

Dundee Naturalists' Society

Instituted 1874



Bulletin No 42 2017

DUNDEE NATURALISTS' SOCIETY

ANNUAL BULLETIN No 42

2017

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The Bulletin cover illustration is by Shelagh Gardiner and shows the Society's emblem, the dwarf cornel. Other illustrations are by Anne Reid, Jim Cook, Christine Reid, Mary Reid and Artfile. Two pages of colour photographs have been included this year. All other, unacknowledged photographs are by Anne Reid.

EDITOR'S NOTE

Thanks to all members who have submitted articles and reports, especially those who have done so for the first time this year. Thanks to Colin Reid, Jim Cook, and Mary Reid for proof reading and helpful comments. Thanks also to those who have willingly, and promptly, supplied articles and photos at my request.

Contributions for the next Bulletin, articles, line drawings and photos, are always welcome and may be submitted at any time during the year. The deadline for submissions is usually the end of the calendar year.

Our website is www.dundeenats.org.uk . Facebook page: Dundee Naturalists' Society

Anne Reid

SOCIETY REPORTS

PRESIDENT'S REPORT

The Society has had a reasonably successful year. There were 18 outings during the summer, 11 Saturday trips and seven Tuesday evenings, along with a winter Saturday morning outing to Morton Lochs and the New Year barbecue.

Outings included Dundee Museum and Art Gallery, the Falkirk Wheel, Luncarty to Perth, Loch Leven, Barry Buddon, Kingsbarns, Glen Mark, the Black Wood of Rannoch, a Dolphin Watch cruise from Broughty Ferry, Powmouth, and Montreathmont. Numbers on Saturday trips are still unfortunately dropping and, even with a discount to attract members, are running at a loss. This is a shame as the outings we had over the summer were varied and interesting with much to see and catering for all abilities. The company was excellent and we saw some interesting wildlife. We will have to look further at whether to subsidise future trips. It is also worth reminding everyone about our code of practice for outings, leaders and members. We ask leaders to be aware of the capabilities of members. However we also ask members to be aware that they are on an organised outing and it is up to individual members not to inconvenience the whole group. It is also impossible on a bus outing to guarantee a particular return time and members should plan their day and evening accordingly.

Evening outings included Templeton Woods and Clatto, Moncreiffe Hill, Arbroath, Little Ballo, Perth Lade and Newport. A number of the outings were held in partnership with the Botanical Society of Scotland as part of the urban plant recording project.

For me the highlight of the year was undoubtedly the weekend in Arran with excellent weather all weekend and midges only being a pest at Brodick Castle on the last day. The special highlight for me was seeing **porpoises** in the Firth of Clyde on the Ferry back. Thanks to Anne and Wendy for organising. Similarly the dolphin trip organised by Kati and Brian Ballinger was well attended and, despite the odd downpour, the dolphins put on a great show.

Although the society actually runs at a small loss the increase in membership fees should enable us to manage for the next few years and it should not be necessary to increase subscriptions for a few years.

The winter programme had 11 talks which were varied, entertaining and informative; highlights were talks on bumblebees, Glencoe and the work of Camperdown Wildlife centre. Once again photos taken by our members entertained us in January.

Council has held five committee meetings over the last session. As well as our regular meetings, we have held a number of extra meetings to concentrate on the development of the Society, in particular wildlife recording, the management of Carsegowniemuir quarry and publicity, to this end we have formed or reformed three subcommittees. The role of technical convener has been replaced with that of biological recording convener, the current organiser is Barry Caudwell, and Barry got off to a good start by organising a moth trapping event at Murton Loch reserve. We plan a number of training and practical sessions to encourage members to record their sightings.

The publicity, membership and succession planning subcommittee discussed these vital areas. The idea behind succession planning is to try and make sure that the society does not lose information when members move on. We are still looking for ways to attract new members and this will include taking part in bioblitzes and open days and attending the flower and food festival. Jim Cook is convener of the Carsegowniemuir Quarry subcommittee and has developed a ten year plan for its management.

For any of these subcommittees and the general running of the society we are looking for volunteers and committee members to represent the views of the members.

Again we have been saddened by the death of a number of society members including Pauline Topham who was an outstanding lichenologist and Pat Gaff who contributed his botanical expertise and wit to many outings; they will both be sorely missed (see obituaries on page 5).

David Lampard

CARSEGOWNIEMUIR QUARRY REPORT

The year began quietly, very different from 2016. Early on, a short time was spent on continuing the path improvements but the main activity was digging holes for the spring tree-planting. We were fortunate that this took place on a wonderfully warm day on Sunday 26th March and resulted in a total of 12 trees being put in. (See report on page 14. Ed.) A few more, donated by Ronnie Young, were

planted later in area S and in the belt of trees on the north bank to help screen the hide. (These, together with the trees put in last autumn, come to a total of 30 trees during the 2016-17 planting season, perhaps the most in a single season for the foreseeable future.) In the same period 17 freshly-cut willow poles, roughly 1 to 1.5 metres long, were pushed into pinch bar holes (a very quick and easy method) along the south bank at the far end in the hope of forming a dense hedge with the elders to help screen the pines of area G. They were all protected by plastic tree tubes, which turned out to be very necessary as deer quickly nibbled any protruding leaves and shoots. Of these stakes 15 have grown well over the summer, are already starting to branch out and within a few years will, we hope, be reasonably immune to deer damage. A few other stakes were pushed into the ground on the willowherb side of the wicker fence at the hide, along with a number of freshly-cut willow twigs. Many have sprouted well and we hope that together they will grow into a dense hedge in the future so that by the time the wicker fence breaks down we will still have an effective screen.

Not all the trees are doing well, however. Ash die-back disease continues to kill small planted ash trees and also considerably damage large mature trees. In fact, the ash tree immediately north of the hide and the most important tree screening the hide in the summer is looking considerably stressed, with much sparser foliage this year. Another harmful wildlife effect this year was that in spring we noticed that a number of our small planted hollies had lost most or all of their leaves. Why and how? Our best guess was that the damage was done by



voles (probably bank voles) because the small trees were well protected by wire against rabbits and deer. Presumably a plague of the animals had occurred due to the mild winter. We could only hope that the increased numbers of voles would attract in the tawny owls from Wilstead's Wood to enjoy the feast. The only upbeat item to note is that some of these young hollies survived the damage and produced a new crop of leaves later in the year from the little remaining undamaged bark.

The annual task of clearing the paths took rather longer than usual this year, with numerous interruptions due to wet weather. The first cut was in early June, to clear the grass now growing luxuriantly on either side of the first part of the main path along to the vicinity of the hide. This was to allow walkers along to and past the hide without getting sodden trousers if it was wet. In July several attempts were made to complete the whole network but the changeable weather frustrated efforts and it was mid-August before they were all complete. Three completely new paths off the main paths were opened up to help improve access to all major areas of the quarry and these, in turn, increased the time taken to clear them all. The three new routes are a side-path off the main path down to allow easy access to pond 4 and another to reach into the trees of area D to the north of the eastern end of pond 5. The other side-path leads off from back-path 3 in among the trees of tree-planting area V on the southern edge of the quarry. At the same time, path improvement work continued with the digging out and removal of more protruding stones from the range of the brasher. In other places short stretches of the path were further levelled and evened out to make them easier to walk along. Later in the year, on a very wet day in September, Ronnie Ogg was able to borrow a cyclometer (a small wheel with a gauge, to measure distances) and we walked the lengths of all the paths (twice, for accuracy). The paths together measured the surprising distance of nearly 1.9 km in total, considerably more than the approximate length that I'd estimated.

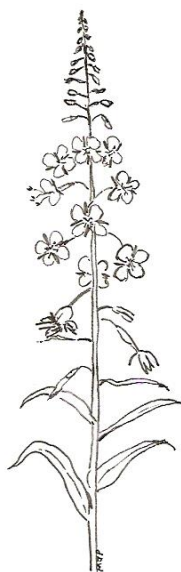
In late summer and early autumn this year, we spent only a relatively short time, a few hours this year, pulling out ragwort plants before they seeded. The plants are left to flower because the bright yellow heads are very attractive to many insects and provide a valuable wildlife resource but the foliage is poisonous to many mammals; in fact it's an agriculturally harmful weed, and we don't want to leave lots of seeds to blow about. The task of clearing the ragwort has become much easier in recent years, because the quantities of this noxious plant growing in the quarry have been greatly reduced. In fact, until only ten or so years ago great swathes of the yellow flowers could be seen thriving in several parts of the quarry. (Some of the barbecue participants in the early years may remember spending half an

hour or so pulling the weed before the food was ready!) Presumably the reduction in ragwort has been caused by the improvements of the plant cover and soil in the quarry due to our efforts in enriching the environment by tree planting (and because of the reduction in numbers of rabbits) and there are fewer viable seeds in the ground, because of our continued efforts over the years to pull out the plants before they can set seed.

The only major task in the quarry this year - and perhaps the last such heavy work - was the construction of a barbecue plinth (as suggested by Jenny Allan at the barbecue last year). This was to be close to the positions of the tables in the hollow between ponds 2 and 3. We began in the spring by selecting out large piles of flat slabs of various thicknesses, particularly ones with squared-off corners, and spending an hour or so during most visits for a number of weeks moving them down to the site. What was needed, though, was a very large stone or two to form a base for the plinth and on the other side of the path not far from pond 2 was a huge slab which looked eminently suitable. The problem, though, was how to move it over to the hole dug ready for the foundation? Meanwhile the turfs dug out ready for the foundation stones were used to complete the construction of the small pier into pond 2. The three of us, Jackie Mackay, Ronnie Ogg and myself, spent an hour or so wrestling with the slab to push and pull it, using several roller logs and an ingenious small trolley constructed by Ronnie, over to the hole. Another large stone next to it was used as well; in fact, Ronnie managed to split it with a large hammer and masonry chisel and move the pieces all by himself. The plinth then took six sessions of dry-stane dyking over the summer months to build, including fitting lots of small stones into the centre to fill the gaps between the larger stones. It was finished off by two large, thick and especially flat slabs that had been located at the far end of the quarry and carried down, with much effort, to the barbecue site. The plinth, and an area of crazy paving around it, was eventually completed in early September, ready for the inauguration barbecue and tree-planting session.

The barbecue took place on 21st October and, I'm pleased to report, was very successful. In particular, the weather held off and it was dry during the day. There was a good turn-out, considering the time of year, we planted all the trees available and everyone seemed to enjoy the abundance of food and refreshments! (See report on page 32. Ed.)

Another potentially considerable problem reappeared in the autumn. After a spell of several wet days in September, Jackie Mackay spotted the first indication: some deep rounded holes along a path near pond 5. Closer inspection showed a couple of cow-pats, obvious indications that at least several cows had managed to penetrate the southern boundary fence as had happened two years ago and quickly caused many paths to be churned up. We located where they had pushed through the extreme south-west corner fence at the far end of the quarry; a few posts had been loosened, some old wooden wire spacers were broken and staples pulled out. This year, however, the damage to the quarry paths was only minor. Back at the cottage, we reported the intrusion to the Youngs; the animals were shifted to another field the next day and the fence quickly repaired.



As well as the four trees planted on the day of the barbecue, we planted five more later in the season, two oaks (one in area I and the other in area M) and three pines in among the others along the south bank; the last of these pines, rather late in the season, was notable in that Jackie and Jim had just finished planting it when the quarry was enveloped in a brief but fierce snow-storm. Several self-sown trees were moved as well this last autumn, a hazel to replace one in area I that had died and two hawthorns into holes dug nearby. Finally, six freshly-cut poles, each some 1.5 to 2 m long, from the willows around pond 3 were pushed into pinch-bar holes on the bank to the north of the hide in the hope they'd grow fast and help thicken the screen of trees between it and the road.

Despite the problems, I'm pleased to report that the wildlife of the quarry is continuing to develop and diversify. There are lots more molehills than there were even ten years ago; presumably this is an indication of increases in the number of earthworms and other creatures underground as the tree growth and leaf fall enriches the soil. A much increased network of roe deer paths is visible now in the quarry, mostly at the far western end, and deer are often seen if we walk around quietly. A number of different forms of life have appeared due to our efforts. For example, because there were no oaks in the quarry before the Nats started there, we can be sure that all associated wildlife is due to our efforts - and now there are four species of oak galls recorded: marble galls and spangle galls

appeared within a few years of oaks being planted, silk-button galls in recent years and just this year, knopper galls were seen on one of our trees for the first time. The list of identified wildlife continues to grow, although rather slowly this year, and now stands at almost 750 species. There must be very

many more and a priority in the next few years should be that we continue to observe, study, identify and record as much wildlife as possible in the quarry.

Finally, it may be of interest to all DNS members that one of John Compton's original suggestions for the quarry nearly 35 years ago was that it could act as a tree nursery for the area. It is good to report that there are now numerous small self-sown trees - ash, gean, hawthorn, willow and hazel, along with numbers of gorse seedlings - throughout the quarry and, if deer and rabbit grazing can be curbed, they should thrive. In a way we're achieving his original suggestion.

Jim Cook

TECHNICAL CONVENOR/RECORDING CONVENOR'S REPORT

The post of Technical Convenor is in the process of being changed into Recording Convenor and David Lampard has handed over to Barry Caudwell. The main activity this year has been a moth recording event at Murton Reserve, described below. Ed.

MURTON MOTHING

A group of five moth-ers, four of them Nats members, gathered at Murton Trust Nature Reserve about 2.5 miles east of Forfar in the early evening of August 11th. The plan was to investigate the moth species that are present at this interesting site. For those that do not know Murton, before 1990 it was an active farm, but it then became an extraction site for sand and gravel. At the end of this phase, the site was landscaped and the nature reserve was created. There are a variety of habitats from a large wild flower meadow to a mixed deciduous woodland which is now maturing nicely, around a series of shallow ponds.

We sampled as many sites as we could. Supplementing this with looking for caterpillars feeding on the vegetation and collecting adults on the wing with sweep nets increased the range of species that we caught. We had a total of eight moth traps running all night with little sleep for the moth-ers! By midday on Saturday nearly all of the moths had been processed, recorded and released. After all the records had been totaled we had caught 977 individuals of 97 species. This is not the place for a full list of the species, but a few are worth including; **canary-shouldered thorn** (*Ennomos alniaria*), **bordered beauty** (*Epione repandaria*), **white-line dart** (*Euxoa tritici*), **double lobed** (*Lateroligia ophiogramma*), **lesser swallow prominent** (*Pheosia gnoma*), **swallow prominent** (*P. tremula*), and, last but not least, the **cinnabar** (*Tyria jacobaeae*). Not a bad night's work, for a site with few if any moth records before the event.

Murton proved a good site to do biological survey work on, we had fantastic help from the Murton staff, who by providing such wonderful facilities made it such a productive and enjoyable event. It is planned to continue the moth survey work, sampling at different times of year for a different range of moths. The potential exists to run some field identification workshops here as well, so watch this space.

Barry Caudwell

OBITUARIES

PAT GAFF
1937 - 2017

Pat spent his childhood in southern England, but came to Scotland as a young man. He had been advised to seek outdoor employment for health reasons and took a job in forestry. He recounted being involved in planting conifers in Glen Clova, which he would later not regard as the Glen's most attractive feature,

A chance meeting with an industrialist led to a job in a Dundee rubber factory where he was to be employed for the rest of his working life, rising to a managerial position.

Pat had always loved to be outdoors and was involved in hill walking both with a local group and overseas. He developed an interest in natural history which progressed further after he retired and led to his membership of the Dundee Naturalists' Society.

His natural history interests were very wide and he became remarkably expert in many areas. For some time he took a particular interest in birds and made many observations and records, accounts of some of which can be found in the Bulletin. He also studied Lepidoptera, both butterflies and moths. He did not have a garden but put his moth trap in other Society members' gardens.

However, later his main interest was botany and he made detailed observation of the Angus flora, including the coasts and Glen Clova. Some of this was undertaken jointly with Barbara Hogarth, the former Botanical Society of Britain and Ireland's vice-county recorder. Together they added more than 21,000 records to the national database, a major contribution to the forthcoming Botanical Atlas and to botanical knowledge.

Several species new to Angus were described and there are accounts of some of these in the Bulletin. Pat and Barbara took a particular interest in **lady's mantle** (*Alchemilla*) species. Two species new to Angus were found, *Alchemilla glaucescens* and *Alchemilla monticola*. There were also some other *Alchemillas* which did not fit the existing classification, but this is still to be determined.

Apart from natural history Pat was very well informed about many other topics both cultural and scientific.

He attended Dundee Naturalists' meetings and outings regularly and his expertise was very much appreciated by all present. Pat had a good sense of humour, perhaps a little sharp at times to those who did not know him. He was always a source of entertaining conversation towards the rear of the coach on outings.

Pat was rather unwell during last two years of his life and was less able to participate in activities. I certainly missed his contributions to plant recording during excursions.

Pat never married but had a wide circle of friends from many walks of life and will be greatly missed by all.

Brian Ballinger

MORRISON DORWARD

Dr Morrison Dorward died in January 2017, aged 88. He and his wife Lydia were regular attenders of Nats Saturday outings and weekends for many years. He was a very well-respected family doctor in Dundee but had wide-ranging outdoor interests including the Nats, wildlife, fishing, steam locomotives and sailing on Scotland's west coast. Our deepest sympathies go to Lydia. His wit and general enjoyment of life will be much missed.

Anne Reid

PAULINE TOPHAM 1927 - 2017

Pauline was a long term Nats member and regularly attended outings and weekends. Her particular wildlife expertise was lichens, to the study of which she devoted much time and effort, greatly contributing to the lichen floras of Tenerife and Greenland, among others. She also had great interest and expertise in other areas including flora in general, and oak trees in particular. A Bulletin article in 2001 recounted a search for little known oak species in Turkey while on a general Greentours trip, which was followed in 2002 by an account of a return to Turkey with the International Oak Society.

A botanist by trade as well as interest, she worked for many years on fruit breeding and was latterly head of statistical analysis at the Scottish Crop Research Institute at Mylnfield, since renamed the James Hutton Institute. She led several specialist lichen evening outings for the Nats, and one of our members recalls one particular evening in Newtyle kirkyard when she identified 40 separate species on the bark of a single tree.

In her retirement, with failing eyesight (which unfortunately prevented her continuing to study lichens), she joined the National Federation of the Blind Tayside branch and, later, the Scottish branch where she held several positions and was very active in promoting the NFB and in fundraising.

Pauline was in her 90th year when she died suddenly in April 2017 while away in Tenerife.

Anne Reid

DR HUGH INGRAM
(1937 - 2017)

Though not a Nats member, Hugh Ingram of Dundee University was a noted plant ecologist, and editor of the prestigious Journal of Applied Ecology (Botany) from 1991 - 97. He was a staunch supporter of the Scottish Wildlife Trust (SWT) both locally and nationally, as Hon President of the Local Group and Chair of Council from 1996 - 99.

I first met Hugh at Balgavies Loch in 1975, when it had just been purchased by SWT at his insistence. He showed Dundee University's McIntosh Patrick painting of the loch to the SWT Council and declared that the Trust must buy this wonderful wetland. He was a long-serving chair of the Reserve Management Committee and attended his last meeting two days before his sudden death on 18th March. He guided the construction of the circular path round the loch, which opened up the previously closed reserve. Hugh suffered an amputated leg in his youth and therefore found the stiles on the path somewhat irksome, so he was delighted when gates replaced the stiles in 2014.

He was a devoted and tenacious champion for nature, as SWT HQ and Dundee University (anti-Botanic Garden faction) can testify. He also had an impish sense of humour. He lectured to the Nats on a number of occasions and always was both a fascinating and authoritative speaker and a great source of advice.

Alban Houghton

WINTER MEETINGS BROUGHTY FERRY BARBECUE

2nd January

Sunshine and little wind were in stark contrast to last year's damp, windy start. We set up our tables and barbecue in a sheltered spot between the Esplanade and the railway, near to some benches and picnic tables and Jenny appeared with mulled wine and cake to welcome everyone. Brian and others sent their apologies due to lingering heavy colds, but we still had a turnout of around 25.

The two walks suggested were along the shore path to Balmossie and on towards Monifieth, or to the west through the Barnhill Rock garden and the Shiell Street Local Nature Reserve. People split fairly evenly between the two directions and walked as much or as little as they liked. It was suggested that lists were made of plants still in flower and birds, though no actual prize was to be awarded this year.

Those who went eastwards were helped with their shore bird identification by Barry Caudwell who had brought his telescope. The usual **gulls** were present, especially at the outflow of the Dighty, and **wigeon** and **mallard** were feeding in the shallow water. **Turnstones**, **redshank**, **knot** and **ringed plover** were all picked out. As the tide came in, around a hundred **bar-tailed godwits** were counted on the sandier parts of the shore close to the water's edge. Just beyond the Dighty bridge Alban spotted a party of **long-tailed tits** near the railway, and Cathy actually walked all the way to Monifieth.

Part of the group who went west, through the Shiell Street Reserve, were led by Mary Reid while the rest took their own routes. The bird list here was mainly the expected woodland species but also included **song thrush** and a single **redwing**. Most of the flowers were noted in this direction with wild ones being **gorse** and **daisy**. Only the eagle-eyed spotted a few flowers of **broom** amongst the gorse! There were a number of cultivated plants with flowers in the Rock Garden including **bergenia**, **heather** and **periwinkle** but some were hampered by not knowing the names of these. Colin McLeod was deemed to have the best flower list due to his knowledge of the cultivated species. Mary and Alban shared the honour for best bird lists which was especially pleasing as one was from each direction and enabled Anne to put good lists onto Birdtrack for both recording squares.

By the time everyone had returned the barbecue was at cooking temperature and all set to and fed themselves. The sun continued to shine and in the sheltered spot selected it almost felt spring-like.

Anne Reid

Footnote: Though Dundee Council had assured me that the nearby toilets would be open they were definitely still locked at 10.30 when we arrived. By the time we left, after 1.00pm, they were, indeed, open. Nobody knows who unlocked them, or when! Ed.

THE STRATHMORE METEORITE

Peter Davidson - 10th January

We were given a fantastically entertaining talk by Peter Davidson from the National Museum of Scotland in Edinburgh. Peter is a Senior Curator of Mineralogy who looks after almost 200 meteorites in the museum's collection. Before revealing to the audience the story of the Strathmore Meteorite, Peter talked to us about meteorites in general, what they are and where they came from.

Meteorites are natural objects made of minerals, metals and glass that have passed through the Earth's atmosphere and landed on the ground. There are three different types which most meteorites fall under (excuse the expression!). These are **stony**, **stony-iron** and **iron**. Virtually all of the meteorites that land on Earth originate from within our own Solar System with the majority of those meteorites coming from the Asteroid Belt which is an area between the orbits of Mars and Jupiter. The giant gas planet Jupiter has a huge influence over the orbits of objects in the Asteroid Belt and may send meteors in Earth's direction. Once these objects hit the Earth, they can leave circular-shaped craters on the land. Famous examples include the Barringer Crater (also called Meteor Crater) in the United States. It was thought to have been formed by a meteor weighing 300,000 tonnes and was 50 metres across. There are a lot of other craters on our planet, Ries Crater in Germany is 24 km wide and a Mexican crater, the Chicxulub, formed in the Late Cretaceous is thought to have caused a mass extinction event. A lot of these craters were previously thought to have been volcanic in origin, but there are clues that set them apart. **Tektites** are small formations that happen when the meteorite strike damages minerals; tektites are present around craters formed by meteorites. Confirmed meteorites are popular among collectors and recently \$83,000 was spent at an auction for a small meteorite that hit a post box in the USA. The nickname 'Hammer' has even been given for any meteorite that manages to hit something (other than the ground) upon landing.

The **stony** meteorites make up 95% of the total, and these are thought to have been formed from the debris of planets. These space rocks are split into two different types - **chondrites** which are made from **chondrules** (burnt glass particles roughly 4.5 billion years old), and **achondrites** which lack chondrules. Chondrites are called 'primitive' because their geology has been unaltered since their formation early in our Solar System's history; this makes them important in the study of the birth of Solar System. **Carbon chondrites** contain organic material and this has led some researchers to believe that these meteorites spread the building blocks of life to the Earth. On a side note, these are also the only meteorites that produce smells detectable to humans. Achondrites on the other hand, have been geologically altered and are much younger rocks. They look similar to Earth rocks. These also include meteors from Mars and the Moon. Martian achondrite meteorites are much younger than chondrite meteorites being only between 1 and 2 billion years old.

Stony-iron meteorites make up about 2% of known meteorites and they represent the transition between the core and the mantle of a planet or can also be created by a huge planetary impact. The last group, **iron meteorites**, are composed of iron and nickel alloy. They were formed in the core of a planet and the Earth's core may be the source of future meteorites of this variety. Peter had some very interesting photographs of close-up views of an iron meteorite which revealed an etching pattern that Peter nicknamed 'Meteorite Tartan'. Humans have used meteorite fragments for centuries, for example, Inuit hunters fashioned a meteorite into a spear and Ancient Egyptians used meteorite metals. This should be of no surprise when we learn that the Sahara Desert and the Polar ice caps are good sources of meteorites.

There are 26 confirmed meteorite impact sites in the British Isles with only four in Scotland (all close to the Central Belt). A 'fall' is a meteorite that has been observed and collected whereas a 'find' is a meteorite that has been found unintentionally. Peter informed his audience about the other Scottish meteorites, High Possil (5th April 1804, found in a quarry and currently stored in the Hunterian, Glasgow), Perth (17th May 1830, North Inch, accompanied by lots of tales of bad weather; part of it is stored in India) and the Glenrothes Meteorite (found in a field, very badly weathered and confirmed as a meteorite in 1994).

The Strathmore Meteorite itself landed on the 3rd December 1917 and broke into four known fragments with a total weight of 13.4 kg (the Easter Essendy fragment alone weighed 9kg). Henry Coates of the Perthshire Society of Natural Science (PSNS) documented the incident by collecting pieces and taking photographs of the impact zones. Fragments landed in Easter Essendy, Keithock, Carsie and Corston - all locations around Coupar Angus and Blairgowrie. They fell in a linear formation; if the impact sites are plotted on a map they appear to show a fairly straight line. The Easter Essendy meteorite frightened sheep in the field (leaving an impact crater 50 cm deep) while the Corsie meteorite was witnessed by Mrs Welsh who not only recovered it instantly but may have given the oldest account

of someone having watched a meteorite impact. The Keithock meteorite famously fell through the roof of South Lodge in the Keithock Estate. The joiner repaired the damage and the meteorite was then apprehended by the police who later gave the PSNS custody of the blackened stone. The damage to the roof had been fixed by the time a photographer arrived, so the photograph of the lodge had to be crudely doctored to show a big black hole where the meteorite had struck. The papers had also reported three fragments, however a fourth was found on the 7th December on the lawn of a farmhouse at Corston. All the fragments have a black skin typical of meteorites and this is formed after the burning up on the outside of the rock when entering the Earth's atmosphere. The black layer



is very thin and the rock cools down very quickly. Professor RA Sampson of the Royal Observatory, Edinburgh, wrote to *The Scotsman* asking for people to send in eyewitness accounts of the event. The meteorite was seen falling from the sky as far south as Northumbria. Coates reported that people heard it the closer it got to the impact sites, but more people had seen it when it was further away. It seems to have exploded 13 miles over the Sidlaw Hills during the time of the Great War, and some people thought that the commotion had been caused by a military craft. This meteorite has been given many different names over the years: The Coupar Angus Meteorite, The Blairgowrie Meteorite and The Perthshire Meteorite to name a few. As all of the fragments fell within the centre of Strathmore, the Strathmore Meteorite is a much more diplomatic name.

This was the first event of the centenary year of the Strathmore meteorite and there are plans for exhibitions and further lectures. We wish Peter Davidson the very best of luck in his plans to reunite all the remaining pieces of the meteorite for an exhibition to mark the Centenary of this extraordinary event.

Mike Sedakat

Illustration, by Mike Sedakat

MEMBERS' NIGHT

24th January

Over 40 members gathered to enjoy the wide variety of photographs submitted by the keener photographers amongst us. Brian Allan had, once again, assembled the photos into a single presentation and compered the evening. Photographs shown were:

Brian Ballinger - 2016 Update Including a **fox** and a **heron** in the garden, Nats on various outings, **twinflower** in Easter Ross and **oyster plant** and **purple oxytropis** on the coast there. A trip to the marshes of eastern Poland resulted in photos of European **bison** and **elk**.

Jim Smith - Birds and a Herd of Beasts Portraits of **shoveler**, **pie'd flycatcher**, **gannet**, **sparrowhawk** and **jay**, amongst others. A large herd of **red deer** in the snow, snaking over the hillside, was particularly memorable, as were the **common seals** on the Kintyre Peninsula.

Stevie Smith - Beasts, Birds and Bugs A **pinkfoot goose** in a stubble field, captured by crawling in close! Disputing **curlews** at Tayport and a Yorkshire **stoat** with a baby **rabbit**. A series of photos of a **fox** hunting in a field near home where the hunter managed to catch, and eat, three **rats** in 20 minutes. A **glossy ibis** stood out against the reflection of a **gorse** bush and the **bittern** at Montrose Basin was

photographed near dusk. A fascinating series of photos of **hair ice** which is associated with growth of a particular fungus.

Bob McCurley - Recent Angus Bird Sightings A **garganey** at Montrose Basin and a **Brunnich's guillemot** at Anstruther harbour. The scarce **little ringed plover** and two chicks at a site in Angus and



Brunnich's guillemot - Bob McCurley
(This photograph was wrongly used as little auk in last year's Bulletin - my apologies. Ed.)

desert wheatear at Montrose. Also photos of the ADBC hide at Montreathmont and its 'near miss' from a fallen tree, **betony** in flower at Barry Buddon and a **red squirrel** at Balgavies. Dorothy Fyffe - Some Birds from My Travels A selection of large and showy birds from around the world, including the Australian **cassowary** and **emus**, a **Goliath heron**, a **painted stork** and a **griffon vulture**.

Barry Farquharson - My Birding Year **Little auks** in January followed by a **lesser whitethroat** in April at Riverside Nature Park, a **yellow wagtail** in Fife, **crested tits** on Speyside in June, a **merlin** at Fife Ness in

November and **shore larks** at Tentsmuir Point in December.

Anne and Mary Reid - Gairloch and the Far East A reminder of the Nats weekend in Gairloch with highlights of **great northern diver** at Inverewe, a **cuckoo** on a hillside nearby and some of the wonderful **wild hyacinths** which seemed to be everywhere. Mary had stopped off in Singapore on her way to Australia and visited the rainforest dome there with a quirky display of **insectivorous plants** made from Lego! On reaching Australia she found an example of a **Camperdown elm** in Colac Botanic Gardens in Victoria.

Wendy Irons - New Zealand Birds A wide selection including the **pukeko** or **swamphen**, a **little stilt**, the **New Zealand dotterel**, a **rosella**, a **spur-winged plover** and a **white-faced heron**.

Jim Cook - 30th Anniversary of the Quarry Photographs of picnic table construction and painting and then the tables in use at a barbecue with everyone enjoying themselves. Also some photos from the anniversary tree planting in October when trees were planted in memory of people and events.

Davie Stein - Wildlife Update A **wolf spider** with its egg sac, a **green tiger beetle** at Killiecrankie, a selection of **fungi**, **long-tailed tits** in the garden, a **snout moth** and the Falls of Clyde in spate.

Brian Allan - Greece 2016 Another trip with Sid Clark to hunt for plants including *Crocus cvijicii* near the Albanian border, *Ophrys argolica* and *Cyclamen peloponnesicum* in the Peloponnese and *Fritillaria graeca* in the Tapetus Mountains.

At the end, Brian was thanked for all his hard work which had resulted in a most enjoyable evening for all.

Anne Reid

SCOTTISH SPIDERS

14th February - Chris Cathrine

Chris Catherine of Caledonian Conservation, and a member of the spider recording scheme, gave us an excellent talk about the spiders of Scotland and how to identify them. He started with an overview of spiders and how to find and identify them and continued with a description of some of the specialist, rare and endangered species in Scotland.

Spiders belong to the arachnids, a class of invertebrate, and are related to **harvestmen**, **pseudo scorpions** and **ticks**. In the UK there are about 660 species of **spider** with 443 found in Scotland; 26 **harvestmen** (18 in Scotland); 27 **Pseudo scorpions** (13 in Scotland) and numerous **ticks** and **mites**, many of them microscopic.

The Scottish spiders belong to two infra-orders, the Orthognatha and Labidognatha. Orthognaths have parallel downward and backward pointing jaws and there is one species in Scotland,

Atypus affinus found in Dumfries and Galloway. There are representatives of 27 families of Labidognatha in Scotland out of a total of 32 families in the UK. The most abundant family are the Linyphiidae with 228 species. These are also called **money spiders** and they are often very small

Spiders are well known for making webs to catch their food. Different families make different kinds of webs: orb webs, tunnel webs, hammock webs and nursery webs. The most complicated are made by the cobweb spiders, Theridiidae. Spiders have up to eight eyes in two rows, but they cannot distinguish colours.

Spiders often carry their eggs around in egg sacs. **Cave spiders** make the largest sacs which may be as large as a ping pong ball and are often found in the cellars of castles. **Zebra, wolf and jumping spiders** do not catch their food in a web, but stalk and pounce on their prey.

There are 443 species of spider in Scotland:
12 are on the UK Biodiversity Action Plan list and 8 on the Scottish Biodiversity list

58 are nationally scarce

16 are listed on the Red Data Book list (Internationally endangered)

3 are introduced and 8 are found associated with people.

Spiders are found in a range of habitats, but some of the rarest are found in montane areas, peat bogs, and Caledonian forest. Some species of these habitats are described below.

Bog sun jumper spider, *Heliophanus dampfi*, only found in raised bogs, on a few sites in central Scotland. A minute jumping spider, it hides at the base of grass tussocks in poor weather, emerging when conditions improve. It was recently discovered in Ochertyre Moss during a bioblitz, by the use of a vacuum sampler.

Lichen running spider, *Philodromus margaritatus*, lives in lichen growing on trees and has been found in remnants of the Caledonian forest. It is nationally rare, scattered in central and highland Scotland. During mating the male spider brings the females gifts.

Wild galls spider, *Diplocephalus torva*, is only found in Caledonian forest where it feeds on **wood ants**. It spins a small web like a trip wire and rows of caught ants can be seen hanging from the web. It is found in a few sites in Scotland, including the Black Wood of Rannoch, Rothiemurchus Forest, Abernethy Forest, and Glen Tanar.

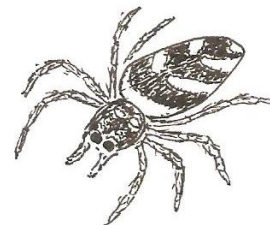
Clubiona subsultans is only found in Caledonian forests, including Rannoch and Abernethy.

Scottish mountain spider, *Mecynargus paetulus*, is found on mountains over 750m on **bilberry**, and has been found on Caenlochan and Ben Lawers.

Scotinotylus evansi is a mountain spider found above 850m on snow beds and has been recorded on Caenlochan.

Northern mesh weaver, *Dictyna major*, is nationally rare found on sandy beaches or stony loch shores, on the strandline and in sand dunes. There are old records from Aberlady Bay, East Lothian; Loch Morlich, East Inverness-shire in 1893; near Forres, Morayshire in 1910; and from the Isle of Hoy, Orkney in 1897 (Stewart 1992). The only modern records are of a single male in 1991 at Barry Links in Angus and of two males in 1998 at Gruinard in Wester Ross.

While a few spiders can be identified on sight or with a magnifying lens most will need examination of microscopic features. Methods of catching spiders include searching and using forceps or a pooter to collect specimens. Tuning forks may attract spiders to their vibrations, and pitfall traps, sweeping nets, beating vegetation, bark traps, nest traps, brushing, vacuum and malaise traps are all techniques used to find spiders. Identification will usually involve preservation of specimens in 70% isopropanol or ethanol and examination with a lens or 90x microscope. Equipment needed for identification includes instruments such as forceps but also needs a good identification guide such as Roberts 1993, The Spiders of Great Britain and Ireland or Roberts, Spiders of Britain and Northern Europe (Collins Field Guide). There are online resources such as spiders of Europe: <https://araneae.unibe.ch/> and also Britishspiders.org.uk and <http://arachnerds.blogspot.co.uk/> by Nik Nimbus.



David Lampard

SOCIAL EVENING

17th February

We returned to the Queen's Hotel this year and gathered in the Glamis Room which was already beautifully set out with round tables for the meal. A delicious buffet was served from the bar area, including stovies, as requested, vegetarian goulash and various salads and cold meats. For dessert, there was a choice of gateaux served with cream, followed by coffee and tea.

After the meal, Brian Allan asked everyone to move round so that there were "experts" at each table. He then entertained us with quizzes, including bird anagrams. We had to identify Scottish orchids, butterflies and moths, with extra marks for also giving the Latin names. He also had pictures of waterfalls seen on Nats' outings which we were asked to recognise. Mike Sedakat had drawn up a most intriguing quiz: "Animals in Popular Culture" such as Minnie Mouse and Tom and Jerry. Small chocolate gifts were given as prizes.

The raffle prizes were up to the usual high standard, including again Davie Stein's lovely wood turned ornaments. A most enjoyable evening was had by all.

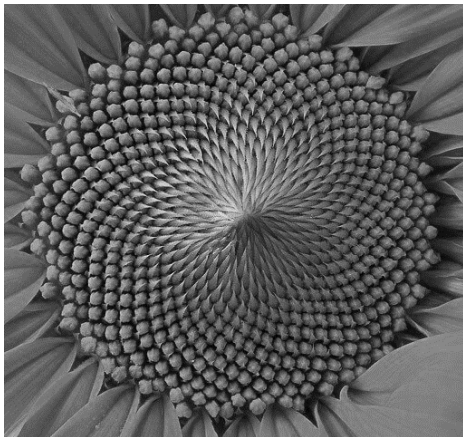
Kati Smith

D'ARCY THOMPSON'S 'ON GROWTH AND FORM' ONE HUNDRED YEARS ON AND STILL GROWING

Matthew Jarron - 28th February

Matthew Jarron, curator of the University of Dundee Museum, delivered an excellent talk on D'Arcy Thompson in his usual ebullient and highly knowledgeable manner. In the introduction we were reminded of the significance of the year 2017, the 100th anniversary of the publication of Thompson's brilliant and ground-breaking classic book, "On Growth and Form". There aren't many scientific textbooks which will be celebrated 100 years on!

D'Arcy had come to the newly opened University in the town in 1884 as the first Professor of Natural History, when he was still in his 20s, becoming Professor of Zoology when Geddes took over responsibilities for botany, and remained until 1917. Matthew briefly described Thompson's early years at the University when he set the foundations of his career, teaching a variety of courses in an innovative and engaging way. He translated a text from Ancient Greek on wild flowers (incidentally, the foreword was contributed by Charles Darwin, his last written work just before his death) and began collecting specimens, models and charts for his Zoology Museum-to-be for which he contacted and made friends, in search of specimens, with many of the captains and owners of the Arctic whaling ships operating out of Dundee. At the same time D'Arcy started his researches, particularly on fishes and marine life, campaigned for increased provision for the teaching of and research in biology in the University, became involved with other University professors and staff in helping to improve the appalling living conditions in parts of old Dundee and, not least of interest to the audience, joined Dundee Naturalists' Society, becoming a member of the Council and remaining there until 1912-13. Within a few years, in fact, he was elected President of the Society, for four years between 1890 and 1895 – and agreed to become Honorary President for the last few years of his life.



During that period and into the early years of the 20th Century D'Arcy became an authority on sea fishes and served as consultant on the subject for the government, amassed what was perhaps the best collection of Arctic specimens in the country and took part as official British government representative on several expeditions and conferences on the fur seal trade in the northern Pacific (and collecting specimens from those waters). He also was consulted by several Antarctic explorers, particularly Ernest Shackleton who later donated a number of outstanding specimens, as well as beginning thinking about and investigating the connections between biology and mathematics. Just how did he find time for it all?

Matthew continued to describe the significance of D'Arcy's text "On Growth and Form", now recognised as one of the best-written scientific textbooks of the 20th Century. Its principal importance

was to recognise and introduce to a wide audience the numerous ways in which the growth and shapes of animals can be analysed and compared in mathematical terms. As well as its importance to biologists and engineers, the book has influenced generations of architects and artists and, more recently, several computer scientists. Its incredibly wide readership and continuing significance explains the interest in the 100th anniversary year, with numbers of lectures and exhibitions in Dundee and elsewhere during the year and a large international conference arranged for the autumn.

Jim Cook

PHOTOGRAPHIC COMPETITION 2016

14th March

The results of the 2016 photographic competition, for the Kim Eberst Memorial Trophy, were announced at the AGM this year to avoid the over-hasty showing of slides at Members' Night which has become more popular recently. The timings worked well and the 2017 competition results will be announced at the AGM in March 2018. All the organisation was, once again, done by Brian Allan and the competition was judged by Ken Drysdale and Lorna Ward. Due to illness, Brian was unable to present the entries, so Anne Reid deputised for him.

The subject for 2016 was 'Sea and Coast Natural History' and a total of 13 entries were received. In order of receipt these were:

Joy Cammack - Redshank Reflecting
Davie Stein - Songthrush
Jim Smith - Long-tailed Duck
Anne Reid - Black Guillemot, Portpatrick Harbour
Barry Farquharson - Oh My Cod! (Gull catching large fish in stormy sea)
Brian Allan - Campanula andrewsii
Jon Cook - Grey Heron
Stevie Smith - Duel in the Dunes (Fighting sawflies)
Bob McCurley - Waxwing
Jim Cook - Pollen Heaven (Bumblebee and hoverfly on flower)
Stewart Dodd - Rock Pool life
Mary Reid - Silver Gull (Australia)
Wendy Irons - Pelican Finial (A pelican on top of a post)



The winner was Jon Cook with his portrait of a heron contrasted against the seaweed on a west coast shore. Unfortunately he was not at the meeting so was presented with the trophy and a certificate the following morning. Second was Joy Cammack with her portrait of a redshank standing in shallow water, and third was Jim Smith's male long-tailed duck in full breeding plumage. Both were presented with certificates. Ken Drysdale, Brian and Lorna were all thanked for their organisation of the competition.

Anne Reid

Winning photograph in colour section on page 24

TENTSMUIR FROM TAYPORT

25th March

More than 20 members and friends met up in the car park at the eastern edge of Tayport on a lovely morning. Once the important business of letting the hostelry know how many of us, 17 in total, would be having lunch and what we'd chosen was over, off we went.

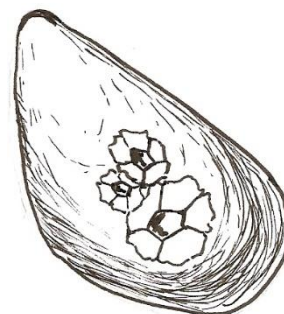
After searching for early sprouts of plants in the small saltmarsh, such as clumps of **sea plantains**, various **rushes** and **sedges**, **thrift** and, in the upper parts, **sea aster** (none yet in flower) we split into two groups. One bunch followed the track along the top of the beach on the lookout for sand-dune plants and birds while the others set off across the lower beach to explore the life on the

exposed muddy sands. The tide at this stage was well out although it was starting to come in and the lower sands wouldn't be exposed for long. We found a good range of saltmarsh plants and animals - including **winkles**, **cockle** and **mussel shells**, small **worms** and, in the lower wetter parts, numerous tiny **mud snails** and numbers of **lugworm** inlet holes and casts.

The spread-out group continued along the beach, looking for shells and items of flotsam of interest and then looped back through Tentsmuir forest, taking several of the tracks through the woods. It was generally quiet but **robin** and **goldcrest** were recorded in the forest and various waders were heard and seen on the shore, plus a **little egret** and the first **wheatear** of the year for many.

Lunch, in Cobbies Bar in Tayport, was generally agreed to be good - particularly since the kitchen staff seemed very short-handed.

Jim Cook



SPRING TREE PLANTING

26th March

Ten members came along to help plant trees on a lovely sunny - and even warm! - morning. Peter and Margaret Bainbridge soon planted an **oak** in one of the holes provided while the McGregor clan set about digging their own hole (while being helped and supervised (!) by young Karis, Duncan's daughter). It wasn't long before the **pine** tree that they had brought along themselves was dug in firmly. Colin McLeod and Jackie McKay also planted other trees in prepared holes and dug more holes for the four large **gean** saplings which Ronnie Young had donated to us. The soil was still a little moist from the winter rains and, fortunately, not too stony in most places. Ronnie Ogg came along in the afternoon, bringing more large pieces of geotextile with him and set about spreading it out around the newly-planted trees to help, we hope, suppress the growth this summer of the surrounding **rosebay willowherb**. With any luck we won't have to pull much close-in willowherb and mulch the trees in the next few years.

We planted a total of 12 trees on the day, one **oak** (also donated by the Youngs), two **pin**es, three **hol**lies, two **row**ans and the four **ge**ans, a very satisfactory total. Together with the trees planted during the 30th anniversary planting day last autumn (see article in the 2016 Bulletin. Ed.) and others this spring means that a grand total of 30 new trees were put in this planting season. It should be the last large-scale planting needed in the quarry. Luckily there was good rainfall during the following week, to water the new trees in thoroughly - and they all grew well during the summer.

It is good to report, when writing this in the late autumn, that the large squares of geotextile have been a great success. They allow rainwater to penetrate down to the roots, effectively suppress the growth of the rampant **rosebay willowherb** and also allow us to find the young trees relatively easily when the willowherb has grown up tall.

Jim Cook

SUMMER OUTINGS KELPIES AND FALKIRK WHEEL

22nd April

Driven by our couthy and efficient driver Martin, on a sunny windy day, 27 members reached the Kelpies at 10.20am. While a sizeable splinter group set off to walk to the Wheel taking a sideways loop to Skinflats, most of the rest of the party repaired to the Visitor Centre for coffee before setting about the business of natural history. Pausing at a short length of canal bank revealed a plethora of plants, among them **coltsfoot**, **butterbur**, **water avens**, **clover**, **reeds**, **dandelions**, **primroses**, **daisies** and **docks**. A complete list of flora was taken by Brian Ballinger and a bird list by Mike Sedakat, both duly submitted to the relevant recording schemes. Mary Harwood photographed an iridescent blue **beetle** taken away for identification by David Lampard.

At 1pm the "short distance walkers" rejoined the bus for a lift to the Falkirk Wheel. Six of the party took the trip on the Wheel while others continued to study the wildlife. Departure at 4pm got us back to Dundee in time for tea.

Margaret Bainbridge

TEMPLETON WOODS AND CLATTO RESERVOIR

9th May

This was a joint Dundee Naturalists' and Botanical Society of Scotland evening visit looking at urban flora (we were just inside the city boundary). We also took an interest in birds and other wildlife.

We managed to fill the car park at Templeton Woods and set off to follow a circular route of about 2 miles to the Clatto wood and reservoir, returning by a more northerly path along the city boundary. A running event was being held on the same evening and we were overtaken by large parties of breathless athletes. We opted for a gentler pace.

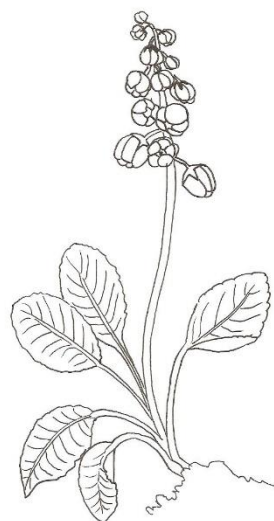
The keen eyes of our party noted a good number of vascular plants including 24 species in our limited passage through the first 1km square and 55 in the second 1km square to the east.

There was a good display of typical woodland plants such as **wood sorrel** (*Oxalis acetosella*), **red campion** (*Silene dioica*), **lesser celandine** (*Ficaria verna* - now renamed, formerly *Ranunculus ficaria*), and **woodruff** (*Galium odoratum*). A patch of **enchanter's nightshade** (*Circaea*) was not in flower but was probably the species not the hybrid. A good find by the northern path was a large patch of **pale lady's mantle** (*Alchemilla xanthochlora*) and it was good to see **common wintergreen** (*Pyrola minor*) (right) just inside the north end of Templeton Wood.

The birds were not neglected and 35 species were seen including **great crested grebe**, **coots**, **tufted duck** and three species of **gull** on the reservoir. The warblers and woodland birds were active at the start of the walk, and as we returned to the Templeton car park a **tawny owl** gave a single hoot, rather to our surprise.

It was not the optimum time for fungi but Jim Cook identified nine species - **turkey tail** (*Tremetes versicolor*) was particularly common.

Your leader was pleased to arrive back at the car park at exactly 9pm keeping to schedule and beating the sunset.



Brian Ballinger

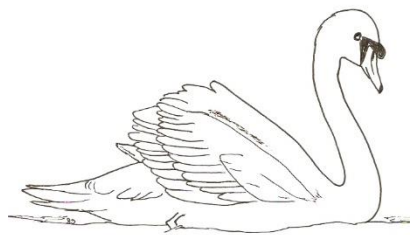
LUNCARTY TO PERTH

13th May

Our linear walk along the bank of the Tay started in a modern housing estate, but although we were never far from civilisation, we enjoyed greenery and open spaces all the way until the final stretch along Perth's Tay Street, and even here there was plenty to see on the river. A new Tay crossing is planned to bridge the river north of Perth, so this was one of the last opportunities to see the stretch in an unspoilt state. We often joke that the collective noun for a group of naturalists is a 'trample', but on this occasion a 'straggle' was more apt - no-one would have believed that there was a group of 19 of us altogether, between those who came on the bus and one or two who had travelled to Luncarty under their own steam. Those in the lead were well out of sight on the way to Perth before those recording species had even left the bounds of Luncarty. A couple of members opted to stay with the bus and explored some of the many footpaths around the village, where traces of an industrial past can still be found amongst the bungalows.

Small groups of **swifts** and much larger numbers of **swallows**, **house martins** and **sand martins** were seen along almost the entire walk. But it was not only hirundines that were taking insects on the wing - we also saw **starlings** and **black-headed gulls** feeding in this way, while **chaffinches** and **robins** were behaving like flycatchers, making short flights from the trees to snatch a few insects, before returning to a branch. The biomass of flying insects was obviously sufficient to make this

relatively energy-intensive aerial method of collecting food worthwhile even for non-specialists. Fortunately for us, the insects that were in such abundance were non-biting; we saw a few **mayflies**, and some **St Mark's flies** *Bibio marci*, which look rather alarming, being large and black with dangling legs, but which are harmless.



Common sandpipers were calling along all the stony stretches of river. The more rural part of the walk produced sightings of warblers, **tree sparrow** and **skylark**, while the more diverse habitats near the edge of town also had **bullfinch**, **treecreeper**, **dipper**, **sedge warbler** and **whitethroat**. Several species were collecting food for young, and some large families of **mallard** ducklings were seen on the Tay. A detour to the pond on

Perth's South Inch added **mute swan** with cygnets and multiple families of young **coots** to the total seen. Altogether, 52 bird species were recorded; Anne Reid has submitted all the records to BTO's BirdTrack <https://app.bto.org/birdtrack/main/data-home.jsp>.

Meanwhile, Brian Ballinger was recording for the Botanical Society of Scotland's Urban Flora Project [www.botanical-society-scotland.org.uk/Urban Flora of Scotland](http://www.botanical-society-scotland.org.uk/Urban_Flora_of_Scotland). Over 140 higher plant species were recorded along the route, including numerous non-natives in the urban fringe and along the riverside; one of the most striking being **leopard's bane** *Doronicum pardalianches*, which was common in the wooded sections of the route - its large yellow daisy-like flowers look like something a child would draw, yet it is untypical of the Compositae (Asteraceae) family in thriving in shady places.

Oak is the main tree species along the riverbank, and some had numerous **oak apple galls**, caused by a tiny gall-wasp *Biorhiza pallida*, and looking remarkably like misshapen crab-apples. An unwelcome find was the empty shell of a **freshwater pearl mussel** showing clear signs of having been prised open by poachers; the common name of this endangered species perhaps encourages the criminals, although extremely few mussels actually contain pearls, for which there is no legitimate market anyway. The **beavers** that lived for some years near the confluence of the Rivers Tay and Almond no longer seem to be resident there, but we found a new beaver lodge dug into the bank of a backwater at Perth's Woody Islands, and evidence of recent bark-stripping, so they are obviously enjoying their now-official status as members of Scotland's fauna.

Colin McLeod

MONCREIFFE HILL

23rd May

This was an evening outing to Moncreiffe Hill just a couple of miles south of Perth city centre. The wet weather failed to dampen the spirits of the intrepid Nats who ventured forth into the woods that surround the hill. This area is steeped in naturalist history as it was here that the gentleman scientist Dr Francis Buchanan White went collecting specimens with Sir Thomas Moncreiffe in the 1870s. Sir Thomas was fascinated by insects, plants, fungi and birds and was only too happy to allow fellow naturalists onto his hill so he could get an understanding of the species present on his land. Nowadays it is the Woodland Trust that looks after the 132 hectares (326 acres) of the hill and visitors can enjoy the same routes that the Victorian biologists took. Further back in history, the Picts had two hill forts on the summit of the hill; the ruined remains of these structures can still be seen today.

The rain perhaps made our own biological recording a bit less effective than it could have been if the sun had been shining upon us. Two species of **bee** were recorded, two **common carder bee** queens and a lone **early bumblebee** worker. **Carder bees** are known to nest in bird boxes and the woods (which include a mixture of tree species) offered plenty of hiding places for a variety of birds. We could hear a lot of birds but seeing them was more of a challenge. Song birds such as **chaffinch**, **blue tit**, **chiffchaff**, **robin**, **blackbird**, **blackcap**, **wren** and **garden warbler** were more often heard than seen and when we did see the tiny musicians, it was usually just a fleeting glimpse. Of course there were also larger birds such as **woodpigeon** and **carion crow** present. Although not seen on this particular outing, the **buzzard** is the top predator of this area and can usually be seen at any time of the year.

Another species present but not spotted by the Nats on this trip is the **red squirrel**. The coniferous trees offer a suitable habitat for these charismatic rodents. Aside from conifers, the **silver birch** is one of the most common trees found on the hill. A natural coloniser, this tree establishes itself on cleared land before many other trees can. Trees cover the highest point of Moncreiffe Hill at 185

metres (606ft) and the whole hill can offer shelter to wildlife during times of harsh weather. The information leaflet for the site even states that Moncreiffe is derived from the ancient name 'Monad Craiob' which is said to translate as 'Hill of the Tree'.

There were some spots where wild flowers could stake a claim and attract the attention of insects and that would certainly be interesting to watch on a sunny day. Opportunist flowers can grow along the path with the added bonus of catching sunlight. Among the flowers seen in this area were **stinking hellebore**, **devil's-bit scabious** and **woundwort**. It is certainly recommended that Nats should venture onto Moncreiffe Hill and explore what this place has to offer at different times of the year. The view at the summit during a sunny day is worth a return visit and the area has a lot of wooden sculptures of local wild animals with new sculptures being made and released onto the hill each year. There are a number of different routes that can be taken with those in the south of the hill being less visited and more likely to have a wider variety of wild species to see.

Mike Sedakat

The **snowdrops**, especially at the west end of the woodland, are spectacular earlier in the spring. Ed.

Photo by Mike Sedakat of the view from the summit on a clear, sunny day (unlike the evening of the outing).
"What we *should* have seen from the top"



RSPB LOCH LEVEN

27th May

The last time we were in this neck of the woods we finished up at RSPB Loch Leven (formerly Vane Farm) but did not have time to explore it properly so, this time, we based ourselves at the reserve and took various walks over the whole reserve.

The forecast was for rain in the afternoon, so those who felt energetic decided to climb the hill on arrival before any deterioration in the weather. Some new long distance paths have recently been completed which join the reserve to Lochore Meadows Country Park on the south side of the hill, so there was some initial confusion for those who did not recognise what they thought was a well-known site.

Just behind the Visitor Centre several people remarked that what they were hearing was a **garden warbler** - very easily confused with a **blackcap** but subtly different. Once we got onto the familiar narrow path in the **birch** woodland more birds were heard singing including **chiffchaff**, **willow**

warbler, chaffinch, wren and robin. A couple of **great tits** were gathering caterpillars and a **blue tit** was seen fleetingly. Brian Ballinger recorded plants as we climbed and gave all an excuse to pause and catch our breath and everyone remarked on the abundance of **blaeberry** on the hill - excellent food for birds and people later in the summer. At least two different sorts of **click beetle** were found on the path. The view from the top of the hill was, indeed, worth the effort with the Leven Cut stretching away to the east in a straight line and the islands in Loch Leven scattered at our feet. On our descent we met Margaret and Peter Bainbridge who were walking the hill circuit in the opposite direction and they remarked that they had just seen three **bullfinches**.

Back at the Visitor Centre we took advantage of the picnic tables and all sat down to our lunch before heading east along the Loch Leven Heritage Trail with the objective of covering the mile and a half or so to the Findatie Hide at the Levenmouth Pools. As the path comes down near the loch side there is a large area of marshy ground with a wide variety of excellent plants. Brian Allan had spotted two flowers of **early marsh orchids** (*Dactylorhiza incarnata*) and a single flowering spike of **northern marsh orchid** (*D. purpurella*). In the same area were a number of flower spikes of **butterwort**, some **bogbean** (below) and well-developed buds of **ragged robin**. There was speculation that the flowers



were more visible than in previous years due to the slow growth of the surrounding grasses after the prolonged dry spell through April and early May. There were **tufted ducks** on the loch and a **sedge warbler** was heard deep in the undergrowth nearby. A family party of **treecreepers** detained us for a while on the way. Beside the River Leven (Leven Cut) were a large number of empty **mussel** shells which David said were **duck mussels**, a favourite food of some of the local gulls.

The rain started just as we reached the hide so we paused a while and looked out at the patterns on the water. A **two-spotted longhorn beetle** (*Rhagium bifasciatum*) was found on the boardwalk to the hide and a **song thrush** flew off silently on our approach. Umbrellas and waterproofs were deployed for the walk back but, with little wind, conditions were not too bad and the rain had mostly passed by the time we returned to the Visitor Centre.

Many of the group then retired to the cafe for refreshments but some also visited the RSPB hides where a number of water birds were added to the list including **shoveler, great-crested grebe, moorhen and mallard**. A couple of **redshanks** were seen in the long grass and rushes behind the pools along with **lapwings**. Dorothy and Marjory found two mystery waders skulking about in the long vegetation in the distance but these defied all attempts at identification or photography as the glimpses were only fleeting. It is possible that they may have been female **ruffs** but we didn't get a good enough view to be 100% certain, unfortunately.

All seemed to have enjoyed the full variety of walks and habitats and the rain had not interfered with our arrangements as much as feared.

Anne Reid

BARRY BUDDON

4th June

The Annual Barry Buddon Open Nature Day took place with the usual five local natural history groups attending - ADBC, RSPB, SWT, SOC and the Dundee Naturalists' Society. In addition attending for the first time were members of the newly formed local group the Carnoustie Community Development Trust adding up to an excellent turn out of over 50 participants.

The Bird Group led by Graham Smith produced sightings of 54 different species, the highlight being **little gulls** on their way north to breeding grounds, and **bar-tailed godwits**. The Botanists led by Jim Cook had a successful day with large numbers of **northern marsh orchids** and record numbers of **adders tongue fern** in "Happy Valley". The overnight moth trapping produced an excellent catch and the Small Blue Butterfly Survey was very successful and was complemented by sightings of the **green hairstreak butterfly**.

Lunch was taken at the lighthouse area where the overnight moth catch was on view courtesy of Anne Reid and David Lampard who organised the setting up and checking of the traps. 65 moths of 13 species were caught notably **dark tussock**, **ruby tiger**, **green carpet** and a lot of **common swift** (the moth not the bird!).

All present agreed it had once again been a most enjoyable visit to the MOD estate and thanks were submitted to the Commandant and staff.

Bob McCurley

KINGSBARNES TO CRAIL

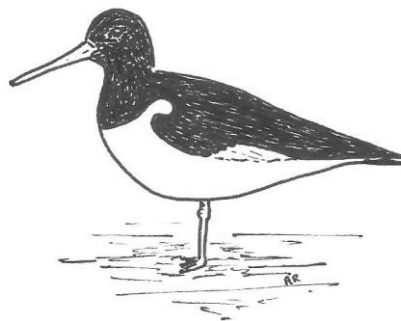
Fife Coastal Path

10th June

On a rather blustery June day we arrived at Kingsbarns on the bus and it was suggested that we have a short walk to Cambo. But there was an outcry from some who wanted to walk to Crail despite the weather. It was decided that the hardy would walk to Crail and the others would spend the day exploring Cambo, to be picked up by the bus and taken on to Crail.

Some of us walked to the beach via the little woodland path which runs parallel to the road. And there in the wood a piggy-wig stood - or rather two - clearing the ground of unwanted undergrowth. Once at the shore, we continued our walk along the Fife coastal path into the buffeting wind and some of the party peeled off at Cambo, led by Gordon Maxwell.

Jim Cook and I recorded the plant species, Jim doing most of the identifying and me acting as recorder with a small notebook which could slip easily into a pocket when the rain came on. We met many people coming the other way and were rather envious of them with the wind behind them. Jim's final list has 153 species, among them, **red bladder** and **sea campion**, delicate **common pearlwort**, **dove's-foot** and **meadow cranesbill**, **common** and **frosted orache**, many other flowering plants, grasses and sedges and the **northern marsh orchid**. Barry Caudwell recorded 18 bird species. There were the usual **mallards** and **eider**, **oystercatchers**, **gulls**, **cormorants**, **sanderlings** and **curlew** and also **whitethroat**, **yellowhammers**, **skylarks** and a **kestrel**.



When we arrived in Crail we found there was a food fayre in full swing, and the sun was shining. Many of the group were enjoying the various stalls, but Jim and I were in need of a cuppa, so we went to the hall above the museum where local ladies and gents were serving tea and coffee accompanied by delicious home baking for a very reasonable price.

It was a beautiful walk in spite of the weather, and a good day was had by all.

Kati Smith

ARBROATH

13th June

A few drops of rain were in the wind when 14 of us met at Victoria Park, Arbroath for this evening outing. This was a joint event between the Dundee Naturalists' Society and the Botanical Society of Scotland (BSS). We were gathering information for the BSS urban flora project and also observing and recording all forms of wildlife.

Unlike most trips to this area, we turned west towards the town, rather than east into the Scottish Wildlife Trust cliff-top reserve. The path along the ridge was bright with early summer flowers, including a display of **ox-eye daisy** (*Leucanthemum vulgare*). Going along the path we were struck by the remarkable abundance of an **onion** just coming into flower, identified as **sand leek** (*Allium scorodoprasum*), not often seen in this area. Many other flowers shone out on this overcast evening, including **birdsfoot trefoil** (*Lotus corniculatus*) and **kidney vetch** (*Anthyllis vulneraria*).



Sea kale at Arbroath Esplanade

The flora became less varied as we left the park, but going down to the shore a new range of species appeared, including **sea rocket** (*Cakile maritima*), **hemlock** (*Conium maculatum*) and **sea sandwort** (*Honckenya peploides*). Then, under the sea wall, the find of the evening, a large clump of **sea kale** (*Crambe maritima*), which appears to be new to Angus, although it is seen in Fife. One large plant had a few white flowers left on it and there were two seedlings nearby. Intermittent rain did not help recording, but 74 vascular plant records were made.

A brief foray onto the slippery rocks led to the identification of ten **seaweed** species, these being included in the urban flora project.

Those that stayed on the higher path were rewarded by the sight of **dolphins** near the shore, spotted by Roslyn, Linda and Margaret. There were good bird recording opportunities and 29 species were noted, including **whitethroat**, **willow warbler**, and **linnet**. Few insects were flying but a **plume moth** was spotted.

Brian Ballinger

FORFAR LOCH

20th June

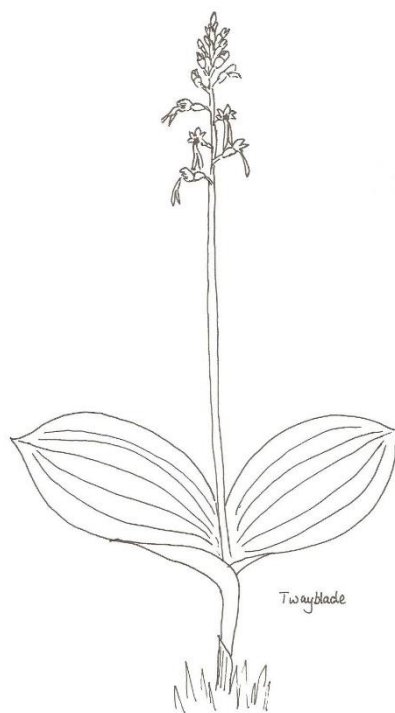
On a lovely, sunny evening about 15 members gathered to walk around the loch and explore what was about. Standing at the east end of the loch, the bird list grew very rapidly to begin with taking in both water birds and those using the surrounding area. A few **great crested grebes** were visible, but apparently not in such numbers as last year - perhaps some were still on their nests. Assorted **ducks** and **gulls** were on the water but only a single **moorhen** was seen. As we progressed along the path along the north shore we added a family party of **blue tits**, several **robins**, singing **goldcrests** and a **chiffchaff**.

Near to the yacht club a male **reed bunting** was singing and four **magpies** made a lot of noise, making their presence very obvious. At the western end of the loch the reeds were tall, restricting views of the water, but numerous plants of **twayblade** were in flower under the **willows** at the side of the path.

When we once again got clear views of the loch an **osprey** appeared and cruised around looking for prey. It caught a very large **fish** and then gained height before it carried it off to the west, with much admiration from all those present. Only a few minutes later, what must have been a second bird appeared and also caught itself a **fish**, though much smaller this time. Presumably there was a nest (or nests) full of hungry youngsters awaiting their supper.

At a brisk pace this walk can be completed in under an hour but at Nats' pace was more than twice as slow, especially as there was plenty to see for all interests. Everyone enjoyed the opportunity to take the time to look at the wildlife at leisure, aided by a warm evening with no threat of hypothermia! A total of 43 bird species were recorded and added to the BTO BirdTrack website.

Anne Reid



ARRAN WEEKEND

23rd - 26th June

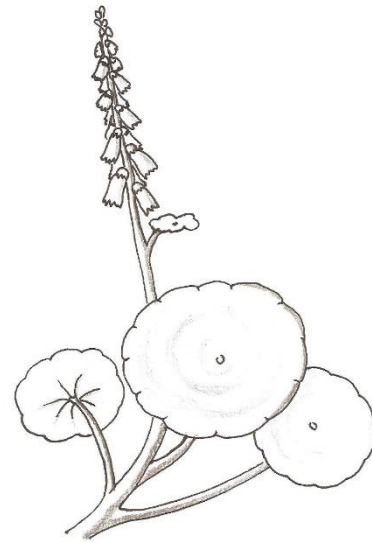
We left Dundee early enough to be certain of being in good time for the ferry from Ardrossan. Unusually, we negotiated Glasgow without pause - when does anyone last remember doing that? The result was that as we approached Ardrossan we still had an hour and a half to spare, so a slow circuit of the countryside nearby, via Stevenston, was done to avoid arriving before the previous ferry's departure time! While waiting to board several people explored the harbour area. The harbour wall had nesting **black guillemots**, there were **eider** just offshore and someone spotted a **peregrine**.

Once safely aboard much of the party spent the crossing at various vantage points on deck, despite the stiff breeze. **Manx shearwaters**, **gannets** and **guillemots** were seen from the ferry but the water surface was too disturbed for any more exciting sightings.

On arrival in Brodick we drove straight to Blackwaterfoot and checked in to the Kinloch Hotel there. Many then re-emerged to explore the rock pools on the shore, immediately in front of the hotel. Liz Houghton found a **hermit crab** with delightfully blue and red striped legs, which was much photographed and Jim Cook found **flat periwinkles** actively feeding on the **kelp** near the low tide mark. David Lampard had donned sandals suitable for paddling to explore deeper water and found the invasive seaweed *Sargassum muticum*, known as **wireweed**. Stevie photographed everything both above and below the water and was seen 'rockpooling' before breakfast every day we were there.

On Saturday morning we set out, via the slow, southern road to Whiting Bay to visit Glenashdale Falls. There is a woodland walk up to the falls with a circular route possible, which many people completed. The riverside woodland near the village was all fresh green and dappled sunlight with many of the birds still singing, including **chiffchaff**, **chaffinch**, **song thrush** and **blackcap**, and others already at the serious business of feeding a hungry brood of youngsters, including **wren** and **spotted flycatcher**. The falls themselves are caused by a sill of harder rock and make an impressive sight from the sturdy viewing platform. Many photographs were taken! (see page 25) Those who undertook the circular walk paused briefly to examine the site of an Iron Age fort before the, fairly rapid, descent into Whiting Bay. Some had time for refreshments in the Coffee Pot while others returned near to our departure time.

Due to the local Council having closed many of the public toilets on Arran we then went back to the hotel at Blackwaterfoot before our afternoon walk to the King's Caves. This entailed either a coastal 'out and back' walk from the hotel or a drop off at the forestry car park a couple of miles up the road. Those who chose the latter option heard and saw the usual birds of conifer plantations, including **wren**, **goldcrest**, **robin** and **coal tit** and also saw a **woodmouse** which 'froze' for long enough for us all to see it. After the steep, rocky descent to shore level we came on a small patch of species-rich marsh which had **ragged robin**, **bog asphodel**, **marsh lousewort**, **marsh pennywort**, **bog pimpernell** and **spearwort**, amongst others. Brian Ballinger and Anne made a full list which was sent to the local plant recorder who had been very helpful at the planning stage of the weekend, suggesting interesting sites for us to visit.



We then moved on to the caves where we met Lesley and Russell who had walked from the hotel. While standing, looking up at the cliff, Jim noticed a **black guillemot** disappearing under the overhanging vegetation right up at the top. We watched for a while longer and decided that the birds must be nesting there and located at least four similar sites with birds coming and going regularly - similar to, but different from, the classic harbour wall nest sites of this species more familiar to most of us. While near the caves there was also a family of **rock pipits** being fed by parents and a **raven** was seen overhead. On the way back we stopped to admire the **felsite** columns of the Doon hillfort which were most impressive, especially in the afternoon sun. Nestled in the tumble of rocks at the base of the Doon, Jack Moody found **wall pennywort** (above) which was unfamiliar to some.

Sunday morning dawned sunny again and the bus took us a few miles up the road to Machrie Moor where there is a complex of Neolithic stone circles and standing stones dating from about 2000BC. The gentle, undulating walk was suitable for all, though it took many a long time to cover the distance as they kept stopping for wildlife on the way. **Ravens** were seen again and **pieb wagtails** and **swallows** were very active over the fields. A pair of **whinchats** detained us for a while and we got splendid views as they perched on the wire fence. **Stonechats** were feeding young and a **wheatear**

was seen briefly. A male **hen harrier** was spotted in the distance cruising over the nearby moorland and a **curlew** called from the rough grass nearby.



After a swift bus uplift we made our way to Lochranza, at the north end of the island, to do a spot of geology. There were good clear views of Kintyre, with those who knew the area managing to pick out Grogport, Carradale and Skipness, with its ruined castle, across the Kilbrannan Sound. A gentle walk along the shore road led to a footpath signposted to **Hutton's Unconformity** which lay further along the shore. This is one of the classic sites where James Hutton formulated his theories of geology by observing that the underlying **schist** rocks had been eroded and tilted before the deposition of a much later layer of **sandstone**. The best example of this is not indicated in any way, so many of the keener walkers shot past in their enthusiasm and had to retrace their steps to look at it, as a heavy shower caused the hurried donning of waterproofs. This is a site much studied by the many parties of geology students who visit Arran and who, presumably, have to find the site for themselves - hence the lack of labelling!

At this point a few keen walkers carried on to complete a longer loop back, along the top of the higher ground while the rest retraced their steps. There was a **small**

heath butterfly roosting on a **heath spotted orchid** after the heavy shower and an interesting **caterpillar** was found munching on **bog myrtle**. There was hope that this might be the larval stage of a scarce moth, the **argent and sable**, which feeds exclusively on **bog myrtle**, but it turned out to be one of the middle stages of the **emperor moth** larva which will eat a range of heathland plants. A very handsome beast all the same. **Chimney sweeper** moths were also flying, **sundew** plants were showing their small white flowers and **whitethroat**, **wren** and **song thrush** were singing in the thick bushes at the foot of the cliff. On the shore of Loch Ranza a **common sandpiper** was feeding four chicks. The 'hill' party saw two **golden eagles** soaring high above the hillside and heard the distinctive sound of **ravens**.

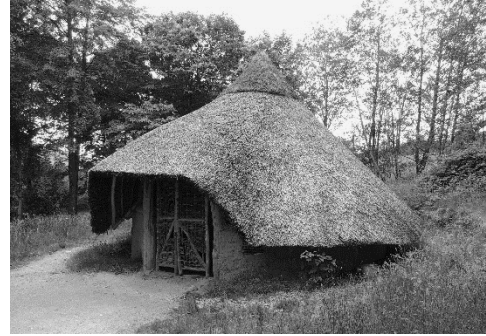
Being two thirds of the way round the island we continued on to Brodick and managed a quick stop, by request, for folk who wished to visit Arran Aromatics. Unfortunately the neighbouring cheese shop was already closed to the disappointment of many (it was 5.15pm...). After that it was straight back to the hotel across the Slug Road - a better, faster road than those around the coast - in time for another excellent dinner.

After dinner a number of people went out for a walk towards the golf course to look at the local rarity **Isle-of-Man cabbage** (*Coinceya monensis*), which Jim had found in the morning at the edge of the rough car park and it was much photographed. It was rather hard to distinguish from the ubiquitous **sea radish** (*Raphanus raphanistrum* ssp. *maritimus*) without careful examination. Juvenile **ringed plovers** were seen on the beach and two small, well-camouflaged **common gull** chicks were spotted on the shingle below the road, near to where Anne had seen an occupied nest on a washed up tree stump on the beach on the recce.

Yet more sunshine on Monday morning saw us bid farewell to the Kinloch Hotel and take the slow, southern road as far as Kilmory where we stopped at the Village Hall for a short walk to Torrylin Cairn, another Neolithic monument. Opposite the gateway we came upon Stevie photographing a small group of **shield bug** eggs on a **gorse** seed pod - she had come across some elsewhere recently which is why she knew what they were. To the cairn was only a short distance and some went no further, preferring to return to the community run café in the hall. Others went on down to the shore where we had been told that there were a few seedlings of **oyster plant** (*Mertensia maritima*) on the beach near the mouth of the burn. We only found four plants which were all that remained of a once-large colony which had been washed away by a storm. There was also a large plant of **sea beet** nearby and a few plants of **sheep's bit** (*Jasione montana*). **Ringed plover** were seen on the shore and various small birds were recorded in the woodland edge and bushes nearby.

Our final destination was Brodick Castle - suitably close to the ferry terminal for our afternoon sailing. The castle itself was closed for renovations, so some people just enjoyed the gardens and café while others explored the grounds more thoroughly. **House martins** were nesting on the buildings and **swallows** swooped around everywhere. **Chiffchaff** and **blackcap** were still singing in the woods while

a pair of **chaffinches** was seen feeding young. A couple of people found the reconstruction of an Iron Age dwelling in the woods (right) and marvelled at its construction and then visited the ranger centre where they spotted three **rats** acrobatically gaining access to the bird feeders! The most memorable wildlife at the castle was the horde of **midges** ready to attack anyone who paused on their walk. This was the first time we had encountered them the whole weekend - presumably they favour the sheltered woodlands on the eastern side of the island. We knew it was a serious problem when we noted that the gardeners all wore full midge protection nets which covered head, neck and arms.



Once aboard the ferry we could see the local **black guillemots** around the harbour and even saw them swimming underwater immediately below the ferry in the clear, green water, until our departure stirred everything up. Once out to sea it was reasonably calm and there were **lion's mane jellyfish** visible below the surface, lots of **guillemots** and **Manx shearwaters**, a few **gannets** and, best of all, a succession of **harbour porpoises**, at intervals, in ones and twos. Glasgow traffic was rather busy but, though slow, we kept moving and arrived back in Dundee after a most enjoyable weekend, helped in no small part by bus driver Paul's calm approach to the rather restricting roads on Arran.

Anne Reid

LITTLE BALLO WOOD AND BLACKLAW BURN

4th July

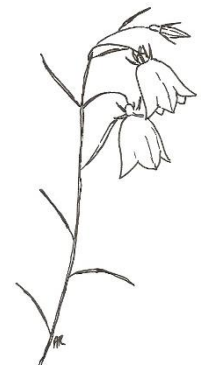
This trip turned out to be small and select, however those who came out on what had started as a wet afternoon were rewarded with a clear evening and a good walk in the Sidlaws. There were great views from King's Seat in the north to Piperdam to the south-east.

Starting from the small forestry car park at Little Ballo and entering by the gate, there was a good open area surrounded by **Scots pine** and **Douglas fir**. **Red squirrel** occur at the site and had left signs of their presence as well as being seen during a recce on 2nd July. Just inside the gate and along the forest ride the hard substrate has very flowery verges with the following species prominent - **bugle** (*Ajuga reptans*), **self-heal** (*Prunella vulgaris*), **yellow rattle** (*Rhinanthus minor*). A small amount of **creeping St John's wort** (*Hypericum humifusum*) was also noted. There were luxuriant growths of **blaeberry** (*Vaccinium myrtillus*) and also some **chickweed wintergreen** (*Trientalis europaea*) as herb layer below the conifer plantation.

Crossing the burn and following a well-trodden path up the hillside, the vegetation was dominated by **bell heather** (*Erica cinerea*), **ling** (*Calluna vulgaris*) and tall clumps of **tufted hair grass** (*Deschampsia cespitosa*). Further east the track is deeply rutted owing to the use of the area by ATVs from Piperdam. A steep flowery slope facing south-west supports a good growth of **rockrose** (*Helianthemum nummularium*), **wild thyme** (*Thymus* sp), **ladies bedstraw** (*Galium verum*) and **harebell** (*Campanula rotundifolia*). We stopped here briefly to look at the **rockrose** which provides food for the **northern brown argus** caterpillar. The adult butterfly was flying in the middle of July. On a daytime visit on 2nd July we recorded **ringlet**, **meadow brown** and **red admiral**. **Small pearl-bordered fritillary** and **small heath** can also be seen at the appropriate times, as well as the **chimney sweeper moth**. On the evening of our walk the Lepidoptera seen were **yellow shell moth**, **silver ground carpet**, numerous **grass moths** (unidentified) and another micro, possibly *Anania fuscalis*.

We had spectacular sightings of two **ospreys** and one or more **kestrels**, as well as **buzzard**, which was heard but not seen, but is however frequent at the site. **Meadow pipit** and **skylark** were seen along the path on the top of the hill. After viewing Piperdam from further along the top, we returned down the west facing slope, surprising some **roe deer** that were grazing on the lush damp growth towards the bottom of the hillside.

Butterfly records have been sent to the Butterfly recorder, Glyn Edwards and moth records have been prepared for submission to the recorder for East Perthshire, John Thorpe. Bird records were submitted on Birdtrack by Anne Reid.



Cathy Caudwell

PHOTOGRAPHS



Grey heron by Jon Cook
Winning entry in the 2016 photographic Competition for
the Kim Eberst Trophy



Tree bumblebee, *Bombus hypnorum*, in Monifieth garden,
June 2017

Photograph by Anne Reid
(See page 41)



The road verge on Dundee Road West, near Stannergate. Left to right:- common spotted orchid,
bloody cranesbill, bird's foot trefoil, cuckoo flower (white version), northern marsh orchid.
Photographs by Brian Allan (See article on page 46)

**Glenashdale Falls, Whiting Bay,
Arran as seen from the viewing
platform on the June Nats weekend
Photograph by Anne Reid**

Article on page 21



**Amethyst deceiver, *Laccaria amethystina*,
photographed in Angus by Stevie Smith**

**Common lizard, Glen Mark
Photograph by Anne Reid
See following article, p 26**



SUMMER OUTINGS (CONTINUED)

GLEN ESK AND QUEEN'S WELL

8th July

About 20 members of the society set off on the coach trip to Glen Esk and after a brief comfort stop in Edzell we set off again only to find the road closed due to road works. A detour along pleasant country roads followed before we made it to the Glen Esk road and up to the car park at Auchronie.

Across from the car park everyone had a chance to examine the corrugated tin sheets laid down by Trevor Rose, the local amphibian and reptile recorder, to attract **adders** and **slow worms**. We were lucky enough to find a couple of basking **slow worms**.

It was a sunny day and a small party split off to walk along Glen Esk. The main group set off at their own pace along the path in Glen Mark towards the Queen's Well and Mount Keen (not that anyone was heading up Mt. Keen. Ed.).

Along the way we kept our eyes open for wildlife. Near the start, Yvonne had sharp enough eyes to pick out an **adder** basking on top of the low wall right beside the path, which most folk had walked straight past! A search of the **bog myrtle** for moth larvae turned up some rolled leaves. A good plant list was compiled of wetland and heathland plants and we carried on towards the well. We were lucky enough to spot a **common lizard** basking on a rock and caterpillars of the **northern eggar moth**. We saw the occasional **green tiger beetle**, and, along the river, **mayflies** hatching. Over the day **dark green fritillary**, **small heath** and **red admiral butterflies** were spotted.



We took lunch at the Queen's Well and a few members carried on upstream to look at Carlochry though, unfortunately, there was not enough time to reach it and we headed back along the track. However there was great excitement from some hill walkers who spotted an **adder** alongside the footbridge on the way to Mount Keen

The birds sighted were mostly woodland species at the start of the walk including **blackcap**, **willow warbler**, **goldcrest**, **greenfinch** and **chaffinch**. There was a juvenile **grey wagtail** by the river and **swallows** and **house martins** swooped overhead. As we progressed up the glen the number of species

decreased with **meadow pipits** being the most common. Near the Queen's Well there were **pied wagtails** and **common sandpipers** by the river.

At the bus we met the party who had walked to Glen Esk to look for **adders**, however none were spotted. They did find **chimney sweeper moth** and **northern brown argus butterflies** by way of recompense. Our departure was marginally delayed by Cathy Caudwell but when she explained why we forgave her - she had been watching a juvenile **cuckoo** being fed by a **meadow pipit** with the poor 'parent' having to perch on the cuckoo's shoulder to reach its mouth - we all wished we had seen that too.

David Lampard

PERTH LADE

18th July

This evening excursion was devoted to the flora and other wildlife of the Perth Lade. It was organised jointly by the Dundee Naturalists' Society and the Botanical Society of Scotland (BSS), aiming to contribute to the BSS Urban Flora project and also to review other wildlife. Perth Town Lade is of considerable antiquity, being in place by the 12th century, when it was used to drive watermills, as a water supply and as a defensive moat for the city.

Over a dozen members gathered in the nearby Asda car park on a warm sunny evening and made their way to a point about mid-way along the Lade. As plant recording was the primary objective, in two hours we covered only around 800 metres of the Lade's total 7km length.

Nevertheless, more than 100 vascular plant species were noted, a mixture of natives and introductions (not counting planted specimens), even though we were not able to reach some plants seen in the waterway to identify them. Along the banks, **great willowherb**, *Epilobium hirsutum*, was prominent and **bittersweet**, *Solanum dulcamara*, was frequent. *Geranium* species seen included **cut-leaved cranesbill**, *Geranium dissectum*, and **dove's-foot cranesbill**, *G. molle*. The white stars of **lesser stitchwort**, *Stellaria graminea*, shone out, and **Canadian goldenrod**, *Solidago canadensis*, was growing in several places. A single plant of **wheat**, *Triticum aestivum*, was surely evidence of someone scattering bird-seed.

Some less-welcome, invasive non-native plants were present, including **giant hogweed**, *Heracleum mantegazzianum*, and **Himalayan balsam**, *Impatiens glandulifera*, but fortunately not in any quantity. One plant of **common hogweed**, *Heracleum sphondylium*, seemed to have atypical characteristics, and we speculated that it might be a hybrid with its giant cousin, but reached no final conclusion.

As usual, plants were not the only wildlife interest. A local had warned that the Lade had "rats as big as cats" and we watched a **rat** close to the path for several minutes, feeding on grass-seeds amongst the **reed canary-grass**, *Phalaris arundinacea*. Disappointingly, it was no larger than a very small kitten. A **tree bumblebee**, *Bombus hypnorum*, scarce in the area, was in a good position for photography, feeding on **bramble** flowers. 14 bird species were identified, including juvenile **moorhens**, and a **willow warbler** possibly feeding a youngster.

This was a successful outing to an urban location little known outwith Perth.

Colin McLeod and Brian Ballinger

THE BLACK WOOD OF RANNOCH

22nd July

The Black Wood of Rannoch is on the southern shore of Loch Rannoch, and is one of only 35 surviving remnants of native pinewoods in Scotland. It is the largest native Scots pinewood in the Southern Highlands and is well isolated from the other native pinewoods areas.

The Forestry Commission Scotland site at Carie was chosen as the start for the walk - it provides a parking place for the coach, and also offers a choice of walks. The adventurous followed the longest of these the Allt na Bogair Trail, which is approximately 8km long. We soon found several of the impressively large nests of **wood ants** (*Formica* sp.) that use **pine** needles to build their nest (photo, right). The weather was far from ideal but Nats are a tough lot and the damp did not put us off, at least it was not cold, but it probably influenced what we saw. The temperature for the day was recorded in Dundee as very close to the average for the month of July, but the rainfall was nearly a quarter of the total for July. Of the potential mammals we saw only **roe deer**, and, although we did not see the elusive **pine marten**, we did see evidence of one. The droppings of many of the mustelids are sufficiently distinct to recognise, and a sausage shaped dropping drawn out to a point, about 9cm long and 1.2 cm across, and with a musky scent, is pine marten. You need to get your nose very close to detect the scent, so if you have a long beard care is needed!



One benefit of the weather may have been an increase in the fungal diversity that we saw. The fungal spotters, Gordon and Jim, came back with an impressive list, even if you may wish not to transport some home with you if you have a garden, such as *Armillaria mellea* the **honey fungus**. Species such as *Cantharellus cibarius*, **chanterelle**, however would be a different matter! Other species seen included a single *Lactarius rufus* the **rufous milkcap**, and a small clump of *Coprinus comatus* the well known **shaggy ink-cap**. My recollection is that **slime moulds** do not often feature in visit write-ups but our intrepid pair also found *Fuligo septica*, **yellow slime mould**, growing on an old log.

The entomologists netted a **brimstone moth**, and towards the end of the trip when the weather started to improve a little, the **northern spinach moth** and a **common blue butterfly** were seen, along with four species of **bumblebee** - *Bombus pascuorum*, *B. pratorum*, *B. jonellus* and a member of the *Bombus lucorum* aggregate. Several **hoverfly** species were seen including the **drone fly** *Eristalis*

pertinax, the wasp mimic *Sericomyia silentis* and *Helophilus pendulus* which is usually found close to water. Given better weather, a look out for **dragonflies** could have produced sightings of Black Wood specialities, but it was impressive to catch an **emerald damselfly**. The only **beetle** found was *Geotrupes stercorarius* the **dor beetle**, but at least several were seen. These beetles dig a deep tunnel beneath a pile of dung and provision side chambers with dung and lay an egg into each chamber. When the weather is damp then you are likely to come across *Arion ater* the **black slug**, and indeed they were common.

A number of ferns and mosses including *Sphagnum rubellum* the **red sphagnum** and several other unidentified *Sphagnum* spp. were growing in wet places as you would expect. Found relatively close to each other were the two ferns *Gymnocarpium dryopteris*, **oak fern**, and *Phegopteris connectilis*, **beech fern**. It was good to see *Pyrola media*, the **intermediate wintergreen**, growing in a number of places. Other vascular plants seen included *Festuca vivipara*, **viviparous fescue**, and *Solidago virgaurea*, **golden rod**.

Our lunch stop was interesting because the local wildlife came out to see us, or, should I say, have a lunch feed on us - we had attracted a large and hungry group of one of the *Culicoides* species, the **midge**. It is difficult to eat lunch through a midge veil, so I just kept walking about, trying to escape from them and failing! (The outing was memorable for its midges. Ed.)

The bird list for the day had many frequently seen species such as **buzzard, chaffinch, coal tit, dunnock, goldcrest, robin, swallow, willow warbler** and **wren**. A **blackbird** was also seen near the car park but two rather special birds were reported, **crossbill** and **spotted flycatcher**, although I failed to see either! Interestingly two species of **crossbill** occur in Scotland, the **common**, *Loxia curvirostra*, and the **Scottish**, *Loxia scotica*. It was likely that the birds here are the **common crossbill**.

Barry Caudwell

DOLPHIN WATCHING TRIP

15th August

We gathered on a rather cold and wet morning at 12 noon at Castle Green in Broughty Ferry to await the arrival of the boat. We had had to change the venue at the last moment, as Taymara, who organized the trip, had not yet had confirmation from the Tayport Harbour board that they could operate from there.

We watched the Missel Thrush making her way across the estuary to Broughty Ferry Harbour, where 12 of us embarked to start the trip. As we filled the boat, it only cost £10 each. The second group went on the urban flora walk with Brian Ballinger (see below) to await their turn on the boat. We sailed out to the buoy, where dolphins had been spotted by the crew. They come in with the tide, which is why we had to sail out at a particular time. It was wonderful watching the dolphins as they came alongside, swam along with us and dived under the boat. There were many adult dolphins, but also some with young swimming alongside. Photographing them was not so easy, as they disappeared



under the water at that moment when the camera "clicked". Those who used video were more successful. I had only pictures of water, but others had managed to capture a dolphin or two on their cameras (Photo by Beryl Shepherd). They subsequently posted the pictures on the Dundee Naturalists' Facebook page and one or two sent them to me. We had a bit of a downpour at one time, when many of us repaired to the cabin and took the opportunity to eat our packed lunches.

All too quickly the hour was up and we found ourselves sailing back into the harbour to disembark and allow the second group to embark. Unfortunately, five people weren't there, and I later discovered from a phone message at home that they had been waiting at Tayport Harbour, as originally arranged. I thought I had emailed all concerned about the change of venue, and our secretary, Lorna, had also

emailed all members. By an oversight they had not got the message, so, having 5 spare places for the second trip, and no-one else having turned up for Brian Ballinger's walk, he was able to come on board, and also Lorna and Gordon, who'd come to see us off. I was also able to join the second outing, so we were only one person short. The second outing was as successful as the first, if not more so, as it didn't rain.

Everyone enjoyed the trip and thanked me and the crew as they disembarked. I was able to thank Bob Richmond and the crew for making our trip so enjoyable, before another group of people embarked and sailed off to see the dolphins. For me, that was the first time I'd seen the Tay dolphins near at hand, and it was really thrilling, especially sharing the excitement and enjoyment with everyone else. Apparently, the dolphins also enjoy swimming alongside the boat, as it speeds their progress. I only wish the other 5 could have joined us. I sent them a written apology by email and gave them details of the Taymara and also Pirate ships, so that they could organise a trip themselves.

I would like to thank the organisers Taymara, who made it such an enjoyable trip, and also all who came along on the day.

Kati Smith

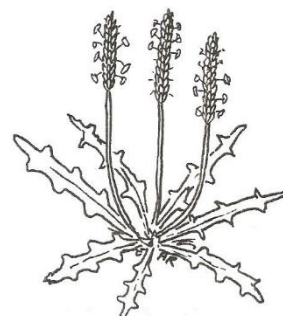
BROUGHTY FERRY PLANTS

5th August

The time available for the botanical visit was limited and was further reduced by a very heavy rain shower which led us to shelter under the sea wall for ten minutes. However, we still managed to progress about 100 yards to the shore by the castle, having decided that the dunes would need to wait for another day. Here there was a typical collection of shore plants, including *Carex arenaria* (**sand sedge**), *Cakile maritima* (**sea rocket**), *Atriplex* (**orache**) species and the two **plantains** *Plantago maritima* (**sea plantain**) and *Plantago coronopus* (**buckshorn plantain**)(right). The grassy area by the castle added to our list and we noted a total of 30 species.

The rain continued on and off and the second group decided that a cafe might be a more attractive option, so the botanical leader was able to enjoy a quite remarkable dolphin watching boat trip.

Brian Ballinger



TAYFIELD ESTATE

8th August

I had done a recce for this walk in the rain the previous day, so was pleased when it turned out to be a lovely evening with a good turnout from members. Though privately owned by the Berry family, there are roads and tracks through the grounds of Tayfield House with public access permitted.

We started up the driveway towards the pond spotting a **robin** on the way. There was not much immediately apparent at the pond but careful searching revealed a **moorhen** skulking about at the far end and then someone found the resident **kingfisher** lurking deep within a **willow** bush on the opposite bank. With a little help everyone saw it, though the striking orange breast actually blended remarkably well into the shadows. It was a bit late in the evening for there to be many birds about but **mallard**, **blue tit**, **wren** and **great spotted woodpecker** were seen and a **willow warbler** was still singing.

The other main attraction of Tayfield is the wide selection of exotic planted trees and shrubs. There is a photocopied handout (from open days on the estate) which pinpoints some of the best specimens, but those of us with some gardening knowledge were kept busy trying to identify plants of interest including **tulip tree** (*Liriodendron tulipifera*), a *Crinodendron* and such conifers as **Wellingtonia** (*Sequoiadendron giganteum*) and **western red cedar** (*Thuja plicata*).

This was a very pleasant stroll on a lovely evening and was a new venue for some.

Anne Reid

POWMOUTH

19th August

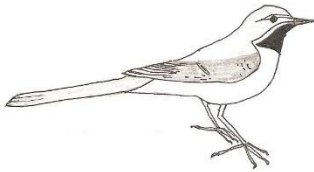
After a swift comfort stop at Montrose Basin Visitor Centre we headed a couple of miles up the River South Esk to Powmouth. We had requested a small bus in anticipation of a very tight corner combined with a bridge parapet just before our destination and all was well (and we didn't meet anything!). Everyone had been well-warned about the six-step ladder which gave access to the riverside walk and all negotiated it safely.

The river bank is maintained for the benefit of fishermen but provides a good, level walk close to the water. On the recce a few days before, there had been heavy rain and parts of the path were flooded but by the time of the outing the water was back to normal levels and much less muddy-looking.

Very soon we were all strung out along the path upstream towards Kinnaird. A **greenshank** was disturbed from the edge of the water and a **buzzard** flew overhead. A **kingfisher** was seen by those at the front of the group and Russell spotted at least three **swifts** flying very high above the river, presumably on their way south. A dead **common shrew** was found on the path and a **red admiral butterfly** was tempted out by the sunshine.

Brian Ballinger diligently recorded plants in at least four different grid squares along the walk as the area was under-recorded in recent years and most of us spent time helping to spot different species for his lists.

Many reached the weir where **grey wagtails** were seen at the water's edge and **goldcrests** in the conifers nearby. Though the season was nearly over there were still a few wild **raspberries** which were searched out and enjoyed by some.



We then returned to the Montrose Basin Visitor Centre to round off the day and saw the usual mix of birds both on the water and at the feeders. This is the best place locally to see **tree sparrows** along with **house sparrows**, **chaffinches**, **goldfinches** and **dunnocks**. On the shore was another **greenshank**, **curlews**, **dunlin**, about 100 **lapwings** and a couple of **black-tailed godwits**. The resident **kingfisher** duly obliged by sitting on the branch in the pond in front of the windows. Many took advantage of the good coffee available at the centre, and all seemed to have enjoyed the day.

Anne Reid

MONTREATHMONT FOREST FUNGAL FORAY

9th September

About 20 members of Dundee Naturalists' Society (including a few from the Tayside and Fife Fungal Group) stopped off for a short while in the Myrekirk car park in Forfar and took the opportunity to inspect and admire the 'Forfar Botanists' Garden. Back on the bus David Lampard told us that an unusual butterfly - for this area - a **speckled wood**, had recently been seen not far away and we should keep a good eye open for it. The party was dropped off at a lay-by off the busy A933 road between Friockheim and Brechin and set off along the Ardovie track across the forest. Almost immediately we started finding fungi; although they weren't abundant, there was a good range to be seen, particularly **brittle gills**. These included small numbers of **sickeners** (*Russula emetica*), with their bright red caps and white stalks, and **purple brittle gills** (*Russula atropurpurea*), occasional **primrose brittle gills** (*Russula sardonia*), one or two **charcoal burners** (*Russula cyanoxantha*) and a single specimen of **crab brittle gill** (*Russula xerampelina*). This last cap was passed around the group to be examined and carefully sniffed; at first not everybody could pick up the distinctive crab-like smell but then, when it was pointed out, agreed that 'yes, that was it'. Another interesting find brought in by Gordon Maxwell was a large but rather old cap of **scarletina bolete** (*Boletus luridiformis*, formerly *B. erythropus*). All were impressed by the fast bluing response of the cap when it was broken open (and by the quantity of 'wildlife' burrowing inside!). Christine Hackett brought in a single old cap of **ugly milkcap** (*Lactarius turpis*) - and you could see why it was so called.

Although the party was doused with a sharp shower of rain in the early afternoon, it didn't last long and the sun soon came out to reward our labours with a lovely afternoon. We spread out and explored the middle of the forest, all the while keeping a careful eye out on the time and the location of the nearest track. Brian Williamson showed us a small tuft of **yellow stag's-horn** (*Calocera viscosa*)

and an elderly cap of **brown birch bolete** (*Leccinum scabrum*). Members of the group saw a good variety of other species, including birds, plants and a few **red admirals** and one **peacock butterfly** but, sadly, neither David nor anyone else found any **speckled woods**. In the late afternoon the Nats' bus picked us up at a lay-by further along the road, which had allowed us to make a good sweep through the area.

Jim Cook

AUTUMN MEETINGS

SOUTHERN CHILE - ALPINES, MONKEY PUZZLES AND PENGUINS

Richard Brinklow - 10th October

When Richard travels, we know that he will bring back a wonderful selection of photographs which he readily turns into a fascinating lecture. He did not disappoint us with the account of three weeks spent in southern Chile in 2013. We were shown three main areas - Torres del Paine in the far south, temperate rain forest and the mountains between Chile and Argentina.

On arrival in Santiago there were still 1,500 miles south to travel to the Torres del Paine National Park in Patagonia. The vast landscape here has dramatic mountains and numerous roadside flowers of recognisable families but mostly unfamiliar genera and species. Much of the vegetation was spiny scrub and in the area of lakes and mountains there were some *Nothofagus* species (**southern beech**) but no trees of great size except where there was some shelter. Here alpine flowers are found close to sea level and numerous examples were shown, many with the specific name *magellanicus*. The most prominent mammal seen was the **guanaco** as no domestic animals are allowed in the national park. Though **guanacos** look docile, they are best avoided, especially in the rutting season. The secretive **puma** is their main predator. There were some very striking **orchid** species here, all larger and showier than those in the UK, including the **porcelain orchid** (*Chloraea magellanica*) with its attractively green-veined petals and the yellow *Gavilea littoralis*. The most common bird seen was the **rufous-collared sparrow**, most often found in association with humans, but we were also shown the **Chilean flamingo** and a pair of **upland geese**.

In the far south the group visited Isla Magdalena, on the Strait of Magellan, where there is a colony of **Magellanic penguins**. The penguins have free range on the island while the visitors are kept strictly between barriers to protect the birds' nesting burrows. There is little vegetation in the area due to the constant trampling by the penguins, but a few other birds were seen including a **kelp gull** on its nest and a **southern giant petrel**.



Shoot of monkey puzzle tree

Travelling to the temperate rain forest area, Richard remarked that there were good main highways or dirt tracks, with little in between! Our **oxeye daisy** had been introduced and thrived on roadsides along with the native *Alstroemeria aurea*. On a moist bank a tiny two inch tall **calceolaria** *C. tenella* was seen and the six foot tall *Puya alpestris*, with its waxy blue flowers, was seen in a rocky area. The **Austral parrot** feeds on the **puya** flowers and is the most southerly parrot in the world.

Some of the plants in the temperate rainforest were familiar to us as many have entered cultivation here. We were shown *Fitzroya* trees, **Chilean lantern tree** (*Crinodendron hookerianum*), **Chilean flame tree** (*Embothrium coccineum*) and the iconic **monkey puzzle** (*Araucaria araucana*). There were unfamiliar smaller plants, including more **orchids**, and a very large **tarantula** was seen on the forest floor. In a volcanic area our **broom** grows rampantly and has become a problem. The **spurge**, *Euphorbia collina*, grew in barren areas and *Viola volcanica* was a rosette plant with the flowers peeping out. Richard said that there had been volcanic activity in the area since his visit and many parts had undergone change.

Still south of Santiago, the mountains near the Argentinian border are partly covered in *Nothofagus* forest with a shrubby **calceolaria**, *C. meyeniana*. Above the tree line here were a number of alpines, again mostly unfamiliar to most of us. *Calceolaria corymbosa* had felty leaves at this altitude

and there was another rosette-forming **viola**, *V. congesta*. The terrain around the border with Argentina was fairly barren up at the Passo Vergano at 2,500m and caution had to be exercised to avoid the lorries of the mining firms which operated up here. Almost the last plant we were shown was **thrift** (*Armeria maritima*) which is native here and known to be very tolerant of stressful conditions wherever it is found.

The whole lecture gave a very full flavour of Chile's natural history and transported the audience for a most enjoyable hour, with full appreciation being shown to Richard at the end.

Anne Reid

AUTUMN BARBECUE AT CARSEGOWNIEMUIR QUARRY

21st October

In addition to tree planting, this gathering was designed to 'christen' the new, stone-built barbecue plinth constructed over the summer. While Anne lit the barbecue, her daughter Mary planted a small **birch** tree for the Reids in area Z close to the edge of back path 2, but it wasn't long before the rest of the party gathered and started on the barbecuing. In the meantime we were welcomed and warmed up by generous ministrations of hot mulled 'Chateau Allan' wine by Jenny. Ken, Moira and Ewan McGregor brought along Duncan with his young children, Karis and Sheamus, and Tom and Mary Harwood also came along and, as usual, there was more than enough food! Nearly all went for a walk along the path network to help develop an appetite while everything was cooking but returned in good



time to enjoy the festivities. Brian, Mo and Tracey feasted on Jenny's burgers and sausages while Ronnie Ogg enjoyed his usual fish. Ronnie Young brought along his cousin, her husband and two children to see the hide and barbecue site but unfortunately they couldn't stay and join in.

Anne and Mary had to leave early (to put Mary on her train home to Cambridge) and left us to it. Brian planted a small **oak** for the Allan clan in area S while Jenny, Mo and Tracey went for an exploratory walk to see how the quarry trees were growing and developing. A short while later Tom and Mary planted a **hazel**, also in area S, as the 'Harwood tree'. The final tree planted, an **oak**

in area Z, was dedicated to the hard work put into the quarry over many years by Alastair and Ina Fraser. The last task, before everyone left, was to muster five strong folk to hump the two picnic tables up to the sheltered spot on the higher ground and put the winter covers on to protect them from the weather to come. Roll on next summer!

Jim Cook

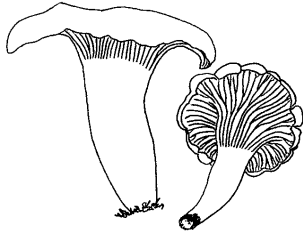
Note: The stone plinth is ideal for a small gathering as only a small barbecue needs to be carried into the quarry instead of the large one with its own legs (not heavy, just awkward!). Editor (and custodian of barbecues).

FABULOUS FUNGI

Jim Cook - 24th October

Though Jim delivered the lecture, most of the excellent images used were taken by Stevie Smith.

The **shiitake** was one of the many edible fungi that we saw, but these are on sale in Tesco, and not one that you are likely to find growing in the wild. Others included a brilliant pink/red one, the edible **beef steak fungus** (*Fistulina hepatica*) which, when cut bleeds like a piece of liver. Jim took us through the differences between the **chanterelle**, which is highly prized and edible and the **false**



chanterelle, which can both be collected from the wild. The difference is very useful as the latter have been recorded in some cases to produce alarming symptoms! Even better for eating is the **cep** and it is the main source of proper French mushroom soup. Unknown to me you can buy dried ceps in M&S.

The tiny **bird's nest fungus** is well named looking for all the world like a **humming bird nest**, while the well-named **cannonball fungus** fires its spores several metres into the surrounding vegetation. Fantastic **jelly tongue fungus** has teeth under its cap, while the **devil's tooth** oozes a red exudate which could be mistaken for blood.

The **devil's claw fungus** which is pinkish and looks like a little **starfish** is a New Zealand species and has recently become established in Britain, but not yet in Scotland. Not all fungi are highly coloured and the **porcelain fungus** is well named for being a delicate, translucent white.

A very common plant pathogenic fungus causes **tar-spot**, producing black spots on the leaves of **sycamore**, but this would appear to have little effect on its host. This is unlike the fungi that cause heart rot or root rot in plants which can be very destructive. But fungi are very good at re-cycling nutrients, and are just doing their job - without them it would be a very different world. Another fungus that is a major plant pathogen is **honey fungus**, dreaded in tree and shrub collections. This has 'bootlaces' which grow out under the bark of infected trees and are a good sign of infection. Fungi come in all shapes and sizes, you find *Aspergillus* growing on old cheese, and many life saving antibiotics are produced by fungi. Much care is needed with some fungi especially if you like eating them, as a few are highly poisonous such as the **destroying angel** which is very well named, but unfortunately another very well-named species, the **death cap**, had eluded the lenses of both Stevie and Jim.

Moving on to the **green elfcup**, which is not only green as suggested by its name, but also stains the wood that it grows on green, and was much-prized by cabinet makers. The **milkcaps** belong to the genus *Lactarius* and are so-called because they bleed a milky sap and come in a range of different colours of caps. The **saffron milkcap** is very good to eat, unlike the **false saffron** which is poisonous, and there is also a **woolly milkcap**. Closely related to *Lactarius* is the genus *Russula* which includes a bright red species that can be found in conifer woods. This is the **sickener**, also known as the **emetic russula** (*Russula emetica*) the details are all in the name! With very white brittle gills and smelling of crabs, the **crab brittlegill**, is another member of this large genus *Russula*. This is one of the species where using a chemical test helps in the identification in the field, in this case it is a crystal of ferrous sulphate, which turns the stalk greenish-blue.

Waxcaps come in a wide range of colours - **green**, **red**, **yellow** and even **black** - and, as well as colours, you can find birds such as the **parrot waxcap**. Many members of the genus *Coprinus*, the **inkcaps**, have an interesting way of distributing their spores. The gills auto digest as they mature and the spores are shed in the resulting black, dripping inky fluid, hence the name. The glistening **shaggy inkcap** is one that is reputed to be edible, but the idea of eating an ink producing machine may be a hard sell to some.

Meeting the **chicken of the woods** you could expect to see a bird, but no this is another fungus and a very tasty one at that. It is a member of a group of fungi that have an interesting form, growing out from a tree trunk to resemble a bracket, hence the name **bracket fungi**. Other common brackets are the **turkey tail**, and the **horse's hoof fungus**, neither of which are good eaters.

One of the fundamental divisions in the organisation of fungi is the group of Ascomycetes fungi. We had an example earlier with the **green elfcup**, another example is the **morel**. The **black morel** can be found in Speyside growing on shingle banks of the River Spey. **Morels** are very popular with many people because they very are good to eat. But beware - unlike **black morel**, the **false morel** is not edible, because it contains a hydrazine which is highly toxic and the effect of the poisoning is cumulative.

Finally Jim revealed that **plums and custard** is his favourite species but unfortunately they are not edible in fungal form.

Two tables were laid out with a superb, varied display of fungi brought by Jim, Stevie, Gordon and other members, including some colourful ones such as the **red** and **yellow waxcaps** and a **fly agaric**. One spectacular exhibit was an example of entomopathogenic fungus, a **fly-killer fungus** which had killed a **fly** that it had infected - very gruesome. These exhibits caused much interest at the end of the lecture



Barry Caudwell

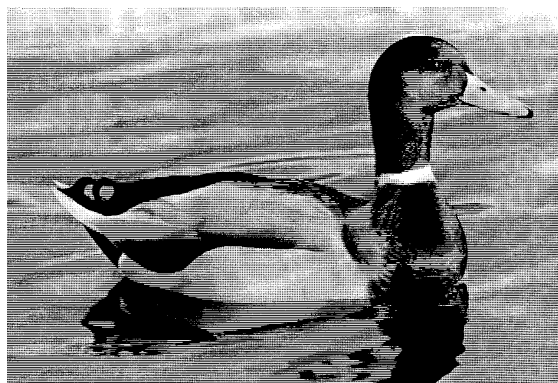
MORTON LOCHS

4th November

A sunny, clear morning looked very tempting for a walk but those who gathered at the south end of the Tay Bridge discovered that there was a keen, cold breeze blowing. When all were assembled at Morton it did, indeed, feel warmer in the relative shelter of the trees.

Wendy suggested that we go to the south hide first to avoid it getting busy with photographers later - looking for the **kingfishers** (which we did not see). Though the party numbered 13, we did all manage to fit into the hide and admired the sunlit reflections of the trees on the mirror-smooth water. A movement in the reeds just in front of the hide attracted our attention so we watched while it emerged giving most of the party a good, close, if fleeting, view of a **water rail** instead of the expected **moorhen**. There were two **teal** at the edge of the reeds but not much else on the pond though a **long-tailed tit** was seen in the trees nearby.

As we walked back along the track a **redwing** flew over and a **treecreeper** was spotted with a number of **coal tits**. Anne saw a **red squirrel** near the car park - high in a tree in the sun. The nearby feeders were nearly empty and still in full shade with neither squirrels nor birds nearby.



Once we got to the north pond we spread out a bit but visited all the hides, including the elevated one as both Anne and Wendy had their keys with them. (Key obtainable from SNH office in Cupar for a deposit of £10.) It was agreed that this was an excellent viewpoint and we noted the usual **coots**, **dabchicks** and **mallard** with a few **gadwall**, **tufted ducks** and **wigeon**. Two **herons** patrolled the far bank, in the sun, and a **buzzard** was seen. A few people saw **jays** and most heard them, bringing the total bird count for the morning to 28 species.

Half way through the walk Kati commented that she had seen a number of plants still in flower, notably **red campion**, **ragged robin** and **ragwort**. We all then started to look out for more and found more than expected including **daisy**, **herb robert**, **creeping buttercup**, **oxeye daisy** and **bitter cress**. There was also a very fresh head of **hedge parsley** with a **hoverfly** (*Syrphus* sp) taking advantage of the food source. Jim managed to record a reasonable list of fungi including **dead man's fingers** and **rollrim**.

We then repaired to the Bell Rock pub in Tayport for lunch which was much enjoyed. I'm not sure what the waitress thought of Jim laying out some of his fungi on the table for identification while we waited for the food to arrive, but at least we are used to him doing such things.

Anne Reid

THE BUMBLEBEES OF SCOTLAND

14th November - Helen Dickinson

The Bumblebee Conservation Trust is the society for the study and conservation of bumblebees in the UK and Helen has worked for them for two and a half years. It organises a variety of bee recording schemes including the national recording scheme and 'bee walks'. The society promotes the value of bumblebees as pollinators and advocates the use of artificial nests in appropriate circumstances.

Helen's talk began with an overview of bees in the UK. There are 270 species of bee, including the domesticated honeybee, 25 bumblebees (18 in Scotland) and the rest are solitary bees. There are about 250 bumblebee species worldwide. They have an annual life cycle and are active for only around three months. Many species are cold adapted and some bees are seen flying in all months. Bees can take advantage of early flowering plants such as **willow**, **crocuses**, **heathers**, and **hellebores**. Bumblebees often use old rodent burrows as a nest.

The first to emerge in spring are the queens which are noticeably larger. The **early bee** (*Bombus pratorum*) is seen early in the year, while the **tree bumblebee** (*B. hypnorum*) has recently colonised the UK and has an aerial nest. Worker bees are smaller than queens and have smaller pollen baskets. There may be a second generation of some species and others will forage on warm days in

winter. Queens hibernate in north facing slopes where temperatures remain stable, they can tolerate cold conditions but not damp.

Overall bumblebees are declining and two species have become extinct in Britain since 1900 - **Cullum's bumblebee** and the **short-haired bee**. Recently there have been attempts to re-introduce the short-haired bumblebee to Dungeness in Kent using queen bees from Sweden.

Bumblebees are arbitrarily divided into the "big seven" - the commonest and most widespread species. It used to be the big six until the tree bumblebee arrived (without help from man) in the UK in 1981.

| | |
|----------------------|----------------------------------|
| Buff-tailed | <i>Bombus terrestris</i> (right) |
| Common carder | <i>B. pascuorum</i> |
| Early | <i>B. pratorum</i> |
| Garden | <i>B. hortorum</i> |
| Red-tailed | <i>B. lapidarius</i> |
| White-tailed | <i>B. lucorum</i> |
| Tree | <i>B. hypnorum</i> |



Bee identification is fairly straightforward. The body has three parts, a head, a thorax (where the wings and legs are attached) and an abdomen. They are identified by the number, position and colour of stripes across the thorax and abdomen. The colours are bands of hairs and are white, yellow, red, ginger or buff. Queens, workers and males may have slightly different patterns. All workers are females and only female workers have pollen baskets on their hind legs. The faces of some bees are distinctive - the **garden** and **heath bumblebee** males have yellow on their faces while females are black and have a longer face. Worker bees are smaller and have differences in the banding e.g. early bee workers do not have a band on the thorax. **Buff-tailed** and **white-tailed bumblebee** workers can be difficult to tell apart.

The earliest males appear in May, they do not have pollen baskets and have a yellow "moustache" on their faces, and the tails appear more rounded from underneath. Males can appear more yellow than females. Once males have hatched they are not allowed back into the nest to prevent them from mating with related queens.

Female bees without pollen baskets belong to **cuckoo bee** species. Cuckoo bees otherwise look like bumblebees and were once in the genus *Psithyrus*, but are now considered as *Bombus* species. They are often darker than bumbles and most have only one colour band on the head and have dark wings. They often have a v shape in the white at the top of the tail. There are three main species in Scotland:

Gypsy cuckoo (*B. bohemicus*) - parasitizes the white-tailed bumblebee

Field cuckoo (*B. campestris*) - parasitizes the common carder bee

Forest cuckoo (*B. sylvestris*) - parasitizes the **early bumblebee**, **heath bumblebee** and **mountain bumblebee**.

Red-tailed cuckoo (*B. rupestris*) - a rarity found on Tiree, have squarish heads.

Outside of the big seven are lesser known species.

Heath bumblebee (*Bombus jonellus*) - a small bee associated with heathland and moorland, but can be found in other habitats.

Blaeberry or **mountain bumblebee** (*B. monticola*) - is generally associated with mountainous areas

Moss carder bee (*B. muscorum*) - in the highlands and islands and sand dunes, it is difficult to differentiate between **common** and **moss carder bee**. A Hebridean form has a brick red thorax.

Red shanked carder bee (*B. ruderarius*) - islands only, have red hairs on their pollen baskets.

Broken-belted bumblebee (*B. soroeensis*) - found in uplands and heathland in the Hebrides, is under recorded and has yellow bands up the sides of the abdomen.

Great yellow bumblebee (*B. distinguendus*) - is the UK's largest bee, restricted to parts of the highlands and islands.

The identification of some bumblebees can cause problems. **White-tailed bees** (originally *B. lucorum*) have recently been separated into three species by genetics - *B. cryptarum*, *B. magnus* (northern) and *B. lucorum* (southern).

For further help with identification the following are recommended:

The Field Guide to the Bees of Great Britain and Ireland by Steven Falk

Field Guide to the Bumblebees of Great Britain and Ireland by Martin Jenner and Mike Edwards
The Bumblebee Conservation Trust leaflet, What's that bee? and their website
<https://www.bumblebeeconservation.org/>
Steven Fuller has a useful flickr site on the internet.

Helen gave a comprehensive introduction to Scottish bumblebees and their lives, with details of some of the rarer species found in Tayside, which was much enjoyed by all present.

David Lampard

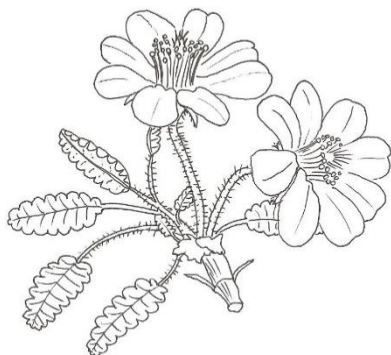
NATURAL HISTORY OF GLENCOE

Dan Watson - 28th November
Joint Meeting with the Botanical Society of Scotland.

Dan Watson from the National Trust for Scotland gave an account of the Trust's Glencoe reserve which has recently been designated as a National Nature Reserve. He drew attention to the fact that this area has received less attention from naturalists than the Trust's other property of Ben Lawers, where he is also ecologist and which is renowned for its arctic-alpine flora. Glencoe is also of considerable floral interest however, although its attractions are more widely distributed.

He described some of the important places in the reserve, beginning in the **alder** wood near the visitor centre. **Pipistrelle bats** and **small pearl-bordered fritillary butterflies** have been seen near here.

Behind the visitor centre, Meall Mor, with its **limestone** outcrops is to be found. Although only 676 metres high, there is considerable botanical interest, including **mountain avens** (*Dryas octopetala*), **alpine cinquefoil** (*Potentilla crantzii*) and **hair sedge** (*Carex capillaris*). **Whortle-leaved willow** (*Salix myrsinites*) is present over a wide area. **Chequered skipper butterflies** and **narrow-bordered bee hawkmoths** have been noted, as well as **mountain ringlet butterflies** at a higher altitude.



Mountain avens

To the east the Bidean massif presents a contrast, being rocky and less densely vegetated. **Ring ouzels**, **ptarmigan** and **mountain hare** may be spotted. In some years snow lingers until autumn in the high gullies.

The scarce **mountain bladder fern** (*Cystopteris montana*) and **Wilson's filmy-fern** (*Hymenophyllum wilsonii*) have been recorded. In one place seven different **saxifrage** species grow close to each other, including the rare **drooping saxifrage** (*Saxifraga cernua*) and **highland saxifrage** (*S. rivularis*). The lowest level patch of **highland saxifrage** has diminished considerably in recent years, suggesting a possible

effect of global warming.

Seeds have been collected from **sibbaldia** (*Sibbaldia procumbens*) plants to help reinforce the Ben Lomond population. Among other rarities are some remarkable **mosses** and **liverworts** and at the bottom of the corrie is a field rich in **waxcap fungi**.

Elsewhere Buchaille Etive Mor is much photographed and is known to be home to the **black mountain moth**. A caterpillar of **Rannoch brindled beauty moth** has been photographed although the adult is yet to be seen - possibly because it flies in April, before most moth enthusiasts have taken their traps out of winter storage!

This is a wonderful area where new discoveries continue to be made and Dan gave us a most enthusiastic and informative account of the reserve which was much enjoyed by all present.

Brian Ballinger

NATS OUT-TAKES

Brian Allan - 12th December
Christmas Festivities

Former society president Brian Allan gave members a fascinating glimpse into years gone by with photographs taken on Nats outings from 1974 to 2011. Brian was one of a number of enthusiasts

who helped to rejuvenate the society in the 1970s after numbers had dwindled and it almost ceased to exist. He has kept a photographic record ever since.

The audience enjoyed identifying members, some sadly no longer with us, as well as younger versions of many present in the audience, some sporting considerably more hair than nowadays. Brian's photos, plus pictures supplied by other members including Dorothy Fyffe, Jim Cook and Alban Houghton, and his many anecdotes provoked many comments and much hilarity.

After the talk there was the chance to socialise and enjoy a festive buffet. Jenny Allan provided a display of her hand-made jewellery and there was the opportunity to buy books donated from the late Pat Gaff's collection.

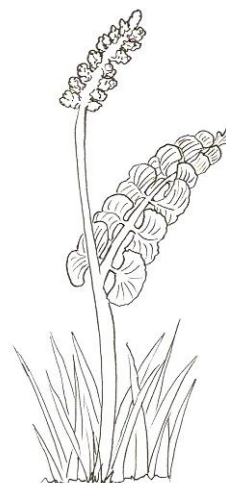
Mary Galloway.

THE WOODS, WILDFLOWERS AND OLD RAILWAY STATIONS OF EASTER ROSS

Brian Ballinger - 13th December
Wednesday Afternoon Lecture

It was a good idea for Brian to begin with a map introducing Easter Ross as a botanical vice-county to orientate the audience. It helps to have a base in an area, and Brian has solved this in a novel and very convenient way, by owning a flat in the railway station buildings at Fearn, and as the line is still an active one, he must have one of the shortest possible walks from the train to his front door! We had a quick look at some of the plants at a few stations along the line such as **hare's foot clover** (*Trifolium arvense*) and **field madder** (*Sherardia arvensis*). We also saw Garrick Wood, which Brian owns, conveniently situated only a short walk from Fearn. After a brief look at the floral literature for the area, some of it a little dated now, we were shown two volumes that Brian and his late wife Barbara had produced, saw a little of how botanical recording is organized and some of the members of the Tain Field club out recording. It is not only plants that Brian and Barbara recorded. Barbara was also the local moth recorder, and we saw some of the spectacular species from the area.

The area has some interesting hazards not found in all sites. Some strange looking camouflaged objects turned out to be military targets on the Morrich More MOD weapons range. The targets have such interesting plants as **centuary** (*Centaurea littorale*) and the **frog orchid** and the less spectacular *Juncus balticus* as neighbours. It is not only the flowering plants that flourish here - others such as the small fern **moonwort** (*Botrychium lunaria*) (right) and the **variegated horsetail** (*Equisetum variegatum*) are found growing in the turf, but who needs flowers to look exotic anyway! As the site is next to the North Sea, you never know what surprises may be waiting just around the corner, and the remains of a dead sperm whale on the shore was shown. In places where **kidney vetch** (*Anthyllis vulneraria*) grows you may be lucky and also find the **small blue butterfly**, as **kidney vetch** is the sole larval food plant. The **small blue butterfly** has a restricted distribution and this part of Scotland is one of a handful of sites where it can be seen. If you are lucky the **oyster plant** (*Mertensia maritima*) can be found occasionally growing on a beach, so it was nice to see a few plants growing and flowering well at the top of a shingle patch.



This land used to be Pictland, and it was good to see some of the fine Pictish stones that are found around this coast. Another feature of this coastline is the wonderful salt marsh to be found here, with plants like **glassworts** (*Salicornia* sp), **cord grasses** (*Spartina* sp) and the **spike rush** (*Eleocharis parvula*). Of the many wonderful habitats shown, arable fields were notable for their weeds. It was nice to look at what used to be common field weeds, but modern agriculture has made a field of blue **cornflowers** (*Centaurea cyanus*) and the yellow **corn marigold** (*Chrysanthemum segetum*) a rare sight these days.

The final habitat was woodland and Brian had examples of the flora associated with both coniferous and deciduous types. Epiphytic growth of **common wintergreen** (*Pyrola minor*), *Polypodium* ferns and **wood sorrel** (*Oxalis acetosella*) growing in a luxurious carpet of mosses amongst or on **oak** trees, contrasted with the pinewood flora. Species such as **creeping lady's tresses** (*Goodyera repens*), **twinflower** (*Linnaea borealis*), **serrated wintergreen** (*Orthilia secunda*) and **bird's**

nest orchid (*Neottia nidus-avis*) were all growing in either pinewoods or recently felled woodland, demonstrating how rich this area is botanically.

One very last plant that for me is particularly special for a number of reasons is **mountain avens** (*Dryas octopetala*). It reminds me of base-rich open mountain hillsides, high in the mountains.

I would like to close with a comment that occasionally cropped up in the talk. This was when Brian described reducing the rarity of a plant, not by conservation work, but by hard work out in the field, doing survey work, and finding new, unrecorded sites for rare plants.

Barry Caudwell

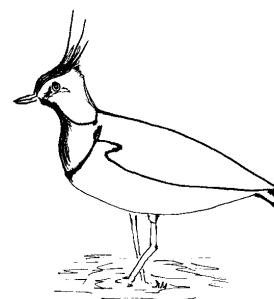
MEMBERS' ARTICLES

INTERESTING SIGHTINGS

This compilation is intended to let people know what has been seen locally. All contributions are welcome. Each entry is followed by the initials of the recorder. The location of garden records is noted on the list below.

Interestingly, once again, nobody appears to have looked at much natural history in December - or did you all forget to send it to me!! Ed.

| | | |
|-------------------------|------|------------------|
| Brian Allan | BA | Monifieth |
| Margaret Bainbridge | MB | Monifieth |
| Lesley Dron | LD | Wormit |
| Alban Houghton | AH | Broughty Ferry |
| Daphne MacFarlane Smith | DMS | Broughty Ferry |
| Colin McLeod | CMcL | |
| Russell Nisbet | RN | |
| Anne Reid | AR | Monifieth |
| Colin Reid | CR | Monifieth |
| Lorna Ward | LW | Broughty Ferry |
| Brian Williamson | BW | Dundee, Law area |



1st January Aconites out from the start of the year. A lovely splash of yellow. DMS.

2nd January On the way to the Nats' barbecue, a fairly small **grey squirrel** ran across Claypotts Road, near the junction with Trail Street, and into a garden gateway. It seems they're becoming much more common. JC.

5th January 16 **waxwings** feeding on cotoneaster berries, Johnston Avenue, Dundee, after the 40 seen there in late December. CMcL.

5th January A chilly walk (2°C) along Easthaven beach gave fine views of more than 100 **lapwings**, **curlew**, **oystercatcher**, **redshank**, and a **pale-bellied brent goose** feeding amongst the rocks. Some **eider**, **wigeon** and **mallard** were in the shallow water, and here I am always pleased to watch **starlings** searching for food amongst dead seaweed. BW.

9th January Somewhat surprised to see a **chiffchaff** hopping around near my feeders. It only stayed for a few minutes. AR.

9th January Both male and female **blackcaps** visited the feeders in our garden, and three **long-tailed tits** delighted, along with the usual **tits** and **finches**. BW.

10th January Taking Colin in to the station for the 6am train, a **fox** casually crossed the road near Hare Craig and jumped over a low garden wall. AR.

13th January Awoke to a covering of **snow**. It only lasted a couple of days before being cleared by light rain, and didn't bring anything unusual into the garden. AR.

16th & 17th January On Law Crescent to Minard Street walks (11°C) I recorded **goldfinch** (15), **chaffinch**, **bullfinch** (3), **starling**, **blue tit**, **coal tit**, heard three **robins**, **blackbird**, **peregrine falcon**, **magpie**, **carrion crows** and **woodpigeon** and also two **peacock butterflies**! BW.

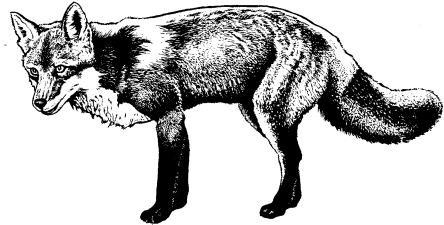
17th January Two cars speeding along the road outside woke me around 3am on a calm night and then, a few minutes later, I heard the rather high-pitched barks of a lonely **fox** repeated

several times in the distance, perhaps along Albany Road. They were the first mating calls I'd heard this winter. JC.

30th January First yellow **crocus** out. DMS.

30th January On my way into Dundee at 6.45pm I spotted a **fox** with a limp lurking in the bushes just to the east of the Stannergate circle. On my way home at 9.15pm I saw a second **fox**, with a distinctive white tip to its tail, trotting purposefully down a driveway on Monifieth Road, Broughty Ferry. Unusual to see one **fox** so early in the evening, but two seemed unlikely! AR. (Probably the same, limping fox was seen again about 200m east on 14th February.)

6th February Two pairs of **bullfinch** were eating buds on our **wild cherry** trees. A pair of **long-tailed tits**, **coal tit**, **great tit** and **blue tit**, **blackcap**, **chaffinch**, **greenfinch** and **house sparrow** were also seen. BW.



7th February Two adult **foxes** together on my back lawn in broad daylight in the morning. Later on they were mating. BB.

7th February At Guardbridge hide the tide was out and birds were mostly distant. An **otter** gently worked its way down the river in front of me, diving repeatedly and apparently unaware of my presence. When it eventually caught something it took it to the far bank and sat and ate it at the water's edge, before repeating the performance slightly further downstream. I watched for about ten minutes before it became difficult to see in the failing light. AR.

13th February A **magpie** was sitting in a tree next door and calling. It was the first I've seen around in the area this year, although I'd heard their harsh chattering calls elsewhere already. JC.

19th February Bill saw two **blue tits** going into nest box. Seemed unusually early activity. DMS.

19th February A visit to Loch of Kinnordy on a warm day (11°C) gave a fine range of woodland and water birds, including **great spotted woodpecker**, **tree sparrow**, **dunnock**, **chaffinch**, **mistle thrush** and **song thrush**, **whooper swan**, **greylag goose**, **goosander**, **teal**, **wigeon**, **tufted duck**, **goldeneye**, **gadwall** and thirteen **waxwings** in a roadside tree. BW.

19th February After three days with temperatures in double figures, warm sunshine caused the **crocuses** and **aconites** to open fully. In the late afternoon I saw a large queen **bumblebee** flying over the garden - almost certainly a **buff-tailed bumblebee**. AR.

28th February Five **honeybees** working the **wallflowers**, in sunshine. Watched them for about 15 minutes. MB.

7th March **Frogspawn** and about 50 **frogs** in the garden pond. Seven dead **frogs** on the lawn, uneaten. BB.

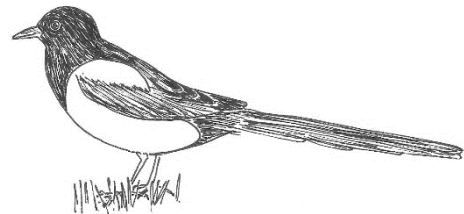
7th March A stroll west along Kingoodie foreshore at low tide gave a good range of **waders**, **shelduck**, **teal** and **mallard**. In the trees beside the railway I disturbed a large flock of **linnets** (over 200), and saw **goldfinch**, **chaffinch**, **tree sparrow** and **house sparrow**. BW.

8th March A **magpie** eating **frogs** by the garden pond. BB.

9th March There are now 24 dead **frogs** beside my pond. BB.

9th March A neighbour mentioned seeing a **small tortoiseshell** butterfly in her garden. DMS.

14th March Fine and sunny but windy. A population explosion of **two-spot ladybirds** in the garden. Tomorrow I must check for **aphids**. MB.



20th March I heard a **chiffchaff** singing in Castleroy, Broughty Ferry. DMS.

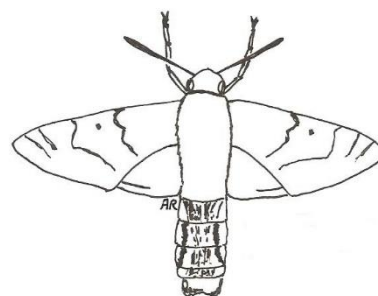
22nd March Heard my first **chiffchaff** calls of the year at Carsegowniemuir Quarry (also a new bird species record there!). On the same day a drumming **great spotted woodpecker** was heard just south of the quarry. Spring at last! (Several **chiffchaffs** were calling only a day or two later in Broughty Ferry.) JC.

23rd March The Montrose Basin never disappoints: on a falling tide enjoyed **pintail** (>100), **wigeon**, **goldeneye**, **eider**, **shelduck**, **mallard** and **red-breasted merganser** (>20), while there were over 300 **pink-footed geese** on the mud, **oystercatcher**, **black-tailed godwit**, **turnstone**, **redshank**, **curlew** and **dunlin** (>200), **greenshank**, a **snipe** and a pair of mating **moorhens**. The female **kingfisher** was on show too. BW.

25th March Saw my first butterfly of the year, a **peacock**, at Drumoig golf course. DMS.

26th March First sighting of **peacock butterfly** in our garden. BW.

- 2nd April** Heard a **song thrush** singing at 4am! Lovely to hear as they are rarely seen in our garden these days. DMS.
- 9th April** On a walk from Rosemill to Dronley on the Newtyle Railway track I saw my first **swallow** of the spring, **skylark** singing, a pair of **buzzards**, **mistle thrush**, **tree sparrow**, **yellowhammer** (two males and female nicely framed in trees covered in yellow *Xanthoria* lichens), **goldfinch** and others. Four **roe deer** were feeding on a meadow close to where I had parked. BW.
- 13th April** A **chiffchaff** was calling in the garden for a few minutes, the first time I've heard one right there! JC.
- 23rd April** A **goldfinch** and a **blue tit** were seen alternately pulling strands off a lump of (probable) **cat** fur and each waiting patiently for their turn until enough was gathered by each. Must look out for the nests! Also three **greenfinches** in the garden this morning, the highest count for a while. AR.
- 26th April** In Little Glenshee, saw a female **hen harrier** and a **blaeberry bumblebee** (*Bombus monticola*). AH.
- 26th April** A mating pair of **orange tip butterflies** beside the Dighty path near Grange Primary School, Monifieth. LW.
- 4th May** In Glen Esk heard my first **cuckoo** of the year, watched a pair of **snipe** in courtship display, spotted three **grey wagtails** on the river and saw a fledged juvenile **dipper** and a male **wheatear**, amongst all the other usual characters. BW.
- 6th May** A **ring ouzel** was mobbing an **osprey**, which had ventured too close, at Loch Lee. AH.
- 13th May** On a traverse walk from Loch Rannoch to Corrour Station, on the West Highland Line, we were pleased to see **red grouse**, six **ptarmigan**, three **dotterel** at close range, **meadow pipits** and **house martins** at the station, my first sighting this season. BW.
- 13th May** An adult **fox** and cub play-fighting in the garden. BB.
- 21st May** At Loch of Kinnordy at 3.00 pm, following prolonged rainfall, I saw a **barn owl** hunting under the trees. It must have been hungry to hunt in daylight. Also saw the male **marsh harrier**, **sedge warbler** and all the usual species to expect at this reserve. BW.
- 23rd May** A **magpie** 'rattled' in a tree in a garden across the road. (A number have been heard since; presumably they're breeding in the area.) JC.
- 26th May** We heard young **blue tits** squeaking in the nest box. DMS.
- 29th May** A first for the garden - a **jay** landed on the fatball feeder, then moved up into the tree before flying off. I have seen them on the Dighty, not too far away, but was not expecting a visit to the garden. AR.
- 31st May** A male **orange tip butterfly** on flowers near the Seven Arches viaduct. AR.
- 9th June** A few **swifts** were flying and screaming above Forfar on a sunny morning; the first I'd heard or seen this year. JC.
- 17th June** While gardening, I noticed a **bumblebee** landing on a **flowering currant** leaf and was aware that it looked out of the ordinary. A proper look confirmed that it was a **tree bumblebee** (*Bombus hypnorum*) and the camera was quickly fetched. This species is moving north and has only recently appeared in this area. AR. (Photo on page 24)
- 21st June** A **song thrush** singing daily, late in the evening, in the **ash** tree for at least ten days. BW.
- 3rd July** A male **bullfinch** was feeding in our garden on *Aquilegia* seed heads. BW.
- 5th July** At midday, while out in the garden, saw a **buzzard** being mobbed by two **carriion crows**. A few minutes later was delighted to see a **hummingbird hawkmoth** (below) hovering in front of flowers. DMS.
- 10th July** A screaming party of **swifts** flew high over the garden on a warm evening. They're the only ones I've heard or seen over Dundee so far this year. JC.
- 14th July** A **bullfinch** feeding on **poppy** seed heads in our garden. BW. (This, and 3rd July entry, show the benefit of leaving seeds for the birds and not tidying the garden too much. Ed.)
- 17th July** I counted 36 **swifts** swirling in the sky over Forthill - the most I've ever seen there. (I think the average most years has been 15 at most.) DMS.
- 18th July** Up in Glen Lethnot I enjoyed watching four **siskins** feeding on **marsh thistle** seed heads, a **kestrel** hunting, a flock of **starlings**, **redpoll**, **meadow pipit**, **pied wagtail**, **oystercatcher**, and a **red kite** upsetting **lapwings**. BW.
- 24th July** A **small tortoiseshell** in the garden - first of the season. MB.



6th August On a walk from Tayport across the Scotcraig Golf Course to Morton Lochs was delighted to see a female **redstart** at close quarters, **yellowhammer**, two **jays**, **house martins**, **sand martins** and much evidence of successful breeding birds - **mallard**, **coot**, **little grebe**, and **moorhen**, all with juveniles. BW.

10th August Delighted to see a **small copper** in the garden, (only the third time ever), and also had a **peacock** and a **red admiral** on our **buddleia**. DMS.

16th August Two **peacock butterflies** were feeding on a **buddleia** in the garden. These were the first that I'd seen doing so this year. Has anyone else noticed the relative shortage of these wonderful insects in gardens this year? JC.

17th August At Usan near Montrose I saw **kittiwake**, **sandwich**, **common** and **arctic terns**, a close view of **arctic skuas** (three pale phase birds), **fulmar**, **gannet**, **eider**, several **gull** species and **linnets**. BW.

30th August A treat at the Eden Estuary where a juvenile **white-tailed sea eagle** was on its perching pole, and five **ospreys** were visible simultaneously. A **kingfisher** put in an appearance and already over 300 **lapwings** and **curlews** had returned to the coast. BW.

1st September Had one **peacock** on **phlox** in garden and the one and only **painted lady** of the year! DMS.

2nd September At 8.45 pm a **tawny owl** flew past out house calling. BW.

2nd September A **small copper butterfly** appeared in our garden. BA.

4th September Three **swifts** seen over the garden and then another two nearby an hour later. A very late record, so presumably on migration. LD.

14th September Late **swallows** and, particularly, **house martins** have been twittering over Carsegowniemuir quarry. The Youngs report that at least one pair of swallows have been seen feeding juveniles in the stables at the cottage during the last few days - perhaps late clutches to replace young lost earlier in the year to the resident **sparrowhawk** (which had even learned to enter the stables and snatch fledglings from out of their nests!). JC.

18th September The first noticeable skein of **geese** of the autumn flew over the garden in the middle of the day. AR.

21st September A small bat, probably a **pipistrelle**, was flitting in the half-light of dusk around the belt of trees beside the road at the far west end of Dawson Park. Although the first time there this year I'd seen them in the same place in previous years. JC.

28th September Two **buzzards** circling over the top of Dundee Law at lunch time. CR.

28th September On a telegraph pole at the top of Adelaide Terrace a **tawny owl** sat for ten minutes before entering the Law Woods. BW.

30th September A **speckled wood butterfly** (below) seen in Denburn Wood, Crail. RN. (This species has recently moved into our area - I know of sightings in Arbroath and Carnoustie in 2017 - keep a lookout for it. Ed.)

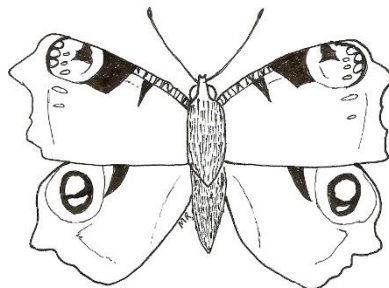
4th October At about 10am, at least 500 **starlings** were perched on wires by the pig farm, beside Drumoig, or flying in a swirling mass nearby. Very like a 'murmuration' except that that usually occurs at dusk before roosting time. DMS.

6th October Three **magpies** seen flying into the **pine** trees near the bowling green by the Bay Diner at Monifieth. MB.

8th October I was very surprised to find two fruiting bodies of **fly agaric fungus** in the grass under my **cedar** tree and close to the **beech** hedge. Though normally associated with **birch**, I read that they may be found with a range of coniferous and deciduous trees. This is a first for the garden in 25 years. (A third fruiting body was found, under the **beech** hedge, on 24th October.) AR.

12th October I counted 17 **little grebes** at The Lurgies, Montrose Basin on a very low tide - the most I have ever seen there. BW.

20th October At 8.40am two **redwings** visited our garden. My first sighting of winter thrushes. BW.



22nd October A handsome **peacock butterfly** was sunning itself on the bark of a large **spruce** tree beside the River Tay just north of Dunkeld. JC.

23rd October **Blackbirds** have been unusually scarce in our garden since July, not even coming to feed on the rowan berries, so at 9:07 today I was surprised to see a succession of them flying across the garden - possibly an influx from Scandinavia. DMS.

30th October First frost of autumn - ice on the car. DMS.

31st October I looked out of the window at breakfast time and spotted a female **blackcap** skulking in the trees in the garden. At lunch time two **redwings** visited briefly and fed on **hawthorn** and **pyracantha** berries. AR.

31st October During a sunny spell, a **red admiral butterfly** was sunning on the front wall of the house. You'd think it would be trying to find a good spot to hibernate by now. JC.

2nd November After a chilly start, lovely warm sunshine by midday brought nine **red admirals** to feed on **ivy** growing over a wall on Castleroy Road. My last butterfly sighting of the year. DMS.

7th November A **fox** and a **cat** were having a face to face confrontation on the back lawn today. The **cat** finally backed away. BB.

15th November On a rising tide east of Tayport saw **greenshank**, **redshank**, **dunlin**, **grey plover**, **black-tailed godwits**, and four **little egrets**. A flock of about 50 **goldfinches** were on the move, and **yellowhammer**, **linnets** and **tree sparrows** were seen besides the usual **gulls** and **ducks**. BW.

18th November At Port Allen, Errol, in an old orchard I saw a flock of **fieldfares** with **redwing** and a **treecreeper**. BW.

20th November Saw a male **blackcap** on a shrub in the garden and then a female too. I can't remember ever having a pair together in the garden before. DMS.

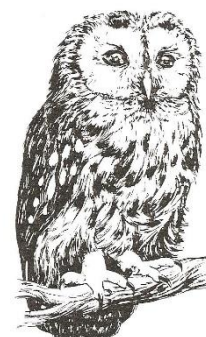
29th November West of Kingoodie, north of the railway (foot underpass), I saw a large flock of winter thrushes feeding in the ancient **hawthorn** trees, including **redwings**, **mistle thrushes**, **fieldfares** and many **blackbirds**. Some **linnets** were feeding in stubble close by. BW.

10th December Our weather station showed that the temperature outside was minus 5C at breakfast time - unusually cold for here. Snow elsewhere in UK. DMS.

14th December Was woken very early in the morning by what sounded like a dog-fight right outside the house but then realised it was two **foxes**. I'm not sure whether the pair were competitors or whether (and more likely) that a lonely fox of two days before had met his paramour! JC.

18th December Soon after midnight the distant calls of a **tawny owl** echoed round, perhaps from somewhere in the larger trees along Albany Road and towards the Broughty Ferry Road. It was the first I've heard in a long time. JC.

22nd December At dusk a large skein of several hundred **pink-feet geese** flew low over Dundee city centre, heading west, and easily heard above the noise of the traffic. I craned my head up to admire the spectacle but noticed that not one other person around paid the slightest attention. JC.



THE ETCHES FOSSIL COLLECTION

Museum of Jurassic Marine Life

Kimmeridge, Dorset

<http://www.theetchescollection.org/home>



Steve Etches was just a young lad when he found his first Kimmeridge fossil on the beach. After that he was 'hooked' on the local Jurassic fossils. His amazing fossil collection was amassed over more than 35 years and Steve was very keen for his collection to remain in Kimmeridge and be displayed for everyone to visit and enjoy. All the fossils were collected in and around Kimmeridge.

Steve's enthusiasm and dogged persistence were rewarded when the funding for a new purpose built museum to display his extensive fossil collection was finally in place. The funding sources included sponsorships and a lottery fund

award. The impressive building was sensitively designed and built to blend in with the surroundings, incorporating natural stone and wood. The floor to ceiling glass windows and doors ensure visitors enjoy the stunning views over the sea. The larger fossil exhibits are all displayed in the main exhibition gallery, but here and there in the museum there are smaller specimens available to handle or examine closely, using a digital enlarger with a monitor screen.

There are several strategically placed video presentations, all narrated by Steve. One of these takes us out to the wave platforms on Kimmeridge beach, demonstrating the painstaking removal of larger fossils from blocks of stone. One particularly fascinating presentation is devoted to fossil

barnacles and how they fitted into the Jurassic ecological system. Other initially puzzling fossil remains revealed small **lobster** species inhabiting the shells of dead **ammonites**, rather like present day **hermit crabs**. Steve is just as passionate about smaller fossils as he is about the impressive larger remains of **plesiosaurs**, **sauropods** and even **crocodiles**.



All the fossils in the main gallery are displayed with comments taken from Steve's notebook, demonstrating how each species fitted into the Jurassic marine ecosystem. Fish remains can be clearly seen within a large **ichthyosaur** fossil skeleton, revealing a food source (above). Steve's comments on a single fossilised ichthyosaur jaw, demonstrate how different teeth evolved to deal separately with **squid** and **fish** (left). A large cabinet contains the huge fossilised jaw of a **pliosaur**, a marine species which could grow to nine metres long (below).

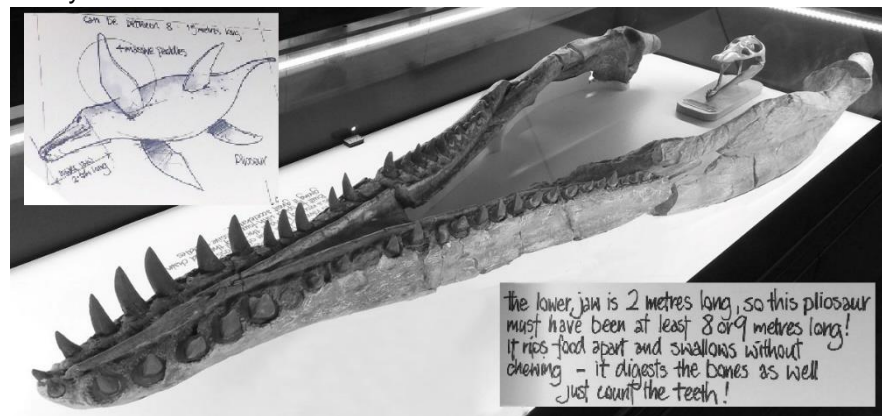
The whole experience is designed to involve visitors, being not just educational but thought-provoking and dynamic. Steve is

particularly keen to involve children, and school visits are particularly welcome. By appointment, Steve also personally conducts tours around Kimmeridge Bay, and also takes visitors 'behind the scenes' in the museum, to see more of his fossil collection, only around 20% of which can be displayed at any one time.

Steve has received several awards for his fossil collecting and research, including an MBE, awarded for his services to palaeontology, and an honorary doctorate from the University of Southampton.

Permission was obtained from museum staff to photograph and reproduce the fossil exhibits; they are very keen for visitors to help publicise the museum. If you are visiting the South of England, don't miss it.

Jenny Allan

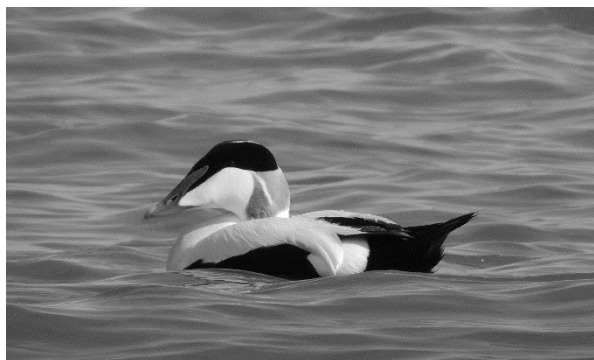


Composite photo - A pliosaur's jaw with teeth - Steve's comments on size and teeth - small reproduction drawing depicting how the creature might have looked when alive.

THE BIRDS OF THE YTHAN ESTUARY AND SANDS OF FORVIE

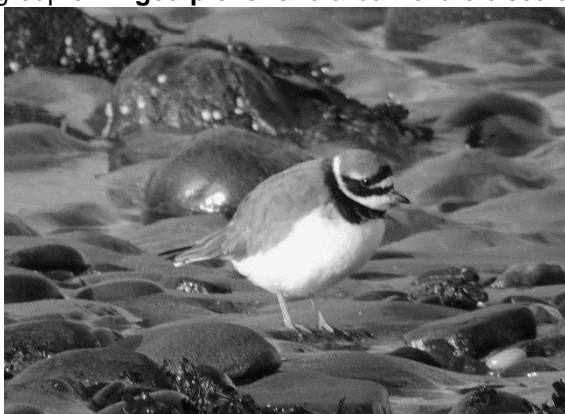
The last day of April and the south east wind blew hard and cold, but a planned visit to the Ythan Estuary with Alban Houghton went ahead. By the time we reached the Newburgh Inn for coffee the weather had improved considerably, but the wind had not abated. We started by visiting the south shore of the estuary near the golf club where large areas of gorse in flower gave a perfect setting for close views of a singing **yellowhammer** and a **willow warbler**. **Blackbirds** were busy in the undergrowth, a **skylark** was ascending and a few **sand martins** and **black-headed gulls** flew overhead. It was low tide when we arrived and after noting the **grey seals** hauled up on the other side of the River Ythan, and hundreds of **common eider** (below) in the river and on shore we made for more sheltered spots further up river.

There are several small car parks beside this river giving splendid views of the birdlife, but be warned that the poles guarding the entrances to all the roadside parking are barely wide enough for most cars, unless the wing mirrors are folded! From Waterside Bridge we found fishing **grey herons**, several **cormorants**, **common gulls**, **shelduck** and **wigeon**. After crossing the bridge and driving a mile up river the views across a sharp bend in the river gave exceptionally good views of the sandy shore where good numbers of **black-tailed godwits** in splendid summer plumage were feeding alongside



redshank, **dunlin** sporting their summer blackish bellies, and a few **pintail**, **gadwall**, **teal**, **goldeneye** and **mallard** in the river. Across from our position a pair of **curlews** were feeding, six **pink-footed geese** landed in a ploughed field and **sandwich terns** were catching fish in front of us.

Further up river we visited the Waulkmill Hide that gives a completely different aspect to the Ythan. Extensive areas of exposed mud in front of the hide gave good feeding for **shelduck** and a group of **ringed plover** and a **buzzard** cruised along the river being mobbed by **carriion crows**. This hide looks south and SE so for optimum light would be best visited in early morning.



Finally we drove back to the Forvie NNR on the lookout for a locally famous **king eider** named "Elvis". Even with local insight to this bird's whereabouts and habits according to the tides we failed to find him amongst hundreds of common eider sitting on the beach. The whole of the southern end of the dunes and sands of the Forvie Reserve are fenced off in summer to protect nesting terns, black-headed gulls and eiders, but it is a delightful walk south along the river and into the dune slacks in the permitted area. **Meadow pipits**, **skylarks** and **sand martins** were flying about and it

was clear that there was a substantial colony of sand martins' nests in an excavated sand dune close to the path. In full sunshine we spotted a male **wheatear**, and there was a surprise appearance of three **long-tailed ducks** so late in the season.

After a cup of tea we decided to return to the south shore to the "Tin Shack", a shelter at the edge of the golf course overlooking the river that gave us the last chance to see "Elvis", but to no avail. By now it was almost high tide. An extensive colony of nesting **black-headed gulls** occupied a grassy patch fenced off on the Forvie Reserve. After checking the eiders along the opposite bank for the last time we noted some **red-breasted mergansers**, but all our attention switched to watching the terns fishing close by over the Ythan: these were mainly **arctic terns**, and some splendid **little terns** with their obvious yellow beaks with black tips. In the deep water the large noses of **grey seals** were popping up everywhere so this was clearly the best feeding time on the Ythan.

Brian Williamson

A VERY WELCOME DISTRACTION

2nd November

I'd been trying to wrestle a large and heavy slab out of the hole dug for a tree in Carsegowniemuir Quarry when the high-pitched 'tseep' calls of what sounded like a flock of tits overhead caught my attention. What was more intriguing, though, were the 'preep' buzzing calls (not a good description but the best I can do!) mixed in with them. I looked up and was delighted to see a large flock of around 30 **long-tailed tits**. The tiny long-tailed pinkish-buff balls of fluff never stayed in the same place for more than a few seconds but flitted around continually. For a moment or two several landed on a low branch only some five or six metres away, allowing me to admire their size, shape and form. Wonderful! I was able to stand quietly and watch the birds for about 10 minutes before they drifted off. Then it was back to that slab and the hole and, eventually, finish planting the young **oak**.

A short time later, while still at the same place, there was a call that I didn't recognise at first and was very pleased to see, almost glowing in a blink of sun, a pair of **bullfinches**, always handsome with their bright pink breasts, striking black heads and short beaks. They were occupying one of our **oak** trees and seemed to be picking at the leaves; perhaps they were pulling **galls** off from underneath. If only I'd been carrying binoculars!

After finishing planting the tree I went along to visit the largest pond and near it disturbed a relatively large rather dark heavy-bodied bird. It dashed off but its rapid zig-zag flight gave it away. Great, it was **woodcock**, not that unusual in the quarry at this time of year. Perhaps the bird had flown across from Scandinavia to enjoy our relatively mild winter.

Earlier I'd heard and seen a flock of **redwings** on berry trees at the eastern end of the quarry and at lunchtime a large flock of mixed **finches** flew over and landed in some of the trees around the plateau for a few minutes. Some of them were **linnets** but, without binoculars, I'm not sure what the others were. Then as the evening came on, a **moorhen** was visible on pond 3 from the hide. It's great to see such an abundance of wildlife in the area.

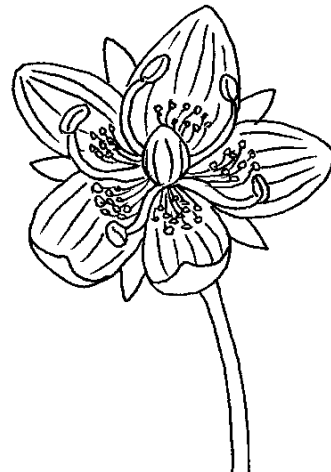
Jim Cook

VISITING COUL LINKS

When I became aware of the proposed golf development on Coul Links just north of Dornoch in Sutherland I realised I had hardly been there. This is in spite of having a base at Fearn near Tain and being botanical recorder for the adjacent vice-county of Easter Ross. The Links have been well surveyed by the ecologist Dr Tom Dargie and recorded by the vice-county recorder Prof Mick Crawley, so I aimed to get a general impression of this important conservation site. Visiting in the autumn did not allow a full botanical review but had the advantage of giving a picture of the flooded dune slacks, which are very unusual in this area.

In November I parked in the village of Embo just north of Dornoch and walked into the links from the south. Near the village, **seaweed** had been washed upstream for quite some distance along a small burn. In the central area I rapidly came to regret wearing boots rather than wellies, as the hollows were wet and often under water. The flooded area extended a long way along the site behind the dunes. Here were large quantities of *Filipendula ulmaria* (**meadowsweet**) and there were also dead heads of *Parnassia palustris* (**grass of Parnassus**) (right). *Salix repens* (**creeping willow**) was plentiful and there was some stunted *Juniperus communis* (**juniper**).

I then retreated to the higher dunes overlooking the sea and a very fine long beach. In many places the dunes were eroding with large hunks of dune newly washed onto the shore, which was being battered by large breakers. Large flocks of waders were feeding along the coastline. On the dunes *Astragalus danicus* (**purple milk-vetch**) was seen in many places in the **marram** and *Thalictrum minus* (**lesser meadow rue**) and *Helianthemum nummularium* (**rockrose**) were also present. **Rose** plants were frequent. Further north a long strip of saltmarsh extended inwards





behind and parallel to the dunes and at the edge the tide was advancing rapidly. Typical plants such as *Armeria maritima* (**thrift**) (left) were growing there.

A few weeks later I visited again, this time starting at the north end, parking at the Loch Fleet old railway crossing at NH8002 9479. Once more the dune slacks were flooded but the water level was higher and the flooding much more extensive. As well as the long slack area there were various other flooded places making progress difficult, even in wellies.

There is a considerable amount of coastal heath with *Calluna vulgaris* (**heather**) and *Empetrum nigrum* (**crowberry**), together with patches of **birch** and **willow**. *Ulex europaeus* (**gorse**) seems to be spreading here. Also on the north there is evidence of grazing by sheep and cattle (I also saw **roe deer**), leading to some areas being denuded of vegetation. I found myself crossing several fences with barbed wire on top here, but this may have been a deficiency in route planning.

Coul Links are well worth a visit, perhaps before any golf development takes place (although we hope it will not). As well as being important and unique, it is very beautiful and peaceful with fine views over

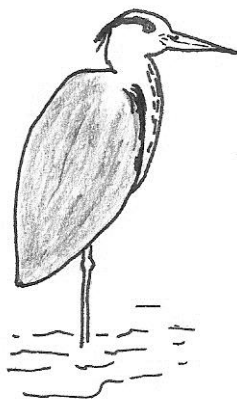
the sea, shore and hills. Many organisations and individuals have put in objections to this proposed golf course in this particular situation.

Brian Ballinger

ROAD VERGES - MANAGING FOR BIODIVERSITY

"Throughout the spring and summer the wild flowers of our country roads and lanes delight all who walk or drive them - or rather one would think that they delight everyone, but this is clearly not entirely so because each year, at the height of their glory, mile upon mile of them are ruthlessly cut."
John Burton, Country Life, 1973.

These days, beautiful road verges are no longer confined to country roads. Following a European directive, UK Governments, including our devolved Scottish Government, now have a legal responsibility for promoting biodiversity within the areas they represent. Scotland's biodiversity strategy, "Scotland's Biodiversity: It's in Your Hands", was published in 2004. This includes biodiversity management of urban and country road verges and motorway banks.



In Dundee, environmental policies implemented decades ago, have quietly resulted in many 'green' areas within the City boundary, being managed for biodiversity. These include the natural 'green corridor' of the Dighty Burn, once overgrown and sterile due to pollution from several mills along its banks, but now a haven for wildlife, and a joy for walkers. Resident birds include **dippers**, several **duck** species, **kingfishers**, **buzzards** and **herons**. Planted **cowslips** have been joined by a natural colonisation of **northern marsh** and **common spotted orchids**. Beside the tarmac path, **rowan**, **hawthorn** and fragrant **dog roses** thrive, later providing an abundance of berries in autumn. A profusion of wild flowers delight the eye, including **scabious**, **ox-eye daisies**, **foxgloves** and **meadow cranesbill**. **Roe deer** are now a common sight within the urban woodlands and green areas north of Dundee.

Other Dundee City Council environmental projects include the excellent Riverside Nature Park, once a hideous smoking rubbish dump, and now a beautifully managed nature reserve, and Shiell Street, Broughty Ferry, an area of natural mature duneland, with **primroses** in spring and fragrant **dog roses** and **restharrow** in summer, in addition to myriad other duneland flora. In Lochee, 'The Miley' along the path of a disused railway line, is managed for biodiversity by the Scottish Wildlife Trust, in partnership with Dundee City Council. The tarmac paths beside the Grassy Beach at West Ferry are bordered by a lovely profusion of wild flowers in summer including **scabious**, **knappweed** and several **vetch** species, along with attendant **butterflies** and other insect species. Regular grass cutting takes place immediately beside the path, but specific areas are now managed to

allow wild flowers to flourish. Strimming in these areas is minimal and limited to specific times in early spring and autumn.

The situation with urban road verges is more complicated. The twin demands of driving visibility and an often obsessive demand from residents for neatness and tidiness, has meant compromises being made, but pleasing everyone has proven a challenge. A lovely wild flower bank beside Dock Street was allowed to flourish uncut with a colourful display of **ox-eye daisies**, **buttercups** and **clovers**, until someone wrote to the Courier complaining about 'untidiness'. We now have a neatly manicured but boring grass verge, which costs precious Council Tax money to maintain. Steeply sloping banks are difficult and costly to mow.

More than two decades ago, some Nats members discovered a few **northern marsh orchids** growing on a wide verge beside the busy Dundee Road West, near Stannergate. The relevant environmental personnel on Dundee City Council were informed and begged to suspend normal grass cutting, until the orchids had set seed in late summer. Dundee City Council eventually incorporated a biodiversity management policy for the verge. This involves mowing only at specific times, in order to not only protect the orchids, but to encourage a diverse flora, providing food for bees, butterflies and other insects. Only around a two metre strip beside the road is mowed regularly to provide motoring visibility. The **northern marsh orchids** have now spread across the entire verge. This year we also found several spikes of another orchid species, the **common spotted orchid**, which flowers slightly later than the northern marsh orchids. Other wild flowers flourish on the verge, including **bush vetch**, **bloody cranesbill** and **cuckoo flower**. Bees and other insects collect nectar from carpets of **red clover** and **bird's foot trefoil**, and for the first time a **blue butterfly** was spotted this year.

Plantlife's campaign, to protect wildflowers and nature on roadside verges, is presently asking for persons to write to their local Councils, requesting a management plan for road verges in order to increase biodiversity.

Quote from Plantlife :-

"The diversity of our verge flora is staggering. Over 700 species of wild flower are known to grow on verges somewhere in the UK, that's 45% of our entire flora. This vast palette allows some remarkable pictures to be painted, with plants coming together in a myriad of combinations that lend local character and identity to our verges."

As a young child, I remember picking the **cornflowers**, **poppies** and **corn marigolds**, growing in fields of cereal crops in the 1950s. The development of selective weedkillers soon put paid to that. These days farmers need to maximise their crop yield, and those colourful opportunist annual plants are regarded as weeds and a nuisance. A few years ago someone had the clever idea to plant annual seeds beside some road verges. This proved a 'hit' with both the public and regional Council personnel. A colourful display of annual wildflowers, can be seen and enjoyed alongside Riverside Drive and the western approaches to St Andrews. This initiative also saves money, since management costs are minimal.

Maintaining the banks and verges bordering main roads and motorways is usually subcontracted out to specialist road maintenance companies, including Bear Scotland. The verges beside the A92 dual carriageway, Dundee to Arbroath, were quickly colonised by **northern marsh orchids**, but just as quickly the purple flowering spikes were mowed to oblivion by Bear Scotland's operatives, with a 'neatness and tidiness' remit. Again, some compromise is possible here. There's no need to trim the soakaways, already planted with **bulrushes** and **yellow flag irises**, more than once a year and the steeply sloping banks behind the nearside verges, also do not need to be so closely and regularly manicured. Plant diversity does require that managed grass cutting takes place, otherwise rank grasses, broom and gorse will take over. Timing is everything; plants should be permitted to flower and set seed.



Wildflowers flourish beside motorways, but sometimes 'green initiatives' clash. A few years ago, a lovely carpet of **orchids**, including **common spotted** and **northern marsh** plus hybrids, flowering beside the M90 near Kelty, was obliterated when an environmental initiative obtained grants

to plant trees on the motorway bank. Orchid enthusiasts in Fife were outraged, but it was too late to save the orchids, now crowded out by the trees which are attractive, but could have been sited elsewhere on the motorway.

Communication and co-operation is essential between members of the public and their local Councils, most of which employ at least one person tasked with promoting biodiversity. Council websites contain information about how to inform Council environmental teams or officers about the locations of any particularly attractive colourful road verges, or any roadside colonisation by rare or interesting plant species, within our respective city, town or rural Council boundaries.

Jenny Allan

Note: There is a colour photograph of the plants on the Stannergate road verge on page 24. Ed.

LINKS

Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland

<http://www.gov.scot/Publications/2004/05/19366/37239>

Plantlife's campaign to protect wildflowers and nature on roadside verges

<http://plantlife.love-wildflowers.org.uk/roadvergecampaign>