

Report on the BMIG Field Meeting in South Wales 2018

Steve J. Gregory¹, Anthony D. Barber² and Paul Lee³

¹ Brook Cottage, Uffington, Oxfordshire SN7 7RE, UK.

Email: stevejgregory@btopenworld.com

² 7 Greenfield Drive, Ivybridge, Devon PL21 0UG, UK.

Email: abarber159@btinternet.com

³ 1 Holly Cottages, Church Road, Tattinstone, Ipswich, Suffolk IP9 2LZ, UK.

Email: arachne2222@aol.com

Introduction and background

The 2018 BMIG field weekend, held from 22nd to 25th March, was based in Longtown, Herefordshire on the Welsh border; a locality chosen to allow easy access to The Valleys of South Wales. Traditionally, BMIG's field meetings are held in a relatively poorly recorded part of Britain in order to fill the gaps in our knowledge. However, South Wales is a relatively well-worked area known to support a high diversity of woodlice, millipedes and centipedes (and indeed other taxa), including several Nationally Rare and Nationally Scarce species. Examples include the woodlice *Metatrachoniscoides celticus* Oliver & Trew, which was described new to science from South Wales (Oliver & Trew, 1981) and *Buddelundiella cataractae* Verhoeff which has proved to be widespread there (Gregory, 2009). Morgan (1994) reports the discovery of *Oritoniscus flavus* (Budde-Lund) from reclaimed saltmarsh near Llanelli, a woodlouse (then) otherwise only known from Ireland. Whilst surveying at the same site in 2007 Harper (2010) discovered a population of the pill-millipede *Trachysphaera lobata* (Ribaut), otherwise only known from the Isle of Wight at that time. In addition, there is a cluster of records of *Propolydesmus testaceus* (C.L. Koch) in South Wales (Lee, 2006). Among the centipedes there are scattered records for *Lithobius piceus* L. Koch, otherwise seemingly restricted to a discrete area of south-east England; *L. tricuspis* Meinert, which is primarily south-western; and *L. muticus* C.L. Koch, which is primarily south-eastern (Barber, 2009).

In 2008 BMIG held its annual field meeting at Swansea to target the uncommon species of the area with great success. A staggering 77 BMIG species were recorded; 25 centipedes, 30 millipedes and 22 woodlice (Morgan, 2011). This included the rediscovery of *Oritoniscus flavus* and *Trachysphaera lobata* at their known site, and from the Gower Peninsula the centipede *Henia vesuviana* (Newport) and also two new sites for the elusive woodlouse *Buddelundiella cataractae*.

Recent field work in The Valleys, a former coal mining area that lies north of Cardiff, has revealed an unprecedented nine species of millipede new to Britain since September 2014. These are the chordeumatidans *Ceratosphys amoena confusa* Ribaut, *Hylebainosoma nontronensis* Mauriès & Kime, *Psichrosoma cf breuili* (Mauriès), *Turdulisoma cf helenreadae* Mauriès, *Turdulisoma cf turdulorum* Mauriès and *Cranogona dalensi* Mauriès, and the julids *Cylindroiulus pyrenaicus* (Brölemann), *Cylindroiulus sagittarius* (Brölemann) and *Ommatoiulus moreleti* (Lucas) (Telfer *et al.*, 2015; Gregory *et al.*, 2018a; 2018b; Gregory & Owen, 2019; Owen & Gregory, 2021). Following the discovery of coal in The Valleys several hundred years ago, commodities, such as iron ore, have been imported in vast quantities into South Wales. It is quite possible that many (but probably not all) of these millipedes, and other invertebrates, simply hitched a lift from their place of origin and found the warm, but damp, climate of South Wales highly favourable (Morgan, 2011; Telfer *et al.*, 2015; Gregory *et al.*, 2018b; Gregory & Owen, 2019; Owen & Gregory, 2021).

BMIG members were joined for the meeting by an invited guest the German myriapodologist Thomas Wesener who presented two talks, the first introducing the German Barcode of Life - Myriapoda program and the second his own research on Madagascar.

Methods and Sites

A list of known sites for the nine recently discovered millipedes, and other sites of known interest, was provided to the meeting attendees with permission to collect specimens. Participants were free to undertake field work as they wished. Two organised site visits were arranged in advance. The first to Cwm Colliery spoil heaps, near Beddau was led by Liam Olds (Colliery Spoil Biodiversity Initiative) to see *Cranogona dalensi*, a millipede discovered there in 2016 (and previously recorded only from the Pyrenees). The second, to the gardeners' working area at St Fagans National Museum of History, was led by Mollusca expert Ben Rowson (National Museum of Wales) where an unidentified *Trichoniscoides* woodlouse was recorded in 2016.

During the field meeting 44 sites were visited, but some cover multiple monads (1km squares) and have been split to give 56 'locations'. The majority are in South Wales; mostly in the vice-counties of Glamorgan (VC41) or Monmouthshire (VC35), but one in Brecon (VC42) and a few sites across the border in Herefordshire (VC36) and West Gloucestershire (VC34). The sites visited were mainly a mixture of deciduous woodland/parkland or former colliery sites. Woodlands visited include: Coed Groes-faen where the millipedes *Ceratosphys amoena confusa* and *Hylebainosoma nontronensis* were first recorded in Britain in 2014; Craig yr Aber, near Bridgend where a diverse array of species has been recorded including the first records of the millipedes *Cylindroiulus pyrenaicus* and *Ommatoiulus moreleti* in 2017; and Sirhowy Valley Country Park where the millipede *Cylindroiulus sagittarius* was discovered in 2017. Former colliery sites include: Cwm Colliery Tip, near Beddau, a site comprising sparsely vegetated colliery spoil where the millipede *Cranogona dalensi* (aka the Beddau Beast) was found in 2016; and unknown sites such as the Big Pit National Coal Museum, Blaenavon, which has extensive sparsely vegetated colliery spoil heaps; and Blaenavon Ironworks. A few coastal sites were visited and, as mentioned above, the Gardens at St. Fagans, which includes several unheated glasshouses.

A summary of the sites visited and the sub-locations within these sites is shown in Table 1.

Table 1: List of sites visited. Recorders: KA - Keith Alexander, TB - Tony Barber, KC - Kevin & Nathan Clements, MD – Mike Davidson, SG - Steve Gregory, PL - Paul Lee, AL - Angela Lidgett, KL - Keith Lugg, HR - Helen Read, PR - Paul Richards, TW – Thomas Wesener, DW - Derek Whiteley

Site Code	Locality	Grid Ref	VC	Date	Recorders
1	Atlantic Wharf Cardiff	ST1975	41	21.iii.2018	DW
2	Craig yr Allt	ST1384	41	21.iii.2018	DW
3a 3b	Ogmore by the Sea Ogmore, banks of river	SS8675 SS8676	41	21.iii.2018	DW
4	Merthyr Mawr	SS8576	41	22.iii.2018	DW
5	Cardiff coastal grassland	ST2177	41	22.iii.2018	DW
6a 6b	Dunraven Bay Dunraven Park	SS8873 SS8872	41	22.iii.2018	DW
7	Ewenny Moor	SS9178	41	22.iii.2018	DW
8	Hopewell Mine Museum	SO6011	34	22.iii.2018	SG, KL
9	Longtown	SO3228	36	22.iii.2018	PR

10	Abersychan Quarry	SO2703	35	23.iii.2018	HR, TW, MD
11a 11b	Bettws Newydd	SO3506 SO3605	35	23.iii.2018	PR DW
12	Big Pit Coal Museum, Coity Tip	SO2309	35	23.iii.2018	PL, DW, TW, MD
13	Blaenavon Ironworks	SO2409	35	23.iii.2018	PL, DW, TW, MD
14	Blaensychan Valley, Colliery	SO2502	35	23.iii.2018	DW, HR, TW
15	Canons Tump Common, St Margarets	S03234	36	23.iii.2018	KA
16a 16b	Craig yr Aber, near Bridgend	SS8584 SS8585	41	23.iii.2018	AL AL, PR, DW
17	Crow Wood & Meadows NR	SO3435	36	23.iii.2018	KA
18	Parc Penallta Country Park	ST1395	41	23.iii.2018	TB, SG, KL, KC
19a 19b “	Sirhowy Country Park	ST2090 ST2191 “	35	23.iii.2018 23.iii.2018 24.iii.2018	SG, KL TB HR, TW
20	Snodhill Park, Peterchurch	SO3039	36	23.iii.2018	KA
21a 21b 21c 21d	Cwm Colliery Tips, Beddau	ST0686 ST0785 ST0786 ST0685	41	24.iii.2018	TB, HR, SG, KL AL SG MD
22a 22b	Escley Brook Valley, Longtown	SO3228 SO3329	36	24.iii.2018	KA
23a 23b	Olchon Valley, Llanveynoe	SO2733 SO2734	36	24.iii.2018	KA
24	Oldcourt Wood, Longtown	SO3329	36	24.iii.2018	KA
25	St Fagans, gardener's area	ST1177	41	24.iii.2018	TB, AL, DW, KL, SG, TW
26	Clytha Park	SO3609	35	25.iii.2018	DW
27	Coed Groes-faen, Bargoed	SO1400	41	25.iii.2018	AL
28	Coed y Cerrig NNR	SO2921	35	25.iii.2018	TB, KA
29	Strawberry Cottage Wood SSSI	SO3121	35	25.iii.2018	TB, KA
30	Two Rivers Meadow	SO5112	35	25.iii.2018	DW
31	Blakeneyhill Woods, Wenchford	SO6508	34	25.iii.2018	SG, KL
32	Blakeney, Café	SO6707	34	25.iii.2018	SG, KL
33	Sedbury by Chepstow (saltmarsh)	ST5592	34	20.iii.2018	MD
34	Mayhill, Monmouth	SO5112	35	21.iii.2018	MD
35	Offa's Dyke nr Caswell Wood	SO5400	34	21.iii.2018	MD
36	Wyegate Hill Wood, Offa's Dyke	SO5406	34	21.iii.2018	MD
37	Offa's Dyke, Hatterrall Hill	SO3125	36	22.iii.2018	MD
38	Offa's Dyke, Tre-wyn	SO3222	35	22.iii.2018	MD
39	St Mary's Church, Abergavenny	SO3014	35	22.iii.2018	MD
40	Cwm Du, Pontypool	SO2502	35	23.iii.2018	MD
41	Hay-on-Wye Castle Grounds	SO2342	42	25.iii.2018	MD
42a 42b 42c	Lugg, Hereford, agricultural land “ grassland “ woodland	SO5241 SO5240 SO5340	36	26.iii.2018	MD
43	Tupsley Quarry, Hereford (LNR)	SO5239	36	27.iii.2018	MD
44	Maerdy Colliery	SS9699	41	23.iii.2018	KC

Species recorded

During the course of the field meeting an incredible 71 BMIG species were recorded, including 22 species of centipede (Table 2), 31 species of millipede (Table 3) and 18 species of woodlice (Table 4). Not unexpectedly, the organised group visits to the St Fagans gardener's area and Cwm Colliery Tips, with many enthusiastic participants, proved to be the most prolific sites as 37 BMIG species (8 centipedes, 15 millipedes and 14 woodlice) and 29 BMIG species (8 centipedes, 12 millipedes and 9 woodlice) were recorded, respectively.

Twelve of the species recorded during the weekend are listed in the Natural England species status review (Lee, 2015) with a GB rarity status greater than common. Four are listed as Nationally Rare (*Lithobius piceus*, *Propolydesmus testaceus*, *Hylebainosoma nontronensis* and *Ceratosphys amoena confusa*) and eight are Nationally Scarce (*Lithobius curtipes* C.L. Koch, *L. macilentus* L. Koch, *L. muticus*, *L. pilicornis*, *Brachychaeteuma melanops* Brade-Birks & Brade-Birks, *Leptoiulus belgicus* (Latzel), *Cylindroiulus parisiorum* (Brölemann & Verhoeff) and *Armadillidium album* Dollfus). Three of these species also have a GB IUCN threat status other than Least Concern; one is considered Near Threatened (*Propolydesmus testaceus*) and two are Data Deficient (*Ceratosphys amoena* and *Hylebainosoma nontronensis*). These comprise an interesting mix of species characteristic of rural sites and species with synanthropic tendencies. These species are discussed in the relevant sections below.

Centipedes

In their account of Welsh centipedes, Barber & Gallon (2020), excluding doubtful, seashore and hothouse/building species, listed 31 species for the country as a whole with the same number for South Wales (vice-counties 35, 41-47) and a lower total (26) for North Wales (VCs 48-52). One species (*Lithobius tenebrosus* Meinert) has only one modern British record, from Aberystwyth (Keay, 1989).

The present account lists 22 species as having been collected (Table 2), all in the 2020 list. Of these, all but one were recorded from the Welsh vice-counties of Monmouthshire, Glamorgan or Brecon. The only *Lithobius borealis* Meinert record was from Herefordshire.

As mentioned above, there is an interesting mixture of animals with synanthropic tendencies and of “rural” types. This might be anticipated given the history and nature of the area. Guetté *et al.* (2017), quoted in Barber (2022) refer to species being differentiated along a continuum from urban “avoiders” to urban “dwellers” and we can see this concept as allowing us to potentially fit our centipede species at various points along the spectrum with, for instance, *Lithobius curtipes* being very much a rural species (see Barber, 2021) and *Cryptops anomalans* Newport (not recorded here but known from South Wales) as being very strongly synanthropic, probably throughout its British range. We need to also recognise that species may have different degrees of “synanthropy” depending on their geographical location, such as where in one part of Britain the species occurs in the “wild” in another it is highly dependent on human activity.

All three of our (outdoor) *Cryptops* species have synanthropic tendencies with *C. parisi* Brolemann, which has been recorded as far north as Aberdeen, probably only found in non-synanthropic sites in the South-West. Chilobase (Bonato *et al.*, 2016) describe it as synanthropic in North Europe and North America whilst Wesener *et al.* (2016) describe it, along with *C. hortensis* (Donovan), as naturally occurring and widespread in Central Europe and generally classified as a mesophilous woodland species, although it may occur outside forests in northern Germany. British *C. hortensis* records are clearly biased towards more or less synanthropic sites but there is a fair proportion from rural ones, especially in the south.

Of the geophilomorphs reported, *Stigmatogaster subterranea* (Shaw) (formerly *Haplophilus subterraneus*) is widespread and common in the south-west in a variety of habitats but in more northerly

Table 2: Centipedes recorded during the Longtown 2018 field meeting. X = species recorded from site.**Geophilus impressus* - formerly known as *G. insculptus* and more recently as *G. alpinus*.

Site number:	2	8	10	12	13	14	16a	16b	18	19a	19b	21a	21b	21c	21d	23b	25	26
10km square:	ST 18	SO 61	SO 20	SO 20	SO 20	SO 20	SS 88		ST 19	ST 29		ST 08				SO 23	ST 17	SO 30
Species																		
<i>Stigmatogaster subterranea</i>					X												X	
<i>Schendyla nemorensis</i>				X	X				X			X	X				X	
<i>Strigamia acuminata</i>						X												
<i>Strigamia crassipes</i>							X											
* <i>Geophilus impressus</i>																		
<i>Geophilus easoni</i>				X														
<i>Geophilus electricus</i>													X					
<i>Geophilus flavus</i>									X									
<i>Geophilus truncorum</i>		X					X	X	X		X	X	X		X			
<i>Cryptops hortensis</i>		X		X					X			X	X	X	X		X	
<i>Cryptops parisi</i>			X							X	X						X	
<i>Lithobius borealis</i>																		
<i>Lithobius crassipes</i>				X														
<i>Lithobius curtipes</i>				X														
<i>Lithobius forficatus</i>	X	X		X								X					X	
<i>Lithobius macilentus</i>					X													
<i>Lithobius melanops</i>												X				X	X	
<i>Lithobius microps</i>				X	X				X			X	X	X	X			
<i>Lithobius muticus</i>							X	X										
<i>Lithobius piceus</i>								X										
<i>Lithobius pilicornis</i>				X		X		X				X					X	
<i>Lithobius variegatus</i>		X	X	X		X				X							X	X
Total 22 species / Total per site	1	4	2	9	4	3	6 sp.		5	3 sp.		site 21: 8 sp.				1	8	1

Table 2: Centipedes recorded (continued)

Site number:	27	28	29	30	31	34	35	36	37	38	39	40	41	42a	42b	42c	43	No. of locations
10km square:	SO 10	SO 22	SO 32	SO 51	SO 60	SO 51	SO 50	SO 50	SO 32	SO 32	SO 31	SO 20	SO 24	SO 54			SO 53	
Species																		
<i>Stigmatogaster subterranea</i>													X		X		X	5
<i>Schendyla nemorensis</i>																		6
<i>Strigamia acuminata</i>																		1
<i>Strigamia crassipes</i>																		1
* <i>Geophilus impressus</i>	X												X				X	3
<i>Geophilus easoni</i>					X					X								3
<i>Geophilus electricus</i>																		1
<i>Geophilus flavus</i>										X				X				3
<i>Geophilus truncorum</i>					X													9
<i>Cryptops hortensis</i>						X						X					X	11
<i>Cryptops parisi</i>																X		5
<i>Lithobius borealis</i>									X									1
<i>Lithobius crassipes</i>																		1
<i>Lithobius curtipes</i>																		1
<i>Lithobius forficatus</i>				X		X	X			X	X				X		X	12
<i>Lithobius macilentus</i>																		1
<i>Lithobius melanops</i>												X				X		5
<i>Lithobius microps</i>		X						X		X	X	X	X		X	X	X	16
<i>Lithobius muticus</i>																		2
<i>Lithobius piceus</i>																		1
<i>Lithobius pilicornis</i>																		5
<i>Lithobius variegatus</i>	X	X	X		X	X	X	X		X								15
Total 22 species / Total per site	2	2	1	1	3	3	2	2	1	4	2	3	3	site 42: 6 sp.			5	

areas tends to be more obviously synanthropic. Of the two small species, *Schendyla nemorensis* (C.L.Koch) and *Geophilus truncorum* Bergsøe & Meinert, the latter is rarely found in synanthropic sites whilst the former occurs both in these and in rural locations. Our two terrestrial *Strigamia* species have records from a variety of sites but biased towards rural ones, more strongly overall in *S. acuminata* (Leach) than in *S. crassipes* (C.L. Koch). *Geophilus easoni* Arthur *et al.* is a typically rural animal but not, it seems, exclusively so. *Geophilus electricus* (Linnaeus) often seems to show synanthropic preferences and *G. impressus* C.L. Koch (formerly known as *G. insculptus* Attems or *G. alpinus* Meinert) and *G. flavus* (De Geer) are fairly common and widespread animals from a diversity of sites.

Of the species listed by Lee (2015) as nationally rare or nationally scarce, *Lithobius curtipes* (NS), *Lithobius macilentus* (NS), *Lithobius muticus* (NS), and *Lithobius piceus* (NR), are well towards the “avoiders” in the synanthropy spectrum but *Lithobius pilicornis* (NS), is mostly or entirely recorded from synanthropic sites although sometimes found in woodland in Cornwall.

In the 1988 Provisional Atlas (Barber & Keay, 1988), *L. piceus* is shown as recorded from a relatively small area of Surrey, Sussex and Hampshire whilst *L. muticus* seemed also to be restricted to south-east England, although to a much larger area of the Home Counties. We now know of the South Wales records for *L. piceus* but not so far from elsewhere here but *L. muticus*, on the other hand, has been recorded from a number of sites in both England (but not the northern areas) and Wales (Barber, 2022).

Lithobius macilentus differs from other British *Lithobius* species in being parthenogenetic (males occur in France). This would facilitate its spread to new sites and there are scattered records from across much of Britain though, seemingly, not from south-west England; more than two-thirds of records are from what are described as “rural” habitats. The status of *Lithobius curtipes* was reviewed by Barber (2021).

Lithobius variegatus Leach is a typically rural animal whilst *L. forficatus* (Linnaeus) occupies a wide variety of habitats in Wales, generally other than truly rural ones. *Lithobius melanops* Newport is often found in gardens and indeed indoors but also on the coast whilst *L. microps* Meinert is a small and common, often synanthropic animal. *Lithobius crassipes* L. Koch and *L. borealis* are medium sized species, both distinctly towards the “avoiders” end of the spectrum and seemingly occupying similar niches. The former is the common small/medium sized rural *Lithobius* of eastern Britain but also sometimes found elsewhere.

There is always an element of chance in any collection made and sampling method, season, microhabitat, etc, can all play a part, along with local rarity or patchy distribution, in what can be found in a sample made in the way of this meeting and several species, recorded in the Welsh list of 2020 were not recorded. In terms of “avoiders” these include *Lithobius tricuspis* (South Wales and south-west England) and the widespread *L. calcaratus* C.L. Koch. In addition *Geophilus osquidatum* Brölemann, a species found in various habitats in south-west Britain up as far as Shropshire (but with an outlying record from coastal Cumbria) was not found. Of the “dwellers”, the two small species, both strongly synanthropic, *Schendyla dentata* (Brölemann & Ribaut) and *Henia brevis* (Silvestri) were not recorded nor the distinctive *Henia vesuviana* which has been found as far north as Lancashire.

Millipedes

Thirty one species of millipede were recorded during the field meeting (Table 3). The most diverse millipede fauna was recorded from the gardeners’ area at St Fagans where 15 species were found, almost half the species list from the meeting. The only other sites where millipede species diversity reached double figures were Abersychan Quarry, Blaenavon Ironworks, Sirhowy Valley Country Park and Cwm Colliery Tips at Beddau. These are all sites with significant human influence and the few semi-natural locations visited by BMIG members appeared to be relatively species poor, a typical outcome from BMIG meetings.

Table 3: Millipedes recorded during the Longtown 2018 field meeting. X = species recorded from site.**Chordeuma proximum*: 'F' indicates two sites where only female specimens were found, but this species has been previously recorded from both.

Site number:	3b	5	7	8	9	10	11a	11b	12	13	14	16a	16b	17	18	19a	19b	21a	21b	21c	21d
10km square:	SS 87	ST 27	SS 97	SO 61	SO 32	SO 20	SO 30	SO 20	SO 20	SO 20	SO 20	SS 88	SO 33	ST 19	ST 29	ST 08					
Species																					
<i>Polyxenus lagurus</i>							X	X													
<i>Glomeris marginata</i>	X					X				X						X	X				
<i>Brachychaeteuma melanops</i>				X							X							X			
<i>Ceratosphys amoena confusa</i>										X			X			X	X				X
* <i>Chordeuma proximum</i>				X					X		X	F	X			X	X				X
<i>Cranogona dalensi</i>																		X	X	X	
<i>Hylebainosoma nontronensis</i>																					
<i>Melogona gallica</i>																	X				
<i>Melogona scutellaris</i>						X				X											
<i>Turdulisoma cf helenreadae</i>																					
<i>Brachydesmus superus</i>			X			X			X	X		X	X		X		X	X			
<i>Macrosternodesmus palicola</i>																					
<i>Ophiodesmus albonanus</i>																					
<i>Polydesmus angustus</i>				X		X			X	X	X				X	X	X	X			X
<i>Polydesmus coriaceus</i>																		X			
<i>Propolydesmus testaceus</i>		X																			
<i>Baniulus guttulatus</i>						X															
<i>Boreoiulus tenuis</i>																					
<i>Proteroiulus fuscus</i>			X			X												X			
<i>Nemasoma varicorne</i>										X											
<i>Cylindroiulus britannicus</i>						X			X	X					X			X			X
<i>Cylindroiulus caeruleocinctus</i>																					
<i>Cylindroiulus parisiorum</i>																					
<i>Cylindroiulus punctatus</i>						X				X		X	X	X				X			X

<i>Cylindroiulus pyrenaicus</i>											X	X								
<i>Cylindroiulus sagittarius</i>															X	X				
<i>Julus scandinavicus</i>					X			X	X						X		X		X	
<i>Leptoiulus belgicus</i>								X												
<i>Ommatoiulus moreleti</i>											X	X								
<i>Ophiulus pilosus</i>					X			X	X							X				
<i>Tachypodoiulus niger</i>			X	X	X			X	X			X		X	X	X	X	X	X	X
Total 31 species / Total per site	1	1	2	4	1	11	1 sp.	8	11	3	7 sp.	1	5	10 sp.	site 13: 12 sp.					

Table 3: Millipedes recorded (continued)

Site number:	23a	23b	25	26	27	28	29	30	31	32	33	36	38	39	41	42a	42c	43	44	No. of locations
10km square:	SO	ST	SO	SO	SO	SO	SO	SO	SO	ST	SO	SO	SO	SO	SO	SO	SO	SO	SO	
Species	23	17	30	10	22	32	51	60	60	59	50	32	31	24	54	53	99			
<i>Polyxenus lagurus</i>																				2
<i>Glomeris marginata</i>					X			X		X		X								9
<i>Brachychaeteuma melanops</i>			X																	4
<i>Ceratospheys amoena confusa</i>				X																6
<i>Chordeuma proximum</i>				F				X			X									11
<i>Cranogona dalensi</i>																				3
<i>Hylebainosoma nontronensis</i>				X																1
<i>Melogona gallica</i>																				1
<i>Melogona scutellaris</i>																				2
<i>Turdulisoma cf helenreadae</i>																			X	1
<i>Brachydesmus superus</i>	X		X				X	X				X								14
<i>Macrosternodesmus palicola</i>			X											X						2
<i>Ophiodesmus albonanus</i>			X											X						2
<i>Polydesmus angustus</i>			X	X			X	X	X					X	X					17
<i>Polydesmus coriaceus</i>			X												X		X			4

<i>Propolydesmus testaceus</i>																				1
<i>Blaniulus guttulatus</i>			X											X	X					4
<i>Boreoiulus tenuis</i>			X																	1
<i>Proteroiulus fuscus</i>	X	X	X																	6
<i>Nemasoma varicorne</i>	X	X					X													4
<i>Cylindroiulus britannicus</i>			X											X	X			X		10
<i>Cylindroiulus caeruleocinctus</i>			X	X										X						3
<i>Cylindroiulus parisiorum</i>			X																	1
<i>Cylindroiulus punctatus</i>						X	X		X							X		X		12
<i>Cylindroiulus pyrenaicus</i>																				2
<i>Cylindroiulus sagittarius</i>																				2
<i>Julus scandinavicus</i>	X		X				X						X							10
<i>Leptoiulus belgicus</i>																				1
<i>Ommatoiulus moreleti</i>																				2
<i>Ophiulus pilosus</i>			X																	5
<i>Tachypodoiulus niger</i>	X		X			X	X		X	X		X					X		X	20
Total 31 species / Total per site	5 sp.		15	2	3	3	4	2	6	2	1	2	3	3	5	4 sp.	3	2		

Seven of the nine species recorded as new to Britain from the area were collected during the weekend (Fig. 1). Six of these millipedes (*Cranogona dalensi*, *Hylebainosoma nontronensis*, *Turdulisoma cf helenreadae*, *Cylindroiulus pyrenaicus*, *C. sagittarius* and *Ommatoiulus moreleti*) were restricted to just one or two sites, usually where they were originally found. The exception was *Ceratosphys amoena confusa* that was present at six locations across five sites and is clearly well established. *Ceratosphys amoena* and *H. nontronensis* were first discovered at Bargoed in 2014 (Telfer *et al.*, 2015), just in time to be included in the species status review (Lee, 2015). As so little was known about their occurrence in Britain they were listed as Data Deficient for the purposes of IUCN threat status but Nationally Rare due to the very small number of records. The remaining five species were not known in Britain at the time of the review and so have no rarity or threat status.

The only record of the flat-backed millipede *Propolydesmus testaceus* during the weekend came from coastal grassland near Cardiff where it was collected by Derek Whiteley. Lee (2015) lists this species as Nationally Rare as other than at a few scattered locations across southern England, it is known only from clusters of sites in Kent and in South Wales. The Cardiff locality appears to fit with the millipede's probable association with base-rich soils noted by Kime and Enghoff (2011).

Another three of the millipedes recorded during the weekend were listed as Nationally Scarce by Lee (2015). One of these, *Leptoiulus belgicus*, was found only at the Coity Tip site during the weekend although South Wales is part of the south-western stronghold for the species in Britain. The white chordeumatidan *Brachychaeteuma melanops* is more of a collectors' speciality being so small but although listed as Nationally Scarce, it has a widespread distribution across South Wales and southern England. BMIG members discovered the millipede in four sites over the weekend – Hopewell Mine Museum, Blaensychan Valley colliery, Cwm Colliery Tips (Beddau) and in the gardeners' area at St Fagans. The third of the Nationally Scarce species found is *Cylindroiulus parisiorum*. Only female specimens of *C. parisiorum* were collected from St Fagans and, ideally, males should be examined for certain identification. However, three recorders, Tony Barber (specimen determined by Steve Gregory), Mike Davidson and Angela Lidgett, collected the species independently, and the species has been found at the site previously by Christian Owen.

Woodlice

Eighteen species of woodlice were recorded from the 43 sites visited during the field meeting (Table 4). Not unexpectedly the four most frequently recorded species were *Oniscus asellus* Linnaeus (35 locations), *Porcellio scaber* Latreille (33 locations), *Philoscia muscorum sensu lato* (32 locations) and *Trichoniscus pusillus* agg. (27 locations). The remaining species were each recorded at ten or less.

Armadillidium nasatum Budde-Lund was recorded from five sites, either on colliery spoil or from other synanthropic habitats. *Porcellionides cingendus* (Kinahan) was found on saltmarsh at Sedbury near Chepstow by Mike Davidson. This species exhibits a predominantly south-western distribution in Britain where it favours coastal areas (Gregory, 2009). Of particular note is *Armadillidium album* found by Derek Whiteley at Merthyr Mawr. This woodlouse is listed as Nationally Scarce by Lee (2015) and is widely distributed along the South Wales coastline where it inhabits undisturbed dune systems and has been recorded on several previous occasions from this site (Gregory, 2009).

Although not routinely checked, most male specimens of *Oniscus asellus* that were examined proved to be *O. asellus spp. asellus*. The 'hybrid' taxa *Oniscus asellus X occidentalis* was recorded from a single site, Penallta Country Park.



Figure 1: Millipedes recently recorded new to Britain from South Wales that were recorded during the field meeting. A) *Ceratosphys amoena confusa* (pair in cop) was recorded from five sites; B) *Hylebainosoma nontronensis* was refound at Coed Groes-faen, Bargoed; C) The tiny *Cranogona dalensi* proved to be frequent at Cwm Colliery Tips, Beddau; D) *Turdulisoma cf helenreadae* was refound at Maerdy Colliery spoil heap; E) Both *Ommatoiulus moreleti* (larger specimen) and *Cylindroiulus pyrenaicus* (two small specimens) were refound at Craig yr Aber, Bridgend; F) *Cylindroiulus sagittarius* was refound at several localities along the Sirhowy Valley.

Images from BMIG website (www.bmig.org.uk). A, B, E & F © Christian Owen. C & D © Keith Lugg

Table 4: Woodlice recorded during the Longtown 2018 field meeting. X = species recorded from site.* Where male specimens examined: a.a. = *Oniscus asellus ssp. asellus*; a.x. = *O. asellus X occidentalis*; s.s. = *Philoscia muscorum sensu stricto*

Site number:	1	2	3a	3b	4	5	6a	6b	7	8	9	10	11a	12	13	14	15	16a	16b	17	18	19a	20	21a	21b	21c	21d
10 km square:	ST 17	ST 18	SS 87		SS 87	ST 27	SS 87	SS 97	SO 61	SO 32	SO 20	SO 30	SO 20	SO 20	SO 20	SO 33	SS 88	SO 33	ST 19	ST 29	SO 33	ST 08					
<i>Androniscus dentiger</i>			X							X				X	X							X					
<i>Haplophthalmus danicus</i>												X															
<i>Haplophthalmus mengii</i> s.str.										X											X	X				X	X
<i>Trichoniscoides</i> sp. NTB																											
<i>Trichoniscus provisorius</i>												X		X							X			X			
<i>Trichoniscus pusillus</i> agg.						X	X			X	X			X	X	X	X	X	X		X	X		X	X	X	X
<i>Trichoniscus pygmaeus</i>										X											X	X				X	
* <i>Oniscus asellus</i>		X				X				X		a.a.		X	a.a.	X	X	X	X		a.x.	X	X		X	X	a.a.
* <i>Philoscia</i> sp. cf <i>muscorum</i>	X					X	X	X	X	s.s.			X	X	X	X				X	s.s.	s.s.		s.s.	X	s.s.	X
<i>Platyarthrus hoffmannseggii</i>							X			X						X											
<i>Porcellio scaber</i>	X	X	X	X						X				X	X	X				X	X	X	X	X	X	X	
<i>Porcellio spinicornis</i>															X												
<i>Porcellionides cingendus</i>																											
<i>Porcellionides pruinosus</i>																											
<i>Armadillidium album</i>					X																						
<i>Armadillidium depressum</i>										X																	
<i>Armadillidium nasatum</i>										X						X								X	X		
<i>Armadillidium vulgare</i>			X	X			X																	X	X		X
Total 18 spp. / Total per site	2	2	3 sp.		1	3	4	1	1	10	1	3	1	6	6	6	2	2 sp.		2	7	7	2	site 21: 9 sp.			

Table 4: Woodlice recorded (continued)

Site number:	22a	22b	23a	24	25	26	27	28	29	30	31	32	33	34	36	37	38	39	40	41	42a	42b	42c	43	44	No. of locations
10 km square:	SO	SO	SO	ST	SO	SO	SO	SO	SO	SO	SO	SO	ST	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	No. of locations
Species	32	23	32	17	30	10	22	32	51	60	60	59	51	50	32	32	31	20	24	SO	SO	SO	SO	SO	SO	No. of locations
<i>Androniscus dentiger</i>				X						X										X						8
<i>Haplophthalmus danicus</i>				X																						2
<i>Haplophthalmus mengii</i> s.str.				X																						6
<i>Trichoniscoides</i> sp. NTB				X																						1
<i>Trichoniscus provisorius</i>																										4
<i>Trichoniscus pusillus</i> agg.				X	X		X	X		X		X		X		X		X					X	X		27
<i>Trichoniscus pygmaeus</i>				X																						5
* <i>Oniscus asellus</i>			X	X	a.a.	X	X	X	X	X	X		a.a.	a.a.	a.a.		a.a.	X	X	a.a.	a.a.		a.a.	a.a.		35
* <i>Philoscia</i> sp. cf <i>muscorum</i>	X		X		s.s.	X				X	s.s.		X				X	X	X	X	X	X	X	X		32
<i>Platyarthrus hoffmannseggii</i>				X													X									5
<i>Porcellio scaber</i>	X	X	X		X	X		X	X	X	X	X	X			X		X	X	X	X			X	X	33
<i>Porcellio spinicornis</i>			X																							2
<i>Porcellionides cingendus</i>													X													1
<i>Porcellionides pruinosus</i>				X																						1
<i>Armadillidium album</i>																										1
<i>Armadillidium depressum</i>				X								X														3
<i>Armadillidium nasatum</i>				X								X														6
<i>Armadillidium vulgare</i>				X					X											X	X					10
Total 18 spp. / Total per site	2 sp.		4	1	14	4	1	3	3	4	5	3	5	1	2	1	4	3	4	5	site 42: 5 sp.			4	1	

For the purposes of this report records of *Philoscia muscorum* (Scopoli) have been treated as a species complex (*P. muscorum sensu lato*) unless male specimens were collected for examination. Following the discovery of *Philoscia affinis* Verhoeff in Britain in 2017 this predominantly western species has been shown to occur in South Wales (Gregory, 2020). However, male specimens collected from seven sites all proved to be the genuine *P. muscorum sensu stricto*. None-the-less it is possible that some of the records for *P. muscorum sensu lato* recorded during the field meeting, especially those from woodland, may have been *Philoscia affinis*.

One of the main reasons to visit St Fagans was to look for more specimens of an un-pigmented and blind trichoniscid, which on the basis of a male collected by Christian Owen and Mark Telfer two years earlier in 2016, appears to be a species of *Trichoniscoides* that would be new to Britain (Owen, C. and Telfer, M., pers. comm. to SJG). Unfortunately, just a single female was collected in 2018 despite searching in exactly the same location where the specimens were first collected in 2016. Several species of unpigmented and blind *Trichoniscoides* are known from western Europe (Vandel, 1960) so a return visit is required to collect more male specimens to determine the species identification.

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