

## Meeting Reports 2018

Saturday 20th January 2018

### The magic in Christmas greenery Golden Boughs and Fertility Balls, mistletoe and pine.

A bit of fun after business at our AGM had members pondering fact from fiction, by dissecting the various attributes, mythical and botanical, of the greenery we use at Christmas. Committee members each presented 'papers', beginning with Sheila on mythography, Peter on Christmas trees, Roger on mistletoe, Joyce on ivy and Peter, again, on the Brussels sprout.

Pagan customs surrounding the gathering of green boughs of holly, ivy and mistletoe often marked the renewal of life and fertility rites, according to Sheila. Holly was thought of as a male protector against evil spirits; it was planted close to homes, and its wood burnt in the winter hearth. Ivy's binding growth habit, often in graveyards and lush woodlands, was considered a female trait, with both life and death associations. It was thought to protect the household against witches and their poisonous spells. Mistletoe was considered a sacred and powerful fertility symbol, revealing its magical powers by growing without soil and off the ground, most commonly in apple trees. It was rare in oak trees, thus adding to its potency when found there. No pagan mid-winter celebrations were complete without a decorated evergreen tree. They were a focal point in medieval times, paraded through streets with much singing and dancing. IAPI members wondered at the ubiquity and timelessness of these customs which, of course, either morphed into, or were replaced by, the essentially Victorian Christian festival we celebrate today. As good scientists, our member botanists seemed a little more comfortable discussing 'facts', and some interesting discussions arose from the individual contributions.

Adding to the mythology of mistletoe, but avoiding the kissing question, Roger said the Golden Bough flourished by Aeneas as he entered Hades was thought to be mistletoe. More prosaically, he explained that *Viscum album*, an obligate hemiparasitic plant, is only partially reliant on its host for nutrients. It takes all its water and mineral nutrients from its host tree but otherwise makes its own food by photosynthesis. Recent research has shown that it may not do much photosynthesis but is capable of making sugars from organic acids and amino acids which are moving in the xylem (the water transport system) of the host, to which the mistletoe is connected by a structure called the haustorium. The familiar white drupes contain a small, black seed, coated with a sticky white substance, which adheres to its host. Once the seed germinates, it relies on water and mineral nutrients in rainwater and provides its own food by photosynthesis until, after two years, it has established a connection to the xylem and becomes hemiparasitic on its host. It is mostly found in west and south-east England, is fussy about climatic conditions, and birds are the main distributors of the seeds, especially blackcaps and mistle thrushes.

Joyce asked what lives in a clump of ivy (*Hedera helix*)? A great deal, it seems, so the dilemma is whether to cut and protect the tree, or not to cut and protect the wildlife it contains. When and why does it develop a juvenile or an adult ivy leaf? Something to do with ivy's need to cling to a host, it seems, as one member's experience testified. If it grows outwards from a wall, there is no need for adventitious roots, and the leaves reflect this in producing leaves that are less indented and smoother—known as 'adult' leaves.

Peter's review of the various Christmas tree species brought us back to the veracity of old legends. In the UK, Norway spruce (*Picea abies*) is common: its short needles, monopodial stem and whorled branching is ideal for decorating; and its leader shoot is convenient for a focal angel or a star. In recent years, Caucasian fir (*Abies nordmanniana*) has become very popular because it retains its needles better in our centrally-heated houses. But silver fir (*Abies alba*) is favoured in continental Europe, while the Americans generally use their native lodgepole pine (*Pinus contorta*). Imagine ourselves in 15th-century Britain, Peter suggested, when there were very few evergreen trees. Only the holly, yew, juniper and Scots pine were prevalent. So, it was not surprising that customs arose around the idea of a Tree of Life, a green tree in the dreariness of winter. And so our beloved Christmas tree serves to cheer us up. And the Brussels sprout? It is a comparatively recent vegetable, apparently arising in what is now Belgium in

the 18th century. Let it set seed and apparently it will revert to type, looking like any other brassica that we eat. Puff! Any taxonomic independence exploded—just like the protective powers of the Golden Bough.

Janet Pope and Sarah Howard

## **Saturday 17<sup>th</sup> March**

### **March Alpine Plants with Dr John Page (Alpine Garden Society)**

This meeting was very well supported despite the threat of snow, and Wendy's delicious fruit cake was a welcome attendee. As part of his introduction Dr Page explained that an alpine plant was one which grows above the tree line, that is the altitude beyond which trees, or rather their seedlings, cannot survive. Interestingly, he added that the word alp did not begin life as a reference to mountainous slopes but was a German word used to describe an upland meadow.

Dr Page has a background in languages but it is his interest in alpine plants which has, for over 40 years, taken him to many mountainous regions throughout the world including Tien Shan (the 'celestial mountains'), the Pyrenees and the Dolomites. Here he has studied and photographed plants and their habitats to better understand the varied and clever ways alpinists have evolved to enable them to thrive in seemingly inhospitable conditions.

The presentation began with beautiful mountain photography showing the various physical features present within an alpine region which have an influence on plant appearance. These included scree slopes, crevices and gullies, upland meadows and boulder fields. Other factors to consider are light, soil conditions, altitude, wind direction and geology, for the interplay of all these elements can form microclimates within mountain ranges which lead to tiny differences in plant morphology.

Dr Page then went on to discuss plant adaptations. Generally, higher altitudes promoted dwarfism to combat wind damage. An example shown on screen was *Iberis sempervirens* 'Compacta' or candytuft, which displayed tiny leaves and very short stems in comparison to our garden varieties. Exceptions to this rule exist where some species actually grow taller as the altitude increases. One possible explanation for this is that the higher up the mountain you go the fewer plants can survive so competition diminishes. Dr Page explained how leaves evolved characteristics to limit transpiration, such as stiff midrib veins that keep the leaf upright lessening its exposure to the sun, toughened leaf edges, or deeply incised veins which create shade upon larger leaves. Glaucous colouring and hairs offer a similar defence—think of *Leontopodium nivale* or edelweiss with its woolly bracts and small hairy leaves. Another leaf adaptation was shown by *Tulipa armena* var. *armena*, where the groundhugging leaves have crinkled edges and are tightly folded together, giving an almost zip-like appearance. More alpine characteristics were covered: extended root development of plants seeking nutrients in crevices, cushion and mat formations where the clusters of small flowers almost obliterate the leaves aiding ant or wind pollination, reddening of stems and leaf edges to protect against the extreme cold, to name but a few. To go into these in detail would take up far too much space but for those wanting further information and a useful fieldbook, Dr Page recommended *The Alpine Flowers of Britain and Europe* by Christopher Grey-Wilson with illustrations by Marjorie Blamey for its clarity and content. He also mentioned two venues in the UK noted for their alpine collections, they being Wisley and The Royal Botanic Gardens Edinburgh, and cited the Dolomites as an excellent location in which to observe a variety of alpinists over differing altitudes and habitats.

After lunch attention turned to the specimens Dr Page had brought along for us to observe. He challenged us to 'spot the differences' between two types of narcissus to identify which was the alpine, and presented three other plants which displayed alpine characteristics, as shown in the photographs. *Primula hirsuta* 'Clarence Elliott'. Note short stems, small thick leaves and changing colours of the flowers depending on how long they have been open and therefore subject to fading through light. Dr Page clearly has a vast knowledge built up over decades of world travel studying alpinists. This, together with his obvious enthusiasm for the subject and style of delivery, made a complex topic accessible and inspiring. The remainder of the afternoon was spent happily chatting until threatening skies did indeed deliver snow. Therefore, in the interests of travel safety, the meeting was concluded slightly early.

**Saturday 19th May****In Ruskin's Footsteps Peter Scott Gallery, University of Lancaster**

**The Background.** Twenty-five countries participated in a collective effort to publicize botanical illustration by having exhibitions of their own native plants, all taking place on the same day (18th May) in their respective countries. The Association of British Botanical Artists (ABBA) was formed specifically for this purpose. This was a visit to see the botanical artwork representing our British flora, done by a select group of some of the country's best botanical illustrators.

**The Exhibition.** Available to view were the 40 paintings which had arrived at the exhibition after rigorous selection by a team of eminent botanists and botanical illustrators. A separate exhibition adjacent to the main hall displayed some of John Ruskin's notebooks and botanical sketches. Past and present materials used in botanic illustration were on display within the main exhibition, and a slide show of the work from other countries (including China) was continuously running. On this particular day, three of the botanical illustrators whose work was part of the exhibition were demonstrating and explaining their working techniques.

**Talk by Martin Allen.** Martin led us round the exhibition, explaining just what it was that made a particular work exciting and interesting botanical art. For reasons of copyright it is not possible to provide views of individual exhibition pictures. On the other hand it is nigh impossible to convey his wisdom and perception without relating to the specific artwork as he did. I am hoping to record some of his more general points and thoughts and will mention the paintings that some of you may remember. In his initial comments Martin told us of his experience that I am sure will be familiar to other botanical artists. Art teaching often encourages looser interpretations of the subject material so that you will 'open out' or 'be able to express your personality', but he described thinking to himself 'but this way of painting is my personality: I observe closely and accurately and I want to be exact!' We all know it is just too easy to draw what you think is there, and not spend the time and effort to make the necessary precise close observation. Getting this across is a problem that anyone attempting to teach botanical art will recognise. At the same time a painting needs to be produced with a concept of the function it is to perform. 'Which elements,' he asked, 'do we wish to communicate?' If a painting is a scientific illustration like Christabel King's *Senecio jacobaea* then it must be uncompromisingly accurate. If it is telling a story, or being a decorative artwork, then the rules are less rigid. Other elements may be included to give more information or entertainment. Billy Showell's bluebells was much more enticing to the public and encouraged a 'come and look' response. He pointed out how Christina Hart-Davies had painted a rosebay willowherb flower, capturing the pink-purple blooms which acted as a 'hook' to take you into the painting, but behind, in graphite pencil, she had drawn the fruiting spike with the hardly detectable windblown seeds wafting across the paper. The heath rush painted by Lizzie Harper was for a printed fold-out identification chart. She had the constraint of how it would look once reduced in size, and needed to be extremely skilful in her manipulation of green. On several occasions Martin referred to the need for accurate identification and had even brought his copy of 'Stace' (*Flora of the British Isles*) to emphasize it. He told us that a plant on one submission had been drawn so well that it was clearly not the species that it was claimed to be. The painting was rejected because of it. Debates had taken place over whether a painting of a Welsh poppy by Polly O'Leary was the genus *Meconopsis* or *Papaver*, and several other paintings were checked very carefully including the species of *Hedera* painted by Ann Swan. Apparently I just about got away with my identification of the elm as Dutch elm, just because there are so many hybrids. In some paintings, like Julia Trickey's poppy, the subject material is itself really engaging, but others like Sandra Doyle's spindle berry would not have been, had it not been for her enlarging the complex and very intricate fruit and using her colourful acrylic inks to create a phenomenal impact. Martin described the process as giving the illustration much more 'show biz'. It is not the medium in which an artist paints that is important, it is how the medium is used that matters. I found it interesting that he almost inadvertently illustrated the point later when he looked at Ann Swan's painting of ivy leaves and muttered about how difficult it was to know if it was watercolour or coloured pencil. Another theme that Martin came back to several times was the indication of size through the use

of scale bars, used by quite a few artists. Anne Girling, depicting the minute Bristol rock cress, had painted it all double size, and others had used various magnifications for different parts their illustrations. Two of the works on display in the accompanying Ruskin exhibition, by pupils of Ruskin. The red lilies on the wall are by Emily Mary Bibbens Warren (1869–1956). The sketchbook is by Susan Beever (1806–1893); wood anemone is recognizable at top left and lily of the valley at top right. A common device used by several artists was to put in plain graphite drawings to augment a coloured part of their illustration. Martin considered this 'as a way to not overstress the observer's brain' especially if it helped to 'tell the story' of the plant or provide more detail without obscuring the painted areas. Annie Morris used this to great effect in her illustration of meadow thistle, using just enough graphite to put the plant into its ecological context. Much to Peter Mitchell's delight, Margaret Fitzpatrick had included a pencil drawing of the whole tree as part of her illustration of hawthorn. Gaynor Dickeson had caught the twisting, messy growth of bittersweet by allowing it to twist in and out of the area of the picture, showing a brilliant use of cropping to handle a difficult subject.

In line with other countries, the exhibition represented our native plants which it did very well considering the small number of paintings. Rare species and common species were represented; ecological implications were considered such the loss of plants from our ways of living e.g. the loss of habitat of the marsh helleborine. Perhaps what was missing was a pen illustration although Pamela Taylor's pen and ink drawings of trees were as magnificent as usual.

The exhibition of John Ruskin's work was interesting, but not startlingly impressive. Martin tended to be less venerating of the great man and more evaluating his work as a botanical illustrator. It was not so outstanding by today's standards, and he thought John Ruskin's descriptions were perhaps too lyrical, even trying too hard. Moreover, these illustrations were more like sketchbook recordings than pieces of precise description. As an illustrator you do the science then you do the art. Should you see the personality of the artist in the artwork? Martin compared it to writers using words or phrases to tell the same story. In a different writer's hand, the product will be different, but despite the variation it still tells the same tale.

A visit to friends near Edinburgh in early May enabled me to see the Scottish contribution to the Worldwide Day of Botanical Art. The exhibition started on 31st March, well in advance of the day itself on 18th May, at the Royal Botanic Garden, Edinburgh. There were 55 works shown, by 34 artists including two members of IAPI, Sarah Howard and Sarah Roberts. As you would expect, all the illustrations were superb but interestingly varied in subject and style. Native "flora" had been interpreted widely to include one illustration of a seaweed, one moss, three ferns, two fungi and three of lichens. Fran Thomas's illustration of shaggy inkcap (*Coprinus comatus*) used ink made from the fungus itself! Two of the lichen works portrayed several species, one of lichens found on twigs, the other on a rock, the rock itself painted in most convincing fashion (Claire Dalby). Some of the work was what I would call arty—taking delight in the sheer beauty of the subject—such as fern croziers, sweet chestnut fruits and seeds, a spray of rowan berries and leaves, butterwort plants in flower. Many others were more botanical: with leaves shown front and back, flowers and fruits, enlargements, dissections, habit drawings, and bark illustrated for several species of tree. There were three lovely watercolours each with three species from the same habitat shown intermingled (Morna Henderson). Sarah Roberts had taken a theme of nitrogenfixing plants and illustrated bitter vetch (*Lathyrus linifolius*), bog myrtle (*Myrica gale*) and sea buckthorn (*Hippophae rhamnoides*). These watercolours included flowers and fruit, enlargements and dissections, and illustrations of the root and nodules in which the symbiotic organisms take nitrogen from the air and fix it into compounds usable by the plant. This is an example of the analytical approach used to show a feature of ecological significance, relating structure to function. Michael Hickey would approve, I'm sure.

The Worldwide Day of Botanical Art was an opportunity for each country to show its native flora. (Sweet chestnut in this case must be seen as an honorary native: introduced by the Romans and making itself thoroughly at home and able to spread by seed.) Not surprisingly, there are overlaps in the species covered by Flora Scotia and the ABBA exhibition In Ruskin's Footsteps. Blackthorn (*Prunus spinosa*) Bluebell (*Hyacinthoides non-scripta*) Foxglove (*Digitalis purpurea*) Hawthorn (*Crataegus monogyna*) Lesser celandine (*Ficaria verna*) Ribwort (*Plantago lanceolata*) Thrift

(*Armeria maritima*) Yellow flag (*Iris pseudacorus*) It is fascinating to compare the illustrations from the two catalogues to see how different artists have tackled the same plant. Christine Battle and Sarah Howard, for instance, have each featured in watercolour the berries of blackthorn and captured the bloom beautifully. Christine also has a flowering shoot in graphite. Sarah shows a flower in outline separately but what caught my attention was the exquisite depiction of the leaves, at this late season, with the tears and holes and beginnings of change of colour. Claire Dalby (*Flora Scotia*) produced a conventional botanical illustration of bluebell, including bulb and roots, with superb cross sections of flower and fruit. Billy Showell, on the other hand, concentrated on the above-ground plant, with beautifully executed foliage, plus some fun with graphite bluebells in the background and a trompe l'oeil effect of some page edges to bring to mind a sketchbook. For thrift, Gaynor Dickeson (*In Ruskin's Footsteps*) and Fran Thomas have produced fairly similar illustrations. Gaynor, however, was especially concerned to show the structure of the inflorescence whereas Fran provided more details of an individual flower and a fruit. I don't suppose that there will ever be an opportunity to bring together artworks from the two exhibitions, for some have been sold. (The *Flora Scotia* work is contributing to a book *Scottish Plant Lore—an Illustrated Flora*.) We do have a record in the two catalogues which provide a wide range of examples of botanical illustration in various styles and across the whole spectrum of non-animal life.

Peter Mitchell

## **Meeting report Saturday 14th July 2018**

### **Field meeting Wakehurst**

At the appointed hour, 14 members and guests met at the Redwood coffee shop well inside the Wakehurst boundary, where coffee awaited us. Our guide John Atherton told us some of the history of the original 9000 acres of Wakehurst, from the arrival of William de Wakehurst in 1205, through the ownership of the Culpepper family (1465–1690), to the current 99-year lease and ownership arrangements between the National Trust and Kew today. In the early twentieth century, as the home of the botanist Gerald Loder, with head gardener Alfred Coates, Wakehurst was planted with fine specimens, the varied topography of the estate offering a variety of habitats. It is now the 500-acre home of the National Collections of *Hypericum*, *Eucryphia*, *Betula*, *Nothofagus* and *Skimmia japonica*, and the natural venue choice for scientific projects, hosting both public days and important experimental research.

On the guided walk, John took us through the new winter garden and walled garden, the Southern Hemisphere Garden, specimen beds, pollination garden, through to the water garden and finally looking down over beautiful iris dell where we were much fascinated by the mature and healthy swamp cypress tree. John was unsparing with his patience and extensive knowledge, pointing out unusual plants, the Wollemi pine, (*Wollemia nobilis*) the Korean fir, (*Abies koreana*) and the giant Himalayan lilies (*Cardinocrinum giganteum*) to name but a few. John took us through the open ground of “Windy Corner” where the 1987 storms had cut a swathe resulting in the complete destruction of the area. This was replanted to create the Tony Schilling Asian Heath Garden, and John explained the plans for continuous development.

We took lunch at the Redwood coffee shop and then went to the seed bank building where in the cool atmosphere, beyond the well presented explanations of the work of the seed bank, we could see the laboratories where the seed testing for germination viability and temperature and moisture control took place on work days. We could also see the doors to the sterile rooms and cabinets where the seeds were stored frozen underground. The seedbank is the centre of a worldwide conservation partnership, collaborating with 150 botanical organisations in 50 countries to protect world plant biodiversity. Seed collections are split and some stored in their native country and some sent to Wakehurst. There is also a U.K. native seed hub aimed at increasing the availability of good quality seed for conservation and restoration projects. The coronation meadow in the centre of the estate was bought in 2014 and developed for this purpose This visit was for me, and most others, a first and a long-cherished wish, which did not disappoint. We are indebted to John for his generous gifts of time and knowledge.

Sally Pinhey

**Saturday 15th September**

**Mushrooms and toadstools Bulkington Community and Conference Centre**

This meeting was led by Nick Williams, a naturalist based in the West Midlands. Nick gained an M.Sc. in Landscape Ecology and then started work in nature conservation in Upper Teesdale before moving to Scarborough and Dudley and then changing career to teaching about conservation. He always had a great interest in fungi so when he was able to he indulged his interest by looking into the fungi at Leasowes Park, Halesowen. This is partly a country park and partly a golf course.

He has identified over 250 species, including 32 species of waxcaps and many species not seen in the area before, and one new to Britain. Interestingly, there are nearly as many species on the golf course as elsewhere in spite of the spraying and grass cutting. The landowner, Dudley MBC, has applied for SSSI status on the grounds of these fungi. The status is going through now, and it is very unusual to be given for fungi. Nick presented much fascinating information about fungi, summarized here.

- There might be some 500,000 species of fungi in the world, about 20,000 in the U.K.
- Only a small proportion of this total has been named and classified. Most of them are actually underground and some of them never produce an above-ground fruiting body.
- Slime moulds were regarded as fungus but have now been given a kingdom of their own.
- Fungi colonized the land alongside the green plants about 400 million years ago.
- Little, if anything, is known about fungi in the sea except where they affect salmon in fish farms.
- Fungi have been found everywhere, even in the fuel lines of jet aircraft.
- The largest living structure found so far is a honey fungus (still growing outwards) in the USA, several kilometres across.
- It may be possible to find or develop a fungus to recycle plastics.
- It is currently thought that up to 90% of plants depend on a relationship with a fungus in the roots, forming a mycorrhiza.
- The spores produce the hyphae (fungal threads) which make up the mycelium. This then produces the mushrooms we know. The single mycelia entity may produce several or hundreds of mushrooms (in the case of fairy rings).
- There are often several lifecycles to fungal species which can have quite different guises. A example is ash dieback which has small mushrooms in the leaf litter and a black liquid under the bark at a different point in the life cycle. Rusts and smuts are other fungi with complex life cycles and usually several host species.
- Spores have been found in the troposphere, which may explain why there are the same species in Australia.

Nick then presented some 60 slides of different interesting fungi and talked about them. The diversity was astounding. Fungi are naturally identified by their features but a great aid to classification comes from their habitat and an even greater aid is what they are growing on. Nick took us through the traditionally shaped mushrooms to the tree bracket fungi to more esoteric dead man's fingers and the likes of coral spot. He pointed out the eating qualities of each species and its role. There are ones that grow in the dark (porcelain fungus), and the jelly ear which is a floppy orange fungi that is much sought after in China for food. Ink caps grow on rich substrates and have gills that dissolve into a black mess in a few hours.

After lunch we did some sketching of the fungi that Nick had gathered, about 50 or 60 striking species, and identified the ones that members had brought along. One of the ones I had was a coral fungus, *Ramaria stricta*, which is on the red data list. We learned from each other with the drawing, and I think all of us learnt a lot about this very interesting kingdom from Nick's informative presentation.

Publications recommended by Nick Williams.

Collins Fungi Guide. All illustrations rather than photographs.

Roger Phillips, Mushrooms. All photographs but very good and showing young and old specimens.

Collins Fungi, New Generation Guide. This is very old now but good for information on fungi although not so good for identification.

Jim Egginton

**Saturday 17th November**

**Bark, Attenborough Arboretum, Leicester**

Sincere thanks are due to Peter Mitchell for a most enjoyable and informative day discussing bark. He started by explaining that his career began with the Forestry Commission where it was sometimes necessary to identify trees in a dense plantation by their bark because the leaves were out of reach. A few artists have illustrated bark (perhaps there will be more after today), including Susan Conroy and Constable. Constable loved trees, and his painting *Study of the Trunk of an Elm Tree* is in the Victoria and Albert Museum. He could not have foreseen what a valuable record this would become when almost all large elm trees have been lost to Dutch elm disease.

Bark protects the stems of perennial plants from ultraviolet radiation, feeding by herbivores, pathogens and fire. It also stores secondary metabolites such as tannins, phenols and alkaloids. Bark develops by a process known as secondary thickening. Primary growth in plants is by cell division in apical meristems but as a plant increases in size it requires more tissue for transport of food and water and for strength and support; thus secondary growth takes place.

The vascular cambium develops as a layer of cells capable of cell division (a meristem) between the phloem and xylem. New cells produced on the inside of the vascular cambium differentiate into new xylem tissue for conducting water; new cells on the outside become phloem tissue, for conducting food materials around the plant. In temperate trees the vascular cambium has an annual cycle of activity so that annual rings are formed in the xylem and phloem. Once the vascular cambium becomes active, the stem enlarges in diameter, stretching and disrupting the outer layers.

Another layer of dividing cells is now developed: the cork cambium (phellogen). This forms as a complete sheath around the stem, usually several cells deep below the surface. The dividing cells of the cambium produce secondary cortex (phelloderm) to the inside and cork (phellem) to the outside, usually just one or two layers of phelloderm and half a dozen layers of phellem. The phellem cell walls become impregnated with waterproof suberin. These cells die and lose their contents. The original outer layer can now fall off to leave the phellem as the outer protective layer. The three layers, phelloderm, phellogen and phellem, are known collectively as the periderm. In almost all plants the phellogen stops dividing once the few cell layers of phelloderm and phellem have been produced. An exception is the cork oak where the phellogen remains active and produces a massive thickness of phellem which becomes the cork of commerce.

Lenticels (looser cells of phellem with air spaces between) are formed to allow gaseous exchange between the plant and its surroundings. The shape and frequency of these is characteristic of the species: some being round, others oval, or forming lines of varying length. The colour is often a contrast to the rest of the bark surface. Aspen (*Populus tremula*) has diamond-shaped lenticels, which become larger as the tree grows, and start to run together.

As mentioned, the active life of the periderm is usually short. A new periderm arises underneath the previous one, successively over the years. If the new periderm is continuous around the stem then the bark will appear smooth (e.g. beech) and may peel off in sheets, as in birch. If the new periderm arises in patches then the bark will become scaly or platy. In some trees the new patch of periderm is much taller than wide so that the bark becomes stringy and fibrous. This gives a clue to the true nature of the outer protective layer: most of it, in fact the bulk of the bark is old phloem tissue, mostly fibres, so considerable thickness can accumulate. When chunks detach it will usually be at a weak point, one of the periderms; at the deepest it could be at the newest periderm. Loss of the outer bark in this way does not harm the tree. But if bark is peeled from a tree by cutting, it generally gives way at the vascular cambium so that all the phloem tissue is detached. If done around the whole circumference then the tree will eventually die since no food can reach the roots.

Peter's talk was followed by observations of trees in the Arboretum. This area of about five acres belongs to the University of Leicester and was the grounds of Knighton Hall where the Attenboroughs lived at one time (the arboretum was opened in 1997 by Sir David Attenborough). It consists of trees from the original grounds interspersed with trees planted in 1997 to show our native trees in the sequence in which they arrived naturally in this country, following the end of the last ice age about 10,000 years ago. All trees are clearly labelled and there are explanatory boards at intervals. Members enjoying looking at bark in the lovely autumnal sunshine. Later there was the opportunity to examine specimens of bark which Peter had brought along. Several members took up the challenge to illustrate a piece of bark, now with greater understanding of how it developed on the tree.

Daphne Thompson