Scottish Charity No. SC024418

BRISC
BIOLOGICAL RECORDING IN SCOTLAND

Issue No 90 July 2013
ISSN 0966-1964

Recorder News

The Wonders of Whitlaw Mosses - Carol Jones p.1
An Update on the Status of the *Hirudo Medicinalis* L. Medicinal Leech - P.Kirkland & P. Maitland p.5
BRISC Project Updates
- **Bursaries**: p.7
  - Mosses and Liverworts at Kindrogan - Julie Smith
  - Introduction to Solitary Bees at Preston Montford - Niell Currie
- **SBIF: An Update** - Christine Johnston p.9

LRC Page: reports from NESBReC; Outer Hebrides & Fife Nature p.10
IT Page – Websites of Amateur Entomologists Society and Scotland BSBI p.11
NBN Page p.12
More Items of interest:
- **A Bumblebee app from Nature Guides** p.13
- **GNHS Conference on Natives, Aliens and Reintroductions –** Report from Richard Weddle p.13
- **The Great Moss: the story of Lochar Moss, Dumfries-shire-** Peter Norman p.13

BOOK REVIEWS p.14
- Ball & Morris(2013). *Britain's Hoverflies (*Simon Hayhow)
- Love, J (2009) *A Natural History of St Kilda* (Chris Smout)
- Dawson, A. (2009) *So foul and fair a Day: a History of Scotland's weather and climate* (Jonathan Willet)

Some Future Events p.16
Chairman's Column – Jonathan Willet p.2
Editorial - Anne-Marie Smout p.2
BRISC Contact Details p.2
Copy Deadline for Next Issue p.16

THE WONDERS OF WHITLAW MOSSES

By Carol Jones

Whitlaw Mosses National Nature Reserve (NNR) is situated in the central Scottish Borders near Selkirk and consists of four small discrete basin fens – Murder Moss, Blackpool Moss, Beanrig Moss and Nether Whitlaw Moss that lie within an area of approximately 2km^2. They are surround by semi-improved pastures. The site is designated as a Site of Special Scientific Interest (SSSI) for its range of basin fens, vascular plant assemblage, a variety of invertebrates and the quaternary geology of Beanrig Moss. It is also designated as a Special Area of Conservation (SAC) for its range of basin fens.

The basin fens of the Scottish Borders formed due to the geology and landform that has developed over millions of years. Following cycles of mountain building and erosion that formed the Southern Uplands, the most obvious effects on the current landscape are from the last glacial period, which ended about 10,000 years ago. During this period ice sheets ground over the vertically folded rocks, which due to their varying hardness were eroded away at different rates. This formed a distinctive landscape of closely spaced ridges and hollows that mainly run in a south-west to north-east direction. The remains of these corrugated hills now form a distinctive feature of the Central Borders and have allowed the development of over two hundred small basin and valley fens, of which the four Whitlaw Mosses form a part.

(above) Murder Moss – (below) Blackpool Moss

The Scottish Borders has had a long history of occupation by man and the area surrounding Whitlaw Mosses was no different. They would have been used for various resources such as grazing, cutting of reeds, hay, wood, and the use of the shallow peats from the margins. **Continued p.3**

Chairman's Column June 2013.

Well, all the wonderful sunshine of early June seems to have been used up and it has been cloudy up in the Highlands most of this week. Perhaps this and the "Supermoon" (the moon appearing 13.5% bigger due to it being at the closest point to the earth in its annual orbit) have been causing the general lethargy that I have heard many people complain of. There has been no lethargy with nature though, now that the temperature has finally warmed up and the sun has been out everything is growing and blooming with gusto.

When down in Poole at the end of April for the NFBR conference, I was amazed by just how far back the South of England was in terms of Spring. For the first time in a Spring visit to the south of England their Spring was at exactly the same stage as the Highlands! Primroses were blooming and not much else and the trees had not burst their buds, amazing. The conference was very interesting and the venue, the RNLI HQ, was something else. The theme of the conference was Biological Recording from a Local Perspective, so the attendees were being encouraged to use iRecord to collect records local to the venue. I did some birding from my bedroom window and used iRecord for the first time. It is pretty snazzy I have to say, and it is great if you have a smartphone or tablet (this isn't the type you can eat).

Further into the May there was a long wait for the Bluebells to appear. I was out with a group at the end of May in glorious sunshine along a coastal walk to Tarbat Ness in Easter Ross. Loads of whitethroats were singing away and both Bluebells and Primroses were in full bloom together, a strange sight at this time of year. There were even some Green-veined Whites on the wing as it was a gloriously sunny day.

Into June I was again guiding a group and this time on Orkney and then Shetland. We went to Yesnaby on Mainland Orkney and found lots of Scottish Primrose, what a great flower. There were drifts of Spring Squill and Thrift all over the coastal grasslands of the island. We visited Marwick Head; this was a site where in the early days of my guiding career in the mid-1990s you would see tens of thousands of seabirds. On our visit there was maybe a twentieth of that. It is sobering to see that and remember what it used to be like. That said it has been a bad year and there were lots of birds on the water but seemingly just not in breeding condition, but overall there seems to be a downward trend with our seabirds. But taking a more historical perspective many species peak populations were in the mid-1980s and they had been low around 1900.

Up in Shetland I experienced something amazing… I was warm! The first day I was in shirt sleeves at Sumburgh Head with hardly a breath of wind and it was 16 degrees C! Lots of seabirds about but not so many on the cliffs but there were excellent views of Puffins. At the Island of Noss the gannetry there was as awesome as ever. The highlight of the trip was Mousa and its Storm Petrels, or *ala-mooties* in Shetlandic. The noise they make, their numbers and the bat-like flight in the twilight is just something to behold a true wonder of the natural world.

But let us not be too vertebrate-centric. On the last evening I took a wander in the garden of the hotel we were staying in. Busta House is the longest continuously inhabited house in Shetland, since 1580. It has some big (for Shetland) Sycamores and a Wych Elm. On a Sycamore stump I saw a bracket fungus, a biggie 25cm across. It was Dryad's Saddle. I checked the NBN and no record so I put the record in iRecord and contacted my go to fungi guy Dave Genney of SNH. The next week I was informed that it was a first record for Shetland! They have been recorded on Hoy in Orkney but that was as far as they went north until now. It is amazing to think of all the spores floating around in the air waiting to land on the right substrate. There is not a lot of suitable deadwood in Shetland so this fungus has a lucky spore.

The final Spring highlight was seen from the plane back to Inverness, passing over Morrich Mor near Tain, I spied what looked like an amazing bloom of heather on the saltmarsh. My exhausted brain took a while to register that a) Ling wasn't in bloom just now and b) it was Thrift. There were acres of pink, an absolutely superb sight.

I am using too many words, I will get in trouble with the Editor! See you at the BRISC Conference and AGM in the Autumn.

Jonathan Willet.

Editorial

Back in early June we took our campervan on a Calmac's hop-scotch tour of the Outer Hebrides, leaving from Ullapool. We were extremely lucky with the weather, which up till then had not been at all promising, but the sun shone upon us quite a lot of the time, which was as wonderful as it was unexpected, and we had a brilliant time. True, the machair was not yet in flower, and there was a general shortage of insect life, but the birds were very good and we heard Corncrakes from several of the campsites we stayed at. On the way across from Ullapool we had picked up a copy of the free *Island News and Advertiser* (INA) and were amazed and delighted to find a whole eight page supplement given over to the flora and fauna of the Hebrides. This was the first issue of regular monthly 'Wildlife in Scotland' supplements this summer, produced with the support of Scottish Natural Heritage to celebrate the Year of Natural Scotland 2013. The Outer Isles are definitely gearing up to making the most of their very special wildlife (read also about the new Recording Centre OHBR on p.10). The supplement recommended particular walks you could follow listing the wildlife to look out for. These were not just birds, but also Otters, particular flowers, bumblebees and day-flying moths. The insect of the month (May) was the Hoverfly *Eristalis intricarius*, featured with photographs of the insect and description of where and how it lives. INA's first annual Bioblitz was advertised to take place on South Uist 27-28 July; there were articles on bird spring migration and much more. The museum Taigh Chearsabhagh in North Uist has an exhibition called 'The Fragility of Flight', this being part of an ongoing project since the severe storm damage in 2005 affecting the habitat of many local species. The exhibition (which finished on 27 July) includes work by local as well as foreign artists, including some from as far away as Japan. Well done INA and SNH!

It has long been one of my dreams to visit St Kilda, so here was the chance. Chris had in advance booked us on a daytrip by motor boat from Leverburgh, and we were naturally very anxious about the weather. The day dawned dry but in thick fog. Chris had once before briefly landed on Hirta, the main island, but in thick fog, so it seemed history was to repeat itself. Fortunately the fog lifted about half way during the three hour trip to the archipelago. What a place! so incredibly remote and dramatic. Hirta is reasonably fertile but the flat bits are not very extensive and most of the island is steep hillside or sheer cliff. However, that is nothing compared to Boreray and the stacks a few miles away. Here the St Kildans harvested essential items for their survival, such as eggs, young birds, feathers, lamp oil (from Fulmars) and so on. We were taken close to these immense, sheet-sided stacks, with countless birds nesting on shallow ledges, so how any person could ever have collect eggs etc, let alone landing there, is unimaginable.

The natural history of St Kilda has been brilliantly researched and described by John Love in his book on St Kilda, a copy of which we bought in the National Trust of Scotland shop out there. It was published in 2009 but never seems to have been much advertised at the time, and it was certainly never reviewed in this journal, so now is the time to put this right. Another book reviewed in this issue, which was missed at the time of publication, is Prof. Alastair Dawson's 'So fair and foul a day' on the history of Scottish climate and weather. Members will remember Prof. Dawson's brilliant talk at the last annual conference in Dumfries.

AMS

BRISC Contacts:
Chairman – Jonathan Willet, 7 Muirden Road, Maryburgh, IV7 8EJ
Email chairman@brisc.org.uk
Secretary – Louisa Maddison, South Lanarkshire Council, Calderglen Country Park, East Kilbride, G75 0QZ, Email - briscsecretary@live.co.uk
Treasurer / Membership Secretary –
Duncan Davidson, 140 Pitcorthie Drive, Dunfermline KY11 8BJ
Email Duncan@dwwd.freeserve.co.uk
Editor - Anne-Marie Smout, Upper flat Chesterhill, Shore Road, Anstruther, KY10 3DZ Tel. 01333 310330 Email anne-marie@smout.org
Website Manager - Andy Wakelin, 32 Tailyour Cresc., Montrose, Angus DD10 9BL Email webmaster@brisc.org.uk

Continued from p.1

From the 18th century there is evidence of the more energetic use of the peat and marl present, with maps from the mid-1700s showing drains from Long Moss (now Lindean Reservoir) and Murder Moss. In places the tradition would have been to strip of the surface turfs and set them aside, before cutting the peat and then replacing the turfs. It is possible that this practice is responsible for the retention of the present vegetation communities.

(above) Beanrigg Moss – (below) Nether Whitelaw Moss

Marl, (a low grade lime rich clay) was formed in the warm waters of these hollows by bio-chemical processes shortly after the last glacial period, and was dug out and used on fields as a soil improver. Within the Border mires there were large deposits of marl and some fens were drained and stripped for this resource. The fens at Whitlaw were not totally drained, either due to the overlying peat or because the marl deposits were just too difficult to get out.

The exploitation of Whitlaw Mosses continued at various levels through history, and would also have included grazing and hay making when the conditions allowed, and the steeping of Flax in "retting pools". The result of this activity has left partially drained and dug over basins, containing a variety of substrates, such as marl, peat, muds and clays, at varying depths. Once the fens had been abandoned (it is unlikely that much active farming would have occurred after the mid-1900s) they re-flooded and re-vegetated. As each has its own hydro-chemical regime, basin shape and history of land use, each has taken a very different route of development, to form the characteristic vegetation communities found in them today.

Each moss has its own unique suite of species that characterise the combinations of sedge fen, open water, moss lawns, reed swamp, lime rich short sedge flushes, fringing tall herb meadow and wet woodland of Willow and Birch. Murder, Blackpool, and Beanrig Mosses have vegetation rich in sedges and brown mosses, which depend on a high lime content and is known as "rich fen". While Nether Whitlaw Moss has more acidic water, and has a different mix of sedges and extensive lawns of bog mosses, known as "poor fen". They support a diverse range of fen communities, but are particularly important as an outpost of the rich fen sites known from Anglesey and East Anglia, but with a northern element in their flora, particularly with the presence of Coral root Orchid (*Corallhoriza trifida*), Alpine Rush (*Juncus alpinus*), Holy Grass (*Hierochloe odorata*) and Narrow Small Reed (*Calamagrostis stricta*). They also lack species characteristic of these rich fens further south, particularly Black Bog-Rush and Great Fen Sedge making this combination of sites unique.

Murder Moss is a small spring-fed basin fen occupying a complex basin with communities that range from open water and floating mats of vegetation to rich sedge fens and areas of reed swamp, sometimes occurring in an interment mix. Also there are several low islands that may have developed from waste thrown up when the fen was mined for peat and marl or maybe of harder rock left behind by the glacial movement.

The sedge fen is rich in feathery brown mosses, horsetails and tall sedges, with Lesser Tussock Sedge (*Carex diandra*) and Slender Sedge (*C. lasiocarpa*) dominating, rather than the more usual Bottle Sedge *(C. rostrata*). In places springs rise to the surface to form open areas of water known as "well eyes", where the continual movement of the water prevents the encroachment of the surrounding floating mats of Bog Bean (*Menyanthes trifoliata*) and Marsh Cinquefoil (*Potentilla palustris*). These mats of floating vegetation then spread out across open water, forming fascinating but dangerous bouncing habitats.

The remains of the Flax retting pools can be identified on aerial photographs taken in the 1960s, now most of these pools have filled in with sedges and floating carpets of Bog Bean and Marsh Cinquefoil, but a number of new pools have been dug in the north-west of the moss and have become the favourite habitat of Greater Bladderwort (*Utricularia vulgaris*) and a number of the specialised water beetles.

Around the edges of Murder Moss, especially around the western edge there are a number of distinctive calcareous flushes. The most distinctive lie towards the north-west corner, where of a number of them are so alkaline that calcium carbonate deposits out as a crunchy layer of tufa across the moss carpet. These flushes are generally dominated by short sedges such as Carnation *(C. flacca*), Yellow (*C. lepidocarpa*) and Dioecious (*C. dioica*), with patches of Alpine Rush (*Juncus alpinus*), Butterwort *(Pinguicula vulgaris*), Grass of Parnassus (*Parnassia palustris*) and Marsh Lousewort *(Pedicularis palustris*), together with a range of fairly common orchids (including Early Purple, Common Spotted and Northern Marsh).

Along the western inflow stream, where the water deposits a fan of silt, reed swamp dominates almost exclusively and has in places naturally succeed to willow carr. Here the westernmost island has been surrounded the carr and contains tussocks of grasses and knapweed, which on sunny days turns into a sun trap, perfect to spot butterflies and dragonflies when the rest of the moss is too windswept. In all 17 species of butterfly have been recorded on Whitlaw Moss, mainly of the common species, such as Peacock, Small Tortoiseshell and Meadow Browns. However, high numbers of Scots Argus have also been recorded in good years, as well as a few Northern Brown Argus.

The eastern islands are mown at the end of the summer and have a mainly short grassland habitat where in spring the grass is spotted with the many flowers of Mountain Pansy (*Viola lutea*) and Common Dog Violet (*V. riviniana*) and around the edges Adders Tongue fern (*Ophioglossum vulgatum*) can be found. Latter in the season there are lots of Devil's-bit Scabious (*Succisa pratensis*) flowers.

(below) Greater Tussock Sedge – Blackpool Moss

Blackpool Moss contains the largest area of willow carr of the four sites, which has formed as a block across the eastern side of the moss. The carr forms a complex mass as the willow grow until the wet ground cannot support them any longer, when they collapse and regrow from rooted branches. All tend to be festooned with large quantities of grey lichens, producing an almost primeval feel to the area. Underneath there is a diverse ground flora, some of the most obvious are the large pillar-like structures of the Greater Tussock Sedges (*Carex paniculata*), and Marsh Hawk's-beard (*Crepis paludosa*).

Most notable within the willow carr though is the colony of Coral-root Orchid (*Corallhoriza trifida*) that grows from the roots of the willows, particularly in the southern part of the carr and in areas of carr along the western board walk. The Coral-root Orchid occurs on all three of the southern mosses (Murder, Blackpool and Beanrig), being easiest to find here and on Beanrig Moss. The numbers found vary dramatically from year to year with a maximum of over 2000 spikes found in 1984, down to less than 10 in 1987. Unfortunately since 1984, the high numbers over 2000 have not been recorded again, but the reasons for this fluctuation remain unknown.

On the west side of Blackpool Moss are relatively poor areas of Meadowsweet (*Filipendula ulmaria*) but come mid summer they produce a wonderful smelling carpet of cream flowers. There are also areas of rich fen with feathery brown mosses, horsetails and tall sedges, again Lesser Tussock and Slender Sedges dominate over Bottle Sedge. Along the silt fan deposited by the inflow of water in the north of the moss is another area of dense reed swamp, which is managed with both mowing and weed wiping, especially along the north-eastern edge where there is a colony of Narrow Small Reed (*Calamagrostis stricta*), a nationally scarce species with a northern distribution and often mistaken for other grass species.

The other notable species of Blackpool Moss is Holy Grass (*Hierochloe odorata*) originally identified on the site in 1961. Then mapped as two small discrete populations, during the 1980s due to changes and spread of the reed it was thought that these populations where lost. When the moss was surveyed again in 2003 for Holy Grass a major colony of this species had developed along the eastern side of the moss, grading both into the willow carr and out into the surrounding grasslands.

Between Blackpool Moss and Beanrig Moss 9but not part of the NNR) is Whitlaw Rig SSSI, an area of 18th century rig and furrow cultivation forming a distinctive area of corrugated landscape. The lack of agricultural improvement here not only protects the fens, but has allowed the development of a variety of neutral and slightly basic grasslands with a number flushed areas, containing over 150 species of flowering plants, including Moonwort (*Botrychium lunaria*), Adders Tongue fern and Greater Burnet (*Sanguisorba officinalis*), species of local importance.

(right) Coral-root Orchid - Beanrig Moss

Beanrig Moss is the smallest of the four mosses and contains the scare *Sphagnum*-rich variant of the rich tall sedge fen community, best seen on the west side of the moss. Here cushions of the reddish Warnstorf's Bog Moss (*Spagnum warnstorfii*) and the pale green Compact Bog Moss (*S. contortum*) rise above the base-rich water that flush across the surface. The more acid environment of the hummocks has allowed species such as Heather *(Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Round-leaved Sundew (*Drosera rotundifolia*), Cranberry (*Vaccinium oxycoccus)* and Round-leaved Winter-green (*Pyrola rotundifolia*) to develop. Beanrig Moss is also contains an extensive patch of the nationally scarce Woolly Feather Moss *(Homalothecium nitens*), showing the health of this rich fen habitat.

The most northerly moss of the quartet is Nether Whitlaw Moss and is distinct with its more acidic nature, containing large areas of floating raft vegetation, and poor sedge fen. It should be noted that the surface of Nether Whitlaw Moss is very treacherous! Although access is therefore discouraged; views can be got across the site from the field along the northern edge. The variations between the communities here are sharp and hard, with sudden boundaries between areas of floating rafts of Bog Bean and Marsh Cinquefoil and areas dominated by sedges. The centre of this moss is a poor-fen type with an extensive area of Bottle Sedge with a luxuriant carpet of *Sphagnum* species, especially Spiky Bog-moss (*S. squarrosum*) underneath. With the deep areas of swamp is a healthy population of the nationally scarce lowland perennial herb, Cowbane (*Cicuta virosa*), which during late summer produces distinctive white heads. Drier areas are then scattered with the development of Willow and Birch.

Originally recognised for its biological importance by a local school boy (now an eminent biological recorder), the flora and bryophytes of Whitlaw Mosses are the best recorded with around 170 vascular plants, 75 bryophyte species, around 40 fungi and 18 lichen species recorded. Over 450 species of invertebrate – spiders, water beetles, bugs, moths, flies, butterflies, dragonflies and damselflies have been recorded, of which 17 are Red Data Book and another 42 species are classified as Notable. This makes the mosses an important refuge for invertebrates of the rich fen systems. In total some 760 species have been recorded from the site and it has been a rich source of both British and Scottish new records.

Finally, it cannot be emphasised enough that access to some of these locations is currently extremely hazardous and extreme care should be taken by any visitors.

Carol Jones is SNH Area Officer for Whitlaw Mosses

AN UPDATE ON THE STATUS OF THE *HIRUDO MEDICINALIS* L. MEDICINAL LEECH

By Paul Kirkland & Peter Maitland

In a recent issue of *Recorder News* Dr Peter Maitland reported the results of surveys for *Hirudo medicinalis* Medicinal Leech carried out for Scottish Natural Heritage (SNH) during 1995-7, noting that the current status of the leech was unknown (Maitland, 2011). Last year PK was fortunate to be asked by SNH to carry out a repeat survey, the results of which are summarised below.

Background

There are only two known extant localities for *Hirudo medicinalis* in Scotland - making it one of our rarest invertebrates (Maitland, 1997). The aim of the 2012 survey was to carry out surveillance for Article 17 reporting under the EU Habitats and Species Directive, which is required every six years.

H. medicinalis has been recorded from at least nine Scottish localities: Sutherland (1961), Lismore (1968), Islay (1951), Oban (1968), Earn (1910), Muthill (1853), Menteith (1853), Gartincaber (1853), and Fife (1853) (in Maitland, 1996). Intensive surveys in 1995 and 1996 confirmed only two sites (Islay and Oban), and were not successful in locating any 'new' sites (Maitland, 1996, 1997).

Prompted by its inclusion in the UK BAP, surveys also took place in England and Wales in the late 1990s (Ausden *et al*., 2002). In contrast to the Scottish surveys, these located many 'new' sites; prior to 1970, only 31 sites were known, but by 2002, there were 135 sites for *H. medicinalis*.

Despite this, *H. medicinalis* is still very restricted in Britain (and apparently absent from Ireland), occurring primarily within five localities (Ausden *et al*., 2002). For example, surveys of over 270 tarns in Cumbria increased the number of known sites from five to 33, but all lie within six 10km^2 (Marshall, 1999).

Many historic sites remain unconfirmed. Some had only a single previous record and it has been suggested that these may have resulted from the release of leeches used in medicine, the water bodies proving to be unsuitable for *H. medicinalis* in the long term (Ausden *et al*., 2002).

Maitland (1996) suggests that *H. medicinalis* could always have been rare in Scotland. Apart from an isolated unconfirmed locality in Sutherland and the sites near Oban, on Islay and Lismore, the historic records are all from accessible lochs in the Central Belt, and perhaps these did originate from released specimens.

The 2012 survey

The survey was of the two extant sites on Islay and near Oban, plus two lochs on Lismore where *H. medicinalis* had apparently been recorded in 1968.

The survey methods included searching submerged and strandline stones for adults and egg cocoons, and 'splash sampling'. Foraging *H. medicinalis* respond to water disturbance caused by a potential host by swimming towards the source, and this is mimicked by the surveyor.

Results

The good news is that *H. medicinalis* was recorded at both the Oban and Islay sites.

At the Islay site, a total of six *H. medicinalis* were recorded, while just one was found at the loch near Oban. Although disappointing, the low numbers found were similar to those found by Maitland in 1995 and 1996 (table 1).

Table 1 Comparison of results with previous surveys (Maitland 1996, 1997)

Site	Year	Date	Adult *H. medicinalis*
Oban	1995	21 Sept	1
	1996	27 June	0
		31 July	4
		27 Sept	3
	2012	11-12 June	1
Islay	1995	13 Sept	3
	1996	24 June	3
		30 July	3
		25 Sept	0
	2012	14 June	6

Leech size was recorded as the diameter of the posterior sucker (PSD). A comparison of the data from Islay with that from the Cumbrian survey shows similar means and range, albeit with far less data (table 2).

Table 2 Comparison of PSD measurements from Cumbria and Islay.

	Mean	min	max	σ-1	N
Cumbrian data (Marshall, 1999)	6.24	2.70	8.05	1.62	202
Islay 2012	4.9	2.5	8.5	3.5	5

A brief visit to the Islay site in September located one *H. medicinalis* cocoon plus several *Haemopis sanguisuga* Horse Leech cocoons. The *H. medicinalis* cocoon was 22mm x 17mm, while those of *H. sanguisuga* were much smaller, around 14mm x 10mm according well with results obtained by Maitland *et al.* (2000).

A young *H. medicinalis* attached to the underside of a stone. © Paul Kirkland.

H. medicinalis (centre) with two *H. sanguisuga.* © Paul Kirkland.

H. medicinalis fully extended. © Paul Kirkland.

H. medicinalis contracted. © Paul Kirkland.

H. medicinalis showing underside and orange side stripes. © Paul Kirkland.

Cocoons of *H. sanguisuga* (top) and *H. medicinalis.* The small squares are 5mm x 5mm. © Paul Kirkland.

H. sanguisuga Horse Leech

H. medicinalis was recorded in two lochs on Lismore in 1968 but no specimens were retained. Maitland (1996) found *H. sanguisuga* to be very common, but did not find *H. medicinalis*. In 2012 the search for *H. medicinalis* was again unsuccessful, although numerous *H. sanguisuga* adults were found in both lochs. It seems possible that the 1968 records for *H. medicinalis* are erroneous.

H. sanguisuga is superficially similar to *H. medicinalis*, and can be a similar size, but all the specimens encountered were a dark green/yellow, whereas the *H. medicinalis* were orange/brown, especially the underside, with bright orange stripes along their sides. They also had two dark lines with pale orange edging along their dorsal surface.

Although its common name is 'Horse Leech', *H sanguisuga* cannot penetrate the skin of mammals, and it feeds primarily on invertebrates but will scavenge on injured amphibians (Elliott & Mann, 1979).

The importance of amphibians

In south Cumbria, Marshall (1999) states that at some *H. medicinalis* sites amphibians are the only food supply, and that two-thirds of the occupied sites had high amphibian numbers.

Several *H. sanguisuga* under a strandline stone on Lismore. © Paul Kirkland.

As Maitland (2011) notes, searching potential *H. medicinalis* sites at amphibian spawning time could be a useful survey method. Care must be taken however, as *H. medicinalis* could be mistaken for scavenging *H. sanguisuga.*

Future work

More surveys are needed, particularly at amphibian breeding time, to see if indeed *H. medicinalis* is confined to just two sites. The central belt lochs are certainly worth revisiting, and there is

also an intriguing recent unconfirmed report of *H. medicinalis* at a loch in Dumfries & Galloway (Peter Norman, pers. comm).

In carrying out any searches for 'medicinal leeches' it is important to be aware that the European *Hirudo verbana* has been used more often by medical practitioners in Britain than the native *Hirudo medicinalis*, and that thousands of the former species have been imported in the past from Turkey and elsewhere (Trontelj *et al*., 2004). The farmed animals which are used in hospitals in Scotland at present are all *H. verbana* and it is quite possible that this species could find its way into the wild here. Though similar in size and behaviour to *H. medicinalis*, *H. verbena* is a much more brightly coloured leech with red and green stripes dorsally.

Hirudo verbana © Peter Maitland

Hirudo medicinalis must be regarded as significantly threatened in Scotland. Only small numbers have been located in past surveys and the fact that just two sites are involved gives great concern. As with some fish species in Scotland, e.g. Powan *Coregonus lavaretus* and Vendace *Coregonus albula*, the existence of just two populations makes such species very vulnerable to extinction – as actually happened to the Vendace in the 1970s (Maitland & Lyle, 2012). Serious consideration should be given to the creation of additional 'safeguard' populations of *H. medicinalis*, as has been successfully done recently with Powan, Vendace (now restored to Scotland) and Arctic Charr *Salvelinus alpinus* (Maitland 1998a, 1998b; Maitland & Lyle, 2012).

Assuming appropriate guidelines (IUCN, 1987) are followed, translocation of *H. medicinalis* to one or more new sites should be possible, with no harm to parent populations or any new water concerned. The large number of new ponds which have been created in recent years means that there are many suitable sites where new populations could be established with no damage to any natural habitat. In particular, the restoration of this iconic species to one or more of the catchments in central Scotland where *H. medicinalis* was known to occur previously would be a sensible initiative.

Acknowledgements
We would like to thank the landowners, SNH staff, and Heather Marshall.

References

- Ausden, M., Banks, B., Donnison, E., Howe, M., Nixon, A., Phillips, D., Wicks, D. & Wynne, C. 2002. The status, conservation and use of the Medicinal Leech. *British Wildlife*, **13**, 229-238.
- Elliott, M. & Kutschera U. 2011. Medicinal leeches: Historical use, ecology, genetics and conservation. *Freshwater Reviews*, **4** (1), 21-41.
- Elliott, J.A. & Mann, K.H. 1979 A key to the British Freshwater Leeches. *FreshwaterBiological Association.*
- IUCN 1987. *IUCN position statement on translocation of living organisms: introductions, reintroductions and re-stocking.* Gland, IUCN.
- Maitland, P.S. 1996. The recovery of the medicinal leech *Hirudo medicinalis* in Scotland. Phase I . *Unpublished report for Scottish Natural Heritage*.
- Maitland, P.S. 1997. The recovery of the medicinal leech *Hirudo medicinalis* in Scotland. Phase II. *Unpublished report for Scottish Natural Heritage.*
- Maitland, P.S. 1998a. Developing reserve populations of *Hirudo medicinalis* in Scotland. Phase III. *Unpublished report for Scottish Natural Heritage.*
- Maitland, P.S. 1998b. Assessment of possible sites for reserve populations of *Hirudo medicinalis* in Scotland. Phase III. *Unpublished report for Scottish Natural Heritage.*
- Maitland, P.S. 2011. The Medicinal Leech *Hirudo medicinalis* in Scotland. *BRISC Recorder News*, **80**, 1-4.
- Maitland, P.S., Phillips, D.S. & Gaywood, M.J. 2000. Notes on distinguishing the cocoons and the juveniles of *Hirudo medicinalis* and *Haemopis sanguisuga* (Hirudinea). *Journal of Natural History*, **34**, 685-692.
- Maitland, P.S. & Lyle, A.A. 2012. *Ex situ* and *in situ* approaches, including assisted reproduction, for the conservation of native species of charr (Salmonidae) and whitefish (Coregonidae) in Scotland. *International Zoo Yearbook*, in press.
- Marshall, H.P. 1999. Medicinal leech (*Hirudo medicinalis*) survey of Cumbria. *Unpublished report for RSPB / English Nature.*
- Trontelj, P., Marusa, A.E., Sotler, A.E. & Verovnik, R. 2004. Genetic differentiation between two species of medicinal leech, *Hirudo medicinalis* and the neglected *H. verbena*, based on random-amplified polymorphic DNA. *Parasitology Research*, **94**, 118-124.

Paul Kirkland
pkscotchargus@gmail.com
www.kirklandecology.co.uk

Dr Peter Maitland
savingfish@sky.com
Fish Conservation Centre, Haddington

BRISC PROJECT UPDATES

BURSARIES

As readers will be aware, Glasgow Natural History Society and BRISC have this year again awarded a number of bursaries to individuals towards attending taxonomic courses run by the Field Studies Council or similar professional courses. Below are two articles from the first of this year's bursary recipients to complete their courses: ed

Mosses and Liverworts at Kindrogan.

By Julie Smith

Thanks to funding allocated to me from BRISC and GNHS I would like to share a few of my experiences of the recent Mosses and Liverworts course I attended at Kindrogan Field Studies Centre.

The group at Tullochroisk, bottom of Schiehallion

I am currently on a Heritage Lottery Funded Bryophyte Apprenticeship scheme with The Conservation Volunteers called Natural Talent. At such an early stage in my bryophyte career, learning bryophyte identification requires constant refreshers and rebuilding upon species already observed. This is important to get the 'jizz' of a plant and its habitat requirements and to build on the number of species you can positively identify with a hand lens in the field, while also knowing when and how to make efficient use of available keys at the microscope.

Nick Hodgetts teaching us Bryophyte identification on Ben Vrachie

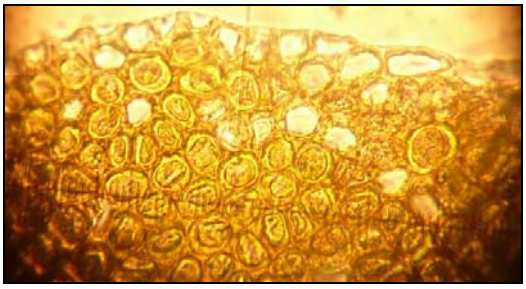
For me, the most important element of attending this course was learning from the expertise of our tutor, Nick Hodgetts. During the course of the week Nick took the group to a variety of habitats, which was a perfect opportunity to put my growing bryophyte knowledge into practice as we **recorded a total of 279 species** and I gained exposure to **50 new species!**

To my delight we recorded 20 *Sphagnum* species in one day, including all of the 'chunky' peat-building bog mosses, indicative of an active peat forming bog. In addition, a first for me was being introduced to *Sphagnum affine*, which within Britain is highly localised with a western distribution. Now I have my 'eye in' for recording more records of this moss in future.

Time spent on Ben Vrachie was particularly useful for introductions to some of the (please excuse my inappropriate terminology) 'cute Hedgehog-like' Grimmia's of limestone rocks. In addition I had my first sighting of *Entodon concinnus* which I appear to be getting my eye in for too.

Entodon concinnus with Purple Saxifrage *oppositifolia*) on Ben Vrachie

Overall, the opportunity to attend the course was great for boosting my confidence with species identification, from familiar woodland bryoflora such as *Thuidium tamariscinum* and *Plagiochila asplenioides* to rare species of limestone rocks, such as *Scapania gymnonstomophila*. You can say that again!



Scapania gymnostomophila cells with a distinctive large oil body in each cell

Thuidium tamariscinum and *Plagiochila asplenioides*

Grimmia longirostris

Julie Smith is currently Bryophyte of Scottish Temperate Rainforest Natural Talent Apprentice

Introduction to Solitary Bees at Preston Montford

By Niell Currie

I had eagerly awaited the chance to get on a solitary bee course, which I saw as an opportunity to unlock this fascinating but difficult to penetrate group of hymenoptera. I am Niall Currie, a TCV Natural Talent Apprentice with Buglife in Stirling, looking at invertebrates on brownfield sites. The weekend course was held at the Field Studies Council's Preston Montford centre near Shrewsbury.

On the Friday evening, having met our tutor Ian Cheeseborough and eaten one of the FSC's famously filling dinners, we began the course with an introductory talk on solitary bees. This was full of identification tips for us to apply in the field the following day.


(left) Andrena species foraging at Wenlock Edge, (right) *Andrena cineraria* – a common species we found in different locations over the weekend

The Saturday was spent out in the field at two different sites, which gave us a chance to get a feel for best places to look for these creatures. The great thing about our tutor Ian was that he has a real passion for field identification and showed us it really was possible for many species. We finished the afternoon with a search of the field centre's grounds which includes a fantastic bee hotel, an eccentric looking wooden structure with all manner of materials suitable for nesting in.

Osmia (aerial nesting bees) cells provisioned with nectar in artificial nests as part of the bee hotel in FSC Preston Montford's grounds.

Since bees are warmth-loving animals our evening session was spent inside, focused on trying out various keys using preserved specimens. Much of the difficulty for beginners entering into this group revolves around the lack of accessible keys and identification aids, so getting a chance to try some of the technically worded keys with labeled specimens and expert help on hand was invaluable.

Our final day on Sunday was again mostly spent in the field, this time at a sandy lowland heath site which is perfect nesting habitat for many mining bee species. We were able to recognise some of the generalist species we had caught at Saturday's sites as well as seeing *Andrena barbilabris,* a heath specialist.

The course highlighted how widespread these easily overlooked creatures really are. Having the opportunity to spend time with an expert has really opened the door to this seemingly difficult group. With the knowledge I have gained I can now continue to learn about these fascinating species myself and hopefully contribute records for my local area. I would like to thank BRISC for providing a bursary that made it possible for me to attend this course.

Niall Currie
TCV Urban Talent Apprentice
Biodiversity Natural

SCOTTISH BIODIVERSITY INFORMATION FORUM

An Update from SBIF co-ordinator Christine Johnston.

Since the last edition of *Recorder News* I have been making progress with the SBIF Action Plan. The first draft of the Action Plan was discussed at the most recent Steering Group meeting (held on the 12th June) and I am now going through the points raised in order to shape the Plan into something that will provide focus for the Forum. Forum partners and supporters have already provided very valuable and extensive comment on the challenges and opportunities within the biodiversity data community, and these are the basis for the Action Plan.

In addition to working on the Action Plan I have been writing text for our new web pages, which should be up and running in the next month or so, and have started a Twitter feed. Most importantly I have been making contact with Forum supporters, making new contacts and lastly, but by no means least, met with some of the members of the BRISC committee at their last meeting, which was very informative and enjoyable.

If you would like to get involved with the Forum, or to be kept informed of SBIF's activities, my contact details are:

Christine Johnston
Scottish Biodiversity Information Forum Co-ordinator
The Wildlife Information Centre
Caretaker's Cottage, Vogrie Country Park
Gorebridge, Midlothian, EH23 4NU
Tel: 01875 825968
Email: sbifcoordinator@wildlifeinformation.co.uk
Web: www.wildlifeinformation.co.uk/sbif.php
Twitter: SB_Info_Forum

LRC PAGE

NESBReC
North East Scotland Biological Records Centre

North East Scotland Biological Records Centre Update. June 2013

By Glenn Roberts, NESBReC Manager

On 9 March we held our annual Recorders Forum in Aberdeen. This was another successful meeting with around 80 recorders

from all over the North East (and some from farther afield) converging to listen to some interesting presentations and to discuss different facets and issues to do with recording and supplying records to NESBReC. The audience was a good mixture of experience, interests and ages. It is good to see younger people at these events where they are able to make contact with long-established and knowledgeable recorders. It is a good starting point for future recorders as well as a great forum for recorders to learn from each other. Presentations this year included: BeeWatch citizen science; Buglife projects for 2013; the local bat group – Nesbats; NE LBAP projects for 2013; an update on Red Squirrels in the North East; and an update from NESBReC.

This year we have launched a three-year project to create a Mammal Atlas for our area. We began with public awareness in order to encourage the public as well as existing recorders to record any sightings of mammals and send them to NESBReC. In addition, we are trying to get people to adopt a 10km square for mammal survey so that we can produce up to date records for every 10km square in our area. As anticipated, some areas are harder to get people interested in than others, so we still require people to adopt squares in some of our notorious "black holes" as well as hard-to-access upland areas. We will target these areas later in the year. Another small initiative as part of the bigger project is that we have 10 camera traps to lend out to people all across the North East. This has proved very popular so far as camera traps really seem to have captured people's imaginations recently. Many borrowers are pleasantly surprised to see what goes on in their back gardens and local areas at night. Records of mammals have definitely increased so far already in 2013, and this can only be a good thing, both for our Mammal Atlas project and for promoting biological recording in general.

Small Blue Butterfly – underside © NESBReC

At the beginning of June, Duncan Davidson led a workshop at Cullen in Moray in order to encourage surveying for the Small Blue butterfly at past known colonies and any suitable Kidney Vetch sites around the North East. This has so far been a productive workshop in that several of the sites have been visited by various attendees and adult butterflies have been recorded. I am happy to say that I have now seen my first examples of this exquisite wee insect and look forward to finding out how everyone else has got on with their surveying later in the year.

As usual we will be running various training days at various locations over the summer including: small mammal trapping, butterflies & moths, riparian woodland habitats, arachnids, and craneflies.

Finally, one of our most interesting latest records was a pod of around eight Killer Whales seen off the coast between Collieston and Peterhead, then heading north into the open sea. I wonder where they are now…?

Outer Hebrides Biological Recording

By Christine Johnson

When Outer Hebrides Biological Recording (OHBR) was established two years ago, we knew that we would have to be prepared to operate with no staff, no funding, reliant totally on volunteers and a laptop computer with a back-up hard drive. Our primary aim is to collate biological records from the islands and to make this information available to anyone who has an interest in or responsibility for the wildlife of the Outer Hebrides. Whilst this is a laudable objective we are a small group with big ambitions. Not content just to collect records we want to improve our knowledge of the composition and distribution of the flora and fauna of the archipelago. To achieve this objective we need more and better trained local recorders and we need to make the world aware of our existence.

A certain amount can be achieved by articles in the local press and assorted newsletters, using our website and social networking, and scratching around for small sums to produce postcards and posters. However at some point the realisation dawned that we needed more than a few odd shekels. For a small organisation working on a group of islands with a small population and an impoverished local authority, we were constantly frustrated by our inability to raise matched funding. Fortunately we were able to persuade Scottish Natural Heritage of the merit of our ambitions and with their support we were able to launch the Natural Hebrides project in April.

This project aims to increase participation in biological recording activities, widen and improve the skill base of local recorders and raise awareness of the importance of biodiversity and environmental monitoring, particularly with respect to invasive non-native species (INNS). So we have a busy three years ahead. We began with introductory talks on biological recording in Lewis and Harris and already have the basis for developing a local recording hub in these two islands and kicked off on South Uist with field a session on identifying our three main INNS species. Further activities covering general recording skills and identifying and recording specific taxa will take place throughout the islands during the summer.

With such a small population the number of resident natural history enthusiasts, both amateur and professional, is limited, so it is important that we all work together and combine our efforts. So in the Year of Natural Scotland we will be participating in activities with SNH, RSPB Machair Life and Curracag (Outer Hebrides Natural History Society). These range from Hebrides Little 5 (and the associated Curracag Photographic Competition), to a Bioblitz and wildlife activity weekend organised by a local newspaper.

We still have a long way to go to get more dots on the distribution maps and to encourage more naturalists, resident and visitors, to send in their records. So if you, friends or colleagues are visiting the islands and recording what you see, we would love to have a copy of your records for our database. We would also be interested in hearing from anyone who has particular expertise in recording and identifying bryophytes, lichens, marine/freshwater invertebrates, spiders or grasses, sedges and rushes and is prepared lead a workshop or field session in any of the islands.

Christine Johnson,
Outer Hebrides Biological Recording
www.ohbr.org.uk

Ffe Nature Records Centre Update

By Alexa Tweddle

Fife Nature Records Centre, which is now part of Fife Council's recently created Biodiversity Team, continues to act as the point of reference for wildlife and habitat information for the region. We are always grateful to receive wildlife sightings, so please do sent us information on what you have spotted in Fife.

As part of a series of events organised by the Biodiversity Team, Fife Nature Records Centre recently coordinated a BioBlitz at the National Trust for Scotland property Kellie Castle & Garden. The event started with moth trapping and a guided bat walk on the evening of Friday 7th June. Well-attended by members of the public and naturalists alike, we were treated to the sight of Soprano Pipistrelles emerging from the roost within Kellie Castle itself. We also made use of the National Trust for Scotland's Badger sett viewing hide and, although not lucky enough to see Badgers in the flesh, a camera trap did capture footage of a Badger snuffling through the woodland. After a late night, the activities resumed on Saturday morning with the opening of the moth traps. Although running five moth traps overnight, only 20 moths were captured – possibly a sign of the cold spring we experienced or last summer's dismal weather? The small mammal trapping, led by Amanda Wilson, zoologist and experienced small mammal trapper, was more successful with a Wood Mouse, Field Vole and Bank Vole finding themselves at the centre of attention. Throughout the day, there were on-going invertebrate surveys led by local experts Gordon Corbet and Anne-Marie Smout, plant surveys and pond-dipping forays. Overall, the event recorded over 120 different species of plants and animals in the surrounds of Kellie Castle. These records provide invaluable information that can be used to protect and enhance Fife's wildlife and will be made available to those who have a role to play in nature conservation.

There will be another opportunity to discover the hidden wealth of wildlife on Friday 28th and Saturday 29th June at the Hill of Tarvit BioBlitz. This family-friendly, free event is a great way to kick-start the school holidays. Nestled in the Fife countryside, this beautiful site contains acres of deciduous woodland, gardens, a hickory golf course and more. The programme will feature a guided bat walk on the evening of Friday 28th June along with moth trapping whilst on the Saturday there will be a guided squirrel walk, pond-dipping, invertebrate surveys and much more! Everyone is welcome at this event – contact nature.info@fife.gov.uk for more information.

For more information on the work of Fife Council's Biodiversity Team please visit the website www.fifenature.co.uk.

IT PAGE
Some Websites/Webpages of Interest:

Amateur Entomologists Society

By Sarah Eno

I was watching numerous clasped pairs (eight at one time) of Large Red Damselfly flitting round the lily leaves and laying eggs. Musing, whilst drinking my coffee, I wondered how long they live, does the male let go, are they mating and egg laying at the same time? Well, if I had discovered the AES a bit sooner I could have looked it up easily, not that my ID book is bad. And there is also Buglife of course. Both organisations devote effort towards increasing knowledge of, protection and the conservation of invertebrates, but whilst AES is run by volunteers, Buglife has worked hard to attract funding and has a relatively large professional staff and high public profile.

The AES, which was founded in 1935, is a charity run for those interested in entomology. Their website www.amensoc.org is very friendly and easy to use. With a couple of clicks from the Insects menu you can access lots of information including Insect Groups with general descriptions, "Caresheets" - keeping insects as pets; "Insect Facts", "Biodiversity", "Conservation of…" etc. The Glossary or illustrated naming of parts is a handy reminder for beginners.

The Society is clearly reaching out to younger people and to anyone running teaching/learning events the **Bug Club** offers Fun and Games ideas, resources for schools and Bug Club events, though these are all in southern England.

AES has published a book a year since 1941, so there is a huge range of specialist books, pamphlets and leaflets especially if you include the historical list as well. Examples of the 32 current publications include *Collecting Het-Het Bugs*; *A Year in The Lives of Ladybirds*; *The Larger Water Beetles of the British Isles*, *Guidelines for Site Surveys*, *Larvel Foodplants of the Butterflies of Britain and Ireland* (including how to encourage them in gardens). Publications are easily purchased via the on-line shop.

Of course membership confers some extra perks like discounts on publications and specialist help with ID, a bi-monthly Bulletin and e-mail newsletters. So another wealth of information for any aspiring or confirmed entomologist.

Increasingly Scottish sections of UK-wide societies are running their own webpages. BSBI Scotland is such a body, and by typing in http://www.bsbiscotland.org.uk/ you can go straight to the web-pages of the Scottish BSBI, focusing on news and information for Botanists based in Scotland.

As you would expect, the site lists details of all the many BSBI field meetings, workshops and indoor meetings organised annually in Scotland, also who is involved in running BSBI Scotland, as well as various archives of past activities, including archives of newsletters going back to 2005.

Interestingly, for recording purposes, BSBI is recommending the software MapMate, and is developing a series of videos to help recorders using this software, especially for plant recording.

If you click on 'Contacts' a colourful map comes up showing all the different Vice-Counties and who is BSBI recorder for each, with a useful link to take you straight to their e-mail – that is if they have one. This is shown by the underlining of the name. Equally, if you click on one of the underlined names of the VCs you will find a kind of blog: perhaps a short description of that VC, perhaps the history of local recording and what is happening today, or a list of relevant local publications. BRISC as well as a number of LRCs are listed under the 'Links'.

The site also gives detail of 'Recording the British and Irish flora 2010-2020', an ongoing project which aims for a comprehensive update of hectads (10kmx10km^2) in preparation for a third Atlas of the British and Irish flora planned for around 2024. A booklet setting out the details of this national project can be read or downloaded from here. AMS

NBN Gateway News

Update on release of NBN Gateway version 5

As we reported in the last issue, the release of the new Gateway was delayed due to performance issues caused by insufficient capacity on the current servers. We have now carried out a full assessment of our hardware requirements, and secured the necessary investment to set up dedicated servers that will deliver the required performance and allow capacity for further expansion.

In the meantime, the development team have been working on some features of the new Gateway that were originally planned to be released in stages after the initial launch, such as the controls for managing access and downloading data. As a result, when the new hardware has been purchased and set up, we will be able to release Gateway v5 with a fairly complete and fully documented suite of functionality. Please contact us on access@nbn.org.uk if you have any queries - thank you for your patience and continued support.

Pending the release of the new Gateway, we are continuing to load new and updated datasets onto the current Gateway and the total number of records has now exceeded 90 million records. The most recent upload includes updated datasets from North East Scotland Biological Records Centre, Scottish Natural Heritage and British Lichen Society's Lichen Database for Scotland.

NBN Gateway to deliver INSPIRE compliance for species data

The Infrastructure for Spatial Information in Europe (INSPIRE) Directive aims to make it easier to access and combine environmental spatial datasets held by public authorities, to support environmental policy and practice at a national and international level. This Directive became law under the INSPIRE (Scotland) Regulations 2009, setting standards for public authorities on metadata creation and the provision of publicly accessible data services.

The INSPIRE Regulations apply to 'public authorities' as defined in the Environmental Information Regulations (paragraph 2), which includes organisations or individuals who hold data on behalf of a public authority. INSPIRE requires the publication with a view and download service of spatial data relating to 34 environmental themes set out in three annexes. Annexes I and II are already being implemented, and work is now underway to publish datasets covered by Annex III – which includes species and habitat distribution data – before the deadline of December 2013.

The publication of species data via the NBN Gateway is recommended as a sustainable and cost-effective way of complying with the INSPIRE Regulations on Annex III species data. By sharing your data with the NBN Gateway in the usual way, accompanied by our standard metadata form, you can achieve INSPIRE compliance without needing to do any extra work. We will publish INSPIRE-compliant species distribution datasets, metadata and network services datasets to data.gov.uk on behalf of data providers

Did you know?

New Studies use data for research

NBN Gateway data have been used through GBIF to model the future for marine species in the North Sea under climate change

Researchers in the UK, United States and Canada used a range of different models to explore the potential impact of climate change on marine species in the North Sea by 2050. The data used for the study included more than 5,000 records of 18 fish and crustacean species accessed via GBIF.

The study projected that on average, species would move northwards by approximately 27km each decade. The researchers found there would be relatively small changes in the overlap of ranges between commercially exploited and threatened species, easing concerns about possible increases in accidental catches of rare species due to climate change.

The study also predicted only small adverse consequences from climate change on the ability of marine protected areas to provide suitable habitat for the threatened species.The study was funded by the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), the National Geographic Society, and the Natural Sciences and Engineering Research Council of Canada.

(Jones, M.C. et al., 2013. *Predicting the Impact of Climate Change on Threatened Species in UK Waters*. PloS one, 8(1), p.e54216.)

NBN News

State of Nature Report

The NBN is proud to be one of the 25 partners involved in the production of the inaugural State of Nature report.

The report is the first of its kind to document the status and population trends of animals and plants in the United Kingdom and its Overseas Territories.

It reviews the state of nature in eight major habitat types in the UK. It also gives brief overviews of the major reasons for change in our wildlife, weighs up the gains and losses of species over the last few decades, and highlights the role of volunteers in providing the monitoring that underpins the report, and conservation in the UK as a whole.

Short case studies throughout the report give extra insight into individual species, sites, conservation issues and recovery projects.

The Report can be downloaded from the NBN website: http://www.nbn.org.uk/nbn_wide/media/Documents/Publications/State-of-Nature-Report.pdf

NBN Training materials

We have created a specific training page on the NBN website which gives information and guidance to help you better understand various aspects of the NBN. It will eventually include guidance on how to use the NBN Gateway and other NBN Tools, but it already has training material for: NBN Record Cleaner, NBN Web Services, iRecord and specific material for ecological consultants. There is also a presentation to help biological recorders get more out of the NBN Gateway, which is currently being used by tutors on Field Studies Council Biodiversity Fellows courses. We will continue to add to the page, but all the current information can be found at:
http://www.nin.org.uk/Tools-Resources/NBN-Publications/training-material.aspx

In Practice

Garden BioBlitz success and update!

The Garden BioBlitz took place across the UK on the weekend of 1st and 2nd June. Following promotion on BBC Springwatch, the Bioblitz exceeded all expectations, generating over 22,000 records of over 2,400 species in a single weekend! A Garden BioBlitz Information Centre (http://www.brc.ac.uk/iRecord/garden-bioblitz-info) was set up on iRecord, so that Blitzers could view the latest photos, find out which recorders and species were 'trending', keep an eye on the running total of species and records, and see a breakdown of results by Vice County on an interactive map. All the latest details can be found there now, including the number of species recorded by Vice County in Scotland.

iRecord Ladybirds phone app

iRecord Ladybirds is a free mobile phone app to help monitor the impact of the invasive Harlequin ladybird on the UK's native ladybird species. The new app will enable people to contribute more easily to the UK Ladybird Survey whose results have already shown declines in native species such as the 2-spot ladybird in response to the arrival of the harlequin ladybird, first recorded in England in 2003.

For many insects 2012 was a challenging year and ladybirds were no exception. Harlequin ladybirds and most native species were reported to the UK Ladybird Survey in lower numbers than previous years except for the mildew-feeding orange ladybird for which the number of records remained stable.

Tens of thousands of people have already contributed to the online UK Ladybird Survey and with continued help from the public using the new recording app, the Survey hopes to discover whether the UK's native Ladybird species bounce back in 2013, as well as gaining further insights into the invasion process over the years to come.

More items of Interest:

A Bumblebee app from Nature Guides

The Bumblebee Conservation Trust has just announced the arrival of the Nature Guides Bumblebee app for iPhones and iPads.

Developed in conjunction with Bumblebee Conservation Trust and Habitat Aid, this app offers a number of features:

- Superb specially commissioned illustrations by Richard Lewington, showing all forms for each species.
- Multiple video clips for every species, showing interesting and characteristic behaviour.
- All-species view organised to help rapid identification in the field.
- Still photographs for every species, carefully selected to show key identification points.
- Distribution maps and detailed text accounts including advanced identification.
- Extensive introduction reproduced from David Alford's classic book Bumblebees.
- Intuitive software that allows any species to be compared side-by-side.
- Supports both scientific and common English species naming.

Bumblebees of Britain & Ireland is available from the Apple iTunes App Store in two versions. A **Basic edition** (price £1.49) covers the eight species most frequently encountered in the UK and Ireland. The **Pro edition** (price £9.99) covers all 23 species including scarcer bumblebees such as the Great Yellow and the recently extinct Short-haired Bumblebee currently the subject of a re-introduction project in Kent.

Glasgow Natural History Society' Conference on Natives, Aliens and Reintroductions

A brief Report by Richard Weddle

On June 22nd & 23rd 2013, a conference entitled 'Natives, Aliens and Reintroductions: how does ecology inform wildlife conservation in Scotland?' took place in the University of Glasgow.

It was a contribution to the Centenary Festival of the British Ecological Society (BES), and the Year of Natural Scotland, and was organised by Glasgow Natural History Society (GNHS) in collaboration with other members of the Glasgow Biodiversity Partnership and Glasgow Science Festival.

The topic is highly relevant because of the considerable resources expended on attempting to rid the country of non-native plants and animals deemed to be harmful, such as Giant Hogweed and Japanese Knotweed, while at the same time expending more resources on reintroducing species deemed to be desirable, such as Beavers, and also worrying about the effects of climate change on the distribution of native species.

After introductions by Roger Downie, Vice President of GNHS, and Julie Hodgkinson of BES, Chris Smout set the scene with an interesting and thought-provoking 'species history' of Scotland in the last 10,000 years asking 'What is Natural'? This was followed by Stan Whitaker (SNH) outlining the legal framework on introduced and non-native species, and the risks and benefits of moving species around; Colin Adams (SCENE) on conservation 'Ark' sites and the potential benefits they might bring, using case studies from rare freshwater fish species in Scotland; and Jim Dickson on the futility (in many cases) of trying to eradicate invasive non-native plants, and the largely undeserved tabloid 'demonisation' of Japanese Knotweed and Giant Hogweed.

The afternoon proceedings included case-histories and research on conservation of: farmland waders, the Aspen and Pine Hoverflies, the Chequered Skipper, the Loch Lomond NNR; pollinators in agricultural landscapes; updates on the reintroduction of Beavers, and on the threats faced by Badgers; an overview of the many invasive pests and pathogens threatening Scottish forests; invasive weed control in a riparian environment; and the status and impact of the White–clawed and Signal Crayfish in Scotland.

Saturday's talks ended with the 'breaking news' that the Small Blue butterfly has now been reintroduced to the Ayrshire dunes.

A large number of posters and displays were presented, on topics including NZ Flatworm, invertebrates in The Necropolis, Water-vole reintroduction, Golden Eagle, various reptiles, maerl, Spurdog Shark, Lampreys, invasive freshwater fish, Storm Petrel, Mink, Grey Squirrels as vectors of ticks (and Lyme disease), and the activities of some Glasgow voluntary conservation groups.

In addition, a schools' poster competition organised as part of this project resulted in an impressive display. Four P7 classes took part, working in groups of 3 or 4; each school was given £100 towards a visit to The Glasgow Science Centre or to an event in the Glasgow Science Festival, and their school libraries received copies of Wildlife Around Glasgow.

The second day started with a choice of workshops on: conservation ethics, management of a wildlife reserve, translocation, alien plants, and squirrels. And the proceedings ended with field excursions in the West End of Glasgow, looking at native and non-native plants in Kelvingrove Park, the Botanic Gardens, the banks of the River Kelvin, and recent habitat-creation and conservation work there and at Bingham's Pond.

Fortuitously, delegates were also able to see a display, in the Hunterian Zoology Museum, on Alexander Wilson the Paisley naturalist, poet and artist, known as the 'father of American ornithology' which also formed part of the BES Centenary Festival.

Further information about the programme, including abstracts of the presentations and posters can be found at www.gnhs.org.uk/2013conference.html These will be replaced by full accounts in due course, in advance of the publication of the proceedings in a forthcoming issue of *The Glasgow Naturalist.*

The organisers are grateful to British Ecological Society, Blodwen Lloyd Binns Bequest and Glasgow City Council for grants towards the costs of the event, to RSPB and SWT for assistance in kind, and to Glasgow Museums for donating copies of Wildlife Around Glasgow.

The Great Moss
The story of Lochar Moss, Dumfriesshire

By Peter Norman

The headwaters of Lochar Water rise north of Dumfries and flow a mere 30km before entering the Solway Firth near the formidable Caerlaverock Castle. The final 20km is all below the 20m contour line and, despite the fact that the floodplain is more than four kilometres wide, along much of its length the Water is no wider than could be cleared by an athletic run and jump. It

therefore comes as no surprise to find it described in Chambers 1836 *Gazetteer of Scotland* as "a small dull stream". However, since the last glaciation, the Lochar valley has been dominated by a vast expanse of wild lochs, bogs, fens and marshes that is anything but small and dull. Reverend Jacob Dickson in his 1791 account for the Parish of Mouswald described it as "the great moss, called Locharmoss...which from the situation of the church, has been a striking object since time immemorial, and almost the whole of which (for 12 miles in length, and full 3 English miles in breadth in some places) is seen by the observer in one view."

Lochar Moss played a critical role in the history of Dumfries, forming a defensive barrier east of the town with the routes around it protected by castles and towers. A road across the Moss was first created in 1724 but to this day only two roads and a railway link the east and west sides. Peat preserves archaeological evidence better than virtually any other environment and discoveries cover a wide historical span. They include three bog bodies found between the 18th and mid-20th centuries, though all subsequently lost. These, together with other finds such as a beautiful Iron Age torc (neck collar) now in The British Museum, suggest that the Moss was a sacred place where offerings, including human sacrifices, were sometimes made. Other discoveries include an Auroch (wild ox) skull, remains of Wild Boar and 'fossilised' timber, good enough to be utilised by medieval carpenters.

'Longbridge Muir' restored from a conifer plantation in 2001-2003

The Moss was also an important resource with surviving documents relating to peat cutting dating from 1524, and 19th century records of Cranberries in Dumfries market. Attempts at agricultural drainage were frequent and include a 1754 scheme by John Smeaton, Britain's first civil engineer, and the first and last use of a steam plough on a Scottish bog in 1837. Attempts at commercial peat extraction in the early 20th century mostly failed, but created a new 8ha loch and developed the milling technique now used for peat extraction worldwide. The result of these schemes was loss of the fringing wetlands, but the four largest raised bog domes of Craigs, Racks, Ironhirst and Longbridgemuir survived, only to be planted with conifers in the 1970s.

Victorian naturalists were the first to record the wildlife of Lochar Moss. James Cruickshank's 1842 'List of Jungermannia &c.' noted that "the whole patch" of *Jungermannia Lyellii* (now *Pallavicinia lyellii*, Ribbonwort or Veilwort) "might be covered by a man's hat". In 1843, entomologist William Lennon described Argent and Sable moth as "a very pretty insect...rather rare", but Marsh Fritillary as "common". On the discovery of a new moth for the Moss he commented that "The Manchester collectors were so elated with their success that they named it the Manchester Treble Bar. I don't see why we should not name it the Dumfries Treble Bar, seeing that we have it in our own locality". George Francis Scott-Elliot's 'Flora of Dumfriesshire' (1896) listed Round-leaved, Oblong-leaved and Great Sundew, Bladderwort and Bog Asphodel along with many others. Perhaps the bird list provides the most surprises? Bittern, otherwise known as Miredrum, Bog-hen or Bog-trotter, was noted in Archibald's 1684 'Curiosities at Dumfries' as "making a great sound in the summer evenings and mornings by thrusting her beak into the ground when she cries". It was still mentioned in the Statistical Accounts of 1791 and 1843. Though the latter date is somewhat dubious, this probably represents the last known breeding site in Scotland. A similar story relates to the Marsh Harrier and Black Grouse, the latter still present until the 1930s.

Recent recording has been limited in comparison. In 1960 Derek Ratcliffe discovered Lochar Moss's rarest plant, Baltic Bog-moss *Sphagnum balticum,* on Racks Moss, but it has not been seen since afforestation. Large Heath, Bog Rosemary and Adders are still common, but poor public access, deep ditches and difficult terrain has not aided recent recording.

(above) Bog Rosemary

With increasing recognition of the importance of peatland biodiversity, Longbridgemuir, including the last remaining unplanted areas of bog, was designated as a SSSI in 1991 and shortly after, a Special Area of Conservation (SAC). As part of the Restoration of Scottish Raised Bogs Project 2001-2003, led by the Scottish Wildlife Trust with funding from the European Union LIFE Nature Programme, Forestry Commission Scotland carried out restoration of the site, the biggest single element of the national project.

Further recognition of the value of peatlands, especially for their role in carbon sequestration, encouraged further steps along the road to restoration. A 2006 report by Richard Lindsay and Jamie Freeman of the Peatland Conservation Unit of the University of East London noted that, with the right management, Racks Moss, Ironhirst Moss and Longbridgemuir could form an ecosystem with "thriving mire vegetation" within 30 years. Indeed, they concluded that "Should it be possible to re-establish an active raised mire vegetation across these raised domes, there is no question that this would stand as one of the largest surviving raised mire complexes in western Europe." A new chapter in the long story of Lochar Moss may be about to begin.

The Great Moss exhibition is at Dumfries Museum until 18 August, then Annan Museum from 7 September to 31 October. Part of the British Ecological Society's Festival of Ecology.

BOOK REVIEWS

Ball, Stuart & Morris, Roger. (2013). *Britain's Hoverflies: An introduction to the hoverflies of Britain..* Wild*Guides.* ISBN 9780691156590 – pbk £24.95

Apart from butterflies and dragonflies, insect identification books tend to be highly scientific with complex keys and extensive use of technical terms or basic introductions to families with little chance of identifying anything to species level with confidence. Despite being sub-titled *An introduction to ….' 'Britain's*

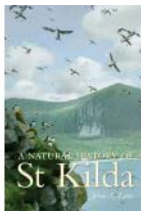
Hoverflies is far more than this and sets a new standard for combining accurate identification with accessible text and high-quality photographs, mostly taken in the field.

This is the latest ID guide from the excellent Wild*Guides* series, *http://www.wildguides.co.uk/* now a division of Princeton University Press, by Start Ball and Roger Morris. Whilst eminently suitable for the beginner, most experienced dipterists will undoubtedly want this amongst their working library for the stunning photos alone. It is packed with over 500 high-quality, close-up, razor-sharp images by a team of 53 insect photographers. Each image has been expertly taken and carefully chosen as, although this is presented as a field guide, many key identification characters would be tricky to see in less discriminating field photographs. A quick trawl through the hoverfly images on the internet will show how so many are misidentified from photos.

For those wanting to branch out into less familiar groups then hoverflies are an ideal way to go. They are diverse, colourful, have interesting life histories, involve mimics, can be found anywhere from gardens to mountain tops, and many can be identified in the field with some experience. This guide does helpfully provide clear categories for degree of difficulty, indicating those species which can be 'done' in the field, with a hand lens or requiring detailed examination under the microscope. All 70 British genera can be identified, along with 165 species out of the British list on 281. Not all species are illustrated but, where there are very similar species, short scientific keys are provided.

There is a wealth of other information besides, on biology and life history, including status, notes on behaviour and habitat, distribution maps and phenology charts. The authors have been co-organisers of the Hoverfly Recording Scheme since 1991 and their expertise and authority shines through in many ways. There are even photos of easily confused species from other groups when there are pitfalls which may catch out the inexperienced. The importance of collections and achieving verifiable records are also well covered. Some hoverflies are instantly recognisable in the field, others can be identified from photographs but do not expect to be able to identify all your photos as some will require specific angles of view or can only be reliably named under the microscope. Learning a new group does always take a lot of time and effort, but you could not get a better start than this high-quality, attractive, accessible and expertly written guide in the excellent Wild*Guides* series. Take the plunge and use this guide to get into a fascinating group of insects.

Simon Hayhow



Love, John A (2009) *A Natural History of St Kilda*. Birlinn, Edinburgh. ISBN 9781841587974. pbk £20.

There have been many books written about St Kilda, some indeed by naturalists, but none have considered before the contribution that the naturalists made to discovering and describing the archipelago, in all its astonishing wealth of biodiversity, scenery and people. The very first account was written in 1697 by Martin Martin, himself a naturalist by the standards of the day, and on the opening page of this book he is aptly quoted: ''Descriptions of countries without the natural history of them are now justly reckoned to be defective''. John Love himself has spent his life in conservation in the Hebrides, latterly as SNH area officer for the Uists, Barra and St Kilda, and has visited the islands many times since 1979. We could not have a better guide to his subject, and it is also altogether delightful that it is illustrated partly by his own ink drawings.

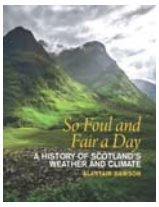
The book is divided into chapters that each deal with an aspect of the natural history—the early accounts, geology, vegetation, invertebrates, several on birds and fowling, mammals and marine life, the impact of visitors, and modern conservation. There is a special chapter devoted to the mice, a House Mouse and a Field Mouse apparently of Norse origin, which each developed a native subspecies of great size—evolution in action over the course of a millennium. The St Kilda House Mouse was a commensal that has been extinct since shortly after the last human native inhabitants left St Kilda in 1930, a fact that provides neat proof that the island was continuously inhabited by people at least since Viking times, and not, as some have suggested, only occupied intermittently before the seventeenth century. There is a chapter on another famous indigenous subspecies, the St Kilda Wren and one on the occurrences and extinction of the Great Auk. A chapter on the Soay and Boreray sheep makes the point that the study initiated by Morton Boyd in 1952 ''is one of the longest running studies of a large mammal anywhere in the world''.

Each chapter is written with great authority and is as much a contribution to the history of science as a description of the natural environment. The naturalists were themselves generally sympathetic to the inhabitants of Hirta, among whom they lived, and ready to emulate their daring on the cliffs in pursuit of seabirds. One of the most remarkable of many excellent photographs is of Evelyn Heathcote wearing a long tweed skirt climbing to the summit of Stac Lee in 1898—the only woman ever to have made the ascent! The roll-call of famous visitors who studied the islands and stayed for some time on them since the beginning of the nineteenth century includes such illustrious names as John MacGillivray, J A Harvie-Brown, W Eagle Clark, Cherry and Richard Kearton, Julian Huxley, David Lack, James Fisher, Ken Williamson and Morton Boyd. One of the strengths of the book is that John Love has had access to unpublished reports and papers in the possession of SNH as managers of the conservation interest on behalf of the National Trust for Scotland.

The social and environmental history of St Kilda is implicit in every chapter, in discussions of how the resources were exploited, and the incredible hardiness of the inhabitants. The author makes the very fair point that the evacuation followed on the failure of the State to intervene, but within a few years the State was pouring resources into the archipelago for military purposes; if the islanders had been able to hang on for a little longer, they might be there still. In 1957, the destruction of the remains of the old village, the cleits and the enclosure dykes, was planned by the military who wanted to use the stone as road fill for the radar base, and was only averted by the immediate intervention of the Nature Conservancy. But at present the continued operations of NTS and SNH on St Kilda depend to no small degree on practical co-operation with the Ministry of Defence and their civilian contractors.

This is a very fine book. It does justice to the islands of which James Fisher said ''whatever he studies, the future observer of St Kida will be haunted the rest of his life by the place, and tantalised by the impossibility of describing it to those who have not seen it''. And it does justice to the many remarkable people who investigated it scientifically and tried to describe it in so many ways.

Chris Smout



Dawson, Alastair (2009) *So foul and fair a Day: a History of Scotland's weather and climate.* Birlinn. ISBN 9781841585673. Pbk £20

To say that Professor Alastair Dawson is interested in the weather is a bit of an understatement. We were lucky enough to have him speak at the 2012 BRISC Conference and his talk on Scotland's weather was fascinating. So much so that I decided to buy his book and read more about Scotland's climatic history.

We all like to talk about the weather and maybe this is because we have lots of it… sometimes all at once. We have all heard that summers are not what they used to be, winter not as snowy (until the last few years) and that the weather is definitely changing for the worse. Professor Dawson's book put this into context and uses a multiplicity of sources to illustrate key events in our weather's history and shows us that the weather has always been changing.

This book is set out into four parts; Weather and Climate Change, Prehistory, History and Present and Future. The first section explains what weather and climate is and why we have such changeable weather in Scotland. The next two sections look at Scotland's weather and climate from 2-3 million years ago, to the start of the Ice Ages that finally ended about 10,000 years ago, to the present day. The final section looks at where we are now and what lessons we can draw from the past. There is also an extensive and interesting further reading list.

The book very much is a history of our weather and climate as the title suggests. What is really interesting is how much effect the weather has had on Scottish history. Famines in the late 1690s, the Herring fishing boom of the 1800s and the Highland famines of the late 1700s. It is something not often thought about, but in times past the weather had even greater effects on events and people as they were far less insulated from it due to the lack of modern infrastructure, which we take for granted. The book does illustrate that even in modern times the weather can overcome just about anything.

Along with the detail, there is a great and easy to understand explanation of why our weather is so changeable. For that alone it is worth reading. But the linking of weather to historical and pre-historical events is really fantastic and does give a different perspective on our weather and history. For one thing it has not been constant in the last 10,000 years.

Anthropomorphic climate change is mentioned and to some degree dismissed. The reason it is downgraded by the author is that there are so many other variables that affect the weather. Others are: volcanic activity, El Nino events and sunspots to name a few. Until all these variables can be modelled together we will not be able to predict (more) reliably future climate change.

History shows we have no control of the weather and we are seldom sure of what it will do. However, history can show us what weather we could have and how quickly or slowly this might come to pass. I would recommend this book for all those with an interest in the weather; it is well written and packed with fascinating information. Since we do not know what the future weather will be I shall be hoping for the best and preparing for the worst!

Jonathan Willet

SOME FUTURE EVENTS:

PLANTLIFE has a long list of interesting events and activities. All walks and workshops must be booked in advance. For more details or to book a place, please email scotland@plantlife.org.uk or phone (01786) 478509.
Walks and training days are **open to all and free of charge** (unless otherwise noted), but donations to Plantlife are welcome.
Sun 14 July, 2-4pm North Berwick Law, East Lothian Important Plant Area - Guided walk. Led by Countryside Ranger Sam Ranscombe.
Sat 20 July, 11am–2pm - **Tentsmuir**, near St Andrews, Fife **Guided walk** Led by local botanical recorder Sandy Edwards. Bring a packed lunch.
Sun 28 July, 11am–4pm - **Wooplaw Community Woodland**, near Lauder, Scottish Borders **Getting the most out of Wildflowers Count.** A practical workshop, while enjoying a walk.
Sun 28 July Forsinard Flows Visitor Centre, Sutherland. **Drop-in event** -Celebrate **International Bog Day** with Plantlife, RSPB and the Bumblebee Conservation.Trust.
Wed 7 August, 10am-4pm. Benmore Botanic Garden, Argyll. **Learn how to identify ferns** in the woodlands Led by Dr Heather McHaffie.
Sat 17 August, 2-4pm - **Traprain Law,** East Lothian **Important Plant Area - Guided walk.**. Led by Countryside Ranger Laura Douglas.
Sat 24 August, 10am-2pm - Aberdour, Fife. - **Seashore walk,** Find out more about seaweeds and seashore ecology. Silversands Bay. Led by Professor Martin Wilkinson of the Centre for Marine Biodiversity & Biotechnology, Heriot-Watt University.
Sat 12 - Sun 13 October, 1–4pm - John Hope Gateway at the Royal Botanic Garden Edinburgh. **Drop-in event** Celebrate National Fungus Day with Plantlife Scotland.
Sat 19 October, 1–3.30pm - **Haddo House**, near Tarves, Aberdeenshire **Guided fungi walk.** The estate lawns at Haddo House are internationally important for species of waxcap and coral fungi.

Saturday 26 October : **New technology for biological recording**. BRISC AGM and Annual Conference at Newbattle Abbey College, By Dalkeith. £35 per person.

Saturday 9th November 2013: Molluscs in Scotland. A joint meeting of the Conchological Society of Great Britain and Ireland & National Museums Scotland, at National Museums Scotland, Chambers Street, Edinburgh EH1 1JF, at 10.00 for 10.30.
At 14.00 there will be a Public Lecture: Scotland's living reefs, given by Dan Harries of Heriot-Watt University
For further details please contact Adrian T. Sumner (preferably by e-mail, adriantsumner@btinternet.com, or by telephone, 01620 894640), and see the Conchological Society's website for full details (www.conchsoc.org/node/2).

Copy Deadline for the next issue is 15 September 2013. All material to the Editor at anne-marie@smout.org or by post to Anne-Marie Smout, Upper flat Chesterhill, Shore Road, Anstruther, Fife KY10 3DZ - Tel 01333 310330