



GLASGOW NATURAL HISTORY SOCIETY NEWSLETTER

November 2015

David Palmar
(Newsletter Editor)

Next Newsletter Deadline
10 January 2016

GNHS is a Registered Scottish
Charity Web-site:
www.gnhs.org.uk

Winter Programme

Roger Downie

1. Apologies to any members who turned up at 7.30pm on October 13th to hear David Menzies' talk on orchids. Unfortunately, Steve Campbell who was to give the evening's first talk had contacted us that morning to report that he was very unwell. Since most members come to the first talk and stay for the second, with very few only coming for the second, it seemed the better of two bad solutions to move David's talk to 6.30pm and to have Richard Weddle alert members by email. Unfortunately, not everyone checked their messages in time, and some are not on email, and this demonstrates the usefulness of Richard having up to date contact details.
2. New Date: Through oversight, I forgot to schedule this session's AGM! Please note that this will now be on Tuesday 15th March. Steve Campbell is able to give his talk that evening. Details in list below.

GNHS Indoor Meetings - in Boyd Orr Building unless noted

November

Wednesday 18th 5.00pm Graham Kerr Building Lecture Theatre 1

Blodwen Lloyd Binns Lecture: Long term effects of early life conditions; consequences for individuals, populations and conservation biology; Pat Monaghan.

Thursday 26th 7.30pm Bower Building, University of Glasgow

Lecture: Scotland's remarkable mosses and liverworts – an internationally important flora; Gordon Rothero. Jointly with Friends of Glasgow Botanic Gardens.

December

Tuesday 8th, 7 for 7.30pm

Zoology Museum, University of Glasgow: Christmas Social, which takes the form of a buffet dinner – see end of this Newsletter for details and booking form; including Lecture: London Airport, Whitehall and the Palace; David Palmar.

2016

January

Tuesday 12th

6.30pm Lecture: Glasgow's biodiversity: it's second nature; Dave Garner.

7.30pm Lecture: Roaming the seas: using mobile phone GPS tags to gain insights

into the prospecting movements of immature Northern Gannets; Jana Jeglinski.

Thursday 21st

7.30pm Lecture - University of Glasgow Boyd Orr Building lecture theatre D
Current research into emerging tree diseases in Scotland, Dr Sarah Green, Forestry Commission Scotland - Jointly with Glasgow Treelovers.

February

Tuesday 9th

7.15pm Photographic Night: members digital slide shows – please send offers of slide shows to David Palmar, plus photographic competition results – 65 entries this year, up from last year’s 50.

March

Thursday 3rd

6.00pm Graham Kerr Building Lecture Theatre 1.
Glasgow University Expeditions Report Back. Jointly with GU Exploration Society (most expeditions are supported by the BLB Bequest).

Tuesday 8th

6.30pm Lecture: Farming with wildlife. Andrew Parsons.

Tuesday 15th

6.30pm Goodfellow Lecture: Close-up photography of nature: from phone–camera to microscope lens; Steve Campbell.
7:30pm: AGM

GNHS/BRISC bursaries

Richard Weddle

As in previous years, GNHS and BRISC (Biological Recording in Scotland) are offering bursaries towards attending a training course in natural history field studies skills. The bursaries will be for £200 or 75% of the cost of the course, whichever is lower. This year there will be seven bursaries available; the closing date for applications is 31 January 2015; for full details, and an application form, see www.brisc.org.uk/Bursaries.php - this currently shows the 2015 bursary info, but will be updated shortly (the 2015 application form is not valid for 2016).

2016 Subscriptions

Richard Weddle

Subscriptions fall due on 1st January 2016 (except for those who have joined in the past few weeks). A subscription renewal form is enclosed for those who don't pay by Standing Order; email recipients will receive a separate reminder by email. We would be grateful if you could pay your subscription as soon as possible, to save us having to send further reminders. Remember that if you pay by the end of January you may deduct £1.

General Correspondence to the General Secretary: Mary Child

Excursion Report

Walk along River Kelvin, 16th August 2015

Alison Moss

Allan Twigg of FORK led six of us on a very interesting walk along the banks of the River Kelvin from Summerston to Balmore. Allan's local knowledge of the wild life was coupled with fascinating historical detail and his concerns for proposed house building on areas close to the River between Summerston and Balmore. Although much could be classified as 'greenfield', the entire area has a long history of human activity including mining and landfill. Thankfully the River itself is now clean and viable for fishing and other wild life, including otters. 56 species of birds have been noted and a great diversity of plant life. It has its share of riverine aliens, including Himalayan balsam and wasteland species on the disused railway line and also includes colourful meadows. The scent of the creeping thistles (*Cirsium arvense*) was almost overpowering, attracting a pleasing diversity of insects (see Richard Weddle's list below). We all agreed with Allan that to keep a wide band of undeveloped land along the River and the associated damp meadows would be invaluable to plant and animal life alike and consequently a refreshing resource of biodiversity and recreation for people in an area of ever expanding suburbia.

Group	Family	Name	Common Name
amphibian	Ranidae	<i>Rana temporaria</i>	Common Frog
fungus	Taphrinaceae	<i>Taphrina alni</i>	Alder Tongue
insect - beetle	Cantharidae	<i>Rhagonycha fulva</i>	Red Soldier Beetle
insect - beetle	Carabidae	<i>Curtonotus aulicus</i>	a black ground beetle
insect - butterfly	Nymphalidae	<i>Aglais urticae</i>	Small Tortoiseshell
insect - butterfly	Nymphalidae	<i>Maniola jurtina</i>	Meadow Brown
insect - butterfly	Pieridae	<i>Pieris napi</i>	Green-veined White
insect - hymenopteran	Apidae	<i>Apis mellifera</i>	Honey Bee
insect - hymenopteran	Apidae	<i>Bombus lapidarius</i>	Red Tailed Bumble Bee
insect - lacewing	Chrysopidae	Chrysopidae	a green lacewing
insect - moth	Geometridae	<i>Lomaspilis marginata</i>	Clouded Border
insect - moth	Tortricidae	<i>Epinotia nisella</i>	Grey Poplar Bell
insect - true bug	Miridae	Miridae	a Mirid bug
insect - true fly	Calliphoridae	<i>Cynomya mortuorum</i>	a carrion fly
insect - true fly	Pallopteridae	<i>Palloptera modesta</i>	a 'flutter-wing' fly
insect - true fly	Syrphidae	<i>Episyrphus balteatus</i>	Marmalade Hoverfly
insect - true fly	Syrphidae	<i>Eristalis horticola</i>	a hoverfly

Great British Beach Clean-Up - a complete waste of time?

David Palmar

Now that I have got your attention, let me explain!

In February I attended an excellent lecture at the Scottish Wildlife Trust's Glasgow members' group in Hyndland Secondary School. It was called "Making a Difference

for Scottish Seas" and was given by Matt Barnes from the Marine Conservation Society. MCS was formed in 1977, now has 5500 members, and there are now 6 staff in its Scottish office in Edinburgh.

During this lecture, I became more and more depressed (sorry, Matt!). Here, I will just mention but won't go into the issues he outlined of increasing sea temperature, change in plankton and fish numbers and distribution, overfishing, choosing to eat fish from sustainable fish stocks, restrictions on bottom trawling destroying our seabed, and the debate over whether Marine Protected Areas will be sufficient to restore our seas.

I will concentrate instead on marine litter.

I learned in the lecture that plastic is 90% of the litter which is found on beaches. Plastic bottles can last 450 years, plastic bags 75 years, and even degradable plastic bags 18 months. It is of course not only beaches but the open sea which is affected. Ingestion of rubbish is one of the biggest threats to marine wildlife. Plastic bags are often found in dead turtles - they feel full so they stop eating and die.

Tiny plastic beads called nurdles - the raw material for plastic goods manufacture - are made in Scotland at a rate of half a million per second. Cosmetics with exfoliating properties contain microplastics. Microplastics are found concentrated in zooplankton. Shellfish can contain microplastics. I wondered what effect this must eventually have on the human food chain - to what extent are we all eating plastic without knowing it, and what effect is this having or will this have on human health?



I was so shocked at what we are doing to the marine environment that my wife and I joined up as MCS members straight away. Following Roger Downie's article in the August 2015 Glasgow Natural History Society Newsletter, I signed up as a Marine Conservation Society volunteer. In the past decades we had made many trips from Glasgow to Argyllshire for various reasons, and had been

shocked at the state of Arrochar beach, where the south-westerly prevailing wind blows the litter up Loch Long, ending up at Arrochar. In recent years I had not noticed this problem so much, so hadn't done anything about it, and I wondered whether there would be anything to pick up at all! However, despite my fears of having nothing to do all day, I decided to help with the beach cleaning and litter surveying programme on Arrochar Shore on 20th September. This particular event was coordinated by the Rangers from the Loch Lomond and the Trossachs National Park, particularly Helen Kennedy. It was part of a weekend of beach cleaning events

which have just been held all over the country - see the map at <http://www.mcsuk.org/beachwatch/events/map>.

Other (specify)	
Medical	
Inhaler	
Plasters	
Syringes	
Other (specify)	
Sanitary	
Condoms	
Cotton bud sticks	
Nappies	
Tampon applicators / tampons	/
Toilet fresheners	
Towels / panty liners / backing strips	
Wet wipes	
Other (specify)	
Animal faeces Don't touch!	
In bags	
Not in bags	
Paper	
Bags	
Cardboard	
Carton / purepak (e.g. milk)	
Carton / tetrapack (e.g. fruit juice)	
Cigarette packets	
Cigarette stubs	

Other (specify)	clothes peg	1
Other (specify)	plastic balloon	1
Polystyrene		
Buoys		
Fast food containers / cups		
Fish boxes		
Fibreglass		
Foam / sponge / insulation		
Packaging		

After just ten minutes beach cleaning with a dozen or so volunteers, mostly from the Loch Lomond and Trossachs National Park, it rapidly became obvious that even if the beach looked from a distance to be superficially fairly clean, in fact there were millions of tiny bits of plastic

embedded in the seaweed. An idea of what we surveyed during the morning of the beach clean can be seen from the accompanying photo of the tally mark sheet (just a small part of the form which two of us filled out). We rapidly decided we had to let one tally mark represent 5 pieces of litter instead of one, or risk filling up the sheet in half an hour, so each five-bar gate stood for 25 pieces of litter.

So was this beach clean a complete waste of time? After all:

1. We picked up only a small proportion of the litter.
2. Much of the litter was buried under seaweed, or embedded in stones, and we didn't or couldn't remove it.
3. However many beaches have been cleaned this weekend, there are many more which have not been cleaned.
4. A volunteer effort by 12 people made a minimal impact on the actual litter problem. We could have used 100 or 1000 people!
5. After a few days, the beach will probably look much as it did before we cleaned it.



However:

1. The beach must have looked better than it did when we arrived.
2. We surveyed the litter as we picked it up, and contributed to the national statistics which MCS have and publicise to spread awareness of the problem.
3. We have to tackle this problem at source. Reduce, reuse, recycle has to be one of the messages.
4. Legislation is needed to reduce marine pollution - a start has been made by all the UK governments in the carrier bag charge.

Some thoughts:

1. Should the bag charge apply to paper bags when plastic is the real problem?
2. I'm old enough to remember Fine Fare's Treesaver bags - should we again be using paper bags instead of plastic?
3. Should single use plastic bags be banned altogether?
4. Should we be making degradable bags at all? After all they become useless in a few months, and you can't reuse them, and have to throw them away or recycle them.

I don't know the answer to these questions.

If we all recycled just a bit more, polluted the environment a bit less, and some more GNHS members joined the Marine Conservation Society and helped to spread the word, we could contribute to making a difference to our seas.

A final thank you to Matt Barnes, Roger Downie and Helen Kennedy, without whom this article would not have been written.

News from the Necropolis - October 2015

Richard Weddle

The Necropolis is the second-largest greenspace in the centre of Glasgow, and its 37 acres (15ha) include a diversity of habitats including mature semi-natural woodland, sandy slopes, and an ivy-covered quarry-face. Recent developments such as a wildflower area and a 'house-sparrow' plot (plants producing seeds that would be popular with birds) have increased this range and have yielded records of several new species.

In May this year, the RSPB Giving Nature a Home team organised a two-day 'Bioblitz' at the Necropolis for pupils from Hillhead High School taking part in the John Muir Award scheme, assisted by staff from RSPB, Glasgow Museums, Froglife and GNHS (myself!). Among the various conservation activities was bio-recording, focussing particularly on birds, flowering plants, and invertebrates.

Over the two days we had nearly 120 records: 22 birds, of which six had not been recorded there before; 34 flowering plants - seven new; two mammals - both recorded before; six beetles - all new (one of these, *Margarinotus ventralis*, turned up beside Richard Sutcliffe as he was sitting on the grass at lunchtime!); 1 butterfly (Orange-tip) - seen before, but the first record of eggs; two moths - both new; two bumblebees - both seen before; one sawfly - new; one lacewing - new; three true bugs - all new; New Zealand flatworm - seen before; four flies - three new; six slugs/snails - three new.

We could probably have done better for insects had the weather been sunnier and less breezy – on a subsequent visit in better weather I recorded several more insects new to the species list, including a *Sphecodes* solitary bee that is still to be identified to species, and a solitary wasp *Ectemnius cavifrons* still to be confirmed. On another occasion, I was allowed in to one of the larger mausolea and found a small beetle *Gnathoncus rotundatus* which is associated with the nests of pigeons – though here it may have been the numerous pigeon feathers, together with a few dead birds, that accounted for its presence on the ground. I also found several other coleopteran and lepidopteran pupae (vacated), so I plan another visit in the hope of finding others that can be reared and identified.

The updated species list for The Necropolis can be found at www.glasgownaturalhistory.org.uk/bio_sites.html - click on the 'species list' link, and note particularly the species with '2015' in the 'Earliest' column. There is also a great variety of planted trees, which have been surveyed by Bob Gray in recent years; the Friends of Glasgow Necropolis plan to produce a 'Tree Trail' leaflet based on these records in the coming months.

Can you contribute towards a book on ancient woodland? Derek Niemann

You may well know that during the decades after WW2, Britain managed to destroy more than a third of its ancient woodlands. But do you have any direct memories from this period? Did you know a wood that was grubbed up for farming, or cut down and replanted with conifers? Were you a farmer or forester? If the answer to any of these questions is yes, I would love to hear from you.

I'm writing a book on the postwar loss of ancient woodland, explaining how and why it happened, that features contributions from George Peterken, Richard Mabey and many other woodland experts. But I'd also like to hear from naturalists throughout Britain to capture their experiences too. If you, your committee or your members have any recollections, then please do get in touch – by Christmas if possible.

Who is the author?

I'm a writer and editor, doing – among other work – a fortnightly nature diary column for the *Guardian* and features for *BBC Wildlife*. My last wildlife book was called *Birds in a Cage* – the true story of POW birdwatchers. Prior to going freelance, I spent 25 years with the RSPB and before that, I had five working for the Cheshire, Bedfordshire and Huntingdon Wildlife Trusts.

I look forward to hearing from you. You can reach me at derek@niemann.plus.com or ring me on 01767 692603. Best wishes Derek Niemann

Reports from recipients of BLB Funding

Abstract from Lynsey Harper

Evaluation of eDNA as a rapid biodiversity monitoring tool for great crested newt (*Triturus cristatus*): a Scottish case study

Environmental DNA (eDNA) is DNA extracted from environmental samples and amplified using Polymerase Chain Reaction (PCR). It presents a non-invasive, low cost alternative to traditional monitoring for great crested newt (*Triturus cristatus*)

and has been implemented in the UK and Europe. eDNA analysis was compared with torchlight survey for monitoring species presence of *T. cristatus* in 24 ponds at Gartcosh Nature Reserve in North Lanarkshire, Scotland. Primer sets designed for PCR and quantitative PCR (qPCR) were compared for amplification of *T. cristatus* DNA extracted from water samples using PCR. Torchlight survey recorded breeding adult counts, which were compared to data from 2006 – 2013 to assess current population status. Population viability and extinction risk were then investigated with a Population Viability Analysis (PVA). Torchlight survey was highly effective (83.7% - 100%) for detection of *T. cristatus* but results from eDNA analysis were affected by contamination. The qPCR primers appeared to amplify *T. cristatus* eDNA but results could not be verified by sequencing, whereas the PCR primers did not amplify eDNA.

The Gartcosh population has increased since 2006 but the PVA indicated high extinction risk without continued conservation. This study was unable to recommend the eDNA method for future monitoring of *T. cristatus* but logistical advantages of the method were confirmed. eDNA analysis should not be used alone in Scotland until results are supported by sequencing of amplified products and the possibility of false negatives/positives is removed. Furthermore, traditional methods are still required for estimation of population size and identification of different life stages of *T. cristatus*. Resolution of the issues described in this article will improve reliability of the eDNA method and enhance monitoring for *T. cristatus* in Scotland.

Limpopo Leopard Conservation

Morgan Welsh

After receiving the kind donation of £200 from the Glasgow Natural History Society, I used the money, along with other donations, to become a volunteer research assistant at the Kruger National Park, alongside the beautiful Oliphants River in South Africa, during July and August of 2015. Whilst there, I took part in various tasks including game transects, camera trap work, habitat assessments and bird point counts, which all contributed to the leopard conservation work that was being carried out in Limpopo.

I arrived in South Africa and met the rest of the team which included eight other volunteers like myself and three safari guides who we would be living and working closely with for the two weeks.

Our daily routine consisted of getting up at five forty-five in the morning, to the sound of hippo calls, and heading into the bush to conduct game transects. We drove for 10 km where we identified, counted and recorded all mammal species and their location such as impala, water buck, kudu, giraffe and elephant. The information recorded gave us a census of all the different species of animal living in one area.

Camera trap work was another main job we had to do. I helped to set up camera traps in specific locations we were most likely to spot leopards, for example, near a game trail or water source. The images were then downloaded onto the Panthera database; the wild cat conservation group, where we had to identify and record what animal had been captured in each image.

Panthera are trying to work out if the hunting quota on leopards is too high. Hunting quota is when hunters are only being permitted to hunt a specific number of a species. In Limpopo it is only thirty-five leopards per year. Panthera want to know if thirty-five is a healthy number, and if it is, indeed, only males being hunted.

Habitat assessments were long and difficult. We sectioned off areas of land, occasionally having to climb through trees, and identified, counted and recorded tree species which were growing in each area. Tree height, width and number of branches were recorded along with the abundance of grass and any damage by fire or elephants. Recording elephant damage was important, as it gave us an indication of how many elephants were in one habitat, and whether there was too high a population of elephants for that particular area.

Another morning job was bird point counts. We headed out to five specific locations near a water source and identified, counted and recorded all bird species and their location for ten minutes at a time. This gave us an indication of how healthy a habitat was, for example, the abundance of different bird species showed that there was a healthy population of insects and small mammals, which showed there was a healthy population of plant species.

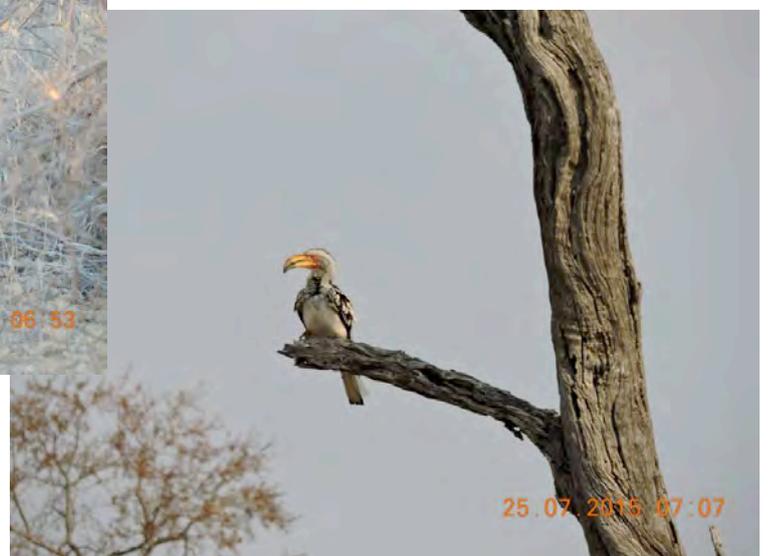
Each day we had a lecture on conservation and biodiversity. Our first lecture was on snakes, spiders and scorpions of South Africa. It was disrupted by a herd of elephant grazing on the bank on our side of the river.

I couldn't believe how beautiful the national park was. The front of camp looked out onto the river, which glistened in the sunlight. The hippos were forever at the river, and we would hear them from time to time. Crocodiles would also make an appearance to bask in the sun, along with a baboon troop on the other side of the river, and an abundance of other animals.

One highlight of the expedition was seeing a leopard. He was sitting on the side of the road one morning as we headed out to conduct a bird point count. It was incredible. We were so lucky to see a leopard as they are so elusive.

Words really cannot describe what an amazing, life changing time I had when I was on this expedition. It was honestly the most incredible two weeks of my life. Not only did I contribute to the leopard conservation work, but I learned so much and made great friends along the way.

Thank you to the Glasgow Natural History Society for helping me make a difference.



The effect of water depth on growth and development in lunged and lungless larval anurans (frogs or toads – Editor) Patrick Walsh

The BLB bequest generously awarded me £600 to investigate the effect of water depth on growth and development in several Trinidadian species during June and July of 2015. I was accompanied by a student who would be continuing the project work into mid-August. The project was very successful, with all four of the intended species (two lunged: *E. pustulosus* and *L. fuscus*; two lungless: *R. marina* and *R. beebei*) being found at an acceptable stage to be included in the study (i.e. at the start of the free swimming stage). Given limitations on space and equipment, we were not able to run all the species simultaneously. This meant that we were only able to get a complete set of data (i.e. to metamorphosis) for *R. marina*, *B. beebei* and *L. fuscus*. Data on *E. pustulosus* was collected to stages prior to metamorphosis, which should allow some of the intended comparisons.

While in Trinidad, I was also able to assist in the development and supervision of several of the other student projects, specifically boldness in relation to throat colouration in the Trinidad stream frog *M. trinitatis* and the competitive interactions of *L. fuscus* and *E. pustulosus* in small water bodies. After completion of the analysis of data, the work will be prepared for publication.

Conclusion: The work went as well as could be expected and I was actually able to do more than I intended (since one of the more difficult species was found easily). It was also hugely valuable to have travelled out with a group of students, since more detailed observations could be made than if I was travelling on my own.

Amphibian research in Trinidad and Tobago Roger Downie

The BLB bequest generously awarded me £700 to work on several projects in T&T during June-July 2015. The visit was successful but did not always go to plan! The dry season had been particularly severe and, although there had been a few showers before I got there on 9th June, there was no standing water, ditches were dry and streams normally flowing at that time of year were merely a few isolated puddles. Fortunately, some wet days followed soon after I arrived and over the next four weeks I was able to make good progress, but not on all of the planned work: as follows:

1. Paradoxical frog escape responses: we heard these frogs calling near the end of the trip, but saw no tadpoles, so this work will need done another time...
2. Pollution and agrichemicals; the colleague planning to pilot this project with my assistance was unable to come after all, so, another project for the future...
3. Tadpole-mosquito interactions; the student intending to work on this had already set out water basins in a range of likely sites by the time I arrived, but no mosquitoes had laid in them, nor had done so a week or so after I arrived (and, because of the severity of the dry season, mosquito numbers were generally low). We decided to abandon this project, since the student's time was limited, and to switch to something different. This was a project on competitive interactions between two species of tadpoles often found together in temporary pools, and he has been able to complete it successfully. Results to be analysed over the autumn.

4. Behaviour of newly metamorphosed tree frogs: this project depended on finding well developed tadpoles as early as possible. Again, because of the severity of the dry season, there were no tadpoles around, and we only began to see some species towards the end of my visit. This meant a need to switch this project too. The student worked instead on the behaviour of the Trinidad stream frog, especially territoriality and boldness in relation to variation in throat colour (the females have bright yellow throats that they use in social signalling); again, the results will be analysed over the autumn.
5. Glass frog hatchling behaviour: the dry season in Tobago was even more severe than in Trinidad, and we saw no glass frog adults in the first few weeks. However, the habitat (forest streams in north-east Tobago) looked in good condition and when the rains came in early July, glass frogs appeared and were soon breeding; the student was able to locate egg clutches and later study hatchling behaviour.
6. Tadpole surfacing and respiration: soon after arrival, I was able to locate toad spawn of two species and two kinds of frog spawn for this project, carried out by Katie O'Neill and Patrick Walsh, so that when Patrick (separately funded by the BLB bequest) arrived, he could concentrate on ensuring that the project progressed smoothly.
7. In addition, a) I collected and developed several tadpole species for a comparative study on the relationship of development to growth: data to be analysed this winter;
 b) I investigated a major site, new to our expeditions, at Aripo Savannah, as a contribution to work on frog distribution in Trinidad, which will feed into a new book;
 c) I assisted/advised on projects on tree-frog basking behaviour and litter frog populations.

Conclusion: Although the work done did not go fully as planned, many useful observations were made, showing yet again that it is necessary to take a flexible approach to project planning in T and T, and how valuable it is to have a group of students who can supplement the observations made by a sole worker and over an extended period.

Discovery and Thanks

Anne Orchardson

Early in 2010 I discovered moths and moth recording. The passion that has developed since is in no small measure due to the loan of a Skinner Trap from Glasgow Natural History Society. The most marvellous aspect of this world was that I could discover it in my own garden, a very normal suburban garden in Newton Mearns. Following an excursion to Mugdock Country Park with John Knowler I was hooked! Support from Neil Gregory, my local County Moth Recorder, Richard Weddle, GNHS, as well as from a Yahoo online group where experts throughout Scotland pool their knowledge and pass on advice to each other and to novices like me, have all helped to build my confidence and inspire me. This initial support has led me to buy my own trap which I continue to run regularly.

I quickly learned some key points: for example, best not to trap two consecutive nights in the same place to avoid catching the same moths; care needs to be taken when releasing the moths to prevent them becoming a ready meal for local birds;

some species are spectacularly easy to identify while others are only distinguishable by examination of their genitalia (a procedure I have not yet attempted!).



There is an indescribable anticipation every morning approaching the trap. Often moths will have settled in surrounding vegetation, on nearby walls or on the ground. Once inspection of the outside of the box has taken place, there is the excitement of opening it and lifting each egg box. My most breath-taking moment must have been the first time I turned over a box to find a

Poplar Hawk Moth beneath! It is huge!

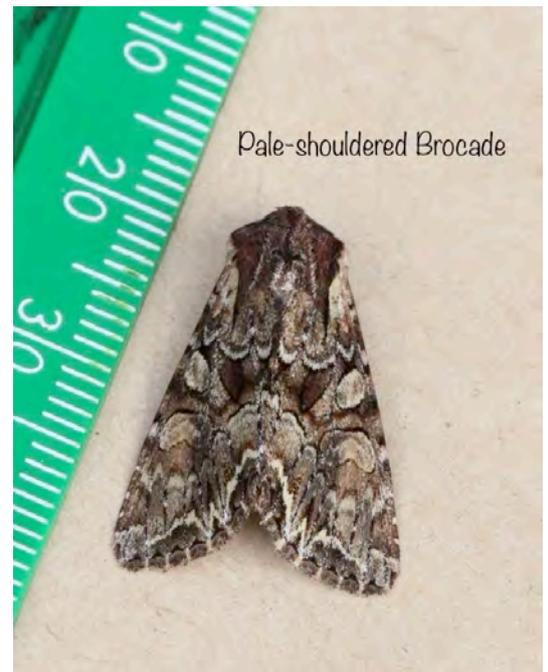
There is of course disappointment when few or no moths are present. But any morning might produce something new. The wide variety and beauty of species is a continually eternally wondrous aspect.

Of course the benefits of moth recording are significant not just to the recorder. National data is a vital tool in the observation and measurement of changes in vegetation, habitat and climate. The presence, migration, movement and numbers of moth species are indicative of changes within other populations. The more information that is available,

the more is contributed to our knowledge of biodiversity.



I have continued trapping in Crieff since I moved here (a garden on the edge of the town) and to date have already had 165 species with another new one added this morning. I am no less excited every time I set the trap! I'm beginning to learn about life cycles, food plants, migrations etc. as well as identification. There is much to discover! So many thanks to GNHS for getting me started on this road!



GNHS welcomes contributions to the Newsletter from members, without which the Newsletter would be a poor production! It would be of enormous help in getting the newsletter out in time if you could please send them either as plain text or in a Word file as Verdana 12 points, which saves them being reformatted by the Editor. Scientific names should be italicised if you have time.

Please send photos separately from the text as jpg files, and indicate where you would like them inserted into the text. The more photos, the better the Newsletter!

Thank you - David Palmar, Newsletter Editor

Christmas Social – 7 for 7.30pm, Tuesday 8th December 2015 Janet Palmar

This year Council has again decided to hold the Christmas Social in the Museum in the Graham Kerr Building, with the talk afterwards in lecture theatre 2. Following its popularity of the last two years, we are again trying a “bring a dish” formula.

Everyone brings enough savoury or sweet food for at least two servings (for example, couples can bring four servings of one dish.) The food is laid out, and everyone can have a taste of any dishes they choose. Please again bring your own knife, fork and spoon which will make setting up the tables and clearing away much easier. No good at cooking, or run out of time with all the arrangements for Christmas? – no problem, just buy cakes or cold meat!

As the kitchen facilities are limited, it would be best to choose dishes which can be served cold. Although there will be no charge for the evening, it is essential to let me know if you intend to come, so that we can set out the right number of tables and chairs. It would also be most helpful if you can let me know what type of dish you intend to bring, e.g. savoury, salad or sweet.

Please fill in the form below and return it to me at the November 18th meeting.

GNHS Christmas Social – 7.00 for 7.30pm, Tue 8th Dec 2015
Bookable as soon as possible please by sending the form below to Janet Palmar

Name(s) (please print)

Address.....

Email address Phone no.....

I/we intend to bring (describe type of food - savoury, salad or sweet) and my/our own knife/knives, fork(s) and spoon(s).

.....forpeople