

Bombardier beetle *Brachinus crepitans* (Linnaeus, 1758) (Carabidae) and other species of interest from a brownfield site in Worcester.

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During routine habitat survey work at a former industrial site earmarked for development in Worcester I took the opportunity to collect entomological records. The site lies alongside railway lines approximately 0.5 km south of Shrub Hill Station at the rear of the Lea & Perrins factory in Worcester (01. The site).

Earlier buildings occupying the site have long been demolished and much of the site is now areas of decaying hard-standing and rubble becoming increasingly invaded by dense bramble scrub as vegetative succession advances. Parts of the site remain clear of brambles on the former hard standing and plants flowering on the more open areas during May & June 2017 included creeping buttercup *ranunculus repens*, red clover *Trifolium pratense*, common vetch *Vicia sativa*, red campion *Silene dioica*, white campion *Silene latifolia*, oxford ragwort *Senecio squalidus*, cow parsley *Anthriscus sylvestris*, common cornsalad *Valerianella locusta*, green alkanet *Pentaglottis sempervirens*, perforate St John's wort *Hypericum perforatum*, broom *Cytisus scoparius*, goat's-beard *Tragopogon pratensis* and beaked hawk's-beard *Crepis vesicaria*.



01. A view of part of the site looking north towards Shrub Hill Station in Worcester. The railway lines are on the right-hand side. © K.McGee.

My first visit was on 5th May 2017 and while I was turning over pieces of broken concrete and old bricks during a general search for invertebrates I collected a ground beetle I did not recognise. It later keyed out readily as a female *Brachinus crepitans*, the 'Bombardier Beetle'. The species is listed as Notable B, nationally scarce.

This is thought to be the third Worcestershire record of this species; one was recorded from the old abandoned railway line at Brotheridge Green during the early 1970's, and one was collected from former railway land near Honeybourne in June 2001 (Meiklejohn *et al*, 2001). The beetle is associated with stony ground and short grassland on chalk or limestone and is mainly coastal in the south and east of England, however it is also known from inland sites such as former limestone quarries (Meiklejohn *et al*, 2001). Those that occur on old railway lines are probably surviving in the arid sparsely vegetated conditions provided by the old limestone ballast. An excellent account of the species' auteocology is provided in the article produced for the Worcestershire Record following the Honeybourne discovery (Meiklejohn *et al*, 2001).

It is possible that further populations may be discovered in similar situations but this depends on gaining access to suitable habitat

provided by railway sidings, for example, which is understandably difficult for obvious reasons regarding safety and trespass. Once familiar with the beetle it is fairly easy to recognise visually in the field, on 18th May 2017 I counted four adults beneath rubble at the site in Worcester, and three were present on 28.vi.2017. Unfortunately, I found them to be impossible to photograph in their natural habitat; they are very fast to seek cover when a stone is turned over, and despite all my best efforts I could not find one to remain stationary for long enough!

Other beetles of note recorded at the site were:
Carabus violaceus (Carabidae). One on 28th June 2017.
Poecilus versicolor (Carabidae). One on 5th May 2017.
Chrysolina hyperici (Chrysomelidae). Approximately ten on perforate St John's wort *Hypericum perforatum* on 18th June 2017, (02)
Ocypus aeneocephalus (Staphylinidae). One on 6th May 2017.
Ocypus olens (Staphylinidae). One on 28th June 2017.



02. *Chrysolina hyperici* at Worcester on 18th June 2017. © K.McGee

A wide variety of other insect species were also recorded. Of particular interest are the following:

LEPIDOPTERA

Brown Argus *Aricia agestis* (Lycaenidae). Two were present on 18th June 2017 (03).



03. Brown Argus in Worcester on 18th May 2017. © K.McGee.

Treble-bar *Aplocera plagiata* (Geometridae). Two were present on 18th May 2017 (04).



04. Treble-bar in Worcester on 18th May 2017. © K.McGee.

Epiblema foenella (Tortricidae). One was disturbed on 28th June 2017. This is my first record of this distinctive species but, unfortunately, I was unable to photograph the specimen.

HEMIPTERA; HETEROPTERA

Stictopleurus punctatonervosus (Rhopalidae) (05). One collected from the flower of a *Hieraceum* species on 28th June 2017. This was my first record for this species, but I later found another on abandoned allotments near Nottingham on 1st August 2017.



05. *Stictopleurus punctatonervosus* in Worcester on 28th June 2017. © K.McGee.

HYMENOPTERA

Osmia bicolor (Megachilidae). Notable B. One female was observed visiting flowers of beaked hawk's-beard *Crepis vesicaria* on 5th May 2017 (06). Like the bombardier beetle, this species is also closely associated with sparsely vegetated ground in chalk and limestone habitats where females construct up to four nest-cells inside empty snail shells (BWARS, 2017). All my previous Worcestershire records for *O. bicolor* are from the limestone habitats on and near Bredon Hill. Investigation of similar sites near abandoned railway lines may result in the discovery of further populations.



06. *Osmia bicolor* (female) in Worcester on 5th May 2017. © K.McGee.

References

BWARS Species search [on-line] <http://www.bwars.com/> [Accessed 29.9.2017]

Meiklejohn, J., Partridge, J. and Green, H. 2001. Bombardier beetle *Brachinus crepitans* found near Honeybourne. *Worcestershire Record*, 11:44.

Images

- 01. Brown field site in Worcester. Kevin McGee
- 02. *Chrysolina hyperici* at Worcester brown field site. Kevin McGee
- 03. Brown Argus at Worcester brown field site. Kevin McGee
- 04. Treble-bar at Worcester brown field site. Kevin McGee
- 05. *Stictopleurus punctatonervosus* at Worcester brown field site. Kevin McGee
- 06. *Osmia bicolor* at Worcester brown field site. Kevin McGee