

DEE SOFT ROCK CLIFFS AND COAST AT THURSTASTON

An invertebrate survey for the Tanyptera Project
2021



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Appendix 1 Species data in separate spreadsheet file



1. PROJECT SPECIFICATION

The Tanyptera Project commissioned Nigel Jones and Ian Cheeseborough to undertake an invertebrate survey of a section of estuarine coast at Thurstaston, Cheshire. The survey focussed on aculeate Hymenoptera and Diptera with casual recording of other insects.

2. “Dee soft rock cliffs” at Thurstaston

The survey area fell within Ordnance Survey 1km grid squares SJ2383 and SJ2482 – shown between the two red lines in Fig. 1. The site consists of an approximately 2km stretch of estuarine coast featuring extensive soft rock cliffs, small areas of salt marsh and small areas of sandy beach with exposed sand and stands of marram grass *Ammophila arenaria*. The soft rock cliffs featured crumbling cliff faces, grassland and numerous wet flushes.



Figure 1: Survey area (between red marks) near Thurstaston.

3. METHOD

Four survey days were undertaken, between April – August:

22 April 2021 – sunny conditions throughout;

1 June 2021 – very warm sunny conditions throughout the day;

20 July 2021 – very warm, sunny conditions throughout the day;

24 August 2021 – mainly warm, changeable with frequent sunny spells;

The original intention had been to make a visit during May, but very poor weather throughout May 2021 prevented this. However the early June field day was an extended day, with 14 man hours spent on site, that encountered many of the typical May flying species as well as species likely to appear after May, so it appears that the survey still picked up a good representative sample of species from the usual May – June period.

On each of the 2021 survey days two field surveyors used the following techniques:

- Search and aerial netting of insects on flowers, leaves and tree foliage;
- Sweep-netting over and through ground vegetation, over flower heads, over sparsely vegetated ground and over tree foliage, targeting wet flushes, sandy exposures, grassland and saltmarsh.
- Pan-trapping: Up to thirty pans were set out at various stations along the coastal section. These were located on less steep parts of the soft rock cliffs where they were out of sight of the public.

4. RESULTS

300 records of 242 species were recorded, including 140 Diptera species and 74 aculeate Hymenoptera.

Species with conservation statuses

Nine species with designated conservation statuses were recorded. Table 1 summarises the species and for hymenoptera comments on their current informally reviewed status. Some species were last reviewed as long ago as 1991. The current informal status is an attempt to update these statuses with regard to improved knowledge of or changes to species distributions. The Hymenoptera informal statuses are those given by Archer (2007). Diptera statuses are more up to date, being drawn from reviews made since 2005. Table 2 provides further information on the species in Table 1 and other noteworthy species.

Species	Status	Current informal status and notes
HYMENOPTERA		
<i>Chrysis viridula</i>	-	Scarce (Archer, 2007)
<i>Nysson trimaculatus</i>	Notable “B” (1991)	Widespread (Archer, 2007) Local in region

<i>Philanthus triangulum</i>	RDB2	Now a widespread species in Britain.
<i>Colletes cunicularius</i>	RDB3	Previously restricted in Britain to dune systems in North Wales and Lancashire. In recent years it has colonised inland sand quarries.
<i>Lasioglossum nitidiusculum</i>	Notable “B” (1991)	Widespread (Archer, 2007) Local in region
<i>Osmia aurulenta</i>	Notable “B” (1991)	Widespread (Archer, 2007) restricted to coasts
DIPTERA		
<i>Syntormon macula</i>	Nationally Scarce	Collected from seepages and grassland
<i>Platypalpus excavatus</i>	p Nationally Scarce	Collected from sandy beach
<i>Coenosia stigmatica</i>	p Nationally Scarce	Collected from seepages and grassland
<i>Villeneuveia aestuum</i>	p Nationally Scarce	Collected from sandy beach
<i>Platycheirus immarginatus</i>	Nationally Scarce	Collected from saltmarsh
<i>Melieria cana</i>	Nationally Scarce	Collected from saltmarsh

Table 1 – species with conservation designations recorded at Thurstaston.

Notation: NS – Nationally Scarce; pNS – provisionally Nationally Scarce; Notable, Nb – Nationally Notable (designations from Falk (1991), Drake (2018), Falk & Crossley (2005), Falk & Pont (2017), Ball & Morris (2014) and Falk, Ismay & Chandler (2016).

5. DISCUSSION

Table 1 details a small number of scarce species associated with sandy substrates, seepages, grassland and saltmarsh. These habitats are supplemented by crumbling cliff faces that offered good conditions for a range of common ground nesting aculeates. Together this matrix of habitats offers conditions that could potentially host a significant range of invertebrate species. The present survey has not revealed a particularly extensive Diptera and aculeate Hymenoptera fauna at Thurstaston, but it should be noted that the 2021 recording season was exceptionally poor, and it is plausible that many species may have occurred in such low numbers that the survey failed to detect them. Evidence for this scenario is provided by the alarmingly low numbers of normally ubiquitous species such as the hoverflies *Episyrphus balteatus*, *Eristalis tenax* and *E. pertinax* which were only recorded in very low numbers, with *E. pertinax* not being recorded at all! The catches in pan traps were also very low and some 30 pan traps put out on 1 June caught no target specimens at all, something never previously encountered in the surveyors experiences.

Table 2 provides details about the scarce and local species recorded by the survey. These include species not previously recorded by the Cheshire Atlas (Clee, Parker and Record, *no date*) and scarce Cheshire species.

Species	Notes
<i>Chrysis viridula</i>	Only one pre 2000 record in the Cheshire Atlas. A cleptoparasite of the wasp <i>Odynerus spinipes</i>
<i>Nysson trimaculatus</i>	No Cheshire Atlas records. A cleptoparasite of <i>Gorytes</i> sp.
<i>Colletes cunicularius</i>	Numbers were observed in April.
<i>Lasioglossum nitidiusculum</i>	No Cheshire Atlas records in the post 1949 period.

<i>Osmia aurulenta</i>	Cheshire Atlas has records from one other tetrad. Around 20 individuals observed in April and June.
<i>Melecta albifrons</i>	No Cheshire Atlas records. A cleptoparasite of the mining bee <i>Anthophora plumipes</i> . Good numbers were observed around sunlit cliff faces.
<i>Epeolus variegatus</i>	A single Cheshire Atlas record – 1994.
<i>Nomada fucata</i>	No Cheshire Atlas records. Often found in association with its host, the now widespread bee <i>Andrena flavipes</i> .
<i>Syntormon macula</i>	New VC58 species. An early flying Dolichopodid fly. A riverine species found by shaded streams and rivers on base-rich and acid geology. Occasional records are from marshes.
<i>Platypalpus excavatus</i>	New VC58 species. Recorded from scattered locations throughout Great Britain in various habitats.
<i>Coenosia stigmatica</i>	New VC58 species. Few post 1960 British records. It may be more widespread in damp valley woods near to the coast. Swept from seepage at Thurstaston.
<i>Villeneuveia aestuum</i>	Second VC58 record, following a 1979 Hilbre record. A very local coastal species. Larvae have been found under stones in the tidal zone.
<i>Platycheirus immarginatus</i>	New VC58 species. A wetland species that occurs in coastal grazing marshes, tidal rivers and other brackish marshes.
<i>Melieria cana</i>	New VC58 species. A very local species, known from saltmarsh, coastal marsh and sparsely vegetated sand and shingle.

HABITAT MANAGEMENT

The cliff faces and steep sided slopes that characterise this section of coast are very active, with evidence of frequent land slips and destabilisation through coastal erosion. These processes will maintain the interest offered by seepages, cliffs and early successional grassland, meaning that active management to maintain these features is almost certainly unnecessary.

Given the above, if at any point, the natural processes are prevented or reduced through cliff protection, specialised invertebrates will likely become locally extinct. Damage to the soft rock cliff habitat can also occur through insensitive cliff top management and artificial drainage.

Acknowledgements

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