

BMIG Newsletter 49 | Autumn 2025





British Myriapod and Isopod Group - discovering millipedes, centipedes, woodlice and other isopods in Britain and Ireland

BMIG mission statement 2021:

The British Myriapod and Isopod Group (BMIG) aims to improve awareness and knowledge of centipedes, millipedes and other Myriapoda, woodlice, waterlice and intertidal Isopoda and related species in Britain and Ireland.

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Cover Photo: *Metatrachioniscoides leydigii* (Weber, 1810), Lancashire (top), *Armadillidium album* (Dollfus, 1887), Essex (left). *Amphitomeus attemsi* (Shubart, 1943), Somerset (right). ©Thomas Hughes





The view from Plas Tan y Bwlch © Annie Northfield

2024 Field Meeting Plas Tan y Bwlch, Eryri National Park, North Wales

- Kevin Clements -

This year we held a very successful and well attended Field Meeting at Plas Tan y Bwlch, Eryri National Park, North Wales. Attendees visited several sites across the

area, with habitats ranging from coastal sand dunes to broadleaved woodland and limestone outcrops to former gunpowder factories.

At Plas Tan y Bwlch itself, many specimens of *Polydesmus asthenestatus* were found. Native to Italy and Corsica, it was discovered in Northern Ireland in 2008, Cornwall in 2020 and subsequently on the Isle of Wight, Isle of Man and in south Wales. It seems to be winter active and inhabits 'disturbed woodland'.

Geoglomeris subterranea was found on the Great Orme. A soil-dwelling species that has been collected from widely scattered locations across Britain and Ireland, it seems to be a strict calcicole, with 96% of the British records coming from calcareous soils. It is known from Anglesey, but seems to be a new record for mainland north Wales.

Armadillidium album was found beneath strandline debris along the beaches at Morfa Harlech and Morfa Bychan. Strongly associated with undisturbed sand-dune systems, this small pill woodlouse was known previously from these sites, but it was good to confirm its continued presence.

Cylindroiulus vulnerarius was also found in a car park at Morfa Dyffryn – apparently also native to Italy, it has been widely introduced into synanthropic habitats in



Members of BMIG rockpooling for intertidal isopods during the field meeting in Wales © Annie Northfield



Armadillidium album (Dollfus, 1887) © Maaïke de Voogd

though this may be the first record from north Wales.

Philoscia affinis was found at several sites, confirming the presence of this previously overlooked species that was only confirmed as occurring in Britain as recently as 2017 – it remains worthwhile checking records of *P. muscorum*.

On the marine isopod front, *Cyathura carinata*, *Halophiloscia couchii* and *Miktoniscus patiencei* were found at Eglwys Sant Tysilio along the Menai Strait, with *Paragnathia formica* at Ynys on the west coast.

Please do forward any outstanding records for the North Wales field meeting and that in Somerset in 2023 to the respective national recorders and/or myself as soon as possible.

Kevin Clements (Field meeting records)

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2024 BMIG Field Meeting Report

-Maaïke de Voogd-

In April I attended the annual BMIG meeting for the first time. It was quite an adventure, as I travelled all the way from The Netherlands to attend the meeting without having ever met anyone from the BMIG.

During my MSc research project with Leiden University and Naturalis Biodiversity Center I investigated the biodiversity of urban gardens. I placed ninety pitfall traps in thirty gardens in three different cities and another ninety pitfall traps in nature reserves close by to compare them to. After collecting the pitfall traps again two weeks later, I found myself going through 54,710 collected specimens. Where to start identifying them? Well... I decided to start with the groups that have the least species, among which were the woodlice, centipedes and millipedes. I figured groups with less species would be easier. Now I doubt if that is really true. This was also during covid, so I was trying to figure it out by myself, without the help of experts. It was a process with a steep learning curve. But the more time I spent on it, the more I started to like these groups! Now, after finishing my MSc Biology, my colleagues consider me to be an "expert" and take me along when monitoring the biodiversity of both urban and natural areas in The Netherlands and abroad. But since I did all my identifying using binoculars during my internship, I felt far from an expert in the field. In The Netherlands there is a group of people who are working on isopods and myriapods, but sadly they do not yet have any kind of annual meeting where I could go to meet the other experts and learn from them. I already knew about the BMIG, mainly because I used the website a lot when I was trying to identify my collected specimens, so I also knew about the annual BMIG meeting. I am grateful for the



BMIG for offering me a bursary. Paul Harding was kind enough to help me figure out how to get to Bangor and Warren Maguire kindly gave Tony Barber and me a lift from Bangor to Plas Tan y Bwlch. Everyone was super helpful and made me feel welcome right away.

We arrived on Thursday afternoon. During dinner was the first time I saw nearly everyone together. Such a big crowd, all excited about isopods and myriapods! I was quite nervous about not knowing anyone, but this quickly faded. The atmosphere was great. After dinner there was an official introduction to the weekend with information about the sites we were allowed to visit.

Friday morning after breakfast we discussed which groups would go to which sites. I joined a trip to the dunes and the beach near Porthmadog led by Paul Richards. Wales is simply beautiful. It was my first time there, so I enjoyed the surroundings a lot. But we also found some cool critters! We checked many pieces of driftwood, looking for the small (up to 6 mm) and sand-coloured beach pill woodlouse *Armadillidium album*. No luck at first, although we found some other species of millipedes and woodlice. Then we saw a big piece of driftwood on the beach in the distance. When we got there, we found quite a few! After having our packed lunch in the car (it was rather windy) with a nice view, we walked a bit along the beach near Criccieth. We came across a woodlouse spider *Dysdera crocata*, with prominent jaws that can pierce the tough armour of woodlice, and we found some centipedes. I have to admit that I lost quite a few centipedes due to the wind. After dinner we got a crash course on identifying the tricky Trichoniscids from Thomas Hughes and looked for the southern pill woodlouse *Armadillidium depressum* that roamed the walls on the outside of the building in the evenings.

Saturday morning I stayed at Plas Tan y Bwlch with some others. The plan was to check the woods in the surrounding area, but we never left the parking lot! Turns out that there were some interesting millipedes in the leaf litter that accumulated in a corner of the building. I got to put my litter sifter to good use. We also found quite a few of the pill millipede *Glomeris marginata*. In the afternoon I joined a group who visited a site near Bangor, after which I returned to Plas Tan y Bwlch with a smaller group to spend some time in the lab. The talks after dinner were all about isopod genomics and phylogenomics. I learned about the Darwin Tree of Life Project, with the goal to genome sequence all species of UK isopods, and about the research by Jessica Thomas Thorpe on the evolution of isopods and their habitat

transitions. Afterwards, Paul Richards gave an introduction to woodlice with some helpful tips on identifying woodlice in the field.

The next morning, after breakfast, it was sadly time to leave. I got to spend a bit more time in the garden around Plas Tan y Bwlch, sitting in the sunshine with a marvellous view, before Warren gave me a lift back to Bangor. Overall, I had a great weekend that felt like a holiday, while gaining a lot of knowledge and meeting a lot of lovely people. I want to thank you all for being so welcoming. I am definitely going to try to make it next year!

The House Centipede has arrived!

- Steve Gregory -

Back in the day the Provisional Centipedes Atlas (Barber & Keay, 1988,) gave just two British records (excluding the Channel Islands) for House Centipede *Scutigera coleoptrata*; a wine cellar in Edinburgh in 1907 and a pre-1955 record from Colchester. Move on a further three and a half decades and the Centipede Atlas (Barber, 2022) notes 38 records (which includes the Channel Islands where it is well established). Of these, just eight records were made in the 110 years from the 1880s to the 1990s and a notable 30 records in the 20 years post 2000.

This upward trend in *Scutigera* sightings continues on mainland Britain! Looking at data held on iRecord, which contains the vast majority, if not all, of the UK *Scutigera* records submitted to the centipede recording scheme, this is quite striking. In 2020 there were 7 records, 6 in 2021 and 5 in 2022. But then in 2023 there were an unprecedented 19 records in a single year, including the first (repeated) observations of a naturalised outdoor population on a vegetated sea cliff in Cornwall (see Tylan Berry's report in BMIG Newsletter 47). And then 2024 happened! To the end of August (i.e. with 4 months still to go!) 71 records have been submitted to the recording scheme, which is not much less than all the previous records from all years added together! In contrast there are just five additional sightings from the well-established populations on the Channel Islands.

It seems that the House Centipede can no longer be considered a mythical beast on a par with the unicorn. It's real and it seems to be here to stay... Records are widely scattered across England northwards to a line from Blackpool to Hull, with a handful of sites in Wales. Mostly these are isolated single observations, perhaps



ephemeral populations as a result of accidental introduction. However, it seems to be well established in some areas, notably Weston-super-Mare (on the north Somerset coast) which boasts about 20 records from 10 sites scattered across the town (mainly from inside houses). Liverpool, an historic port, comes in at a poor second place with 7 records from across the city. And of course there's that outdoor population on the Cornish cliffs, where it's now been found 3 times!

Although there is no doubt that this upward trend is real, the number of sighting has been slightly enhanced by the publication of a BBC news report regarding the discovery of the House Centipede in Nottinghamshire (as reported in the last Newsletter 48). Several recorders mentioned that they had seen this article which requested that they should record their sighting. It'll be interesting to see what happens in 2025!

***Cylindroiulus londinensis* in Cumbria**

- Anthony Wardhaugh -

On 18th April 2023 I visited Brantwood, the home of John Ruskin from 1871 to 1900. Brantwood is a large house situated on the eastern shore of Lake Coniston in Cumbria (www.brantwood.org.uk). Whilst there I was able to make a brief search for ground-dwelling invertebrates in parts of the extensive garden. This is on a

westward-facing slope and is set amid acidic oak woodland. Of particular note was a single specimen of *Cylindroiulus londinensis* found in the Fern Garden beneath a piece of slate (Figures 1 and 2). Unfortunately I did not have a g.p.s. receiver with me on the day so the best grid reference that can be provided is SD312958 (VC69: Westmorland). During this very brief search no other individuals were located.

This finding is of significance because there are no other records of *C. londinensis* in north-west England although it is known from western Scotland and from Wales. In Europe its distribution is distinctly Atlantic so there seems to be no reason why it should be scarce in the north-west and this apparent gap in its distribution may be a consequence of uneven recording effort (my thanks to Paul Lee for these comments).

At two sites in north-east England I have found *C. londinensis* in abundance:

- Crimdon Dene NZ48433673 (VC66: Durham) on 23.05.2018. Hundreds of individuals were present beneath stones in the dry bed of Crimdon Beck where it runs through rough grassland (Wardhaugh 2019). *C. londinensis* had been recorded from this site previously by N. Jackson on 04.05.1985 (see NBN Atlas website).



Cylindroiulus londinensis (Leach, 1816) ©A. Wardhaugh



- Castle Eden Dene NZ44964046 (VC66: Durham) on 12.10.2019. At least tens of individuals were found under stones and timber in an area of fairly open woodland (Wardhaugh 2020).

In view of its abundance and high population density at these two sites it would be of interest to know more about the numbers present and extent of the population of *C. londinensis* at Brantwood.

The only other myriapods found in the garden at Brantwood on 18.04.2023 were *Cylindroiulus punctatus* and *Lithobius variegatus*.

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Cylindroiulus londinensis (Leach, 1816)
©A. Wardhaugh

***Porcellionides cingendus* (Kinahan, 1857) (Isopoda, Porcellionidae) established in Worcestershire**

- Paul F. Whitehead -

According to Gregory (2009) *Porcellionides cingendus* (Kinahan, 1857) has a markedly Atlantic type of distribution and a clear preference for humid environments especially along the coastal fringes of south-west Britain. Documenting an East Gloucestershire record (VC33 SO9330) in November 1987 Whitehead (1988) attempted to produce an ecological rationale for its occurrence there noting the proximity of the ancient River Swilgate

and Dean Brook.

Sorting through a large pile of cut decaying herbage on 28 August 2024 as part of an extended study of the invertebrates of the Warwickshire-Worcestershire River Avon (Whitehead 1986a, 1986b, 1988, 1989a, 1989b, 1992, 2000, 2001, 2006, 2008) I observed six fast-running woodlice of uniform colour, including subadults in moult at Birlingham, Worcestershire (VC37 52008'N 02011'W SO9232). They would certainly have been missed had it not been for the technique of sifting over white polystyrene. All of the *P. cingendus* were of the same almost uniform colour and this initially protracted the identification. Usually *P. cingendus* has a mottled appearance (Gregory, 2009) and examples seen under limestone boulders on the shingle beach just above high water mark at Hope's Nose, Torbay, South Devon during 2017 (Fig. 3) confirm this. If individuals of the Birlingham population are distinctive in this way it could indicate ancient origins confirmed by study of other groups of riparian invertebrates in the same areas of land usage unchanged for centuries.

The Birlingham site, adjacent to an ancient hawthorn enclosure hedge, is a somewhat depressed area at the back of the floodplain of the River Avon no more than 12 metres a. s. l. where the rank vegetation is a mixture of tall herbs originally of flood-rafted origin in particular Marsh Woundwort *Stachys palustris* L., Trifid Bur-marigold *Bidens tripartita* L. and Orange Balsam *Impatiens capensis* Meerb. amongst which *P. cingendus* could easily be overlooked. However, in studies by the author on millions of flood rafted invertebrates in the Avon valley *P. cingendus* has never been encountered whereas the isopod *Trachelipus rathkii* (Brandt, 1833) is frequently flood-dispersed and has been observed at the *P. cingendus* locality. Controlled sampling in this habitat would be difficult given that the area is prone to episodic flooding viz. seven flood episodes between October 2023 and May 2024.

Monitoring populations of invertebrates in riparian contexts and attempting status assessments of them (Farmer, 2023) requires considerable care and forethought. Invertebrates subject to inundation may be dispersed more readily by an increasing number and frequency of flood events but not all are and some have developed special techniques to counteract the effects of inundation. In the case of *P. cingendus* the Birlingham population could well be constrained spatially by flood events rather than being dispersed by them. For example, a metapopulation of the intensely localised carabid beetle

beetle *Harpalus dimidiatus* (Rossi) has for more than 40 years maintained fidelity to very limited areas of the floodplain where individuals have developed the ability to swim purposefully under floodwater as it expands laterally over them. *P. cingendus* has certainly demonstrated an ability to disperse by other means including to isolated areas well away from its normal range (De Smedt et al., 2022); the only other Worcestershire record is of one individual found in a greenhouse at Malvern on 26 March 2024 (Leonard, 2024) which was regarded as a passive dispersant. Although *P. cingendus* has been regarded as synanthropic it presently shows no invasive tendencies in this way.

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***Chaetophiloscia elongata* in Kent: a woodlouse new to Britain**

- Andy Musgrove & Richard Wilson -

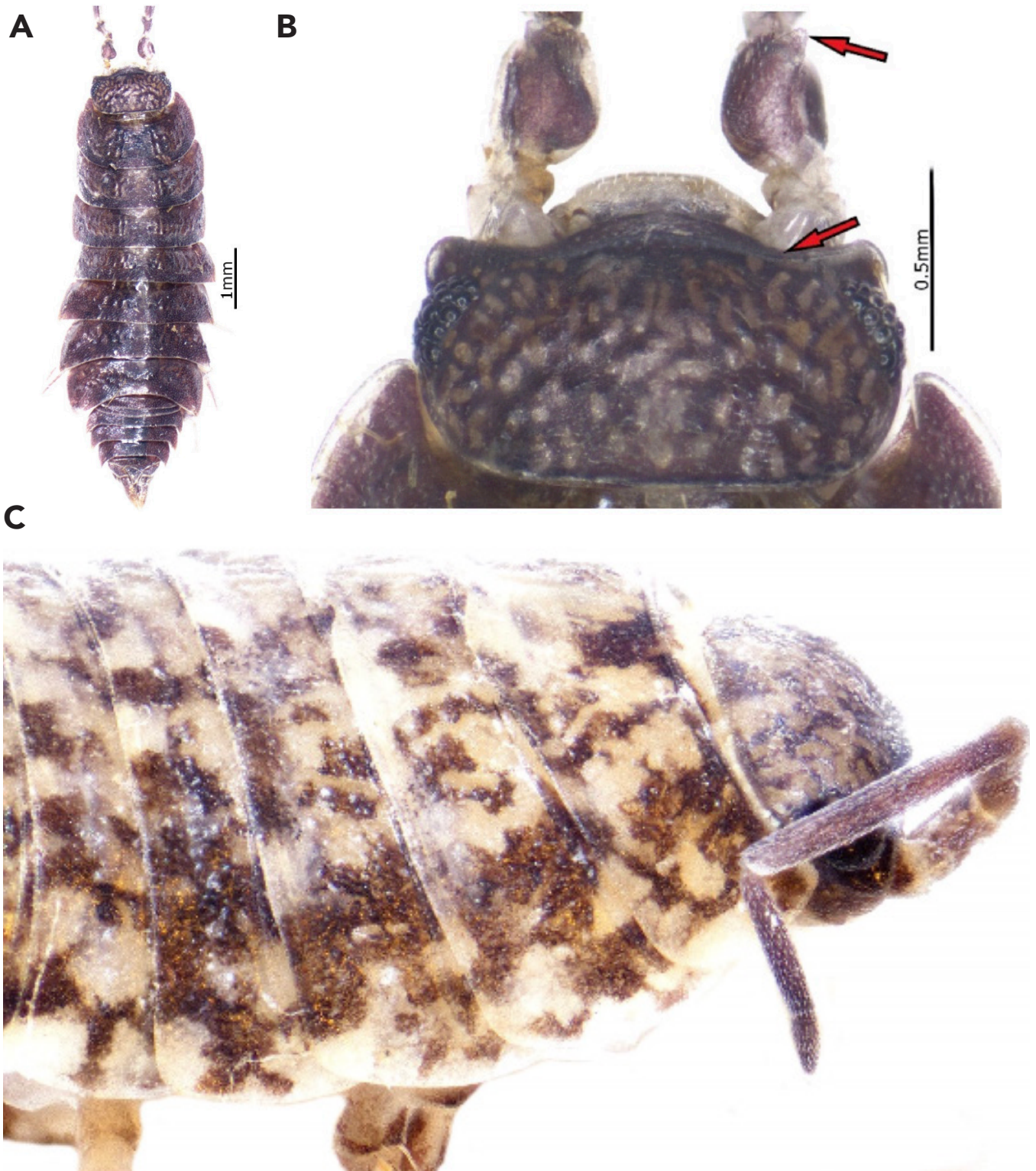
During spring and summer 2024, we were commissioned to complete a series of invertebrate surveys to the southern edge of the Isle of Sheppey, East Kent. Whilst sorting through material collected prior to the final visit, multiple specimens of a distinctive small woodlouse were discovered. These were superficially similar to immature specimens of *Philoscia muscorum*, having a relatively dark head and dorsal stripe, as well as three flagella segments and a 'stepped' outline between pereon and pleon. However, the telson was notably rounded and the margins of the pleon notably smoother than the more 'jagged' edge of *muscorum*. The shape was also more elongate than for an adult *muscorum*, although not so dissimilar in proportions to immatures of that species.

Investigating other options via the BMIG website, it became clear that it was a good fit for the genus *Chaetophiloscia*. Overall colouration, as well as it having eyes made up of about 25 ommatidia, suggested that *C. elongata* was the closest match. Images were sent to a few woodlice specialists on 20th August 2024 and there was broad agreement with the suggested identification.

Having established the identification of this new British species, further investigations of its range and habitat preferences were possible during September and October 2024. In short, most specimens were found in plant litter at the interface of seawall and saltmarsh, although in some places the species was also present on the tops and landward edges of seawalls. Specimens were located both by sieving and through suction-sampling.

So far, the species has been found on the mainland (south-west) side of the Swale for several hundred metres (at least) either of the Kingsferry Bridge (TQ9169), readily accessible via public footpath. It is also present





Figs. *Porcellionides cingendus* A; Uniformly coloured example, habitus (specimen slightly desiccated), Birlingham, Worcestershire, 28 August 2024. **B;** First pereonite, head and peduncles, dorsal aspect. The slightly undulating front margin of the head and distinctive peduncular eminence are arrowed. Birlingham, Worcestershire, 28 August 2024. **C;** *Porcellionides cingendus* typical mottled example, littoral of Hope's Nose Devonian Limestone, Torbay, south Devon, amongst boulders just above high water mark, 50°46'N 03°48'W, SX948636, 2 metres Ordnance Datum, 3 October 2017. © P. F. Whitehead.

on the Sheppey side of the Swale at a number of locations east as far as Mocketts Hill (TR0066). Clearly, the species should also be sought in similar habitat elsewhere, particularly around the greater Thames system. However, an extensive, dedicated search of 29 different locations around the Medway Estuary to the west failed to reveal it. Concerning the origin of *C. elongata* in this area, it is possible that it was introduced during the construction of the seawalls (particularly if continental material was used). Alternatively, it may simply have arrived as a result of unwitting delivery by boats; the area continues to handle imported cargo (e.g. at Ridham Dock just south of the Kingsferry Bridge) and will have seen marine traffic to / from the continent for centuries. Finally, it is possible that *C. elongata* is a long-overlooked native species, although given the non-detection around the Medway Estuary this feels less likely.



Above: Dorsal views of *Philoscia muscorum* (left) and *Chaetophiloscia elongata* (right) from Sheppey. © A. Musgrove & R. Wilson.

The full report is now available to read via the BMIG Bulletin (37) here: https://bmig.org.uk/sites/default/files/bulletin/BullBMIG37-2025p02-06_Chaetophiloscia_Musgrove-Wilson.pdf

Below: Lateral view of *Chaetophiloscia elongata* from Sheppey. © A. Musgrove & R. Wilson.



Centipede Hunting on Scilly

- Steve Gregory -

Between 1982 and 1986 Dick (R.E.) Jones & P. Pratley (1987) undertook a detailed survey of the myriapods occurring across the Isles of Scilly, recording 20 species of centipede. Lying some 27 miles west of mainland Cornwall this archipelago of low lying granite islands experiences a moist and mild climate. Unsurprisingly, the principle 'semi-natural' habitats are mainly coastal, including granite cliffs, shingle beaches and sand dunes, with large tracts of western maritime heath. The highlight of Jones & Pratley's survey is undoubtedly the discovery of two undescribed geophilid centipedes *Arenophilus peregrinus* Jones, 1989 and *Nothogeophilus turki* Lewis, Jones & Keay, 1988. Subsequently *A. peregrinus* has been found at two additional sites on the Cornish mainland (and single sites in Portugal and France). In contrast *N. turki* has not been refound anywhere since its 1988 description based on specimens from the Isles of Scilly and the Isle of Wight. Jones & Pratley also refer to the Nationally Rare 'coastal' centipede *Geophilus pusillifrater* as "appears not to be uncommon". Although there are a handful of records for *G. pusillifrater* from the south coasts of Britain and Ireland it has not been seen in recent decades (the most recent record seems to be in Ireland in 1998).

Thus, when I was given an unexpected opportunity to spend a few days on the Isles of Scilly, albeit at the wrong time of year (that dry period of late summer when these notoriously elusive species are even more elusive!), I decided to look for little white soil dwelling centipedes. My three target species, *A. peregrinus*, *N. turki* and *G. pusillifrater*, all have 45 or less leg bearing segments (LBS) so it's relatively easy to spot likely specimens among a sample. Unfortunately the common *Schendyla nemorensis* and *Geophilus truncorum* also fall into this category. Thankfully, the former has characteristically shaped ultimate legs and the latter sternal carphophagus fossae; neither are seen in my target species.

The first day on the island of St. Mary's (which was warm and sunny) was preceded by a day of steady rain, which I hoped would bring these elusive species closer to the ground surface. Starting at Tolman Point I soon found a small pale specimen beneath an embedded rock. Upon my return home, examination with a microscope showed it had 61 LBS – far too many legs for my target species, but at least I'd found something. This proved to be an immature *Geophilus osquidatum*, a scarce pre-

dominantly south-western species. Further east along the coast is the beach at Porth Hellick. Here several relatively large pale yellow specimens were collected from under stones at the base of a low cliff just above the high tide mark and from among sandy shingle beneath a wooden pallet sat on the storm drift line among rotting seaweed above the beach. These had 53 or 55 LBS and distinct sternal carphophagus fossae (i.e. not one of my target species) and proved to be *G. gracilis* (= *G. seurati*). Apparently this scarce coastal species has not been seen on the Isles of Scilly since Jones & Pratley's 1980s surveys. Additional specimens were also found a few days later on the coast at Rushy Point on Tresco. Continuing east on St. Mary's, at Porth Hellick Downs I picked up 2 centipedes each on the underside of embedded stones one from the cliff top and the other about 100m inland. Both had 41 LBS and lacked the distinctive features of *S. nemorensis* or *G. truncorum*. Looks promising! I mounted a specimen onto a microscope slide immersed in clove oil (an easy way to clear a specimen to see internal structures; and it smells nice!). The next morning I could clearly see 3 pairs of coxal pores, the posterior pair being smaller. This and other characters indicated *Geophilus pusillifrater*. Success! My images can be seen at <https://bmig.org.uk/species/geophilus-pusillifrater> (these may be the only known images of this species; Tony Barber, pers. comm.).

Unfortunately this is as good as it got. Subsequent days remained dry and sunny. I did not find *A. peregrinus* nor *N. turki* with all other likely candidates proving to be either *S. nemorensis* (on Tresco and Bryher) or *G. truncorum* (on St. Mary's and Tresco). Although disappointed not to have re-discovered *N. turki* or *A. peregrinus*, I had never seen *G. pusillifrater* before, so that is a welcome bonus. Considering the relatively dry conditions I'm pleased to have found anything of note at all. A visit at an appropriate time of year (late autumn or early spring) would have been much more productive for soil dwelling species in general. Both *N. turki* and *A. peregrinus* must surely still be present on the islands, and there is huge potential for other unexpected species, as highlighted by Mark Telfer's (2024) discovery of the woodlouse *Acaeroplastes melanurus* on Tresco in 2019. So do visit the archipelago if you can. Several 'BMIG' species recorded there have not been seen since the 1980s and up-to-date information about their occurrence and distribution is urgently needed.

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Evolutionary origins of terrestriality in Isopods: The power of Phylogenomics

- Jessica Thomas Thorpe -

Last September, my paper "*Phylogenomics suggests a single origin of terrestriality in isopods*" was published in the *Proceedings of the Royal Society, Series B: Biological Sciences*. If you attended the field courses over the last couple of years, you would have heard me talk about it, so it is nice to have it finally out! Here is a brief summary of the findings for those who haven't (had a chance to) read it (yet!).

When biologists sequence the genes of any species, they upload it to online databases. From these databases, I took all the isopod DNA sequences generated in different studies over the last decade and analysed them to find out more about the evolutionary relationships of isopods. More recent studies tend to produce 'genomic' datasets, meaning they have 1000s of genes in them. Of course, it didn't use to be as easy to generate whole genomes – so older studies tend to contain only individual genes. These genes are sometimes called 'marker' or 'housekeeping' genes, as they are responsible for essential function of the cell. They are therefore found in, and can be compared across, almost every species, so are useful for evolutionary analysis! For example, COI – the barcoding gene – is one of these, and another important one is 18S... both have been used for years for 'phylogenetic' analysis – studying species evolutionary relationships using DNA sequences.

Back to the study – I analysed two different datasets – a 'phylogenomic' dataset containing almost 1000 genes across 36 isopods, and 4 'outgroup' species (closely related Crustacea, such as amphipods, which can tell you which isopods evolved first), and a 'marker-gene' dataset containing 148 isopods, and 12 outgroup species, but only 11 genes. These two datasets produced very similar results. Firstly, the oldest group of isopods appear to be the Asellota – this group contains freshwater species, such as *Asellus*, the pond-louse, and a clade of deep-water marine isopods, Janiroidea (some species of this group live as far as 10km below the surface and have insanely long limbs – looking more like spiders – but anyway, I digress). The next group in the

'marker-gene' dataset were the Phreatoicoidea – this is a group of freshwater Australian isopods – which didn't yet have genomic data, so weren't included in the 'phylogenomic' dataset (however, since I collected them on fieldwork in Australia last year, they now do! And actually, are recovered in the same place). Surprisingly, the next branching clade in the tree (in both datasets) was Epicaridea – this is the group of isopods which parasitise other Crustacea. This was a surprise because previous studies had suggested that the parasitic isopods (Epicaridea, and Cymothooidea, which parasitise fish) were closely related to each other. In the 'marker-gene' dataset the next two groups were the Gnathiidea (containing *Gnathia*) and Anthuroidea (long slender 'worm-pods' e.g. *Cyathura*), grouping together in a sister-relationship (neither of these groups were included in the 'phylogenomic' dataset as they lacked genomic data – but I have recently sequenced these too and found that Gnathiidea are actually more closely related to Epicaridea than Anthuroidea!). The next clade was the terrestrial Oniscidea – unlike previous studies, these all grouped together, i.e. the sea slater *Ligia*, as well as *Ligidium*, *Helleria* and *Tylos* were sister to the other oniscids. Though the exact relationship between these non-crinochetan oniscids isn't fully resolved yet, they are definitely more closely related to other terrestrial isopods, than other marine ones. The final clade contained the Cymothooidea, then the Valvifera (e.g. *Idotea*) and Sphaeromatoidea (such as *Sphaeroma*) as sister-groups. Tiny Limnoriidea were hard to place in the tree, but they are either related to Cymothooidea or the Valvifera+Sphaeromatidea clade.

It turns out that the surprising evolutionary relationships recovered using the 'phylogenomic' dataset, i.e. those which differed to previous studies, were due to the fact that previous studies had only relied on individual 'marker-genes' before – and one of them – 18S, was actually really biased in isopods. It's not really clear why, but certain isopods, e.g. the sea-slaters and the parasitic isopods, have much faster mutation rates in their 18S gene sequences – so the phylogenies built using 18S were incorrectly grouping the sea-slaters together with the parasitic isopods – making the terrestrial isopods in Oniscidea look like they didn't have a single origin. And also explaining why previous studies found the parasitic isopods to be closely related to each other. It is known that parasitic species can have faster mutation rates, but coastal species having faster rates hasn't been reported before.

Finally, I built a dated time-tree for Isopoda, using isopods from the fossil record to time-stamp the tree. This





Examples of members of the Tylida (family Tylidae) that are an unusual basal group of terrestrial isopods which are predominantly found in coastal habitats. They have a surprisingly similar morphology to marine Sphaeromatoidea. **Above**, *Helleria brevicornis* (Ebner, 1868), **Below** *Tylos ponticus* Grebnitzky, 1874. © T. D. Hughes



This revealed some really cool biogeographic patterns, such as a split between the predominantly northern and southern hemisphere terrestrial isopods, which could date to the break-up of Pangaea – or might be younger! Native northern hemisphere terrestrial isopods aren't found across Asia or in the states, except recent human-mediated introductions, unlike e.g. insects or other species of northern hemisphere isopods like *Asellus* or *Ligidium*. This suggests a later origin. Another interesting set of dates corresponded to the parasitic isopods – the Cymothoidea appear to have coevolved with their fish hosts, but the crustacean parasites in Epicaridea look to have evolved much later than the first crustaceans. There are lots of other interesting isopod dates that I wrote (a lot) about in the paper. This is free to download and read from the Royal Society website. I'd be happy to answer any questions next field course, or by email, if you have any!

The Burren, Ireland: The search for a new woodlouse

- Thomas D. Hughes-

Last winter I made a brief trip to The Burren, County Clare in Ireland in search of under-recorded or potentially new Trichoniscid woodlice. The Burren is a very famous landscape of jagged glacial-worn limestone that has a very rich biodiversity and houses many rare and unusual species.

To my surprise, the most abundant Trichoniscid during the trip was *Trichoniscoides saeroensis*, which was found as many hundreds of individuals under scree on the limestone pavements that ran inland for several hundred metres, and sitting only a few metres above the high tide mark. The fairly ubiquitous *Haplophthalmus danicus*, *H. mengii* and *Trichoniscus pusillus* agg. were also found in good numbers further inland. However, I failed to find my target, a *Metatrachoniscoides* species that I'm sure must be present somewhere in the karst landscape of Ireland. Recent records of *M. celticus* in England and Wales has shown this species has a strong association with calcareous geology (Hughes, 2019; Ashwood & Gregory, 2021), and the same is true for all the other species found on the continent (the only exception being *M. leydigii*) (Vandel, 1960; Reboreira et al., 2015). However, the geology isn't the only thing that pushed me to search for *Metatrachoniscoides* in Ireland, but more the biogeography of a different crustacean, amphipods of the genus *Niphargus*. The British and Irish *Niphargus* are restricted exclusively to subterranean habitats including cave systems, wells,

boreholes, springs and riverine gravels (HCRS, 2024a). It is currently believed that these amphipods persisted during the last glaciation in tundra and sub-glacial refugia, which would have allowed the preservation and formation of several endemic species to these islands rather than the fauna being comprised of widespread, post-glacial colonists (ibid). Interestingly, of our endemic species, the *Niphargus* found in Ireland (*N. irlandicus* and *N. wexfordensis*) are completely distinct to those found in England (*N. glenniei*), indicating a very ancient split between their respective faunas (HCRS, 2024b). I speculated that as the majority of the species of *Metatrachoniscoides* currently described are known from cave systems, it is highly likely that the genus is capable of surviving like *Niphargus* undisturbed during climatic oscillations. In fact, the highest diversity of *Metatrachoniscoides* can be found living in or near cave systems in the Pyrenees (Vandel, 1960), an area that was also strongly impacted by glaciation (Delmas et al., 2021). Although *M. celticus* has not been recorded from cave systems before, it still lives an endogenous lifestyle in the interstitial spaces deep within the soil. This is essentially a cave system in miniature. Therefore, if it is possible that *M. celticus* is a truly endemic taxon that could have survived during the glacial period deep underground, then surely the same could be true for the limestone areas of Ireland, and if so, why not become a different species like that seen with the *Niphargus*? Sadly I was unable to confirm this during this trip, but the possibility still remains that a new *Metatrachoniscoides* could potentially be hiding somewhere in Ireland. Although this was a woodlouse focused trip, I did also spare some time to look at Myriapods too. A highlight of the trip was finding a single specimen of *Geophilus pusillifrater*, under deeply embedded limestone boulders in association with many *Schendyla nemorensis* just outside the town of Doolin. And if I have piqued your interest in *Niphargus*, then a trip to the cave at Doolin is a must. Both Irish endemic species can be found living sympatrically in the underground river which can be easily viewed from the main chamber.

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The Pet Trade & BMIG

- Annie Northfield & Thomas Hughes -

Many of our readers are probably aware of the growing popularity of keeping isopods as pets, and it is very likely some members have been introduced to the BMIG society through this avenue. Many of us have kept (or still keep) woodlice as pets before - they're common, easy to maintain, reproduce all year round, and are a firm favourite with children. However, following recent social media trends and the timely publication from researchers in Spain (Robla et al., 2024), it seems necessary to discuss this topic in a little more detail in order to clarify the society's position on the subject.

In general, woodlice are simple and rewarding to keep as pets, with many different species able to be kept identically in comparably basic set ups: plastic containers with ventilation, a substrate of leaf litter and soil, fed on a mixture of vegetables and calcium sources and sprayed occasionally with water. Additionally, being active in the adult stage all year round and reproducing readily, they are a desirable alternative to other strongly seasonal or short lived invertebrate pets. In the UK, keeping and breeding some *Armadillidium* or *Porcellio* from the garden is not an issue and does not represent a conservation concern; however, the same cannot be said for the unregulated trade of species from elsewhere in the world.

There are approximately 4,000 species of isopod globally and with many brightly coloured, spiky, tuberculate and ball rolling varieties, it is not surprising they have become popular as pets. Indeed, there has been some-

what of a surge in the keeping and breeding of isopods in the last decade or so, exacerbated by social media groups and the fact that, while it's now not possible to sell vertebrates on many sites, it is still acceptable (or with simple loop holes) to sell invertebrates. Until now, little attention has been focused on the impact this trade is having on wild populations, especially of rare and endemic species. In Britain and Europe, many species which are common and widespread breed readily in captivity and produce interesting colour forms (e.g. *P. laevis*, *A. vulgare* and *A. granulatum*), and are thus less vulnerable to over-collection and resulting population pressures. However, this picture changes with the inevitable demand for rarer and more unusual species, eventually impacting uncommon or endemic species which typically breed slower and inhabit more niche environments.

In the study conducted by Robla et al. (2024), examining online shops selling invertebrates found 56 Spanish species in the international market, of which 22 were endemic to Spain. 15% of all endemic Spanish woodlice were represented in the pet trade, and the number of species on sale is ever-increasing. The most common Spanish endemics for sale were *P. bolivari*, *P. haasi*, *A. espanyoli*, and *Cristarmadillidium muricatum*, with the endemics significantly more expensive than their non-endemic counterparts. Spanish woodlice in particular were also disproportionately represented in online retail shops. This provides worrying evidence that the greater expense derived from endemic species drives the trade in rare species, with no national or international regulations protecting them from over-collection or population-level damage. It can only be hoped that the consumers who are buying these species are simply unaware of these facts. Another major example of this effect is tropical genera such as *Cubaris* from east Asia, which are hugely popular in the pet trade due to their interesting colours and ball-rolling capabilities, plus the fact that there are many species; we last counted around 200 distinct colour forms or species represented in the pet trade. More concerning is the fact that some of these species show troglitic characteristics, adaptations to cave environments such as the attenuation of appendages and loss of eyes. Such species often live in highly sensitive environments, sometimes occurring at low population densities where a single species may be restricted to one or several interconnected cave systems. The fragility of these environments make them highly susceptible to over-collecting, inadvertently leading to population or species level extinctions in the wild. The continuous demand, especially from the western world, for new and interesting species is driving an





Porcellio expansus Dollfus, 1892 in situ in Spain. A species prized in the pet trade for its colour and large size. ©Thomas Hughes

industry that could very easily be causing widespread extinctions of tropical woodlice before they have even been described.

Despite research focusing on mainland European species, there are potential consequences for the UK as well. As mentioned elsewhere in the newsletter, there have been increasing records of non-native species collected outdoors in recent years, with some including suspected escapes from captivity, such as the orange form of *P. laevis*, otherwise a rare species in the UK. More surprisingly, an observation of *A. gestroi*, a northern Italian endemic, turned up in our recording scheme from a Scottish garden. There is the potential that the trade in exotic woodlice, already established in this country, could have further ramifications in the next few years with regard to potential introductions. Alternatively, the demand for rare species could begin to impact species here, although thankfully there is limited evidence for this so far. Following the recent research of Robla et al. (2024), it is hoped that this may set in motion some way of regulating the trade in woodlice so that populations of rare and endemic species are protected in their wild habitats.

To conclude, we do not want to deter like-minded in-

dividuals from keeping pet woodlice, as it is a fun and rewarding activity that can foster greater understanding and appreciation for this group. As a general rule, if you are interested in keeping pet woodlice, collect species local to your home, ones that are abundant, and never collect them in large numbers. Additionally, if you are interested in more exotic woodlice, only purchase species that are well established in the trade; cheaper species with higher supply and lower demand are far less likely to be contributing to recent wild collecting or over-harvesting events. Always make sure to research any species to understand its wild distribution.

Finally, the BMIG acts solely as a recording group, and has no affiliation with any form of sale or trade in these animals.

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IUCN Red List assessment Request for records

- Paul Lee -

BMIG last undertook a species status assessment of the centipedes, millipedes and woodlice of Great Britain over 10 years ago. Since that review was published there have been many changes to both the number of species and the extent of their distribution. An update is long overdue and Natural England have approached us about re-evaluating the BMIG data for centipedes, millipedes and woodlice with a view to producing a new Regional Red List for these groups using the latest IUCN criteria. The cut-off date for records used in the initial status assessment was 2012. The re-evaluation will include comparing this older data with our post-2012 records. We estimate that, post-2012, BMIG holds approximately 7500 centipede records, 12000 millipede records and over 20000 woodlouse records. There has been no big push for submitting data on these groups since the most recent distribution atlases were published, as long ago as 2006 in the case of the millipedes, and no doubt there are many recorders out there who have important data that has never been submitted to the recording schemes. The more of the 'missing' data we can capture the more relevant our analyses will be. Therefore, we are appealing to everyone that has not already done so, to submit your post-2012 records. We need your records, however many or however few they may be, by the end of 2025 to allow us to begin the assessment early next year. Ideally, please enter your records via iRecord using the new BMIG species recording form, but you can also send records direct to the scheme organisers (see below for contact details). It would be best to contact the scheme organiser before sending any records directly, just to ensure they are in a format that is accessible by the receiver.

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Fieldwork Insurance

BMIG now has its own fieldwork insurance. The previous arrangement where we fell under the insurance policy of the BENHS, as an associated society, no longer operates so we have had to take out our own separate policy. This insurance mainly covers our spring field meeting and allows us to visit sites that require public indemnity insurance, but this may also extend to BMIG members carrying out fieldwork at other times. If you are trying to record myriapods and isopods on a site but getting access requires public indemnity insurance the BMIG policy could cover you up to £10M. Note that this is not for commercial recording or consultancy work, but for general, voluntary recording within Great Britain. Please contact the chair or secretary for more details.

New treasurer needed

After many years of looking after the BMIG accounts Paul Harding has stepped down as treasurer at the last AGM meeting in April 2025. The society will greatly miss the support and invaluable advice Paul has provided over the years in this role and we sincerely thank him for this, but the torch must be passed. During the last AGM the role was sadly unfilled with Paul acting only on a very provisional basis until a new officer is in place. For those wanting to have a greater involvement in the society's operations, or improve your wildlife sector CV this would be a great opportunity. As the BMIG does not have a membership fee, our main financial handlings are those associated with the annual field meeting and a summary report for the AGM - so the workload is very manageable. I would recommend anyone interested in the role to reach out to the Chair or Secretary for more details.

BMIG Sporting a New Look

You may have noticed on the cover of this newsletter that we have a new logo. After a discussion over the past few years the committee decided it was time for a new look that would reflected the future direction and scope of the society. Several designs were made by Annie Northfield which were revealed during the 2024 field meeting, after a vote from the committee and present members the following logo was chosen as their favourite. This new look now covers all the groups under the remit of the society, with even the teeny-tiny Pauro-pods making an appearance. We hope you like it!



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NEXT NEWSLETTER - Spring 2026

Please send your contributions to reach the editor(s) by 1st March 2026



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