# THE WILDLIFE GARDEN AT THE NATURAL HISTORY MUSEUM: DEVELOPMENTS OF THE FLORA AND FAUNA UPDATE 2017-2018 – TWENTY THREE YEARS OF SPECIES RECORDING

CAROLINE WARE[1]*, MIRANDA LOWE[1]* and DUNCAN SIVELL[1]* and (listed alphabetically) MAXWELL V.L. BARCLAY[1], JOE BEALE[1], LEN ELLIS[1], FLORIN FENERU[1], MARTIN HONEY[1], DAVID LEES[1], DAVID NOTTON[1], NICKY REILLY[1], MARK J. STERLING[1] and THOMAS J. THOMAS[2]

[1]The Natural History Museum, Cromwell Road, London SW7 5BD
[2]143 Selbourne Road, Luton, Bedfordshire LU4 8LS

*lead authors, contact details:
c.ware@nhm.ac.uk, m.lowe@nhm.ac.uk, d.sivell@nhm.ac.uk

## INTRODUCTION

The purpose of the current report is to present a summary of species recorded between July 2017 and July 2018, focussing mainly on groups included in Ware *et al*. (2016).

The period includes a two-day bioblitz on 30 and 31 May 2018, which was part of the May half-term *Family Festival: Operation Earth*, a three-day event in celebration of environmental science, the different environments on our planet and the joy and value that comes from investigating them. The bioblitz was well attended with between 3,000 and 4,000 visitors attending the two days in the Garden. In addition to the benefits from helping families to engage with urban biodiversity and environmental investigation, an additional 14 new species were identified from the 193 records collected.

Pollination was the theme for the *Open Garden Squares Weekend* on 9 and 10 June – where yet again the staff and volunteers, together with staff from the Bumblebee Conservation Trust and Buglife, helped inspire visitors to view and collect records. Our third and most recent event this year was the Wildlife Garden's *Anniversary Species Recording Day* in celebration of our twenty third anniversary, when an additional 186 records were collected by staff and volunteers. Some 178 records were collected during the Garden's twenty second *Anniversary Species Recording Day* in July 2017.

The recording methods described previously (Leigh & Ware 2003; Ware *et al*. 2016) continue to be used. Habitat references refer to the map in Ware *et al*. (2017).

As the Garden reached its twenty third anniversary, a total of 3,399 species are recorded on the Wildlife Garden database.

Aerial view of the Wildlife Garden. © Trustees of the Natural History Museum, London

## FLORA

### BRYOPHYTES

LEN ELLIS and CAROLINE WARE

Surveys of bryophytes are carried out on an annual basis with interim checks once a quarter. This year's survey was carried out on 26 March, 5 and 12 April. Thirty two species were recorded of which two were new to the list: the liverwort *Frullania dilatata* on the Sweet Chestnut fence around W01 and the moss *Fissidens viridulus* from the meadow G05. Liverworts have always been rare in the Garden but two species, *Marchantia polymorpha* (between paving adjacent to LH04) and *Lophocolea bidentata* (near Dinosaur Footprint), have reappeared after a lengthy apparent absence. Similarly, there reappeared some ephemeral mosses of sporadic record, e.g. *Fissidens taxifolius* (F06) and *Barbula convoluta* (near the Chalk Hill). The presence and persistence of these mosses of bare soil may have been aided by the very damp spring.

Throughout the Garden, *Brachythecium rutabulum* remains the dominant component of rock and log communities, but populations have declined of the once similarly abundant *Orthotricum diaphanum*, which occurs on tree stumps and wooden fencing. *Amblystegium serpens*, *Calliergonella cuspidata*, and *Didymodon insulanus* are among the more persistent mosses in the Garden, especially flourishing around the Waterfall and Dinosaur Footprint. Also flourishing, *Leptodictyum riparium* is more generally scattered around but occurs most abundantly alongside the chalk stream. However, one



of the most stable moss communities in the Garden, which continues to thrive, occupies the lowland heath (LH04).

A more rare arrival in the Garden, *Cryphaea heteromalla*, first recorded in 2013, appeared to be on the way out in 2017 but was still present and fruiting during the current survey. Also initially recorded in 2013, *Cratoneuron filicinum* retains a tenuous hold on life in the reed-bed (RO3). However, *Mnium hornum*, recorded in 2015, was not found this year.

It remains to be seen how the Garden's bryophyte community will survive disturbance from routine garden management and the hot, dry weather conditions we are experiencing in early summer 2018.

### VASCULAR PLANTS

CAROLINE WARE AND NICKY REILLY

The plant communities have remained stable with little change since the previous report (2016). Comment here will be confined to a few changes.

Woodland, hedgerow, scrub, meadow, heathland and wetland plant communities in the Wildlife Garden continue to mature and consolidate. Plant diversity within each habitat is maintained with considerable help from volunteers undertaking tasks of coppicing, pollarding, pruning, weeding and occasional planting.

With respect to the less common vascular plants in the Garden some species are expanding their range. The colony of Common Spotted-orchid *Dactylorhiza fuchsii* is gradually increasing in the meadow (G05), chalk downland (G01) and woodland glade (W06) with self-sown additions appearing in the woodland areas W07 and W09. Bee Orchids *Ophrys apifera* have spread in the chalk downland (G01) with two additions flowering this year, though several of the original plants have not flowered since 2017. The Summer Lady's-tresses *Spiranthes aestivalis* on the waterfall (A10) has flowered each year, with the exception of 2016. An additional plant of Broad-leaved Helleborine *Epipactis helleborine* has been recorded under Beech in woodland W01 – a welcome find in 2017. The Nationally Scarce Starved Wood-sedge *Carex depauperata* is still present in the woodland glade (W06). Alongside the main pond and in the fen Marsh Sow-thistle *Sonchus palustris* continues to thrive (A04) (F01 and F02) and the Nationally Scarce Hog's Fennel *Peucedanum officinale* maintains its statuesque presence near the pond in meadow G02.

Of particular significance is the increasing evidence of plant-insect associations. For example, Brimstone *Gonepteryx rhamni* butterfly sightings have increased as the Buckthorn *Rhamnus cathartica* and Alder Buckthorn *Frangula alnus* plants mature and the butterfly has this year been observed ovipositing on Alder Buckthorn. The recent sightings of the Nationally Notable Yellow Loosestrife Bee *Macropis europaea*, the Marsh Beetle *Scirtes hemisphaericus* (see below) and the weevil *Cionus alauda*, regularly found on Water Figwort *Scrophularia auriculata*, is evidence of the increasing value to wildlife of the plant diversity of pond margins and fen habitats. This year has seen an increase in grassland butterfly species such as Meadow Brown *Maniola jurtina*, skippers and Gatekeeper *Pyronia tithonus*. The continued presence of the soldier fly *Solva marginata*, and other poplar-dependent species including the Poplar Hawkmoth *Laothoe populi*, highlights the importance of mature *Populus nigra* 'Italica' trees in the Garden.

A more detailed account of plant-insect associations in the Wildlife Garden will be included in next year's update.

## LICHENS

MARK POWELL, DANNAE HASKATH, PAULA SHIPWAY AND MOSELLE SINGH

A brief survey of lichens was carried out on 31 May 2018 during a half-term bioblitz. Twelve taxa were added to the list of lichens and related fungi recorded for the Wildlife Garden. These are listed in Table 1 below:

### Notes on some of the added species

*Caloplaca cerinella* was recorded from a wooden seat. Although microscopic examination is sometimes recommended (to observe the 12- to 16-spored asci) this field record was justified by the company it was keeping. There is a trio of species which frequently grow together on soft, nutrient-rich bark: *C. cerinella*, *Lecania cyrtella* and *Lecanora hagenii*. It is less usual to record these three species on lignum but the community growing on this shaded seat is very much a 'twig community'.

*Catillaria nigroclavata* was found (confirmed microscopically) on a cleft fence rail.

Table 1. Lichens added to the Wildlife Garden list on 31 May 2018

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 242 | *Caloplaca cerinella* | 0 | LC | Lig | G05 |
| 316 | *Catillaria nigroclavata* | 0 | LC NS | Lig | G05 |
| 1704 | *Halecania viridescens* | 0 | LC NS | Lig | G03 |
| 613 | *Lecania cyrtella* | 0 | LC | Lig | F06 (Bench) |
| 2121 | *Lecanora barkmaniana* | 0 | LC NS | Lig | G05 |
| 849 | *Leptogium turgidum* | 0 | LC | Sax | W/C circle |
| 2135 | *Paranectria oropensis* subsp. *oropensis* | LF | LC NS | Lic | G03 |
| 1127 | *Physconia grisea* | 0 | LC | Lig | G05 |
| 1168 | *Porina aenea* | 0 | LC | Cort | P04 |
| 1378 | *Strigula taylorii* | 0 | LC NS IR | Cort | P04 (London Plane) |
| 1511 | *Verrucaria ochrostoma* | 0 | DD NR | Sax | W/C circle wall |
| 1518 | *Verrucaria viridula* | 0 | LC | Sax | W/C circle wall |

**Key to table:**

**Column A** gives the standard British Lichen Society number for each taxon.

**Column B** gives the name for each taxon.

**Column C** indicates whether the taxon is a lichenized fungus (0) or a lichenicolous fungus (LF).

**Column D** gives the IUCN threat category and other conservation designations as follows: DD = Data Deficient, LC = Least Concern, NR = Nationally Rare, NS = Nationally Scarce, IR = a species for which Britain has International Responsibility.

**Column E** gives the substrate: Cort = corticolous (growing on bark), Lig = lignicolous (growing on decorticated wood), Sax = saxicolous (growing on stone).

**Column F** relates to the habitat code on the plan of the Wildlife Garden (Ware *et al*. 2017).



Ten years ago, *Amandinea punctata* was abundant in lowland England and *C. nigroclavata* seemed very rare. The two species have done something of a swap on twigs, with *A. punctata* becoming much less common than it was. The fence rails in the Garden support both species. Fletcher & Coppins (2009) state of the distribution of *C. nigroclavata*: "locally common on twigs in young woodland groves in Ireland, S. & W. England".

Fletcher & Coppins (2009) give the distribution of *Halecania viridescens* as: "N. & W. British Isles and S.W. to N. Wales". It has shown a dramatic extension of range and increase in abundance throughout lowland England in recent years and is now something of a sorediate 'weed' on nutrient-rich bark and lignum. Ten years ago, *Scoliciosporum chlorococcum* was the ubiquitous green sorediate crust on twigs but this has largely retreated to lignum, replaced by this lookalike (*H. viridescens*).

*Lecanora barkmanina* was recorded from a cleft fence rail. This was a field record, partially confirmed by its appearance (pastel yellow patchy soralia) and K+ bright yellow soredia. *L. barkmaniana* is now common on nutrient-rich bark and lignum and the habitat and community was certainly suitable. The material was not well-developed, so this record is sufficient for general recording purposes but since it is not previously known from the Wildlife Garden, further validation is advised.

*Leptogium turgidum* is present as a very good individual on a wall top in the Garden. This has been the subject of recent discussion on forums and Twitter: https://twitter.com/obfuscans3/status/1000504340614967296

*Strigula taylorii* is present in some quantity on the base of the large London Plane *Platanus* x *hispanica* near the shed. Coppins & Orange (2009) give its distribution as: "S.W. England, Scotland, Ireland". Its spread across England in the past four or five years has been truly remarkable. Not only has its range greatly expanded but its habitat preference seems to have changed; previously it was largely recorded from shaded old woodlands but now it has become something of a weed on shaded tree trunks in all manner of situations, including gardens.

*Verrucaria ochrostoma* is present in very small quantity on a wall top in the Garden. Orange *et al*. (2009) state that it is: "rare, S.E. England". In recent years it has been recognised that this lichen is a common colonist of calcareous substrata. Now that we know that it is not a rarity, we need not mourn the loss of the superb colonies that grew on wall tops at the south side of the Museum, now removed by cleaning the stonework.

*Verrucaria viridula* is a common and well-circumscribed species which is, nonetheless, much confused with other species. Confusion arises when it grows on soft substrata, such as mortar, when its thallus becomes immersed and it is more often recorded as *V. hochstetteri* or *V. muralis* than as itself.

# FAUNA

## INVERTEBRATES

## HYMENOPTERA

DAVID G. NOTTON

A good deal of progress has been made listing Hymenoptera from the Garden since the previous reports by Notton (in Ware *et al*. 2016) which lists mainly bees, Anthophila, and

*Brachymeria tibialis* – a chalcid wasp that parasitises Burnet moths © Trustees of the Natural History Museum, London

digger wasps, Spheciformes, and by Root (in Ware *et al*. 2017) which lists gall wasps, Cynipoidea, and gall forming sawflies, Symphyta. Records added here are by David Notton except where mentioned.

The list of bees and digger wasps is supplemented by another six species including the nationally notable Yellow Loosestrife Bee, *Macropis europaea*, a specialist on the pollen of this water-loving plant; a male bee was found patrolling at the edge of the pond in 2017 and both male and female were recorded in July 2018. Thanks to Stephanie Skipp for drawing my attention to a specimen of the nationally notable Sharp-collared Furrow Bee *Lasioglossum malachurum* in her collection, the first record of this species for the Garden. The nomad bees *Nomada flava* and *N. panzeri*, previously only recorded as an aggregate based on males which cannot be separated easily, are now confirmed to both be present, based on females.

A significant start was made on the Chrysidoidea, with six species new to the Garden list, including the nationally notable *Cleptes semiauratus* which is a parasitoid of sawflies, and with thanks to Massimo Olmi for identifying *Anteon pubicorne*.

Six more Cynipoidea are added, including the rarely-recorded *Andricus gemmeus*, which was only added to the UK fauna in 2008. Thanks to Mattias Forshage for identifying *Rhoptromeris heptoma*.

Diapriids make a first appearance on the list with eight species recorded for the first time, these are parasitoids of flies. A handful of platygastrids, also fly parasitoids, are added here thanks to identifications made by Peter N. Buhl.

Among the vespoid families, five ants are newly added, including the nationally notable *Lasius brunneus*, an inhabitant of old trees, including the Garden's fine old Poplar.

Three Pompilidae - spider wasps - are added of which the star is *Agenioideus apicalis*, a species new to Britain and so far only known in Britain from the Wildlife Garden

*Agenioideus apicalis* – a spider wasp new to Britain. NHMUK 010264906. © Trustees of the Natural History Museum, London



(Notton 2018) where it was found dining on nectar from Wild Carrot *Daucus carota* flowers.

A number of other small additions raise the total of Hymenoptera reported from the Wildlife Garden by more than 50, although it should be noted that the Hymenoptera is a large order and there is potential for a great many more.

## DIPTERA

DUNCAN SIVELL

The big news for Diptera has been the discovery of Cryptochetidae, a new family for Britain. Two specimens of these stocky, diminutive flies, just a few millimetres long, were caught by David Notton on the edge of the meadow in May 2018. Cryptochetids have quite a specific ecology; they are parasites of scale insects (Coccidae). A provisional species identification has been made but at the time of writing is awaiting confirmation. More details of this discovery will be published separately in the near future.

The formerly rare *Chryopilus laetus* has been recorded again in the Garden, suggesting a population is present, and based on known biology is most likely breeding either in rot holes or in the heartwood of mature trees. A general increase in this species' abundance at the national level has recently promoted it from Endangered to Near Threatened (Drake 2017). *Solva marginata* continues to be recorded on and around the mature Poplar trees where their larvae develop. This species has also had its national status modified from Notable to Nationally Scarce (GB rarity status) or Least Concern (GB IUCN status) as numbers of records increase (Drake 2017).

In addition to finding a new family, a further 15 Diptera species have been added to the Garden list. This is comparable to, but slightly fewer than, the 18 species added in the preceding year (Ware *et al*. 2017). The total list of Diptera recorded for the Garden

Below left: *Chrysopilus cristatus* – male. © Joe Beale

Below right: *Chrysopilus laetus*. © Joe Beale

*Solva marginata*. © Joe Beale

now stands at 268 species. The addition of three widespread and common hoverflies (*Eupoedes luniger*, *Rhingia campestris* and *Xylota segnis*) reflects that there is still much recording to be done, for the more popular and accessible Diptera families as well as the more challenging ones.

*Odontomyia tigrina* – female. © Joe Beale



## COLEOPTERA

MAXWELL V. L. BARCLAY

Barclay in Ware *et al*. (2016), listed 356 species of beetles from 47 families then known to occur in the Wildlife Garden. Ware *et al*. (2017) added a further ten species, including the 'Welsh Chafer' *Hoplia philanthus* (Scarabaeidae), a formerly local species that seems to have become much more frequent in cities in the last few years. Other 2017 additions included the nationally scarce weevil *Hypera meles*, associated with clover in the meadow area, and the locally distributed ladybird *Coccidula scutellata*, which is associated with good quality reedbeds and wetland habitats with clean water, so quite a surprise at the edge of a pond in Central London. The marsh beetle *Scirtes hemisphaericus* was reported for the first time in the same pond-side reed habitats in 2017, suggesting that the marginal vegetation of the main pond is 'coming of age'.

Since the 2017 publication a further six species have been reported, mainly from the light trap that is periodically run in the Wildlife Garden. Most interesting of these is the fungus beetle *Hallomenus binotatus* (Tetratomidae) noted on 15 May 2018. This is a nationally scarce species associated with the fruiting bodies of various fungi, particularly wood-rotting fungi, and represents a new family as well as a new species for the Garden; it is probably connected with fungi growing on the dead wood piles that have been placed in the Garden to create habitat for fungi and saproxylic beetles. Two dung beetles new for the list, *Aphodius sphacelatus* and *Aphodius granarius* (Scarabaeidae), were captured in flight in the Garden. These may benefit from the dung of the sheep that are occasionally brought in for grazing but may also be feeding on scats from foxes and other animals. The nationally scarce melyrid *Dasytes plumbeus*, last reported in the 1990s, was collected again in 2016 by Identification Trainee Krisztina Fekete in 2016, and in 2018 was found in the Garden in some numbers, along with a single specimen of the usually commoner *Dasytes aeratus*.

Six species not reported in Ware *et al*. (2016; 2017) are listed below; these bring the total list of beetles known from the Garden to 372 species in 48 families. Newly added taxa are *Aphodius sphacelatus* (Panzer 1798) (Scarabaeidae), *Aphodius granarius* (Linnaeus 1767) (Scarabaeidae), *Dasytes aeratus* (Stephens 1830) (Melyridae), *Epuraea aestiva* (Linnaeus 1758) (Nitidulidae), *Enicmus transversus* (Olivier 1790) (Latridiidae) and *Hallomenus binotatus* (Quensel 1790) (Tetratomidae).

These beetles were collected and identified by the authors and by other NHM staff and associated personnel, in particular Krisztina Fekete, Katy Potts, Stephanie Skipp, Daniel Johnson, Keita Matsumoto, Michael Geiser and Roger Booth.

## LEPIDOPTERA

DAVID C. LEES, MARTIN R. HONEY, JOE BEALE AND MARK J. STERLING

In 2017 an additional 17 moth species were added to the then species list of 540 moths. To date (3 July 2018), we estimate we have found an additional 20 moth species, listed with comments below. A few additional records are also mentioned below, these being species previously recorded in the Wildlife Garden but missing from the existing database or of interest because they are rarely recorded or probably resident. The total Garden Lepidoptera list now stands at 577 species (excluding those yet to be determined

to species level and after correcting for those records still in the database as junior synonyms). The figure of 577 includes 23 species of butterfly.

Only verified records are noted here and most were recorded from the light-trap set in the meadow (G05) unless otherwise noted. The species are listed according to their Bradley & Fletcher number (Bradley 2000), as in previous reports, with the addition of their new checklist numbers (Agassiz *et al*. 2013) given in square brackets.

Three exceptional micromoth findings were:

159 [6.002] *Antispila treitschkiella* (Fischer von Röslerstamm 1843) – recorded on 23.viii.2016 (new to Britain and still the first record for Britain; see Nieukerken *et al*. 2018), the adventive yponomeutid,

435a [16.011] *Zelleria oleastrella* (Millière 1864) on 13.vi.2017. This is the 8th record of this species for the UK and the first for the vice county of Middlesex (Honey 2017) and

887b [42.0022] *Stathmopoda auriferella* (Walker sensu lato) on 26.viii. 2017 (an adventive species with just one previous UK record but the complex is in need of revision).

6 [2.001] *Dyseriocrania subpurpurella* (Haworth 1828). It is nice to see that this oak-feeding eriocraniid is probably resident in the Garden (two specimens on 19.iv.2018; previously recorded on 26.iv.2010).

147 [7.002] *Nemophora metallica* (Poda 1761) – a colony of this beautiful scabious-feeding longhorn was discovered and filmed on the chalk mound (G01) on 5.vii.2017 (it has also been recorded nearby at the London Wetland Centre, Barnes).

185 [11.009] *Luffia ferchaultella* (Stephens 1850). – larval cases were found in two places in the Garden by J. Beale on 4.vi.2018.

230 [12.039] *Monopis crocicapitella* (Clemens 1859) – this tineid was recorded on 3.vii.2018.

275 [14.012] *Bucculatrix bechsteinella* (Bechstein & Scharfenberg 1805) (vouchered; conf. Mark Sterling) – a specimen on 15.v.2018 was the first record for the Garden of this nationally local bucculatricid.

280 [15.002] *Caloptilia cuculipennella* (Hübner 1796) (Nationally Scarce A) – recorded as new to the Garden on 26.vii.2016 and is new to Middlesex.

290 [15.012] *Caloptilia semifascia* (Haworth 1828) – this nationally local Field Maple feeder was found on 6.vii.2017 and 16.ix.2017 (also on 26.vii.2016) and may well be breeding in the Garden.

313 [15.019] *Acrocercops brongniardella* (Fabricius 1798) – this nationally local

*Nemophora metallica* found on the chalk grassland; one of only two sites for this species in Greater London.
© David Lees



gracillariid, first recorded at light on 6.vii.2017, is now breeding prolifically on an Oak *Quercus robur* in the Queen's Gate corner of the Garden.

331 [15.051] *Phyllonorycter lantanella* (Schrank 1802) – mines of the nationally local species were found at low density by David Agassiz on Wayfaring Tree *Viburnum lantana* in 2017 (there are just three Middlesex records).

353 [15.075] *Phyllonorycter ulmifoliella* (Hübner [1817]) – recorded for the first time on 3.vii.2018.

607 [38.037] *Elachista canapennella* – first recorded in about 2001, it was recorded on 3.v.2018.

638a [28.005] *Denisia albimaculea* (Haworth 1828) (Notable; Nationally Scarce) – this striking oecophorid, first recorded in the original list from the Garden (Honey *et al*. 1998) continues to be recorded in the Garden with one on 15.v.2018.

758 [35.157] *Recurvaria leucatella* – the distinctive and nationally local gelechiid was recorded on 3.vii.2018.

808 [35.033] *Platyedra subcinerea* (Haworth 1828) – this gelechiid was recorded on 26.vii.2017.

831 [35.135] *Caryocolum proxima* (Haworth 1828) – this is one of the most important micromoths in the Garden, it is worth noting that it came to light on 26.viii.2017. (pRDB3; first recorded in the Garden in the original list (Honey *et al*. 1998) and on 26.vii.2001, and previously bred by Mark Sterling from the Garden on *Cerastium* sp.).

968 [49.133] *Cochylis nana* (Haworth 1811) – recorded on 22.v.2018 (previously on 19.vii.1995).

1043 [49.078] *Acleris aspersana* (Hübner [1817]) – recorded on 20.vi.2017 (previously only in the original list (Honey *et al*. 1998)).

1137 [49.245] *Epinotia tetraquetrana* (Haworth 1828) – recorded on 8.v.2018 (confirmed M. Sterling; previously only one historic and one post-2000 Middlesex record).

1174 [49.292] *Notocelia cynosbatella* (Linnaeus 1758) – this tortricid was recorded on 25.vii.2017 (not otherwise recorded since 13.v.1997).

1241 [49.347] *Grapholita compositella* (Fabricius 1797) – recorded by day during the Wildlife Garden bioblitz, on the chalk mound, on 22.vi.2018. First recorded, also by day, on 29.v.1998.

1760 [70.095] *Chloroclysta siterata* (Hufnagel 1767) Red-green Carpet – recorded on 3.x.2017, 25.x.2017 and 16.xi.2017 (previously on 25.iv.1996) and it should be breeding here.

1803 [70.133] *Perizoma alchemillata* (Linnaeus 1758) Small Rivulet on 10.vii.2017; its food plant is in the Garden.

1879 [70.198] *Lobophora halterata* (Hufnagel 1767) Seraphim – the discovery of two Seraphim on 15.v.2018 suggests this interesting geometrid is breeding in the Garden.

1894 [70.218] *Chiasmia clathrata* (Linnaeus 1758) Latticed Heath – recorded on 29.viii.2017 having been first recorded on 31.vii.2001.

2019 [71.027] *Clostera curtula* (Linnaeus 1758) Chocolate-tip – recorded on 11.iv.2017.

2011 [71.020] *Pterostoma palpina* (Clerck 1759) Pale Prominent – recorded on 15.v.2018.

2022 [71.001] *Thaumetopoea processionea* (Linnaeus 1758) Oak Processionary – this introduced colonist has not been seen in the Garden since a single female to light on 11.viii.2016.

Above left: Pale Prominent *Pterostoma palpina*. © Joe Beale

Above right: Plumed Fan-foot *Pechipogo plumigeralis*. © Joe Beale

2327 [73.155] *Apamea epomidion* Clouded Brindle (conf. Alberto Zilli) – recorded on the day of the Wildlife Garden bioblitz, on 30.v.2018.
2368 [73.119] *Helotropha leucostigma* (Hübner [1808]) Crescent – recorded in the Garden on 6.vii.2017.

Two additional *Phragmites*-associated moth fauna have been recorded recently in the Garden:
2370 [73.139] *Lenisa geminipuncta* (Haworth 1809) Twin-spotted Wainscot – first recorded 8.viii.2016, another came to light on 8.vii.2017.
2377 [73.137] *Arenostola phragmitidis* (Hübner [1803]) Fen Wainscot – one fresh specimen was recorded on 3.vii.2018. This is a very localised species in the London area.
Both species have been recorded nearby at the London Wetland Centre (M.R. Honey pers. comm.).

A range of interesting species that may or may not be resident in the Garden, or are reinforced by immigration, have recently been noted, including:
1403a [63.046] *Duponchelia fovealis* – this adventive pyralid was recorded in July 2016 and on 4.vii.2017 and 6.vii.2017.
2194 [73.297] *Mythimna albipuncta* ([Denis & Schiffermüller] 1775) White-point – this immigrant was recorded on 24.viii.2017.
2204 [73.302] *Leucania obsoleta* (Hübner [1803]) Obscure Wainscot – recorded on 17.vii.2017 (it is frequent nearby at the London Wetland Centre and has been found more commonly in London in recent years).
2488 [72.056] *Pechipogo plumigeralis* (Linnaeus 1758) Plumed Fan-foot – first recorded in the UK in 1995 it is now established in Britain, with London being its stronghold; there were two on 19.vii.2018; previously one on 29.vi.2009, was also a particularly interesting finding as it may be established here.



### Day-flying moths:

The Garden's population of Six-spot Burnet *Zygaena filipendulae* remains stable, with larvae, cocoons and adult moths recorded in grassland areas (G01, G02 and G07), whilst the Cinnabar Moth *Tyria jacobae* population has increased remarkably with 214 larva recorded on 9.vi.2018, compared to 30 recorded in 2017. The Humming-bird Hawk-moth *Macroglossum stellatarum*, recorded regularly in recent years and photographed ovipositing on 7.vii.2017, has yet to be spotted in 2018 (as of July 2018), despite the long period of hot weather in June/July.

## ARACHNIDA
## ARANEAE (SPIDERS) AND OPILIONES (HARVESTMEN)

THOMAS J. THOMAS

Since late 2015 there has been regular searching for spiders in the Wildlife Garden, at least one day per week throughout the year. A variety of collecting methods were used: active methods such as sweeping and beating, sorting leaf litter, brushing and hand searching; some passive procedures included corrugated cardboard wrapped around tree trunks simulating loose bark and pitfall traps. The latter were 'sheltered' in being capped with lids perforated with a series of small holes to reduce the chances of young amphibians getting into the traps and drowning.

The following species are further additions to those published in previous editions of *The London Naturalist*. It is worth noting that two of the new records were found by visitors: *Mangora acalypha* and *Macroeris nidicolens* during a Wildlife Garden event, showing the worth of having public involvement. Two other spiders found but not claimed were immatures of *Nuctenea* and *Zoropsis*; so far, no matures for definitive identification have been found. A future possible addition may be *Segestria florentina* which has been found outside the Garden in the Museum colonnade.

Another species, *Anyphaena accentuata*, may be in doubt as none have been found since 2015, possibly having been confused with *A. sabina*, a recent addition to the British fauna regularly found in the Garden as discussed in (Ware *et al*. 2016). If *A. accentuata* is removed from the list, then 100 species have been recorded in the Garden. It is interesting to note that *A. sabina* and *Cryptachaea blattea* are now found regularly during collecting.

With respect to the Harvestmen, of which only four species have been recorded, apart from the very occasional *Dicranopalpus ramosus*, no other species have been found.

**Theridiidae**
*Steatoda bipunctata*

**Linyphiidae**
*Monocephalus fuscipes*
*Diplocephalus latifrons*
*Diplocephalus picinus*

**Araneidae**
*Araniella cucurbitina*
*Mangora acalypha*

**Lycosidae**
*Alopecosa pulverulenta*

**Philodromidae**
*Tibellus oblongus*

**Thomisidae**
*Diaea dorsata*
*Xysticus acerbus*

**Salticidae**
*Macroeris nidicolens*

## VERTEBRATES

### BIRDS

JOE BEALE AND FLORIN FENERU

Since 2017 another five species of birds have been recorded, taking the Wildlife Garden bird list to 65 species. Red Kites *Milvus milvus* overhead on 16 March and 23 May 2018 were the first and second records and the freezing cold spell in early 2018 produced another first: Lapwings *Vanellus vanellus*, with 25 moving overhead on 28 February. Common Gull *Larus canus* flew over on 18 December 2017, although it is likely to be overlooked as a winter fly-over. There was one Stock Dove *Columba oenas* in the Lime on 15 June 2018 and another on 16 July 2018 by the chalk pond. Also new was a passage migrant Lesser Whitethroat *Sylvia curruca* which fed and sang in scrub and woodland habitats on 4 May 2018.

The following statements refer to some of the birds which used the Garden in both 2017 and 2018, unless specified. In March 2018, a Grey Heron *Ardea cinerea* predated several spawning Common Frogs *Rana temporaria* and a Carrion Crow *Corvus corone* also took one frog. A Sparrowhawk *Accipter nisus* visited regularly and in winter 2017-18 took a Redwing *Turdus iliacus* as well as a Greenfinch *Carduelis chloris* and a Feral Pigeon *Columba livia*. Flying over were Common Buzzards *Buteo buteo* on 16 March (three birds) and 26 March 2018 (two) and a Peregrine *Falco peregrinus* low overhead on 16 March 2018, the first one recorded since October 2015. Ring-necked Parakeets *Psittacula krameri* in April and December 2017 were surprisingly only the sixth and seventh records of this increasing adventive. Swifts *Apus apus* scythed overhead from May to August. A Green Woodpecker *Picus viridis* fed in various trees on 1 Nov 2017 and a Great Spotted Woodpecker *Dendrocopos major* in the Poplars on 19 Nov 2017 was the first since September 2016. The Garden's second and third records of Fieldfare *Turdus pilaris* since the first record back in November 1996, were birds on the move overhead: eight on 30 October 2017 and two on 28 February 2018 during the cold snap. Up to 25 Redwings overwintered from 2017 to mid-March 2018. They sheltered and fed in the tall Hollies, also foraging in the meadow and woodland leaf-litter. One Mistle Thrush *Turdus viscivorus* used the Poplars as a lookout on 19 Nov 2017 and two feasted on Juniper berries on 2 March 2018 during the snow. Blackcap *Sylvia atricapilla* occurred in February and autumn 2017 and one held territory for several days in spring 2018 but did not stay to breed as happened in 2016. Chiffchaffs *Phylloscopus collybita* occurred on migration in March and September 2017 and October 2018. Two Goldcrests *Regulus regulus* visited almost daily from autumn 2017 to spring 2018. Daily visitors included Greenfinch and Goldfinch *Carduelis carduelis*, often at the bird feeders.

Breeding birds included the Moorhen *Gallinula chloropus* pair which raised two broods to fledging in both years. Two pairs of Wrens *Troglodytes troglodytes* nested in 2017 and 2018. Also nesting and fledging young in both years were Robin *Erithacus rubecula*, Blue Tit *Cyanistes caeruleus* (in the nest boxes), Magpie *Pica pica* and Carrion Crow, all with young seen in both years. Blackbirds *Turdus merula* also fledged young in both years and were the most commonly seen bird, according to data from the weekly bird counts. Dunnock *Prunella modularis*, Great Tit *Parus major* and Coal Tit *Periparus ater* all fledged young and nested either in the Garden or very close by. Grey Wagtails *Motacilla cinerea* visited occasionally throughout but in early July 2018 a pair visited the main pond frequently, gathering beakfuls of Azure Damselflies *Coenagrion puella* to feed young somewhere in the Waterhouse building. In 2018 contractors replacing the metal railings were made aware of the Long-tailed Tits *Aegithalos caudatus* nesting alarmingly close by in the adjacent Gorse. This was the first time Long-tailed Tits had nested since 2015. The nest was left alone and as a result at least five young were successfully fledged.



## SPECIES LIST

### BRYOPHYTES

**Jubulaceae**
*Frullania dilatata*

**Fissidentaceae**
*Fissidens viridulus*

### LICHENICOLOUS FUNGI:

*Marchandiomyces aurantiacus*

**Telochistaceae**
*Caloplaca cerinella*

**Catillariaceae**
*Catillaria nigroclavata*
*Halecania viridescens*

**Ramilinaceae**
*Lecanora cyrtella*

**Lecanoraceae**
*Lecanora barkmaniana*

**Collemataceae**
*Leptogium turgidum*

**Bionectriaceae**
*Paranectria oropensis* subsp. *oropensis*

**Physciaceae**
*Physconia grisea*

**Porinaceae**
*Porina aenea*

**Strigulaceae**
*Strigula taylorii*

**Verrucariaceae**
*Verrucaria ochrostoma*
*Verrucaria viridula*

### HYMENOPTERA

#### ANTHOPHILA (Bees)

**Apidae**
*Nomada flava*
*Nomada panzeri*

**Halictidae**
*Lasioglossum malachurum* (Nationally notable B)
*Lasioglossum parvulum*
*Lasioglossum villosulum*

**Megachilidae**
*Megachile ligniseca*

**Melittidae**
*Macropis europaea* (Nationally notable A)

#### CHALCIDOIDEA

**Chalcididae**
*Brachymeria tibialis*

#### CHRYSIDOIDEA

**Bethylidae**
*Bethylus boops*
*Epyris niger*

**Chrysididae**
*Cleptes semiauratus* (Nationally notable B)
*Hedychridium roseum*
*Pseudomalus auratus*

**Dryinidae**
*Anteon pubicorne*

CYNIPOIDEA
**Cynipidae**
*Andricus gemmeus*
*Andricus kollari*
*Neuroterus aprilinus*

**Figitidae**
*Anacharis euchariodes*
*Anacharis immunis*
*Rhoptromeris heptoma*

DIAPRIOIDEA
**Diapriidae**
*Basalys tritoma*
*Monelata solida*
*Trichopria cameroni*
*Trichopria nigra*
*Trichopria nixoni*
*Trichopria subimpressa*
*Trichopria suspecta*
*Trichopria verticillata*

EVANIOIDEA
**Gasteruptiidae**
*Gasteruption jaculator*
*Gasteruption minutum*

ICHNEUMONOIDEA
**Ichneumonidae**
*Listrodromus nycthemerus*

PLATYGASTROIDEA
**Platygastridae**
*Amblyaspis roboris*
*Leptacis ozines*
*Leptacis vlugi*
*Platygaster cochleata*
*Platygaster dryope*
*Platygaster filicornis*
*Platygaster sagana*

**Scelionidae**
*Anteris aethra*
*Anteris asramanes*

PROCTOTRUPOIDEA
**Heloridae**
*Helorus ruficornis*

SPHECIFORMES (Digger wasps)
**Crabronidae**
*Rhopalum clavipes*

SYMPHYTA (Sawflies)
**Pamphiliidae**
*Neurotoma saltuum*

VESPOIDEA
**Formicidae (Ants)**
*Hypoponera punctatissima*
*Lasius brunneus* (Nationally notable A)
*Lasius flavus*
*Lasius niger*
*Myrmecina graminicola*

**Pompilidae (Spider wasps)**
*Agenioideus apicalis* (New to Britain, Notton 2018)
*Agenioideus cinctellus*
*Dipogon bifasciatus*

**Sapygidae**
*Sapyga quinquepunctata*

**Vespidae (Social wasps)**
*Vespula germanica*
*Vespula vulgaris*

DIPTERA
**Psychodidae**
*Pericoma fuliginosa*
*Psychoda surcoufi*

**Stratiomyidae**
*Odontomyia tigrina*



**Rhagionidae**
*Chrysopilus cristatus*

**Platypezidae**
*Callomyia amoena*

**Syrphidae**
*Eupeodes latifasciatus*
*Eupeodes luniger*
*Rhingia campestris*
*Xylota segnis*

**Conopidae**
*Myopa pellucida*

**Tephritidae**
*Tephritis bardanae*
*Tephritis ruralis*
*Trypeta zoe*

**Lauxaniidae**
*Meiosimyza rorida*

**Cryptochetidae**
(species identification to be confirmed)

**Muscidae**
*Schoenomyza litorella*

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