gives garden lectures in the Staffs /Shrops /Ches area.

70 Willow

There are several different sorts wild and ornamental Willow (*Salix*) growing around the farm and nurseries. Willows have catkins in early spring before the leaves. Male plants have catkins with yellow pollen; female plants just have grey ‘furry’ catkins- which produce seeds later. On the right towards the farmhouse is a willow with black catkins (*Salix melanostachys*) *Melano* means black.

71 St. Mary’s Well,

The same fault line that crosses ‘the drumble’ also crosses the farm yard at Church Farm , in the corner is a small pond , where spring water gushes from the ground. Spring water is good to drink , because it is clean and uncontaminated . Villages , like Mucklestone were always built next to a reliable source of clean water. In Pre-Christian times springs were seen as a link or portal to mother earth , and offerings were made –as still done with wishing wells today. When Churches were built next to these ancient sacred springs , they were normally dedicated to St. Mary – being the mother of Jesus.

72 Please visit us again soon. We hold a walk in on the first Saturday afternoon after Easter each year . Visitors / groups may also follow the trail at any time through April to early May unaccompanied during nursery opening hours, provided they check in and out at the nursery before and afterwards. Visitors to the Nursery may explore the plantings in the Marl pit, George's Pond, and M. Business Centre areas and the farmhouse gardens on the same basis all through the year. If you are looking for somewhere to carry out a business, hold a charity event, or are interested in operating a concession at the nursery then contact us. We have business premises available and can tailor them to your needs .

School/Student Groups are welcome to follow the woodland walk during the April /Early period by appointment ., guided walks can be arranged by appointment.

Garden groups are welcome for guided walks around the Gardens and Plantings by William Friend , during the spring and summer by appointment .

William gives lectures to gardening groups on ‘Plants for the West Midlands’ in the Shrops/ Ches/ Staffs / North Wales area, when up from Kent - where he gives talks the contrasting talk on Mediterranean Plants for the Kent Coast.

Thank you to:

Ruth Lloyd and the Mucklestone W.I./ Friend of st. Mary’s for doing the teas.

Eric Pemberton and the Friends of Turner Hodgkiss com. Nat Reserve to stewarding .

Peter James for laying out the trail of info markers .

See our website for details www.botanyplants.co.uk
Will Friend.