Scottish Invertebrate News

The Scottish Invertebrate Conservation Newsletter

www.scottishinvertebrates.org.uk

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Welcome!

Welcome to the third issue of Scottish Invertebrate News!

After a long and hard winter, we seem to have skipped spring and moved straight on to summer!

Hopefully you are already getting out looking for our beloved wee beasties. Bees, wasps, butterflies, spring season spiders, and, of course oil beetles are all out and ready to be recorded!

If you're not out already, or if your chosen specialist bugs aren't in season *just* yet, hopefully this newsletter will galvanize you!

As well as new discoveries, this issue also includes feature articles looking at amphipods, an endangered beetle, brownfields and some not-quite parasites...

There are also plenty of events coming up, as you'll see in the programme - so why not get in touch and volunteer to share your enthusiasm?

Inside this issue:

Join the Oil Beetle Hunt!

This Spring Buglife – The Invertebrate Conservation Trust are launching a new public survey to look for oil beetles.

Oil beetles, so called because they secrete oil from their joints to deter predators, have one of the most extraordinary life cycles of any British insect. They are nest-parasites of solitary bees. Oil beetle populations are therefore dependent on the health and diversity of wild bees. The ideal habitat for these species is wildflower-rich grassland - a habitat that has disappeared from large parts of our countryside.

Oil beetles are fascinating insects, there are three species in Scotland: the Black oil beetle (*Meloe proscarabaeus*), Violet oil beetle (*Meloe violaceus*), and Short-necked oil beetle (*Meloe brevicollis*). The Black and Violet oil beetles have been recorded all over the country but most recent records have been from Western Scotland. The Short-necked oil beetle was thought to be extinct in the UK until 2007 when it was rediscovered in South Devon; in 2010 the species was found on the island of Coll (see ***Scottish Invertebrate News Volume 1 Issue 2***).

All species of oil beetle in the UK are in decline. At a national level species' ranges are contracting and at a local level populations are becoming weaker, and in some cases extinct.

Violet oil beetle (*Meloe violaceus*) © John Walters

The main factors responsible are changes in land use for forestry, farming and development which have reduced the number and quality of available nesting sites both for the beetles and the solitary bees they rely upon.

You are most likely to come across an oil beetle in late March to June. Oil beetles can be found on wildflower-rich grasslands, heathland, moors and coastal areas such as cliff tops. Please keep a look out for oil beetles this spring, and visit the Buglife website **www.buglife.org.uk** to report your sightings and photographs, download an identification guide, and find out more about these brilliant beetles.

Andrew Whitehouse, *Buglife*

Scottish Invertebrate Discoveries

Every year new invertebrate discoveries are made in Scotland. From amazing ecology, to records of species new to Scotland or science, this section highlights just a handful of these fascinating discoveries!

Endangered Pine hoverfly takes flight at new sites!

The Pine hoverfly (*Blera fallax*) has been translocated to native Caledonian pine forests. The translocation involved captive bred hoverflies and individuals collected from the last two remaining British populations.

Pine hoverflies were released at Rothiemurchus Estate in June 2010, where they had not been seen for 50 years. By August a new larval generation was found at Rothiemurchus, which is a great success!

In June 2011, Abernethy Forest will become the second translocation site for the Pine hoverfly. RSPB Abernethy felled 100 trees at a location near Loch Garten to create habitat for this endangered insect.

Habitat creation and population supplementation will continue until we are sure we have established self-sustaining populations of this special Scottish insect at five sites.

Ellie Rotheray, *Malloch Society*

Female Pine hoverfly (*Blera fallax*) takes flight © Ellie Rotheray

Pink prowler update!

The Pink prowler (*Oonops domesticus*) *has* been found in Craig Macadam's house in Stenhousemuir! This is the second record of this spider in 17 years. This spider was last seen in Chris Cathrine's house in Hamilton in February 2010 (see ***Scottish Invertebrate News Volume 1, Issue 1***), before which it had not been recorded in Scotland since 1994.

Keep an eye out for this diminutive pink spider (1-2mm long) crawling on your walls at night!

Chris Cathrine, *Buglife*

Male Dark bordered beauty moth (*Epione vespertaria*) © Pete Moore

Timely Dark bordered beauty discovery!

A new wild population of the rare Dark bordered beauty moth (*Epione vespertaria*) has been discovered at the RSPB Insh Marshes reserve!

RSPB and Butterfly Conservation have been working together to conserve the beautiful and rare Dark bordered beauty moth, which was known from only three UK sites – two in Scotland and one in England.

Despite potentially suitable habitat, several years of light trapping had failed to detect the Dark bordered beauty at the Insh Marshes reserve.

As a UK Biodiversity Action Plan (UKBAP) priority species, one of the objectives of its Action Plan is to increase the number of sites where it is found. To achieve this, a project to translocate larvae or eggs to the RSPB's Insh Marshes reserve began in 2011. To provide individuals to translocate, a small captive breeding population was established from larvae collected in 2009 from the nearest known site and boosted by wild caught adults in 2010.

While the captive breeding programme was well underway breeding individuals to introduce to the reserve, Robin Wynde, on sabbatical from RSPB Head Office, undertook detailed vegetation monitoring at Insh Marshes to identify the best potential release sites. He also regularly set moth traps and on the last day of his study located a healthy wild population of the moth on the reserve, catching 15 individuals in his trap. With this find, the number of known UK sites jumped from three to four!

As the planned translocation site is already occupied, this leaves a question mark over the captive bred population...

Pete Moore, *RSPB Insh Marshes*

A new woodlouse for Scotland!!

In September 2010, *Oritoniscus flavus*, a woodlouse new for Scotland, was discovered at Melville Castle just outside Edinburgh, as part of a survey organised by The Wildlife Information Centre!

O. flavus is a species that was known to occur in Ireland and had also been found in South Wales in 1994, but is otherwise unknown from the British mainland. This species is included in current woodlice guides for Britain and Ireland and males can be identified very easily following these keys. However, the identity of the Edinburgh woodlouse was not immediately apparent as there are other, very similar, continental species that it had to be distinguished from. Also, unfortunately, the specimens collected at Melville Castle were all female and could not be identified with certainty.

A return trip to the area in February 2011 found more woodlice at two other sites further along the River North Esk; at Dalkeith Country Park and by the riverside cycle path between Whitecraig and Monktonhall. Male woodlice were collected at both these sites which established that this was indeed *O. flavus*, which was confirmed by the national recorder, Steve Gregory. These records extend the global northern range of *O.flavus* by 200 miles, with the most northerly records previously found at County Meath in Ireland.

This woodlouse is quite distinctive in the field due to its size, colour and speed. *O. flavus* is a dark purple-brown, approximately 6-7 mm long and is an extremely fast runner for a woodlouse. After reading the description, and looking at the photo, those with a classical education may wonder why this *Oritoniscus* species is called *flavus* ('yellow'). This is because specimens lose their colour and fade from purple-brown to a sandy-yellow when kept in preservative.

The only likely confusion would be with dark, juvenile Striped woodlice (*Philoscia muscorum*), which also move quickly, or possibly with larger Pygmy woodlice (*Trichoniscus species*), but these are still smaller than *O. favus* and are a paler pink colour. Striped woodlice have a dark head and a dark stripe running along their back. Striped and Pygmy woodlice are both very common species and are likely to be found alongside *O. flavus* meaning it should be possible to make these comparisons in the field.

New woodlouse for Scotland, *Oritoniscus flavus*
© Paul Richards

O. flavus was found under leaf litter and moss in wooded areas by the River North Esk. These woodlice were common at all three of the sites where they were found, so this species appears to be well established locally.

We encourage recorders in the Lothians, and particularly around Edinburgh, to look out for this species so we can map its distribution. Further records or specimens should be sent to the national woodlouse recorder Steve Gregory (steve.gregory@northmoortrust.co.uk).

In Ireland *O. flavus* tends to be associated with watercourses, but other damp habitats such as wet grassland, wet scrub or the coast can support populations too. *O. flavus* is less likely to be found in urban areas or on wasteground.

For more information on how to identify British woodlice, the AIDGAP key to British and Irish woodlice is fantastic. Further details are available from the Field Studies Council, who publish the book: **www.field-studies-council.org**

More information on recording and studying woodlice can be found through the British Myriapod and Isopod Group: **www.bmig.org.uk**

Duncan Sivell, *Buglife*

Scottish Invertebrate Discoveries Cont.

First Scottish short-winged conehead record!

Short-winged conehead (*Conocephalus dorsalis*) © Gordon Maxwell

In August 2010 Gordon Maxwell spotted an unusual looking conehead at Tentsmuir, near St Andrews in Fife. After consulting some identification books, he thought he might have a Short-winged conehead (*Conocephalus dorsalis*), - the only trouble was that the nearest record known was from Yorkshire!

Given that Gordon found the conehead so far from it's known range, he sent the photo to experts, who confirmed the identification as the first Short-winged conehead record from Scotland!.

This is a fantastic find, and a great example of using digital photography to improve recording of under-recorded groups. However, it must be remembered that species is often not possible from a photograph, and specimens are always preferred for confirmation. Fortunately, this is one of the rarer examples of an invertebrate that can be identified from a good photo!

Chris Cathrine, *Buglife*

New true bug recorded at Hollyrood Park!

A BioBlitz at Holyrood Park, Edinburgh in August 2009 gave a good excuse for beating small trees by Hunter's Bog! A few Heteroptera (true-bugs) were collected during this survey, one of which was later identified as *Pilophorus cinnamopterus* - the first Scottish record!

The most northerly record of *P. cinnamopterus* was previously found in Yorkshire, and so the possibility of accidental introduction must be considered, and the urban surroundings increase the likelihood of this. However Heteroptera are particularly under-recorded in Scotland and records of Juniper shieldbug (*Cyphostethus tristriatus*) from Lothian (new to Scotland in 2007), Aberdeenshire (2008), Perthshire (2009) and Highland (2010) show how even very easily recognised species can be long overlooked.

In England and Wales, *P. cinnamopterus* feeds on Scots Pine (*Pinus sylvestris*), which are found by Hunter's Bog. The bug is distinctive in appearance and, if well established in the area, should be easily found by beating foliage.

Nick Littlewood

New true bug for Scotland, *Pilophorus cinnamopterus* © Tristan Bantock

Three new hoverflies for Scotland!

Cheilosia psilophthalma Becker, *Cheilosia ranunculi* Doczkal and *Brachypalpus laphriformis* (Fallén) are newly recorded from Scotland in 2010. In April 2010 in Dunblane, Stirlingshire, a female *C. psilophthalma* was taken from willow catkins. In May a second specimen was taken from the blossom of Sloe at Insh Marshes RSPB Reserve, Strathspey. In June 2010 a specimen of *B. laphriformis* was taken from Methven Wood, Perthshire. Specimens of *C. ranunculi* were found mixed in with a similar species, *C. albitarsis*, in the collections at the National Museums Scotland, Edinburgh. Of the 9 specimens 6 were from Scotland all taken from Dumfriesshire and perhaps Edinburgh between 1816 to 1980.

These members of the *Cheilosia* genus tend to be most active in the spring (when fewer entomologists are in the field) and, coupled with difficulties in taxonomy, have long been under-recorded. This is particularly acute in Scotland and the distribution of a number of hoverfly species mysteriously stop short of Scotland in Cumbria or Yorkshire e.g. *Myolepta dubia* (Fabricius), *Pocota personata* (Harris), *Xylota abiens* Meigen, *X. florum* (Fabricius) and *X. xanthocnema* Collin. It is probable that further fieldwork may show that some of these species also occur in southern and central Scotland.

Geoff Wilkinson

Scottish Invertebrate Discoveries Cont.

The Aspen hoverfly takes flight!

The Aspen hoverfly (*Hammerschmidtia ferruginea*) is a flagship species for a group of 12 other rare and similarly endangered flies dependent on Aspen woodlands Previously thought to disperse up to only 1km, new research has shown that some individuals may travel up to 5km!

By understanding the resource utilisation of the Aspen hoverfly we hope subsequent habitat management protocols will benefit these rare flies and the wider aspen-associated community.

Conservation management for the Aspen hoverfly involves encouraging aspen plantation and expansion across Scotland, and ensuring retention, maintenance and continuity of dead wood where the Aspen hoverfly has been recorded and in areas that may link up populations. In order to do this effectively we need to know how far the adults can disperse.

In 2006 a mark and recapture experiment found that by taking advantage of the tendency of adults to group on decaying aspen logs, an estimate of their dispersal ability could be made. These findings inspired a three year project funded by Scottish Natural Heritage (SNH) to investigate this in more detail.

We are now two years in to this project, and we have been able to demonstrate that the Aspen hoverfly is capable of locating decaying aspen logs up to 5km away, although most dispersing individuals (68%) were recorded at 1km. This is important information on the ecology of this endangered species which will be able to help inform management protocols.

Male Aspen hoverfly (*Hammerschmidtia ferruginea*) © Ellie Rotherway

Based on these findings, we can now recommend that if enough dead wood is available it should be distributed within a radius of 1 to 2km so as it can be used as a stepping-stones linking up aspen woodlands, and allowing wider dispersal for the Aspen hoverfly.

The third and final year of this groundbreaking project will focus on assessing habitat networks by utilising aerial photographs of aspen in Scotland, and measuring dead wood abundance. This will allow us to focus our habitat management efforts to create deadwood ‘stepping stones’ in key locations to extend the network of Aspen woodland available to this species in the future.

Ellie Rotheray, *Malloch Society*

Volunteer needed at the David Livingstone Centre!

The National Trust for Scotland are looking for a keen individual to share their enthusiasm in a new Environmental Education and Conservation Volunteer position, at the David Livingstone Centre, Blantyre. The position would offer an excellent opportunity to gain experience of environmental education as well as species identification and surveys.

The David Livingstone Centre is surrounded by wildflower meadows and located next to Bothwell Castle Grounds Site of Special Scientific Interest (SSSI) which is designated for ancient woodland and its invertebrate assemblage. These habitats offer excellent opportunities for invertebrate enthusiasts to take part in mini-beast hunts, and potentially contribute to surveys.

For more information, go to:

www.nts.org.uk/Volunteering/Opportunities/

Male Orange-tip butterfly (*Anthocharis cardamines*) © Chris Cathrine

Falkirk's Wonderful Brownfields—Important Invertebrate Habitats!

The industrial revolution in Britain during the 18th Century transformed the scenery of our towns and countryside. In Central Scotland, Falkirk was at the heart of this revolution and many heavy engineering works and iron founders were based there. With the demise of these industries across Falkirk, their former premises have been left derelict. Many of these ex-industrial sites have since been reclaimed by nature through natural succession.

Prime invertebrate habitat! Distillery brownfield site © Suzie Bairner

Brownfields are any site that has been altered by human activity, which includes not only derelict land in towns but also quarries, old railway lines, disused airfields and bings. Lack of management on brownfields often creates an open mosaic of habitat such as species rich grassland, bare ground and early successional habitats. This, combined with a low nutrient content of the soil which prevents fast growing plant species becoming dominant, provides a continuity of resources for invertebrates throughout the season. In addition, a mosaic of habitats provides a home for a wide range of species and allows many to complete their life cycles within the same site.

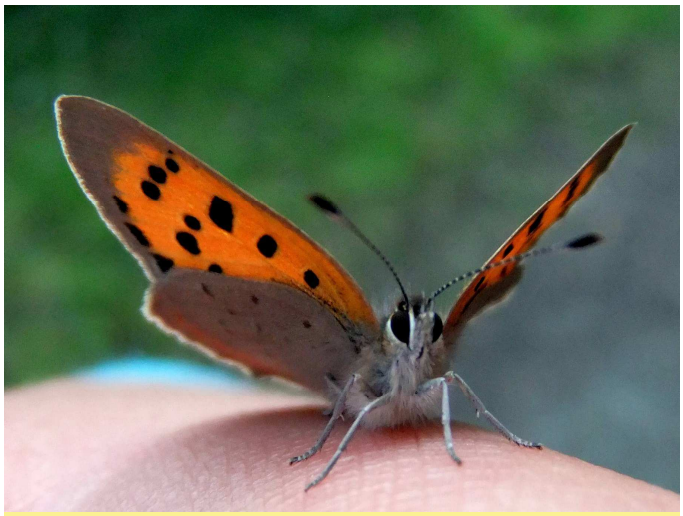
It has long been recognised that brownfields may have as many associated Red Data Book (RDB) and Nationally Scarce invertebrate species as ancient woodlands. Between 12-15% of nationally rare and scarce insects have been recorded from Britain's brownfields. The lack of management on brownfield sites also provides a secure area for breeding birds such as Skylark (*Alauda arvensis*) and Grey partridge (*Perdix perdix*), that are often absent from land under agricultural management.

Many features identified at long abandoned industrial sites can no longer be found in the managed and over-farmed wider countryside or even in our over-tidied parks. Loss of natural habitat is causing many species, including bumblebees, beetles, butterflies and reptiles, to become increasingly dependent and reliant on brownfield sites.

Despite their potential to support biodiversity a strong negative public image has been attached to brownfields due to lack of management and a perceived untidiness and they are threatened by development, succession and landscaping. Restoration of post-industrial sites into greenspace can destroy much of the existing wildlife interest through the importation of large quantities of topsoil and tree planting. Site restoration can result in the loss of particular niches at brownfields which will have a knock on effect on the wildlife found at that site. For example, the loss of bare ground at a site will affect thermophilic (warmth-loving) invertebrate species such as spiders and ground beetles as well as species such as mining bees and solitary wasps that build nests in the ground.

The conservation of brownfield sites has lagged behind other important habitats for plants and wildlife and it was only recently in 2007 that Open Mosaic Habitat on Previously Developed Land was added to the list of UKBAP habitats. In an urban setting brownfields can be used as 'stepping stones' to allow the movement and mixing of animals and plants across an area.

A current project by BTCV Natural Talent apprentice Suzie Bairner is looking at wildlife (particularly invertebrates) and wildflowers at the brownfield sites in Falkirk with Buglife - The Invertebrate Conservation Trust. The project aims to use the Vacant and Derelict land register to identify brownfield sites with open mosaic habitat and conservation interest. Buglife are working



Small copper butterfly (*Lycaena phlaeas*) at Bridgeness scrapyard brownfield site © Suzie Bairner

Comma butterfly (*Polygonia c-album*) at Forge Dam brownfield site © Suzie Bairner

across Britain to highlight the importance of brownfield sites.

Brownfield sites in Falkirk were sampled for invertebrates using pitfall traps and sweep nets. Several invertebrates that were collected during survey work have not been recorded in Falkirk before including the Green tiger beetle (*Cicindela campestris*), Violet ground beetle (*Carabus violaceus*), Field digger wasp (*Mellinus arvensis*), and the Marram spider (*Tibellus maritimus*). This may be because there is no-one or few people sampling for invertebrates in Falkirk, especially at brownfield sites, however there is no local record centre in Falkirk so records may exist but are unavailable.

One site visited in Stenhousemuir, known as Carron Works, is listed as vacant land on the register. Survey work at this site has recorded the Nationally Scarce (Notable B) ground beetle *Amara praetermissa* and the Red Data Book 3 solitary bee *Andrena ruficrus.* The Hobo spider (*Tegenaria agrestis*) that is rare in Scotland has also been recorded at this site. This particular brownfield site is extremely diverse with invertebrate species and is also rich in wildflower diversity. The site is adjacent to the Carron Dams SSSI, which is owned by Falkirk council and managed by the Scottish Wildlife Trust.

Due to natural succession at these sites, brownfields are a transitory habitat and if left un-managed they have a lifespan of around 15-20 years. Results from this project can ultimately be used to improve biodiversity in Falkirk as the council can ensure that brownfield sites recognised as being of conservation importance are considered and mitigated for in the planning and development process. Due to succession, sites recognised as being important in this project may only be of interest for a limited time and can then be put back on the planning and development list. In this time new sites of interest in Falkirk may be identified that can be protected and this allows for a continual shift in 'stepping stones' that allow the movement of brownfield species throughout the Falkirk area.

New Discoveries Made at the Study Sites

Hobo spider *(Tegenaria agrestis)*

The Hobo spider (*Tegenaria agrestis*) (Family Agelenidae) has previously only been recorded from five locations in Scotland (Bo'ness, Grangemouth, two locations from the Edinburgh area and near Dingwall in the Highlands). Individuals were collected from two brownfield sites in Falkirk - from Bo'ness and a new 10km location for this species from Stenhousemuir.

This large house spider is rarely seen in houses in Europe due to competition by its larger relative *T. duellica*. Instead, the Hobo spider is found amongst vegetation and under stones in grassy areas, waste ground and alongside railway tracks. As a result it is thought to be a brownfield site specialist.

Hobo spider (*Tegenaria agrestis*) © Tobias Mercer

Nationally Scarce beetle - *Amara praetermissa*

The Nationally Scarce (Notable B) ground beetle *Amara praetermissa* (Family Carabidae) was recorded in Bo'ness during the 1980s by Richard Lyszkowski. It has recently been found at a new 10km location at a brownfield site on the vacant and derelict land register known as Carron Works in Stenhousemuir. The site is adjacent the Carron Dams SSSI which is owned by Falkirk council and run by Scottish Wildlife Trust.

This ground beetle is a brownfield site specialist and is rare across Britain as it is threatened with the destruction of its preferred habitat and through natural succession.

Suzie Bairner, *BTCV Natural Talent Apprentice*

Rare Shrimps Come to Light in Scottish Seas

Amphipod shrimps are a diverse group of crustaceans from marine and freshwater habitats in Scotland. They can be important indicators of biodiversity and water quality. SEPA has recently compiled a dossier of nearly 240 species recorded from Scotland which will be published by Buglife in May at:

www.scottishinvertebrates.org.uk

A number of the UK species from offshore marine waters are poorly known and are only rarely recorded. Marine survey work carried out in 2010 by SEPA and Marine Scotland Science has revealed new records of some of these species.

Byblis gaimardi © Myles O'Reilly

In the Fladen Grounds off north east Scotland, two unusual amphipods, *Byblis gaimardi* and *Nicippe tumida* were recovered.

B. gaimardi has previously only been found off the Isle of May, off St Abbs Head, and off Alnmouth but there have been no published records in the last 100 years!

N. tumida, one of a number of blind amphipod species, is known previously only from Shetland and the Minches with few recent published records.

Another blind amphipod, *Eriopisa elongata*, with distinctive long uropods sticking up at the tail end, was also found in the Fladen Grounds in 2010. Although the standard UK amphipod identification textbook (Lincoln, 1979) suggests this rare species is restricted solely to deep waters in the Firth of Clyde, it has since been collected from the Irish Sea in 1995. In fact a few old records from the Fladen Grounds (overlooked by Lincoln) do actually exist way back from the 1960's!

In the Firth of Clyde, an area in which amphipods have been well studied for over 100 years, two unusual species were observed in the 2010 surveys: *Unciola planipes* known in this area from

Monocorophium sextonae © Myles O'Reilly

a single record in 1898 and *Maerella tenuimana* which is completely new to the Clyde Sea area. In Scottish waters *U. planipes* is recorded from Shetland and the Firth of Forth while *M. tenuimana* has only been found in the Moray Firth.

It is evident that some of our rarer Scottish amphipod species manage to go largely undetected, or unrecognised, in seabed habitats. Other species may well be changing their distributions. One of these, the alien amphipod *Monocorophium sextonae*, was introduced to southern England from New Zealand in the 1930s and first appeared in Scotland in 1979 in Loch Sween. It appears to be spreading in Scotland and SEPA surveys have charted its arrival in the Summer Isles in 2002, Loch Etive in 2005, Irvine Bay in 2006, Girvan in 2008 and in 2010 it appeared in Loch Ryan and the Sound of Jura.

Clearly there is still a lot to be discovered about the diversity and distribution of amphipod shrimps in our coastal waters and it is hoped the production of a Scottish amphipod dossier will inspire other marine ecologists to look more closely at any amphipods they come across.

Myles O'Reilly, *SEPA*

Eriopisa elongata © Myles O'Reilly

Hitch-hikers in Scottish freshwaters

Some species of aquatic invertebrates collected from the River Endrick in 2010 had ecto-commensal ('ecto' = outside; 'commensal' = animals or plants which live as tenants of others) organisms attached (Figure 1). Ecto-commensal organisms are differentiated from parasites, as they merely live on the host organism, whereas parasites also obtain their nourishment from their host.

These ecto-commensal organisms are likely to be sessile ciliates, which are protozoa with cilia. The cilia are used for feeding. Some of these sessile ciliates have shown a trend to specialise on agile, fast moving host species such as Gyrinidae (Tanada & Kaya, 1993), (Figure1).

It quite amazing that the host animals appear to function with such a heavy covering of these ecto-commensals (e.g. *Hydropsyche siltalai* in Figure 1b). It makes you wonder if in fact at such a high burden level these ciliates may result in effects similar to and so be considered ecto-parasites.

Jennifer Dodd

Reference

Tanada, Y. And Kaya, H. K. 1993. *Insect Pathology*. Academic Press Inc., San Diego. xii, 666p.

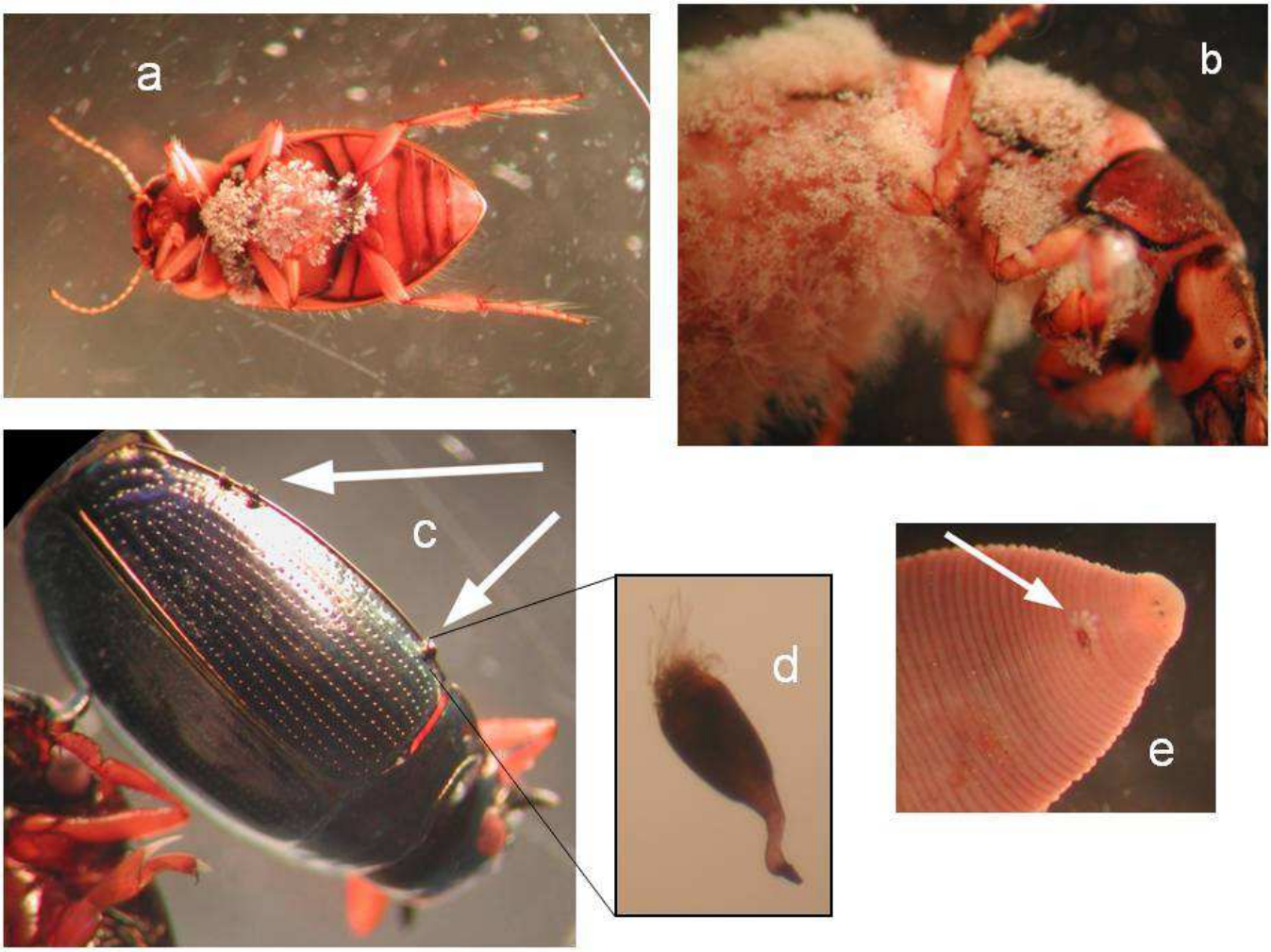


Figure 1: Ecto-commensals attached to various aquatic macroinvertebrates from the River Endrick; (a) Dytiscidae (Coleoptera); (b) *Hydropsyche siltalai* (Hydropsychidae: Trichoptera); (c) *Gyrinus aeratus* (Gyrinidae: Coleoptera); (d) dislodged ciliate from *G. aeratus*; (e) *Helobdella stagnalis* (Glossiphoniidae; Hirudinidae). Pictures not to scale.

A Study of the Endangered Beetle *Thanatophilus dispar* at Loch Leven National Nature Reserve

The beetle *Thanatophilus dispar*, is a member of the family Silphidae - the carrion beetles, which in the British Isles consists of some 22 relatively large and obvious species.

T. dispar is the rarest member of this family and is categorised as Red Data Book 1 "Endangered" The only published British records of this species since 1970 relate to its presence on the shores of Loch Leven National Nature Reserve in Perth and Kinross and in South Uist, Western Isles.

Baited pitfall traps were placed around the loch shore in June and July 2010. The bait used was a small piece of rainbow trout about 2.5 cm square. To ensure that the beetles remained alive and in good health the traps were placed out in the evening and where emptied the next morning. Trapping was not undertaken on rainy nights as, even although there were holes in the bottom of the plastic cups, heavy rain could have caused any trapped beetles to drown.

Baited pitfalls proved easy to use and were successful in collecting *T. dispar*. Once captured each beetle was carefully held between the fingers and individually marked on its back with a small spot of coloured enamel paint. By re-trapping at weekly intervals and comparing the percentage of marked to unmarked specimens the total population on the south shore of the loch was estimated at 481 individuals.

Iona Macgowan, *Perth Academy*

Thanatophilus dispar © Iona Macgowan

Species spotlight

Green tiger beetle (*Cicindela campestris*)

These fast, agile predators are common and widespread throughout Britain and are frequently seen on brownfield sites. Green tiger beetles (*Cicindela campestris)* are easily recognised with their iridescent green colouring and the yellowish spots on their back.

The striking colouration of the Green tiger beetle makes them easily recognisable. The adults of the Green tiger beetle can be seen from April to September and are 10.5-14.5mm in length. Long legs that make them agile when hunting for prey and large eyes make them the perfect predator. If disturbed they will fly for short distances very fast and they make a buzzing sound in flight. Green tiger beetles have strong sickle shaped jaws (mandibles) that have several teeth. Adults feed on any small invertebrates they can catch including spiders, caterpillars and ants.

Green tiger beettle (*Cicindela campestris*) © Matt Shardlow

Volunteer with Buglife in Scotland!

Solway Vegetated Shingle Surveys

During 2010, with funding from Scottish Natural Heritage, Buglife undertook surveys of vegetated shingle along the north Solway coast to build upon the Shingle Vegetation Survey conducted by Randall and Doody (2000).

The surveys were a great success, resulting in many new records of invertebrates for Dumfries and Galloway and also some important records in a Scottish context. For example, during mollusc surveys, Richard Marriott and Barry Colville discovered only the second extant population of the Blind agate snail (*Ceciliodes acicula*) in Scotland. Pitfall trapping for beetles and other crawling invertebrates found the shingle specialist *Philorhizus notatus* and the Bloody-nosed beetle (*Timarcha tenebricosa*).

Copper sun-jumper (*Heliophanus cupreus*) © Chris Cathrine

Active searching of shingle revealed many interesting invertebrates including the Copper sun-jumper (*Heliophanus cupreus*), the Black zipper (*Zelotes apricorum*) and *Chthonius tetrachelatus* (a pseudo-scorpion).

This year we want to concentrate on aculeate Hymenoptera (bees, wasps and ants). This is an excellent opportunity for volunteers – experts and novices – to get involved in understanding the invertebrate fauna of this unique habitat.

Who knows what we'll find this year!

If you would like to get involved with these surveys please contact:
Craig Macadam
Tel: 01786 447504
E-mail: craig.macadam@buglife.org.uk

Gardening Scotland 2011: 3rd - 5th June

Buglife Volunteers Needed!

Well managed gardens are an important refuge for wildlife, including invertebrates. Where better to spread this message than the biggest gardening event in Scotland?

Buglife will be providing a stall at Gardening Scotland 2011, promoting the 'Strategy for Scottish Invertebrate Conservation', the Initiative for Scottish Invertebrates (ISI), and, most importantly, Scotland's fantastic invertebrates themselves!

Volunteers with a passion for invertebrates are needed to help man the Buglife stall.

Full tickets will be provided to volunteers, allowing free access to the event on the day. This is an excellent opportunity to not only promote invertebrate conservation to a wide audience, but also to enjoy Scotland's biggest gardening and outdoor living event.

Places are limited - for more information please contact Chris Cathrine (tel: 01786 447504 / e-mail: chris.cathrine@buglife.org.uk).

Gypsy cuckoo-bumblebee (*Bombus bohemicus*) © Nigel Jones

Invertebrate Events Programme

From the beginner to the expert, there are events for everyone! This section pulls together many invertebrate events into a single calendar.

If you have an event you would like to publicise in Scottish Invertebrate News please send the details to chris.cathrine@buglife.org.uk

Date	Event	Location	Cost	Further Information
07/06/11	Introduction to Sawfly identification	Stirling	£40	scotland-training@btcv.org.uk
21/06/11	Introduction to invertebrates	Grangemouth	£40	scotland-training@btcv.org.uk
08/07/11 to 11/07/11	Spiders (1) - an Introduction to their Identification	Kindrogan	£189	http://www.field-studies-council.org/kindrogan/
12/07/11	Ants - their biology, ecology and conservation	Aboyne	£40	helen.rowe@aberdeenshire.gov.uk
18/07/11 to 22/07/11	Dragonflies and Damselflies	Kindrogan	£205	http://www.field-studies-council.org/kindrogan/
26/07/11	Introduction to Bumblebee identification	Stirling	£40	scotland-training@btcv.org.uk
31/07/11	Joint Buglife and Plantlife guided walk	Flanders Moss	Free	chris.cathrine@buglife.org.uk
03/08/11	Introduction to Spiders	Stirling	£40	scotland-training@btcv.org.uk
05/08/11	Moths - their natural history and how to record them	Inverurie	£20	helen.rowe@aberdeenshire.gov.uk
08/08/11 to 12/08/11	Invertebrate Surveying	Kindrogan	£205	http://www.field-studies-council.org/kindrogan/
20/08/11 to 27/08/11	Highland Butterflies & Moths	Kindrogan	£475	http://www.field-studies-council.org/kindrogan/
20/08/11 to 27/08/11	Spiders (2) - identification and ecology	Kindrogan	£475	http://www.field-studies-council.org/kindrogan/
30/09/11 to 03/10/11	Harvestmen - identification and ecology	Kindrogan	£189	http://www.field-studies-council.org/kindrogan/

Credits and Information

If you would like to write an article for ***Scottish Invertebrate News***, suggest a topic to be discussed, or would like any further information, please contact:

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chris.cathrine@buglife.org.uk

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www.scottishinvertebrates.org.uk

ISI Initiative for Scottish Invertebrates

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