

# SYNAGAPETUS DUBITANS, A CADDISFLY NEW TO BRITAIN

By Stuart M Crofts

## Summary

The British Glossomatidae contains just 6 species, equally split between the genera *Glossosoma* and *Agapetus*. The examination of adults I collected from North Yorkshire has shown that an additional species, *Synagapetus dubitans*, from the closely related *Synagapetus* genus, also occurs in Britain.

*Synagapetus dubitans* had been recorded in a number of central European countries including France, Switzerland, Belgium and Italy but not from Britain. However, on the 4<sup>th</sup> of September 2010, a single adult male *Synagapetus dubitans* was collected from a small spring stream flowing through a wood near Masham in the county of North Yorkshire. On a return trip, on the 28<sup>th</sup> of October, a female *Synagapetus dubitans* was collected from almost exactly the same place.

During the summer of 2011 other sites have been identified as having populations of *Synagapetus dubitans* in the North Yorkshire area of Great Britain and a record of the co-occurring Trichoptera species has begun.

Adults of *Synagapetus dubitans* are separable from other species using a key to the European species by Hans Malicky (2004). But, the details given by Mosely (1935) and later by Vaillant (1967) are much more specific. The larvae are separable using the PhD Thesis of Thomas Pitsch (1993)

## Introduction

The finding of this caddisfly was a total surprise, not at all planned and just plain lucky!

It started as just another day as a Fly-Fishing Guide; I met my clients in the wonderful market town of Masham, within the county of North Yorkshire, on a fine September day. We were to be fishing the nearby River Ure for trout and grayling. While doing this kind of work I always have a small sweep net in my pocket to catch insects. I do this for two reasons, one is to show my clients the wonder of insects. And two, to catch adult caddisflies for the Adult Caddisfly Occurrence Scheme records. During the afternoon I happened to be walking past a tiny woodland spring stream and so I ran my small net through the plants alongside, just to see what was there. The net immediately caught in a brier and tangled! After a few minutes of carefully untying the net I noticed two small adult caddisflies still in the bottom. I recognised one of the caddis as *Crunoecia irrorata*, a common species in small streams in that area. The other I just assumed to be another common species called *Agapetus fuscipes*. However, you never take these things for granted so I popped them into a collecting tube for proper investigation on my return home.

Back at home the *Crunoecia irrorata* was soon confirmed and added to my records. But, as I checked the suspected *Agapetus fuscipes* down the microscope I started to shake as it dawned on me that it was not *Agapetus fuscipes* at all and I was actually looking at something I had never seen before. I work from many different adult keys and this finally keyed out in the Atlas of European Trichoptera by Hans Malicky; this was the first *Synagapetus dubitans*, and it was a male. However, it was always going to be questioned

(maybe it was a freak and just blown in from Europe) but a few weeks later, during October, I found another whilst looking at the same site with Dr. Ian Wallace (UK National Trichoptera Recorder), that was a female and within a few feet of where the first capture had occurred. This was great confirmation and very exciting.

Following this, and after consultations with Dr. Ian Wallace, I decided to spend as much time as possible during 2011 doing more research. Not as easy as it sounds as the area is 80 miles from my home. The aim was to collect more information & data on *S. dubitans* and to try and locate other sites where the species could be found.

The first question was where to look; the spring where I first found *S. dubitans* is very unusual. It is a calcium depositing spring that issues from the base of a sandstone (Brimham grit) crag on a steep slope in mixed woodland. As the spring flows down the slope towards the River Ure various mosses are growing in association with it. Around, and maybe because of these mosses, tufa is deposited. This must have been going on for a long time as the tufa is very thick in places and has become a major feature of the spring.

On checking geological survey maps it appeared that the area is part of a fault (known locally as Hackfall) and the springs could be coming from ancient marine deposits (namely the Ure Shell Bed and the Cayton Gill Shell bed). It therefore followed that looking for similar springs in the Hackfall area would be a logical start, and then to expand the search by looking for similar geological situations where other analogous springs could be found. By the end of the winter 2010 I had a list of potential areas to check during the warmer months of 2011

On the tables can be found the results of the expeditions to these areas during 2011. Most of these visits have been solo trips but some have been in the company of Andrew Dixon, a fellow Trichoptera enthusiast and recorder for the River Eden area in Cumbria. Each record has the dates, locations and names of those involved.

A huge concern with this project is the realisation of how delicate these depositing springs actually are. At the moment the only protection these wonderful ecosystems appear to have is their remoteness and problems with access. The site where I found the first two adult samples is less than 30 yards long and so very sensitive to disturbance or a pollution incident. It has also become more obvious that these depositing springs in woodland are very different to comparable springs in open country.

## **Methods**

Three sampling methods were used to collect the specimens:

### **1. Larvae Collecting**

Collecting typical cased caddis from the Glossosomatidae family is a relatively easy task as they are easy to find in these small springs and streams. Those that can be picked off

the stones and other structures easily are the active larva, those that are more reluctant to come from their chosen location will often be in the pupae stage.

## 2. Adult Collecting with a sweep net

For a sweep net I use a standard triangular folding type (frame size 450mm x 400mm x 450mm) and work through the vegetation close to the springs and streams. The samples caught are then simply collected from the net with a pooter. The main problems with sweep netting for the adults are associated with weather conditions. If it is wet and/or windy the adults are often in shelter and not picked up by the net. In addition, in the rain, trying to judge which are the small wet caddisflies in a net with dozens of other small wet insect is never an easy task.

## 3. Adult Collecting with a light trap

For a light trap I use a light weight battery powered lantern (7w U-type energy saving lamp). The lantern is positioned in the middle of a two metre square white sheet so that caddis coming close to the light can be easily seen and caught. Light trapping is always interesting but the lights can, and often do, bring in caddis from quite far away. For example, the results from the Hackfall Fountain Pond light trap (August 20<sup>th</sup> 2011); *Agapetus ochripes* would not be from the pond and most likely would have come from the main River Ure in the valley bottom. I also suggest that *Hydroptila forcipata*, *Hydroptila sparsa*, *Polycentropus flavomaculatus*, *Potamophylax latipennis* and *Sericostoma personatum* did not originate from the pond either, but came from the springs and streams close by. It is the same story with the *Agapetus ochripes* record from the Hackfall woodland spring light trap (same date); once again, this specimen is far more likely to have come up from the main river. In the past, when light trapping other areas, I have found this species hundreds of yards from their nearest larval habitat. Subsequently, light trapping has its good points and its bad points, just like any other sampling method. In common with sweep netting, samples that come to the lamp are simply collected with a pooter.

Whatever method of collection is used the locations of all the sampling areas are recorded using the UK National Grid Reference system (NGR) and are taken with a Garmin GPS receiver or taken directly from Ordnance Survey maps.

## Discussion

It can be seen from the records that the larvae of *S. dubitans* were present in a number of the sites visited. However, the adults were only collected from a couple of springs other than the original site in Nutwith Cote wood. I am not too concerned about this as I feel it is just a matter of time before these are picked up in sweep net samples in the future. And, as an added bonus, other interesting records were collected during the survey work using the sweep net, *Plectrocnemia brevis*, for example. It also became evident that some of the sites visited, although interesting, turned out not to be at all suitable for *S. dubitans*.

Below is a list of the sites where I have now recorded *S. dubitans* (either as larvae or adults) in the North Yorkshire area:

- Woodland springs in Nutwith Cote wood (part of the general Hackfall “fault” area)
- Woodland springs in Mickley wood (part of the general Hackfall “fault” area)
- Woodland springs in Hackfall wood
- Alum spring in Hackfall wood
- Woodland spring in the Rievaulx area
- Grass Keld, near Rievaulx

(details on each of these sites, with NGR`s, can be found on the dated record sheets).

All of the springs and streams that I have found to contain populations of *S. dubitans*, thus far, are calcareous and depositing calcium carbonate (in varying degrees). The sites are also in woodland.

From the survey records there are a number of other species found with *S. dubitans*. Examples of these are: *Agapetus fuscipes*, *Beraea maurus*, *Crunoecia irrorata*, *Diplectronea felix*, *Drusus annulatus*, *Hydroptila martini*, *Oxyethira falcata*, *Micropterna sequax*, *Plectrocnemia brevis*, *Plectrocnemia conspersa*, *Polycentropus flavomaculatus*, *Rhyacophila obliterata*, *Tinodes unicolor* and *Wormaldia occipitalis*. I can add to these *Plectrocnemia geniculata* and *Tinodes dives*. Larvae of these two species were found by Dr. Ian Wallace and Andrew Dixon in some of the spring streams of the Hackfall wood area in 2010 that have subsequently produced *S. dubitans*.

Of these species, *Plectrocnemia brevis*, *Tinodes dives* and *Tinodes unicolor*, are generally associated with calcareous waters, while *Crunoecia irrorata*, *Diplectronea felix* are generally associated with waters in woodland.

I sent larval samples from the various sites to Dr. Ian Wallace for confirmation and further study. I also made the conscious decision not to sweep net the original site in Nutwith Cote wood after I found adults in August as I did not want to deplete their numbers anymore more than necessary.

Looking ahead it would be nice to locate other springs/streams in the UK that could, potentially, hold *S. dubitans*, with this information local collectors could be encouraged to check the sites. The larval stage is the most obvious to lookout for, it is easy to collect and available for most of the year. However, although it is not that difficult to identify, there would need to be a definitive UK based larval key for collectors to work from. At the moment there are only limited European references on the identification of the larval stage. The same identification problems apply to the adult stage but hopefully this will be included in the new key to the Adult British Trichoptera by Dr. Peter Barnard (which should be available soon).

## Acknowledgments

I would like to thank Dr. Peter Wiberg-Larsen and Dr. Peter Barnard for helping to confirm the identification of the species and Dr. Johann Waringer for the extra literature and keys for the species. I would also like thank Dr. Ian Wallace, Craig Macadam and the Riverfly Partnership for their valued support and ideas on how to progress further studies on the habits and distribution of the species in Britain. And last, but not least, my good friend Andrew Dixon who has helped with the some surveys, collecting and identification of the caddis samples.

## References

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Masham area in North Yorkshire May 14 2011

Collecting and Identifications by Stuart Crofts

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	6	L	N/A	N/A	AH	
Agapetus	ochripes	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	1	A	0	1	SN	Probably from the River Ure
Silo	pallipes	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	1	A	1	0	SN	
Synagapetus	dubitans	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	20	L	N/A	N/A	AH	
Wormaldia	occipitalis	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	2	A	2	0	SN	

Masham and Hackfall area in North Yorkshire May 20 2011

Collecting and Identifications by Stuart Crofts

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Hackfall Alum spring, N. Yorks	SE2336876976	396	5	L	N/A	N/A	AH	
Agapetus	fuscipes	Hackfall Alum spring, N. Yorks	SE2337476977	411	2	L	N/A	N/A	AH	
Synagapetus	dubitans	Hackfall Alum spring, N. Yorks	SE2336876976	396	2	L	N/A	N/A	AH	
Synagapetus	dubitans	Hackfall Alum spring, N. Yorks	SE2337476977	411	9	L	N/A	N/A	AH	
Agapetus	fuscipes	Hackfall, woodland spring, N. Yorks	SE2352977349	193	2	L	N/A	N/A	AH	
Agapetus	fuscipes	Hackfall, woodland spring, N. Yorks	SE2345877378	241	1	L	N/A	N/A	AH	
Agapetus	fuscipes	Hackfall, woodland spring, N. Yorks	SE2340777208	266	2	L	N/A	N/A	AH	Both in pupae
Synagapetus	dubitans	Hackfall, woodland spring, N. Yorks	SE2352977349	193	5	L	N/A	N/A	AH	
Synagapetus	dubitans	Hackfall, woodland spring, N. Yorks	SE2345877378	241	11	L	N/A	N/A	AH	
Synagapetus	dubitans	Hackfall, woodland spring, N. Yorks	SE2340777208	266	5	L	N/A	N/A	AH	
Synagapetus	dubitans	Hackfall, woodland spring, N. Yorks	SE2336677247	267	9	L	N/A	N/A	AH	
Wormaldia	occipitalis	Hackfall, woodland spring, N. Yorks	SE2340777208	266	2	A	2	0	SN	
Agapetus	fuscipes	Nutwith Cote, woodland spring, N. Yorks	SE2342378165	149	2	L	N/A	N/A	AH	One larvae and one pupae
Synagapetus	dubitans	Nutwith Cote, woodland spring, N. Yorks	SE2342378165	149	1	L	N/A	N/A	AH	
Synagapetus	dubitans	Nutwith Cote, woodland spring, N. Yorks	SE2337678294	229	6	L	N/A	N/A	AH	
Synagapetus	dubitans	Nutwith Cote, woodland spring, N. Yorks	SE2338778265	268	5	L	N/A	N/A	AH	
Synagapetus	dubitans	Nutwith Cote, woodland spring, N. Yorks	SE2337778281	290	6	L	N/A	N/A	AH	
Wormaldia	occipitalis	Nutwith Cote, woodland spring, N. Yorks	SE2337678294	229	2	A	2	0	SN	

**Mickley area in North Yorkshire May 27 2011**

**Collecting and Identifications by Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Crunoecia	irrorata	Dropping Well spring, Mickley Wood, N. Yorks	SE2419477080	225	1	A	0	1	SN	
Diplectrona	felix	Dropping Well spring, Mickley Wood, N. Yorks	SE2419477080	225	1	A	1	0	SN	
Wormaldia	occipitalis	Dropping Well spring, Mickley Wood, N. Yorks	SE2419477080	225	2	A	2	0	SN	
Synagapetus	dubitans	Mickley Barras spring, Mickley, N Yorks	SE2450976882	168	6	L	N/A	N/A	AH	
Agapetus	fuscipes	Triple Springs, Mickley Wood, N. Yorks	SE2463476737	237	1	L	N/A	N/A	AH	Pupae stage
Agapetus	fuscipes	Triple Springs, Mickley Wood, N. Yorks	SE2463476737	237	4	A	3	1	SN	
Diplectrona	felix	Triple Springs, Mickley Wood, N. Yorks	SE2463476737	237	2	A	2	0	SN	
Synagapetus	dubitans	Triple Springs, Mickley Wood, N. Yorks	SE2463476737	237	11	L	N/A	N/A	AH	
Wormaldia	occipitalis	Triple Springs, Mickley Wood, N. Yorks	SE2463476737	237	8	A	8	0	SN	

**Gordale area in North Yorkshire June 29 2011**

**Collecting and Identifications by Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Gordale Beck, N. Yorks	SD9141463747	N/R	6	A	4	2	SN	
Odontocerum	albicorne	Gordale Beck, N. Yorks	SD9141463747	N/R	2	A	1	1	SN	
Agapetus	fuscipes	Gordale Springs, N. Yorks	SD9145663803	N/R	22	A	21	1	SN	
Philopotamus	montanus	Gordale Springs, N. Yorks	SD9145663803	N/R	2	A	2	0	SN	
Agapetus	fuscipes	Malham Beck, Malham, N. Yorks	SD9006563018	N/R	6	A	4	2	SN	

**Masham area in North Yorkshire July 02 2011**

**Collecting and Identifications by Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	2	A	2	0	SN	
Beraea	maurus	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	3	A	3	0	SN	
Wormaldia	occipitalis	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	3	A	3	0	SN	

Rievaulx area in North Yorkshire July 05 2011

Collecting and Identifications by Stuart Crofts

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Grass Keld, near Rievaulx, N. Yorks	SE5557784696	333	1	A	0	1	SN	
Athripsodes	aterrimus	Grass Keld, near Rievaulx, N. Yorks	SE5557784696	333	1	A	0	1	SN	
Drusus	annulatus	Grass Keld, near Rievaulx, N. Yorks	SE5557784696	333	1	A	0	1	SN	
Hydroptila	martini	Grass Keld, near Rievaulx, N. Yorks	SE5557784696	333	5	A	2	3	SN	
Synagapetus	dubitans	Grass Keld, near Rievaulx, N. Yorks	SE5557784696	333	1	A	0	1	SN	
Athripsodes	aterrimus	Spring Wood Pond, Nr Rievaulx, N. Yorks	SE5619484658	304	2	A	0	2	SN	
Beraea	maurus	Spring near Rievaulx, N. Yorks	SE5727085318	228	7	A	5	2	SN	
Hydroptila	martini	Spring Wood, Nr Rievaulx, N. Yorks	SE5576884690	266	2	A	0	2	SN	
Agapetus	delicatulus	River Rye, Rievaulx, N. Yorks	SE5712085424	254	1	A	0	1	SN	
Lepidostoma	hirtum	River Rye, Rievaulx, N. Yorks	SE5712085424	254	1	A	0	1	SN	
Lype	phaeopa	River Rye, Rievaulx, N. Yorks	SE5712085424	254	1	A	0	1	SN	
Mystacides	azurea	River Rye, Rievaulx, N. Yorks	SE5712085424	254	1	A	1	0	SN	
Agapetus	fuscipes	Woodland spring near Rievaulx, N. Yorks	SE5767485263	275	8	A	8	0	SN	
Agapetus	fuscipes	Woodland spring near Rievaulx, N. Yorks	SE5767485263	275	6	L	N/A	N/A	SN	
Beraea	maurus	Woodland spring near Rievaulx, N. Yorks	SE5767485263	275	8	A	3	5	SN	
Synagapetus	dubitans	Woodland spring near Rievaulx, N. Yorks	SE5767485263	275	2	L	N/A	N/A	SN	
Wormaldia	occipitalis	Woodland spring near Rievaulx, N. Yorks	SE5767485263	275	2	A	2	0	SN	



Masham and Rievaulx area in North Yorkshire August 01 2011

Collecting and Identifications by Andrew Dixon and Stuart Crofts

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	2	A	2	0	SN	
Beraea	maurus	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	2	A	2	0	SN	
Synagapetus	dubitans	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	4	A	4	0	SN	
Tinodes	unicolor	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	5	A	2	3	SN	
Wormaldia	occipitalis	Nutwith Cote, woodland spring, N. Yorks	SE233782	N/R	10	A	10	0	SN	
Adicella	reducta	Stream south of Nutwith cote wood, N. Yorks	SE234887768	N/R	1	A	0	1	SN	
Beraea	maurus	Stream south of Nutwith cote wood, N. Yorks	SE234887768	N/R	4	A	2	2	SN	
Beraea	maurus	Stream south of Nutwith cote wood, N. Yorks	SE234327758	N/R	1	A	0	1	SN	
Crunoecia	irrorata	Stream south of Nutwith cote wood, N. Yorks	SE234887768	N/R	1	A	1	0	SN	
Crunoecia	irrorata	Stream south of Nutwith cote wood, N. Yorks	SE234327758	N/R	2	A	2	0	SN	
Diplectrona	felix	Stream south of Nutwith cote wood, N. Yorks	SE234887768	N/R	4	A	4	0	SN	
Diplectrona	felix	Stream south of Nutwith cote wood, N. Yorks	SE234327758	N/R	1	A	1	0	SN	
Hydropsyche	fulvipes	Stream south of Nutwith cote wood, N. Yorks	SE234887768	N/R	2	A	1	1	SN	
Micropterna	sequax	Stream south of Nutwith cote wood, N. Yorks	SE234327758	N/R	1	A	1	0	SN	
Wormaldia	occipitalis	Stream south of Nutwith cote wood, N. Yorks	SE234327758	N/R	1	A	1	0	SN	
Beraea	maurus	Hackfall, woodland spring, N. Yorks	SE2344977340	N/R	4	A	2	2	SN	
Crunoecia	irrorata	Hackfall, woodland spring, N. Yorks	SE2344977340	N/R	1	A	0	1	SN	
Diplectrona	felix	Hackfall, woodland spring, N. Yorks	SE2341477195	N/R	1	A	1	0	SN	
Diplectrona	felix	Hackfall, woodland spring, N. Yorks	SE2344977340	N/R	2	A	2	0	SN	
Synagapetus	dubitans	Hackfall, woodland spring, N. Yorks	SE2341477195	N/R	1	A	1	0	SN	
Tinodes	unicolor	Hackfall, woodland spring, N. Yorks	SE2344977340	N/R	1	A	1	0	SN	
Wormaldia	occipitalis	Hackfall, woodland spring, N. Yorks	SE2341477195	N/R	11	A	9	2	SN	
Wormaldia	occipitalis	Hackfall, woodland spring, N. Yorks	SE233667264	N/R	1	A	1	0	SN	
Wormaldia	occipitalis	Hackfall, woodland spring, N. Yorks	SE2344977340	N/R	3	A	2	1	SN	
Agapetus	fuscipes	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	16	A	5	11	SN	
Beraea	maurus	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	2	A	2	0	SN	
Crunoecia	irrorata	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	1	A	1	0	SN	
Diplectrona	felix	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	1	A	1	0	SN	
Tinodes	unicolor	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	1	A	1	0	SN	
Wormaldia	occipitalis	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	1	A	1	0	SN	
Lype	phaeopa	R. Seph, N Yorks	SE567915	N/R	1	A	1	0	SN	
Potamophylax	INDET	R. Seph, N Yorks	SE567915	N/R	1	A	0	1	SN	
Agapetus	delicatulus	R. Rye, Rievaulx, N. Yorks	SE574856	N/R	5	A	3	2	SN	
Hydropsyche	instabilis	R. Rye, Rievaulx, N. Yorks	SE574856	N/R	1	A	0	1	SN	
Lepidostoma	hirtum	R. Rye, Rievaulx, N. Yorks	SE574856	N/R	1	A	1	0	SN	
Agapetus	fuscipes	Woodland spring near Rievaulx, N. Yorks	SE576852	N/R	3	A	2	1	SN	
Tinodes	unicolor	Woodland spring near Rievaulx, N. Yorks	SE576852	N/R	2	A	2	0	SN	

**Grantham area in South Lincolnshire August 03 2011**

**Collecting and Identifications by Andrew Dixon and Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Cold spring, Pasture Farm, S. Lincs	SK8998328666	312	2	A	2	0	SN	
Crunoecia	irrorata	Cold spring, Pasture Farm, S. Lincs	SK8998328666	312	1	A	1	0	SN	
Sericostoma	personatum	Cold spring, Pasture Farm, S. Lincs	SK8998328666	312	1	A	1	0	SN	
Lyte	reducta	Cringle brook, Stoke Rochford, S. Lincs	SK9214928938	235	3	A	2	1	SN	
Agapetus	fuscipes	Woodland springs, Stoke Rochford, S. Lincs	SK9224429001	216	7	A	7	0	SN	
Beraea	maurus	Woodland springs, Stoke Rochford, S. Lincs	SK9224429001	216	1	A	1	0	SN	
Crunoecia	irrorata	Woodland springs, Stoke Rochford, S. Lincs	SK9220528992	212	4	A	1	3	SN	
Lyte	phaeopa	Woodland springs, Stoke Rochford, S. Lincs	SK9220528992	212	4	A	2	2	SN	
Micropterna	lateralis	Woodland springs, Stoke Rochford, S. Lincs	SK9224429001	216	1	A	0	1	SN	
Polycentropus	irroratus	Woodland springs, Stoke Rochford, S. Lincs	SK9224429001	216	2	A	1	1	SN	
Tinodes	maclachlani	Woodland springs, Stoke Rochford, S. Lincs	SK9220528992	212	2	A	2	0	SN	
Athripsodes	cinereus	Wyville brook, Pasture Farm, S. Lincs	SK8997728644	304	1	A	1	0	SN	
Hydropsyche	angustipennis	Wyville brook, Pasture Farm, S. Lincs	SK8997728644	304	3	A	3	0	SN	
Oxyethira	falcata	Wyville brook, Pasture Farm, S. Lincs	SK8997728644	304	5	A	3	2	SN	

**Dark Peak area in South Yorkshire August 05 2011**

**Collecting and Identifications by Andrew Dixon and Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Beraea	maurus	Bull Clough, Howden moors	SK1775495819	N/R	1	A	0	1	SN	
Drusus	annulatus	Bull Clough, Howden moors	SK1775495819	N/R	1	A	1	0	SN	
Odontocerum	albicorne	Mickleden beck, Midhope moors, S. Yorks	SK1921197773	1387	1	A	N/R	N/R	SN	
Plectrocnemia	conspersa	Mickleden beck, Midhope moors, S. Yorks	SK1921197773	1387	1	A	1	0	SN	
Agapetus	fuscipes	Lord Edward Howard's spring, Howden moors	SK171963	N/R	10	A	9	1	SN	
Beraea	maurus	Lord Edward Howard's spring, Howden moors	SK171963	N/R	6	A	5	1	SN	
Crunoecia	irrorata	Lord Edward Howard's spring, Howden moors	SK171963	N/R	7	A	4	3	SN	
Diplectrona	felix	Lord Edward Howard's spring, Howden moors	SK171963	N/R	1	A	1	0	SN	
Drusus	annulatus	Lord Edward Howard's spring, Howden moors	SK171963	N/R	3	A	3	0	SN	
Philopotamus	montanus	Lord Edward Howard's spring, Howden moors	SK171963	N/R	2	A	1	1	SN	
Plectrocnemia	conspersa	Lord Edward Howard's spring, Howden moors	SK171963	N/R	1	A	1	0	SN	
Polycentropus	flavomaculatus	Lord Edward Howard's spring, Howden moors	SK171963	N/R	1	A	0	1	SN	
Wormaldia	occipitalis	Lord Edward Howard's spring, Howden moors	SK171963	N/R	1	A	1	0	SN	
Rhadicoleptus	alpestris	Rhian Gutter, Midhope moors, S. Yorks	SK1822597593	1280	1	A	1	0	SN	
Agrypnia	obsoleta	Pond on Midhope moors, S. Yorks	SK1848697471	N/R	1	A	1	0	SN	Observed emerging at pond surface

**Mickley area in North Yorkshire August 07 2011**

**Collecting and Identifications by Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Beraea	maurus	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	0	1	SN	
Crunoecia	irrorata	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	0	1	SN	
Lepidostoma	hirtum	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	5	A	4	1	SN	
Lype	phaeopa	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	0	1	SN	
Plectrocnemia	brevis	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	1	0	SN	
Polycentropus	flavomaculatus	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	0	1	SN	
Wormaldia	occipitalis	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	5	A	5	0	SN	

**Mickley area in North Yorkshire August 19 2011**

**Collecting and Identifications by Andrew Dixon and Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Crunoecia	irrorata	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	3	A	2	1	SN	
Diplectrona	felix	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	1	0	SN	
Micropterna	sequax	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	1	0	SN	
Plectrocnemia	conspersa	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	1	0	SN	
Tinodes	unicolor	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	1	A	0	1	SN	
Wormaldia	occipitalis	Tripple Springs, Mickley Wood, N. Yorks	SE246767	237	21	A	18	3	SN	

**Coverdale area and Hackfall Light Trap in North Yorkshire August 20 2011**

**Collecting and Identifications by Andrew Dixon and Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Athripsodes	bilineatus	River Cover, Coverdale, N. Yorks	SE1377386746	N/R	2	A	N/R	N/R	SN	Swarming over river surface
Odontocerum	albicorne	River Cover, Coverdale, N. Yorks	SE1377386746	N/R	1	A	N/R	N/R	SN	
Polycentropus	flavomaculatus	River Cover, Coverdale, N. Yorks	SE1377386746	N/R	1	A	1	0	SN	
Potamophylax	INDET	River Cover, Coverdale, N. Yorks	SE1377386746	N/R	1	A	0	1	SN	
Rhyacophila	dorsalis	River Cover, Coverdale, N. Yorks	SE1377386746	N/R	1	A	N/R	N/R	SN	
Agapetus	fuscipes	Riverside spring, Coverdale, N. Yorks	SE1330486692	N/R	4	A	4	0	SN	
Beraea	maurus	Riverside spring, Coverdale, N. Yorks	SE1330486692	N/R	2	A	1	1	SN	
Plectrocnemia	conspersa	Riverside spring, Coverdale, N. Yorks	SE1350286702	N/R	1	A	1	0	SN	
Tinodes	unicolor	Riverside spring, Coverdale, N. Yorks	SE1330486692	N/R	6	A	3	3	SN	
Wormaldia	occipitalis	Riverside spring, Coverdale, N. Yorks	SE1350286702	N/R	1	A	1	0	SN	
Wormaldia	occipitalis	Riverside spring, Coverdale, N. Yorks	SE1330486692	N/R	5	A	4	1	SN	
Tinodes	unicolor	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	1	A	0	1	LT	Light trap set 9pm until midnight
Wormaldia	occipitalis	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	1	A	1	0	LT	Light trap set 9pm until midnight
Agapetus	ochripes	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	4	A	3	1	LT	Light trap set 9pm until midnight
Hydroptila	forcipata	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	35	A	28	7	LT	Light trap set 9pm until midnight
Hydroptila	sparsa	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	3	A	0	3	LT	Light trap set 9pm until midnight
Limnephilus	lunatus	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	2	A	0	2	LT	Light trap set 9pm until midnight
Molanna	angustata	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	1	A	1	0	LT	Light trap set 9pm until midnight
Oxyethira	falcata	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	1	A	0	1	LT	Light trap set 9pm until midnight
Polycentropus	flavomaculatus	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	1	A	1	0	LT	Light trap set 9pm until midnight
Potamophylax	latipennis	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	3	A	2	1	LT	Light trap set 9pm until midnight
Sericostoma	personatum	Hackfall Fountain Pond, N. Yorks	SE2334977318	N/R	1	A	0	1	LT	Light trap set 9pm until midnight
Agapetus	ochripes	Hackfall, woodland spring, N. Yorks	SE2342177202	N/R	2	A	1	1	LT	Light trap set 9pm until midnight
Hydroptila	forcipata	Hackfall, woodland spring, N. Yorks	SE2342177202	N/R	1	A	0	1	LT	Light trap set 9pm until midnight
Lepidostoma	hirtum	Hackfall, woodland spring, N. Yorks	SE2342177202	N/R	1	A	1	0	LT	Light trap set 9pm until midnight
Micropterna	sequax	Hackfall, woodland spring, N. Yorks	SE2342177202	N/R	1	A	1	0	LT	Light trap set 9pm until midnight
Plectrocnemia	conspersa	Hackfall, woodland spring, N. Yorks	SE2342177202	N/R	2	A	2	0	LT	Light trap set 9pm until midnight
Sericostoma	personatum	Hackfall, woodland spring, N. Yorks	SE2342177202	N/R	1	A	0	1	LT	Light trap set 9pm until midnight
Wormaldia	occipitalis	Hackfall, woodland spring, N. Yorks	SE2342177202	N/R	4	A	4	0	LT	Light trap set 9pm until midnight

**Bishopdale area in North Yorkshire August 21 2011**

**Collecting and Identifications by Andrew Dixon and Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Agapetus	fuscipes	Hillside stream, Bishopdale, N. Yorks	SD972832	N/R	8	L	N/A	N/A	AH	
Beraea	maurus	Hillside stream, Bishopdale, N. Yorks	SD972832	N/R	1	A	0	1	SN	
Crunoecia	irrorata	Hillside stream, Bishopdale, N. Yorks	SD972832	N/R	1	A	0	1	SN	
Crunoecia	irrorata	Hillside stream, Bishopdale, N. Yorks	SD974833	N/R	1	A	0	1	SN	
Crunoecia	irrorata	Hillside stream, Bishopdale, N. Yorks	SD975836	N/R	1	A	0	1	SN	
Drusus	annulatus	Hillside stream, Bishopdale, N. Yorks	SD964824	N/R	1	A	1	0	SN	
Philopotamus	montanus	Hillside stream, Bishopdale, N. Yorks	SD974833	N/R	2	A	1	1	SN	
Rhyacophila	dorsalis	Hillside stream, Bishopdale, N. Yorks	SD964824	N/R	1	A	1	0	SN	

**Hackfall area in North Yorkshire August 22 2011**

**Collecting and Identifications by Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Crunoecia	irrorata	Hackfall, woodland spring, N. Yorks	SE2338477236	N/R	1	A	0	1	SN	
Micropterna	sequax	Hackfall, woodland spring, N. Yorks	SE2342277389	N/R	1	A	1	0	SN	
Rhyacophila	obliterata	Hackfall, woodland spring, N. Yorks	SE2338477236	N/R	1	A	1	0	SN	
Tinodes	unicolor	Hackfall, woodland spring, N. Yorks	SE2338477236	N/R	1	A	1	0	SN	
Wormaldia	occipitalis	Hackfall, woodland spring, N. Yorks	SE2338477236	N/R	9	A	8	1	SN	
Agapetus	fuscipes	Hackfall Alum spring, N. Yorks	SE2336876976	N/R	15	L	N/A	N/A	AH	
Crunoecia	irrorata	Hackfall, woodland spring, N. Yorks	SE2337877500	N/R	2	A	0	2	SN	
Crunoecia	irrorata	Hackfall, woodland spring, N. Yorks	SE2346177379	N/R	1	A	0	1	SN	
Odontocerum	albicorne	Hackfall, woodland spring, N. Yorks	SE2346177379	N/R	1	A	1	0	SN	
Wormaldia	occipitalis	Hackfall, woodland spring, N. Yorks	SE2346177379	N/R	1	A	1	0	SN	

**Mickley and Rievaulx area in North Yorkshire September 03 2011**

**Collecting and Identifications by Stuart Crofts**

Genus	Species	Location	NGR	Altitude in feet above sea level	Samples taken	Larvae (L) or Adult (A)	Males	Females	Capture Method	Brief Notes (when taken)
Crunoecia	irrorata	Triple Springs, Mickley Wood, N. Yorks	SE2470276717	237	1	A	1	0	SN	Probelms sweep netting in the rain
Wormaldia	occipitalis	Triple Springs, Mickley Wood, N. Yorks	SE2470276717	237	7	A	6	1	SN	Probelms sweep netting in the rain
Rhyacophila	obliterata	Woodland spring near Rievaulx, N. Yorks	SE5768285268	275	1	A	1	0	SN	Probelms sweep netting in the rain
Wormaldia	occipitalis	Woodland spring near Rievaulx, N. Yorks	SE5768285268	275	3	A	3	0	SN	Probelms sweep netting in the rain

### **Information & keys for the record sheets**

<b>Genus:</b>	The genus of the specimen captured
<b>Species:</b>	Species of the specimen identified. If "INDET" is in this column then the species is indeterminable because reliable, definitive keys were not available at the time of investigation.
<b>Location:</b>	This is the general area in which the sample was collected
<b>NGR:</b>	National Grid Reference (UK) direct from GPS receiver or Ordnance Survey maps where the sample was collected
<b>Altitude:</b>	Height recorded by GPS in feet above sea level
<b>Samples Taken:</b>	This is the number of samples taken for identification
<b>Larvae (L) or Adult (A):</b>	The life stage of the specimen collected
<b>Males:</b>	The actual count of male specimens identified from the sample.
<b>Females:</b>	The actual count of female specimens identified from the sample.
<b>Capture Method:</b>	Method relates to how the specimen was caught:  AH : ad hoc, no specific method. Larvae are often just picked off rocks in the water or by using a kick net. With adults, they too are often just picked off bank side plants etc. SN : sweep netting randomly through undergrowth or trees LT : Light trap
<b>Notes:</b>	These are just very brief comments
<b>N/R:</b>	Wherever this abbreviation is used it simple means "not recorded"
<b>N/A:</b>	Wherever this abbreviation is used it simple means "not applicable"