GLASGOW NATURAL HISTORY SOCIETY NEWSLETTER

April 2017

Newsletter Editor
David Palmar

Next Newsletter Deadline
22 July 2017

GNHS is a Registered Scottish Charity
Website: www.gnhs.org.uk/

2017 Meetings - in the GU Boyd Orr Building unless stated

April
Tuesday 11th
6.30pm Lecture: Conservation of epiphytic lichens in Scotland's temperate rainforests; Sally Eaton.
7.30pm Lecture: Seabirds and climate change; Bob Furness.

May
Tuesday 9th
7.00pm Lecture: **(Please note starting time)**
Can we live with the lynx? David Hetherington.

June
Tuesday 13th
Summer Social – see Excursion programme for details and end of Newsletter for booking form.

Winter Programme 2017-18
It is time to assemble next session's programme of evening talks- so please send any ideas you have for speakers/topics to roger.downie@glasgow.ac.uk as soon as you can.

Following discussions at Council, we are going to make some changes to the timing and format of next session's meetings:

1. There will normally be only one talk each evening (occasionally two short talks).
2. There will be time at the start for members to show specimens, or photographs, or briefly report on interesting observations (anyone wishing to bring specimens that might need a microscope should let Roger Downie know in advance). The September meeting will not be a members' specimens night, since specimens can be brought through the year. Instead, it will include a talk plus 'start-of-session' refreshments.
3. Evening meetings will start at 7 for 7.15pm i.e. there will be a short time before the meeting formally starts at 7.15, where members can mingle and chat.

Summer Excursion Programme 2017 Additional Information

Alison Moss

April

Thu 27th, Portencross, shore walk. **6pm** (Low tide at 7.20pm). Meet at the signposted car park near the end of Portencross Road, NS 177 489. The Portencross Road heads towards the coast from the A78 just north of Seamill. Bring wellington boots or stout footwear. The rocks can be very slippery. A bucket or container for collecting animals would be useful. After identification we will return all animals to the sea. Contact Mary Child.

Sun 30th, Uplawmoor and Shilford Woods 11am, – Mixed interest with focus on mosses and liverworts. Meet at Uplawmoor Hotel car park, NS 436 553. Uplawmoor village is in East Renfrewshire, off the A736 (Glasgow-Irvine Road). Before lunch, exploration of roadside SE of Uplawmoor. After lunch, investigation of Shilford Woods to the North. Bring lunch and/or eat at Uplawmoor Hotel. Stout footwear. Contact James Milner-White.

May

Sat 13th, Glasgow Museums Resource Centre, 10.30am – approx. 12pm, geology collection. Meet for 10.30 at Resource Centre at Nitshill, G53 7NN. Excursion is a follow up from lecture by Ann Ainsworth on March, 14th on Geology collection. Numbers are restricted to maximum of 15, so please book in advance. Contact Ann Ainsworth.

Tues 16th, Bothwell Banks, 7.30pm, mainly plants. Meet at Bothwell Castle car park, NS 688 593, G71 8BL. Some botanical recording is anticipated. Stout shoes/boots best. Contact John Lyth.

Thurs 18th, Rouken Glen Park, 7pm, trees. Meet at NS547 586, parking area outside the Garden Centre, off A727, Rouken Glen Road. Contact Bob Gray.

Sat 20th, **Glasgow Botanic Gardens** 200 year Celebration. Details below.

Sun 28th, Loch Ardinning 11am, SWT Reserve, mixed interest, plants, birds, etc. Meet at parking for Reserve at roadside of A81,NS 564 777, 1 mile from Strathblane. From Glasgow take A81. The Reserve is 2.5 miles from Milngavie. Parking is limited. Car sharing would be helpful. It may be necessary to shuttle from Mugdock Country Park, East car park approx 1 mile away. Stout shoes or boots necessary. Paths may be muddy and in places quite rough. Activities can include pond dipping in loch. Bring lunch. Contact Alison Moss.

June

Sat 3rd, Cashel Forest Bioblitz, from 9.30am. Bioblitz starts at 9.30am. Park at Cashel Forest car park, NS 397 938. Meet at Cashel Centre, NS 400 940, post code, G63 0AW. Take B837 from Drymen to Balmaha. Cashel lies 2.5 miles north of Balmaha or north-east side of road to Rowardennan. GNHS members are encouraged to contribute to Bioblitz and should sign presence at Centre. All skills will be used and different options will be available. Stout footwear necessary. Paths vary in quality and may be muddy. Bring packed lunch. Please notify contact in advance and your anticipated time of arrival. Contact Dominic McCafferty.

Tues 13th Summer Social, Oran Mor, 7pm, opposite Glasgow Botanic Gardens main gate. Optional walk in Botanic Gardens 5pm. Contact Mary Child.

Sat 17th, Overtoun House, 11am, parkland trees, plants, insects and alkaline rocks of Overtoun Burn. Meet at Overtoun House car park, NS 426 761. Overtoun House is in a public park in Milton, north of Dumbarton. Approach via a small uninviting turning off the A82 Glasgow – Loch Lomond road. (From Glasgow go 1/3 mile past Bowling roundabout. Go slow and turn right.) Easy paths through the estate, uphill paths after lunch. Bring packed lunch or eat at Overtoun House café. Contact James Milner-White.

Tree Weekend Fri 23rd - Sun 25th. Eastern Borders, based in Kelso from Friday evening c.6pm onwards. All details and booking contact Bob Gray.

July

Thurs 6th, Overtoun Park, Rutherglen, 7pm, Trees. Meet at park gate at Rodger Drive NS 614 608. Contact Bob Gray.

Sun 30th, Inchcailloch, 11am, Balmaha, mixed interest, deciduous woodland plants and insects. Meet at large Balmaha car park NS420 910. Weather permitting we take a boat (approx £5 each) to Inchcailloch. Inchcailloch has easy paths round it, but stout footwear best. Bring packed lunch. If weather is very poor, more time will be spent on mainland woods. Contact James Milner-White..

August

Sat 12th, Mini Bioblitz, Castlemilk Glen Park, 2–4pm

How many different plants and animals can we find in a day of wildlife surveys as we record the park's bio-diversity on this mini Bioblitz. The Glen is the wooded area with burn and loch immediately adjacent, and it extends south to the southern part of Ardencraig Road. It's organised by Richard Bolton, Community Woodland Officer with the Cassiltoun Housing Association: Richard.Bolton@cassiltoun.org.uk 631 5213.

Call by and see what we have discovered, make your own arts and craft creatures and learn about the wildlife on your doorstep.
Meet outside Castlemilk Stables (NS609594), 59 Machrie Road, G45 0AZ

Sun 20th, Cardowan Moss LNR, 11am, mixed interest, insects and plants etc. Meet at parking place at Sunnyside Primary School, G33 5LA. (The entrance to Cardowan Moss is beside the Strathclyde University playing fields and is on Avenue End Road.) From M8, leave at J11. Go north on B765 Stepps Road which becomes Avenue End Road. Pass 2 schools on right and a row of shops on left. After a stretch of grass, take right turn onto Mossvale Road and follow this along. Just after bend turn right onto Powrie Street. Park at Sunnyside Primary School (NS651672).

From M80, take A80 Stepps turn off. Follow A80 north-east till you see Playing fields. Turn right at lights into Avenue End Road. Cardowan Moss is on your left. Turn left into Mossvale Road, then follow above instructions. Good paths throughout. Bring packed lunch. Contact Alison Moss.

Dedication of Tree and Memorial Plaque to Peter Macpherson

GNHS members are invited to attend the above event on the north-facing front of the GU campus, outside the main building overlooking University Avenue **on Thursday 27th April**. Coffee is being made available beforehand, at 6.00pm in the museum of the Graham Kerr Building, before the dedication which will be at 6.30pm. As numbers are required for this please contact Roger Downie if you intend to be present.

Bicentenary of Glasgow Botanic Gardens **Richard Weddle**

This year marks the bicentenary of the founding of Glasgow Botanic Gardens by Thomas Hopkirk and colleagues; the original site was at Sandyford at the west end of Sauchiehall Street, and it relocated to Kelvinside in 1842.

It is also 20 years since a GNHS project entitled 'On the Wildside: the Natural History of the Glasgow Botanic Gardens' which was reported in T*he Glasgow Naturalist* 23(3), 1998 and 23(4) 1999. The 2017 events listed in the excursion programme are intended to update the findings of the 1997 excursions, but not all of the earlier sightings originated from excursions – some members also visited throughout the year, and noted their sightings.

We aim to repeat this project this year and, as part of this effort, we encourage members to visit the Gardens and record wildlife such as water-fowl on the Kelvin, or butterflies; records of under-recorded species are particularly welcome.

To whet your appetite, I've updated the species list for the site from the records in Glasgow Museums Biological Record Centre database – www.gnhs.org.uk/biodiversity/gbg_splist.pdf - so that you can see what hasn't been recorded since 1997, in the hope that it will stimulate individual visits throughout the year; please let us know what you see (info@gnhs.org.uk).

There will be a number of events throughout the year. The main event is on Saturday May 20th (the exact 200th anniversary of the opening) – a large public event which will include many of the groups and organisations that utilise the Botanic Gardens for some of their activities. There will be wildlife walks led by various organisations, also 'entertainments'; GNHS will have a display in the marquee on the Main Lawn, and will also contribute to a display in the Kibble Palace which runs for much of May.

And, as noted in the excursion programme, we hope there will be some further recording events in the Gardens in July and early August.
There will be more on this topic in the next Newsletter, including more details of the Bioblitz on September 2nd, and I'll be notifying those members who have email about other events as we get nearer the time.

TCV "Making Urban Greenspace Count" Mini Bioblitzes

Amanda Malcolm

It would be great if GNHS members would like to participate or help in our activities. To express interest or find out more contact Amanda Malcolm. Children under 16 must be accompanied by a responsible adult. Please wear suitable outdoor clothing, shoes and bring snacks/lunch.

- **Saturday 13th May**, 10am-3pm. At the Seven Lochs Wetland Park BioBlitz you can explore this amazing location as we will have exciting and hands-on wildlife activities and surveys. Drop in and see us on the day at Hogganfield Park Local Nature Reserve for wildlife recording activities around the park to see how many species you can spot! There will be simple wildlife surveys around the park: bug hunting, pond dipping, bird watching and songs, explore the mini lab and more!

- **Saturday 20th May**, Glasgow Botanic Gardens Bicentenary, Time TBC activities but will have timed walks to record as much wildlife as possible in different habitats throughout the Glasgow Botanic Gardens.

- **Saturday 10th June,** 10am-4pm Jupiter Urban Wildlife Centre, Wood Street, Grangemouth, FK3 8LH. Meet local experts and help us find and record all the amazing wildlife we have at Jupiter.

- **Saturday 24th June**, Knightswood Park, Bassett Ave, G13 3XW. At the Community Rewilding BioBlitz you can explore the amazing location as we will have exciting and hands-on wildlife activities and surveys. Drop in and see us on the day for some amazing wildlife recording activities around the park to see how many plant and animal species you can spot! Simple wildlife surveys around the park: bug hunting, pond dipping, bird watching, explore the mini laboratory and more!

Watch out for Orange-tips this year **Richard Sutcliffe**

Butterfly Conservation ran a postcard survey of orange-tips in 1997 to find out where they were spreading in Scotland and they repeated the survey in 2007. Another ten years later, they are doing so again. The butterfly is still expanding its range, and records from the west of Scotland are particularly welcome.

The unmistakable males are easy to spot from late April until June or even early July. The females are more of a challenge, as they lack the orange colouration, but can be distinguished from other 'white' butterflies by their rounded wings, and the green mottled pattern on the undersides of the wings.

If you see any orange-tips, please submit your records online at www.butterfly-conservation.org/scottishorangetip (where there is more information), or complete a survey postcard (you can pick one up at GNHS meetings).

'TEK' Equipment **Richard Weddle**

As we are within sight of the next field-recording season, it seems a good time to remind everyone that the Society possesses a number of items of equipment for the use of members. Many of these were purchased with the aid of a recent generous bequest from Thomas E Kinsey.

The list indicates that some items are 'in use' but which may available to others for a short time. However, there are also some items that have been purchased for particular research projects, and will not be available until the end of those projects. Items such as nets and sorting trays are sometimes needed for GNHS field excursions and other such events. GNHS Council do stipulate that requests to use items for any significant length of time should be supported by an outline of the project for which they are required, and that the results should be submitted for publication in *The Glasgow Naturalist*. I should also point out that though the bat-detector is quite easy to use, it requires some training and experience to interpret what it picks up, and the Longworth traps can only legally be used by a trained and licensed operator.

Description	Availability	In care of
6 compound microscopes	occasional use	Hunterian Museum - Geoff Hancock
10 Longworth mammal traps	occasional use	Countryside Ranger Service
Batbox Duet bat detector	occasional use, often available	Richard Weddle
2 Garmin eTrex GPS	1 in use	Richard Weddle
Skinner moth trap (mains operated)	available	Richard Weddle
Heath moth trap (battery operated)*	occasional use	Richard Weddle
2 pond nets: large / small	occasional use	Richard Weddle
sweep nets: 1 large/1 small	occasional use	Richard Weddle
3 Butterfly nets	1 in frequent use	Richard Weddle
1 Beating-tray	occasional use	Richard Weddle
Emergence Traps (80) (for pupae etc.)	most available	Richard Weddle
3 sorting trays	occasional use	Richard Weddle
4 remote video cameras	available	Richard Weddle
camera traps (3)	enquire#	Stewart White
Torch (1 million CP)	often available	Richard Weddle
Hanna 98129 pH/Conductivity/ Temperature Tester	available	Richard Weddle

* there are additional Heath traps owned by Butterfly Conservation SW Scotland, which may be available for use by GNHS members.
# available by arrangement

If you'd like to borrow any item, contact me; or I can put you in touch with the current holder of the equipment.

New Members **Richard Weddle**

Since the last Newsletter we have welcomed the following new members: Jaime Villacampa (Partick), Greg Chamberlain and Mrs K Chamberlain (Hillhead) and Martin Hughes (Hampshire).

We hope you will make them welcome at meetings; and, in view of some relatively poor attendances at recent meetings, it would be good if you could think of encouraging someone you know to join the Society.

Social Secretary **Mary Child**

We are looking for a volunteer to be our social secretary. If you come to the winter meetings regularly and would be willing to organise the tea, coffee and nibbles after meetings we would be absolutely delighted to hear from you. Please contact Mary Child if you would like to volunteer or need further information.

PhotoSCENE Natural History Photographic Competition David Palmar

The PhotoScene competition, sponsored by GNHS and Glasgow University Institute of Biodiversity, Animal Health and Comparative Medicine, aims to promote interest in Natural History and the work of SCENE (Scottish Centre for Ecology and the Natural Environment, the University's field Station at Rowardennan), provide linkage between the Institute and the Society and providing pictures for publicity. All entrants are thanked for making the effort to enter the comptition.

Participation has increased over the years, and prizes totalling £800 per year have been awarded at the Society's photographic nights. Since the first competition in 2011, and together with talks from members, the competition has provided us with an interesting photographic evening each February. This year there were 117 entries from 30 people. In the light of increasing entries, the competition will continue.

Here are the first prizewinners:

Barracuda, Egypt
Anna Persson

Wild Flower Identification, Islay
Richard Thomson

Malachite Kingfisher
Ken Ferguson

Logging – Laura Allen

Frog spawn – Darren Monkton

Reports from Recipients of Blodwen Lloyd Binns Bequest Grants

Identifying Difficult Invertebrates **Sarah-Jayne Forster**

I received a grant from GNHS/BRISC to study more about invertebrates that were hard to identify. I have studied for an MSci in zoology and understand the taxonomic groups of the invertebrates but I was unable actually to identify down to species level. I work as a project officer for the RSPB Connecting the people in Glasgow and Edinburgh to nature. I organise many large scale Bioblitzes and survey events across the cities. I felt it was limiting not knowing more about how to identify invertebrates to a level appropriate to record and when it was necessary to collect specimens. For organising Bioblitzes it is also essential to invite the appropriate experts and have the right equipment on hand as well as the right field guides.

The course was held at Preston Mills FSC centre on the 8th-11th June, and was called Collecting Difficult Invertebrates. We learned about the groups that were more difficult to identify in the field, then were left to explore different habitats around the site to collect specimens. The site was an ideal location and had a variety of habitats to explore which were suitable for invertebrates. I learned from the instructor as well as others on the course the appropriate way of collecting the voucher specimens (specimens which serve as a basis for study – Ed.) On the second day we had a field trip to a quarry near Wales where we were able to explore more and collect different invertebrates. I decided to collect a range of invertebrates to give me the most experience collecting, identifying and pinning/preserving. I collected Hymenoptera (sawflies, wasps, bees), Diptera (Hoverflies), molluscs (snails), and Crustacea (woodlice).

Though I was initially a bit put off at the collecting of these animals it soon became clear in the lab why it was necessary to identify them. Even under the dissection microscope it was quite tricky to identify the hoverflies using the keys. Some of the other groups were slightly easier but would still be very difficult if dealing with a live specimen. I am now able to help collect appropriate specimens in the field and can hopefully put this into practice more in future recording events.

Pinning and labelling specimens is also useful for me to learn as I work in partnership with Glasgow Museums, organising and delivering events which interpret the natural history collection. I feel I am now more able to contribute to preserving existing specimens as well as being able to inform the public about the importance of voucher specimens in museums.

I have worked with the local recorders in Glasgow for the last few years to put together and record in Bioblitz events as well as in our wildlife garden festivals. This course made me more confident with using I-record and when to contact specialists to identify species. For the Duddingston Bioblitz in Edinburgh 2016 I was able to help set up iRecord events as well as collecting in the records. I hope to continue biological recording as part of my role encouraging others to record in large scale events and local schools. I also hope to record more in my free time too.

Since receiving this grant I have become more aware of BRISC as an organisation and very much enjoyed presenting at their conference as well as hearing all of the other speakers. I was kindly invited by one of the members to be on the committee which I have accepted. I look forward to learning more about the organisation from doing this.

Identiplant - FSC distance learning course available in 2018 in serious botanical ID training. It will open for applications in December 2017.
See FSC website: http://identiplant.co.uk/

Identiplant
plant identification course for beginners in serious botany

General Correspondence to the General Secretary: Mary Child <mary@gnhs.org.uk>

Next Newsletter - copy to David Palmar by 22nd July 2016 please. email:

Contributions by members are particularly welcomed. Please send preferably by email, as .rtf, .doc or .docx (Word 2007) format. If you have time, please italicise taxonomic names, and use Verdana font, size 12 points**.**
Photos are welcome, especially if they illustrate an aspect of the work of GNHS, e.g. if taken on one of our excursions. If sending photos, please send separate jpgs under 100Kb each (**not** embedded in a Word file or a .pdf please).

Spider Identification **Kirsty Godsman**

I first attempted to identify a spider as a student on an invertebrate taxonomy course. It was difficult. I identified around four spiders in four hours. Aside from the few large species with patterns on their abdomens, most spiders seem to need to be examined closely with a high power microscope and plenty of light. I gave the group little notice after this experience and shifted my attention to more "obliging" groups of arthropods such as macro moths and ground beetles to begin my journey as an entomologist. This was great fun but I had always wanted to give spiders another go.

Figure 1: a Linyphiid spider under the microscope

Since January this year, I have become a PhD student in biology tasked with finding out about biodiversity in plantation forests and the resilience of these ecosystems. This involves running pitfall traps at a number of sites throughout the UK – including eight in Scotland. Pitfall traps are an excellent method for collecting large numbers of ground-dwelling invertebrates, especially spiders and ground beetles.

Spiders, although well studied in forests in Ireland and Southern England, are poorly studied in Scotland. In addition, biological recording of this group is sparse (see figures two and three for records coverage). This would be a great opportunity to improve on our knowledge of spiders and was the excuse I needed to have a second go at mastering their identification.

Figure 2: Sampling leaf litter

Using a new style of key for me was an interesting experience – the Linyphiidae key is basically a table summarising a small number of features of these numerous and minute spiders and it works very well. I have also picked up some new spider sampling techniques that I hope to try out in my own time.
I now have 200 samples from across the UK to keep me occupied over the winter and look forward to building a large list of species records for the study sites. These records will be shared with site managers and the public so

I hope they will add to our understanding of spider ecology and distribution in the UK.

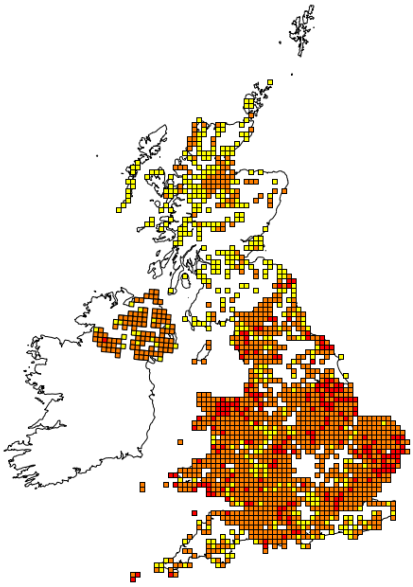

Figure 3: Map of all spider records in the UK. Yellow squares: 2000 to 2016, orange squares: 1950 to 1999 and red squares: 1600 to 1949. Crown copyright and database rights 2011 Ordnance Survey [100017955] https://data.nbn.org.uk/Taxa/NHMSYS0000841308/Grid_Map

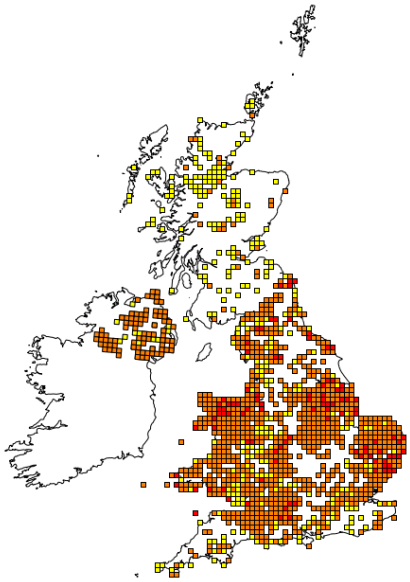

Figure 4: Map of all Linyphiidae (money spider) records in the UK. Yellow squares: 2000 to 2016, orange squares: 1950 to 1999 and red squares: 1600 to 1949. Crown copyright and database rights 2011 Ordnance Survey [100017955] https://data.nbn.org.uk/Taxa/NBNSYS0000160328/Grid_Map

Figure 5: Burlese funnels set up to extract invertebrates from leaf litter

Figure 6: The key to Linyphiidae

Glasgow University Rift Valley Expedition (GURVE) **Neil Burnside**

The aim of GURVE was for a 12-person strong team to explore geothermal sites situated within the East African Rift (EAR). The initial scope of the project was to visit the Butajiri-Silti Volcanic field in Ethiopia and the Menengai Shield Volcano Caldera, Kenya (Fantale). Due to logistical and budgetary constraints the GURVE expedition ultimately focused solely on Menengai, which allowed for additional and more thorough exploration of the surrounding region. The leadership team for the expedition consisted of Dr. Neil Burnside (academic supervisor and regional hydrological research program), PhD candidate Helen Robinson (caldera geochemistry and logistics) and 3rd year undergraduate Hillary Mulholland (geological mapping). During the trip the student team members where split into three groups and rotated between each of the group leaders for their respective areas of work. The funds awarded by the GNHS contributed to the team's accommodation costs in Kenya.

The East African Rift (EAR) runs the length of Ethiopia, Kenya, Uganda, Rwanda, Burundi, Zambia, Tanzania, Malawi and terminates offshore of Mozambique. Rift extension in this area has led to a thinning of the Earth's crust and allows for hot buoyant magma to rise closer to the surface and heat local groundwater, providing a large potential resource for geothermal energy. Kenya has embraced this resource and has enthusiastically pursued geothermal development in order to provide low-carbon and sustainable energy to its people.

Menegai Volcano is situated 10 km north of Nakuru, the 4th largest city in Kenya, and thought to have last erupted ~350 years ago. From 1997-2000, satellite radar imagery recorded proximal land deflation which may indicate magma draining from the surface. Magma drainage and localised lowering of pressure can potentially lead to caldera collapse and explosive eruption. Other recent activity, such as steaming and altered grounds, micro-seismicity, fumarole activity, and high subsurface temperatures (150°C/km as compared to global average 25°C/km), provide substantial evidence to suggest there is a superheated body of magma at shallow depths.

The main goal of the expedition, carried out between the 20th of June and 9th of July 2016, was to give the student members a flavour of geological and hydrological investigation and fieldwork. The main hope was that the work carried out during the trip would provide a baseline for further scoping work and ultimately robust evidence for major grant applications. The students were split into three groups of three based on their degree programme, course level and long term career interests. Each group spent 3 days with their group leader to focus on either hydrology, soil gas or geological mapping work. The rest of this report will focus on the hydrological part of the trip as that was under the current author's supervision.

Water characterisation can be used to help identify the scale of a geothermal resource, optimal target extraction points and provide advice on the best strategy for geothermal operations (e.g. reinjection of water to manage reservoir pressure). Water chemistry can also provide key information on water provenance, water-rock interactions and subsurface mixing processes- in essence it can be used to determine connectivity between surface and subsurface water bodies. The hydrological team visited many locations throughout Nakuru and Baringo Counties

and secured a total of 45 samples from surface water bodies (including rivers, lakes, and thermal springs) and geothermal test wells (currently venting to test flow rates). Water physiochemistry (temperature, pH, conductivity, alkalinity) will be determined in the field (using Ultrameter and digital titration) and collected samples were later analysed for major anions and cations, silica, heavy metals and stable isotopes within the University of Glasgow School of Engineering and the Scottish Universities Environmental Research Centre (SUERC).

One of the issues being tackled with these analyses is potential geothermal related flooding of Rift lakes. Since 2013, five of the nine lakes along the rift have rapidly risen by up to 3m. The flood levels have thus far shown little sign of receding and it is unlikely that regional rainfall (900 mm/y) can be solely responsible. Local residents have reported negative impacts on homes, businesses, wildlife and tourism in response to the flooding. Rising reports of poor health conditions, such as stomach pains and tooth damage, may also be linked to these flooding events. A major indicator of hydrothermal contamination is elevated concentrations of fluoride, so this is being investigated as part of the analytical programme.

Student team members observe health and safety advice whilst visiting a venting geothermal well in the Menengai Caldera.

The trip has been a resounding success, and the team is very grateful to GNHS for their contribution. The students really enjoyed their time in Kenya, and the experience they have gained will serve them well in their future endeavours. The analytical work has been completed and the results are currently being interpreted, written up and used to support on-going grant applications. The experience that the author has gained from this trip has already been put to good use as it has formed the basis for two successfully awarded scoping study grants (£40k EPSRC ISF, £7.5k ESRC IAA) associated with building evidence for major Global Challenge Research Fund (GCRF) proposals.

Caroline Crawford gets the celebrity treatment as she explains the science behind the Lake Bogoria Hot Springs.

Glasgow University Remote Scotland Expedition **Alison Tait**

This document details the success of the 2016 Remote Scotland Expedition and its projects, the results of which are still being analysed.

Island Gigantism of Small Mammals on Islay

This project investigated the presence of the phenomenon 'island gigantism' in the small mammal populations of Islay.

Over the 5 weeks that this project ran there were 42 trapping attempts in deciduous woodland at two sites on the island; Loch Skerrols (GRID) and Druim Dubh (GRID). There were also 5 attempts in a third woodland, Cairnmore, but this woodland did not prove to be viable and was abandoned. In a trapping session, 50 Sherman traps and 16 Ugglan multi-capture traps were used. While the Sherman traps were very successful, the Ugglan traps proved utterly unproductive and were discontinued in the fourth week to avoid any accidental shrew captures. Out of 50 captures there was only two species caught: the Wood Mouse, *Apodemus sylvaticus*, and the Field Vole, *Microtus agrestis*.

Measurements taken included weight, age, sexual state, hind foot length, body condition and sex with the weight and hind foot data being considered especially relevant to determining island gigantism. 'The Mammal Society' details the mainland wood mouse as having a weight ranging from 13 g to 27 g and the weight of the mainland field vole ranging from 20 g to 40 g. From 46 captures of adult wood mice, the weight ranged from 24.5 g to 42.5 g, averaging at 30.88 g. This clearly shows the mice to be much heavier on the island, with the average weight higher than the upper limit of mainland mice. There was also one capture of a juvenile wood mouse at 13 g. Three Field voles were captured and all of them measured at 50 g+. The spring balance used had a maximum limit of 50g and so anything above this could not be measured. This limitation was not accounted for as such a weight was not expected. These results also show the field voles to be significantly heavier than their mainland counterparts, however, with only three captures, there is not enough data to truly come to any conclusion.

Traps were checked in the morning and afternoon, allowing mice to be trapped during the day and night. However, out of the 50 captures, none were in the afternoon meaning that no mice were trapped during the day. As these are nocturnal species, this was to be expected but it is an interesting display of the rigidity of their habits.

An Investigation Into habitat Preference of Invertebrate Prey Items of the Chough (*Pyrrhocorax pyrrhocorax*)

This study was carried out in the Ardnave area and The Oa area of Islay. Both of these are known to be popular feeding areas for individuals among the Chough population on the Island. The research was carried out over 5 weeks with 1 day spent at Ardnave and 2 days spent at The Oa per week. Using four 500 m transects, 120 soil core samples were taken from each site per week, which resulted in 1200 core samples being taken in total over the 5 week period for both sites. Moisture levels were also taken at the sample sites as a potential factor that

may influence invertebrate preference. The expected result was that there would be more invertebrate prey items found in the short grazed pasture to correlate positively with the preferred habitat type of Choughs.

Cowpats are a crucial component of the short grazed pasture that proves an attractive source of nutrients for larva and also an easy target for the Chough, especially juveniles. This therefore was another factor that further increased the probability of prey items being discovered in short grazed pasture. Two types of beetle larvae were found; individuals from the Scarabaeidae family and of the genus *Aphodius*. Also individuals from the Scarabaeoidea family from *Geotrupidae* genus were found but in very low numbers. Beetle larvae were almost exclusively found in cowpat samples. All Tipulids were of the species *Tipula paludosa* Mg. They were most frequently discovered in the short grazed pasture rather than the heathland or rush grassland also sampled, as predicted. In addition a severe lack of moisture or an extremely wet sample site proved to have very few invertebrate species. Overall more Tipulids were found at Ardnave which had a higher level of grazing animals and consisted of a more uniform habitat in comparison to the varied land covering areas of The Oa.

The Quality of Islay's Freshwater Rivers near Distilleries Determined by the Freshwater Invertebrate Presence

The overall quality of the freshwater on Islay's rivers has been high, highlighted by the diverse range of freshwater invertebrates found while kick sampling at each of the rivers. The average number of taxa identified at each point in each river was 13 with a low of 11 and a high of 15. Particularly common species such as freshwater shrimps (*Amphipoda crangonyctida*) and biting midges (*Ceratopogonidae* larvae) were found in abundance in each river; however less common invertebrates such as caddisflies (*Trichoptera*) and river limpets (*Acroloxidae*) were also found. The data collected will be analysed to see whether there is a link to the river quality and the distance from a distillery; so far preliminary analysis shows that there is no link and that the distilleries are not having any negative impacts on the river water quality. The Easting, Northing, coordinates, distance from source, mean width, mean depth, altitude, slope, pH and velocity were also recorded to aid in calculating the RICT (River Invertebrate Classification Tool) scores for each river area. Data was collected on average three times a week with data collecting taking around an hour and sorting through the samples taking between 2-4 hours.

An Investigation into Vigilance Behaviour of Common Seals (*Phoca vitulina vitulina*)

Between the 8th of June and 14th of July 2016, a total of 19 observational surveys were carried out into the frequency of vigilance behaviour in common seals. Each survey was conducted for 2 hours, giving a total of 38 hours of data collected for the full investigation. Common seals were observed at their haul-out sites at Bunnahabhain in the north-east of the island and Seal Bay in the south. These observations were conducted from around 100m distance for 2 hours surrounding low tide each day. The GPS coordinates of these sites, along with seal population counts, were recorded. The sampling sites were alternated with each survey to negate any temporal bias. Local human activity was observed, mapped and recorded. These activities included but were not limited to interaction with seals

e.g. photography, footpaths and footfall, relative proximity to seals, local fishing boats/ sea traffic, passing cars and low flying aircraft, pets and farm animals. In addition, potential natural disturbances to the seals were recorded. Examples were grey seals swimming in close proximity to the haulouts and birds nesting and foraging nearby.

Initial comparisons made between the data for human activity and seal vigilance behaviour frequency reveal a positive correlation. Primary analysis has also determined that seal vigilance does not increase with natural disturbances.

Population Monitoring of Bat Species on Islay for the National Bat Monitoring Programme

The aim of this project was to collect bat population data to be used in the National Bat Monitoring Programme (NBMP). The main aim of the NBMP is to produce statistically defensible population trend data for UK species. The bat population on Islay is very under-recorded and further research would be extremely beneficial. Two types of surveying were carried out, in accordance with the NBMP guidelines: roost counts and field surveys. Roost counts were carried out at two different sites, Loch Gruinart RSPB Cottages and at Aoradh Farmhouse. At each site, two roost counts were carried out; one in the first half of June, one in the second half of June. Only one site was used for a field survey due to time constraints: Bridgend Woods. Heterodyne detectors were used to measure bat activity at 12 points on a 1 km transect. 3 bat species were detected during the surveys: Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Daubenton's (*Myotis daubentonii*). The equipment and training necessary for this project was provided by the Bat Conservation Trust and was invaluable for the project's success.

Public Outreach

In conjunction with the five research projects, the team also visited Port Ellen Primary School to carry out some activities with children in the community. The activities were used to show how the projects were used to investigate Islay's wildlife and the importance of ecological research. The school children were very enthusiastic and interested about their local wildlife and enjoyed the activities. The various activities were met with positive feedback from the teaching staff and the team has been invited to go back to the school next year should the expedition run again.

The team also carried out a beach clean at Seal Bay on the south of the island. The small beach is often covered in litter that is brought in by the currents. An afternoon was spent getting rid of the rubbish and the beach was far cleaner afterwards.

Summary

Overall, the Remote Scotland Expedition 2016 was a success. Data collection for all five projects was completed without major alterations and the results are currently being analysed. A completed report will be submitted in February 2017 which will

include detailed reports of all projects, finances and logistics. This will be sent to all funding bodies and associates.

We would like to take this opportunity to thank all our funders for their financial support that enabled us to carry out our research: the University of Glasgow Chancellor's Fund, the Glasgow Natural History Society and the Gordon Fraser Charitable Trust. We would also like to thank the RSPB, the Islay Natural History Trust, the Bat Conservation Trust and Islay Estates for their help with our research.

Book Review **Anthony Payne**

One book has recently been received for review:- *Birds of Europe, North Africa, and the Middle East. A photographic guide* by Frédéric Jiguet and Aurélien Audevard (2017) Princeton University Press. 443pp. Paperback. £24.95

The latest release from Princeton University Press is an English-language translation of "*Tous les oiseaux d'Europe*" published in 2015. It covers all the birds of this large region, including vagrants from all directions. For each bird, the text is short, consisting of a brief physical description, voice and habitats, together with a distribution map. It is aimed at the same useful field guide market as Collins Bird Guide, but its selling point is that it uses photographs rather than paintings. The entry for the Sparrowhawk is shown for illustration. A full review will appear in *The Glasgow Naturalist* at a later date.

Govan Graving Docks

The latest on the graving docks is that the developers have submitted an outline planning proposal which includes an element of marine heritage: www.eveningtimes.co.uk/news/15016751.Flats_plan_for_Govan_s_historic_graving_docks/.
The following is a summary of what the *Evening Times* had to say on 11 January 2017: "The owners of Glasgow's historic graving docks plan to build 750 homes on the site. Developer New City Vision has lodged a formal notice to Glasgow City Council for redevelopment and conservation work at the docks, ahead of submitting a planning application for the site in April."

Changes in GNHS Council and Office-Bearers

At the March 2017 AGM, the following changes were agreed:

Election of Council Members

- There were no nominations for president
- Chris McInerny was elected as vice-president
- Myles O'Reilly was elected as zoology convenor
- Ann Ainsworth was elected as geology convenor
- Bob Gray and Erik Paterson were elected as councillor members
- No nominations for social convenor

Summer Social 2017

This year's summer social will take place on Tuesday 13th June. We will be meeting at Oran Mor at the top of Byres Road, G12 8QX at 6.30 for 7pm. We have booked a lovely private room which overlooks the Kibble Palace. There will be a varied three course menu which looks delicious. For anyone who would like to walk round the Botanic Gardens before the meal please meet at 5pm at the main Botanic Gardens Gate.

The cost is £25 per person. Please complete the form below and return it to Mary Child before May 31st'

……

I/We wish to attend the Summer Social on Tuesday 13th June 2017

NAME/S……..

ADDRESS…….

PHONE NO…….EMAIL ADDRESS…….

Amount enclosed £……Cheques made out to Glasgow Natural History Society)

Please complete this form and send, along with a cheque (£25 per person) to Mary Child.