THE WASPS AND BEES (HYM., ACULEATA) OF THE OPEN SANDY HABITATS OF HIGHGATE COMMON IN WATSONIAN STAFFORDSHIRE

BY MICHAEL ARCHER

It is unusual to come across a site where the solitary species of aculeate wasps and bees are so much in evidence. Highgate Common Country Park is such a site. Highgate Common (SE8389), which is managed by Staffordshire County Council, is situated about 10 miles south-west of Wolverhampton and occurs in the Midlands Plateau Natural Area. Its area is about 94ha. The site is underlain by Bunter beds of Triassic sandstones with overlying patches of Pleistocene sands and gravels. The soils are sandy and usually well drained. The topography of the site is undulating. The vegetation mainly consists of woodland, scrub, heathland and acid grassland although there is some wet heathland and two ponds. Intense visitor pressure (usually as horse riders, dog walkers and picnickers) has resulted in an extensive network of sandy paths which provide good nesting sites for subterranean nesting species. Flowers of hawthorn, sloe, rowan, broom, gorse, bramble, yellow composites and umbellifers provide rich pollen and nectar sources.

The aims of this paper are to describe the aculeate wasp and bee fauna of this Country Park, and compare it with other sandy English sites. In addition, non-parametric statistical procedures will be used to estimate potential species diversity.

SAMPLING METHODS

Between 1996 and 2003, 14 visits were made to Highgate Common throughout the year as follows: April (1 visit), May (3), June (3), July (3), August (3) and September (1). During each visit of approximately three to four hours, all species of aculeate wasps and bees were recorded and usually collected with a hand net for identification. Recording was mainly from the heathland and acid grassland although shrubs were present in such habitats. The area of such open sites was about 29ha. Records from these visits represent the Archer sample.

In addition, Falk made available a report (Falk *et al.*, 1996) which contained records of species found at Highgate Common during four visits by Falk and four visits by Bloxham between April and August during 1994 and 1995. J. Webb also asked the author to identify the solitary bee species that were recorded from Highgate Common on 25 May 1999. The records of Archer, Falk, Bloxham and Webb will be called the Composite sample. Again these records seem to be mainly from the open habitats.

Furthermore, Falk (pers. comm., 2002) provided a further list of aculeate wasps and bees recorded from Highgate Common. Since the species of this list are to be the subject of a paper by Falk they will not be

included in the analysis presented in this paper. However, where relevant, reference will be made to this list to be known as the Falk's List.

In the following account, the nomenclature can be related to that given by Kloet and Hincks (1978). An up-to-date check list can be found on the Bees, Wasps and Ants Recording Society (BWARS) web pages at http://www.bwars.com/.

SPECIES PRESENT AND SEASONAL PROGRESSION OF SPECIES

A full list of the species recorded is given in the Appendix. At the family level, Table 1 shows the taxonomic distribution of species and records. A record represents a specimen differing in one of the following three variables: name, sex and day of visit. The solitary wasp family, Sphecidae, and the solitary bee subfamilies, Andreninae, Halictinae and Anthophorinae, are the dominant family and subfamilies in terms of number of species and records.

TABLE 1 — THE NUMBER OF SPECIES AND RECORDS OF ACULEATE WASPS AND BEES RECORDED FROM HIGHGATE COMMON (ARCHER SAMPLE) AND JUST SPECIES (COMPOSITE SAMPLE)

	Archer sample		Composite sample
	No. species	No. records	No. species
Solitary wasp species			
Chrysididae	0	0	2
Tiphiidae	1	1	1
Mutillidae	1	3	1
Pompilidae	5	12	6
Sphecidae	17	82	18
Total	24	98	28
Solitary bee species			
Colletinae	1	2	1
Andreninae	19	66	20
Halictinae	17	57	19
Melittinae	2	2	2
Megachilinae	2	5	3
Anthophorinae	12	44	13
Total	53	176	58
Total solitary wasps and bees	77	274	86
Social wasp and bee species			
Vespinae	3		4
Apinae	10		10
Total	13		14
Total wasp and bee species	90		100

From the Archer sample (Table 2) June, July and August were the best months for recording solitary wasp species, with June the most productive month for first recording. The species most evident were the hunters of flies (*Crabro peltarius, Oxybelus uniglumis* and *Lindenius albilabris* which also hunts heteropteran bugs), of weevils (*Cerceris arenaria*), of

solitary bees (*Cerceris rybyensis*), of spiders (*Priocnemis parvula*), of caterpillars (*Ammophila sabulosa*), of honeybees (*Philanthus triangulum*) and of homopteran bugs (*Mimesa equestris* and *M. lutaria*). All these species are subterranean nesters.

The best months from the Archer sample (Table 2) for recording solitary bees were May, June and July although many species were also taken during April and August. April was the best month for the first recording of solitary bee species although May and June are also good months. The species most evident, which again were all subterranean nesters or cleptoparasites of subterranean nesters, were: the sweat bees *Lasioglossum leucozonium* and *L. villosulum*; the spring and summer mining bees *Andrena nigrospina, A. haemorrhoa, A. humilis* and *A. wilkella*, and the cleptoparasites *Sphecodes pellucidus, S. reticulatus, Nomada goodeniana, N. integra* and *N. rufipes*.

From the Archer sample on average 17 (range 10-21) solitary wasp and bee species were recorded on each visit. June with an average of 20 species and July with an average of 19 species were the best months.

TABLE 2 — THE NUMBER OF SPECIES AND FIRST RECORDS OF SPECIES OF SOLITARY WASPS AND BEES RECORDED PER MONTH AT HIGHGATE COMMON (ARCHER SAMPLE)

	April	May	June	July	August	September
Solitary wasps						
First records	0	5	12	2	4	1
Recorded	0	5	13	12	14	6
Solitary bees						
First records	17	12	11	6	7	0
Recorded	17	23	23	20	18	9

SPECIES STATUS

In the Archer sample seven Red Data Book species (Shirt, 1987) have been recorded: *Diodontus insidiosus, Philanthus triangulum, Lasioglossum brevicorne, Sphecodes reticulatus, Nomada fulvicornis, N. lathburiana* and *N. signata*. Falk (1991) suggested that one of these species, *S. reticulatus*, should be downgraded to national scarce status (Na) and that the following eight species should be given national scarce status: *Lasioglossum quadrinotatum* (Na), *Sphecodes rubicundus* (Na), *Nomada integra* (Na), *Methocha articulata* (Nb), *Andrena bimaculata* (Nb), *A. humilis* (Nb), *A. nigriceps* (Nb) and *Nomada flavopicta* (Nb).

Recent work carried out by the Bees, Wasps and Ants Recording Society indicates that two species (*Philanthus triangulum* and *Nomada lathburiana*) should lose their national rare status, four species (*Diodontus insidiosus, Lasioglossum brevicorne, Sphecodes reticulatus* and *Nomada fulvicornis*) should be downgraded and a further three species should be given a national status (*Priocnemis susterai, Andrena nigrospina* and *Melitta haemorrhoidalis*).

To take account of these changes, Archer (1999, 2002a) has developed a national quality scoring system of high and low quality scoring species. High quality species have a scarce (equivalent to Nb), rare (equivalent to Na) or very rare (equivalent to RDB) status while low quality species have a universal, widespread or restricted status. According to this national system, the Archer sample has one very rare status species (*Nomada signata*), four rare status species (*Andrena nigrospina, Lasioglossum quadrinotatum, Sphecodes rubicundus* and *Nomada integra*) and eleven scarce status species (*Methocha articulata, Priocnemis susterai, Diodontus insidiosus, Andrena bimaculata, A. humilis, A. nigriceps, Lasioglossum brevicorne, Sphecodes reticulatus, Melitta haemorrhoidalis, Nomada flavopicta* and *N. fulvicornis*. From the Composite sample there is an additional scarce status species, *Sphecodes crassus*.

By giving each of the 77 solitary wasp and bee species from the Archer sample an Archer national status, a national quality score of 273 can be calculated (Table 3) with a national species quality score (SQS) of 3.5 (273 divided by the 77 solitary species). Since the Composite sample contains more solitary species its Archer national quality score is higher (292, Table 3) but its SQS of 3.4 is similar to that of the Archer sample.

TABLE 3 — THE ARCHER NATIONAL QUALITY SCORES OF THE SPECIES OF SOLITARY WASPS AND BEES RECORDED FROM HIGHGATE COMMON (ARCHER AND COMPOSITE SAMPLES)

		Archer	Composite	Archer	Composite
Status	Status score (A)	No. species (B)		Quality score (A x B)	
Universal	1	35	40	35	40
Widespread	2	25	28	50	56
Restricted	4	1	1	4	4
Scarce	8	11	12	88	96
Rare	16	4	4	64	64
Very rare	32	1	1	32	32
Total		77	86	273	292

Species Quality Score (SQS) Archer 273/77 = 3.5 Composite 292/86 = 3.4

How do these quality scores compare with similar scores for other English open sandy habitats? Table 4 shows species quality characteristics from the south-east: Bagmoor Common (Archer, 2000), Ambersham and Iping Commons (Archer & Edwards, 2002); East Anglia: Rampart Field (Archer, in press) and Roydon Common (Archer, 2004a); north-west: Ainsdale-Formby sand dunes (Archer, 1999) and North Walney sand dunes (Archer, 2004b); West Midlands: Hartlebury Common (Archer, 2002b) and Devil's Spittleful (Archer, 2004c); East Midlands: Sherwood Forest (Archer, unpublished); Yorkshire: Crow Wood (Archer & Burn, 1995); Lincolnshire: Kirkby Moor (Archer, 2001) and Gibraltar Point sand dunes (Archer, 1998); and Northumbria: Lindisfarne sand dunes (Archer unpublished). Although the quality scores, and the number of

TABLE 4 — SPECIES QUALITY CHARACTERISTICS OF SOME ENGLISH SANDY SITES

	No. solitary spp.	No. high quality spp.	Quality score	Species quality score
South-east England				
Bagmoor Common	148	32	730	4.9
Ambersham Common	190	42	863	4.5
Iping Common	189	40	853	4.5
East Anglia				
Rampart Field	76	17	300	3.9
Roydon Common	88	19	339	3.9
North-west England				
Ainsdale-Formby dunes	94	17	361	3.8
North Walney dunes	40	6	128	3.2
West Midlands				
Hartlebury Common	87	15	292	3.4
Devil's Spittleful	109	15	282	2.6
Highgate Common	86	17	292	3.4
East Midlands				
Sherwood Forest	100	9	292	3.0
Yorkshire				
Crow Wood	105	9	266	2.5
Lincolnshire				
Kirkby Moor	72	3	136	1.9
Gibraltar Point	84	4	140	1.7
Northumbria				
Lindisfarne dunes	28	2	44	1.6

solitary and high quality species will be influenced by the areas of the sites, the species quality scores are relatively independent of site area (Archer, 1999), so can be used to compare sites. The SQS of Highgate Common is similar to those from the West Midlands, East Midlands and north-west sites, smaller than those from the south-east and East Anglian sites, and larger than those from Yorkshire, Lincolnshire and Northumbrian sites.

ESTIMATING THE POTENTIAL NUMBER OF SOLITARY WASP AND BEE SPECIES

One of the problems in the study of any site is the difficulty of knowing how many more species are present at a site but, as yet, are unrecorded. Recent advances in non-parametric statistical procedures offer a way of addressing this problem. The presence/absence estimate of Chao (in Colwell & Coddington, 1994) is based on the number of species that are observed in one (unique species) or two (two occasion species) samples or visits. Because some aculeate species are only active in the spring or summer it is advisable that samples be taken throughout the months of adult activity. The software to carry out the statistical procedure was provided by Pisces Conservation Ltd.

The statistical procedure was run 30 times for the Archer and Composite samples. The software takes 1, 2, etc. samples at random 30 times, each time calculating a mean estimate of species diversity. With a

small number of samples the estimates are erratic, but as more samples are selected the estimates may stabilise giving confidence in them. In fact, the estimates do stabilise (Fig. 1) predicting that about 91 solitary species from the Archer sample and 93 species from the Composite sample potentially could be present on the site. The estimates are given in Table 5 for the maximum sample size with its 95% confidence limits (meaning that there is a 95% chance that the potential number of species falls within this range). The close agreement of the two estimates gives confidence in these estimates. The percentage of species recorded based on the estimated number of species increases from the Archer to the Composite samples indicating that progress has been made in more fully characterizing the solitary species assemblage.

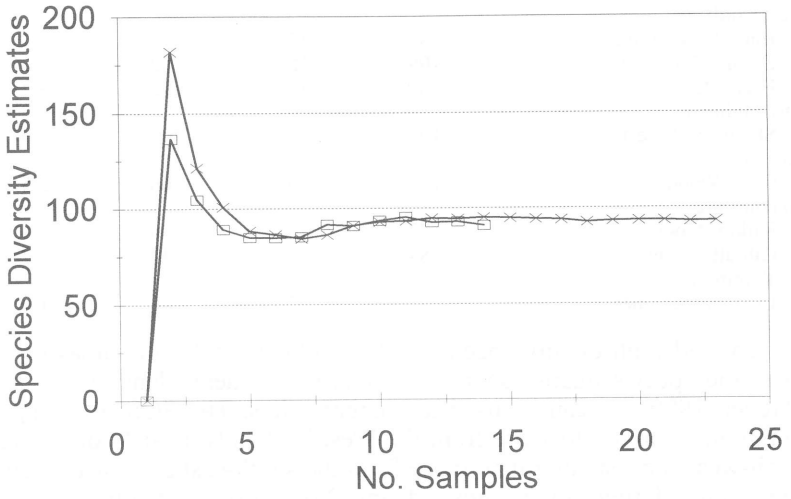

Fig. 1 — The Chao presence/absence estimate of species richness of solitary wasp and bee species from Highgate Common (Archer and Composite samples).

Since the Chao estimator is a relatively new statistical procedure, caution is needed in accepting its estimates. Two further non-parametric statistical procedures are the first order Jackknife (Heltshe & Forrester, 1983) and the Bootstrap (Smith & van Belle, 1984) procedures (software by Pisces Conservation Ltd.). The Jackknife procedure depends only on the unique species and the Bootstrap procedure on the proportion of samples containing each species. Both these procedures, with increasing sample size, closely approach an upper asymptote value indicating a stabilised estimate prediction (Figs 2, 3, Table 5). Compared with the 95% confidence limits the estimates from the three statistical procedures are fairly close together. In conclusion, from the Archer sample it is indicated that, on average, a further 11–21 solitary species associated with the open habitats of heathland and acid grassland remained to be recorded. From

the Composite samples the number of species remaining to be recorded, on average, reduces to 7–15 species. Falk's List, which involved several more visits, shows that a further 17 species of subterranean nesters with their cleptoparasites have been found, so closely agreeing with the predictions.

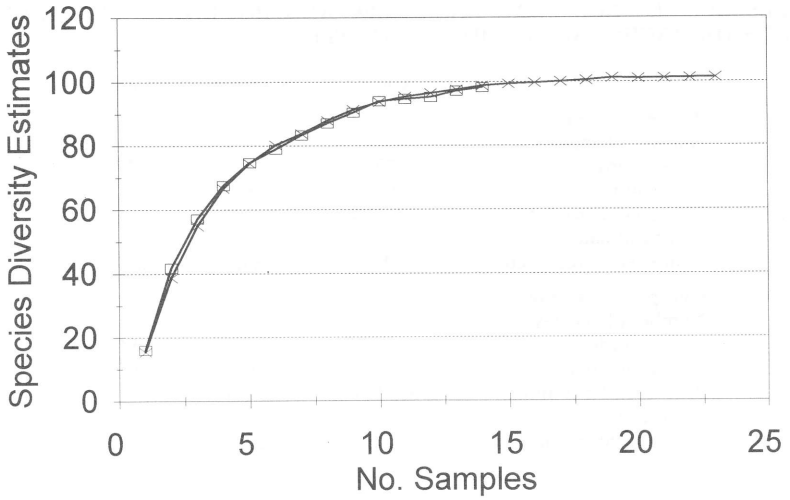

Fig. 2 — The Jackknife estimate of species richness of solitary wasp and bee species from Highgate Common (Archer and Composite samples).

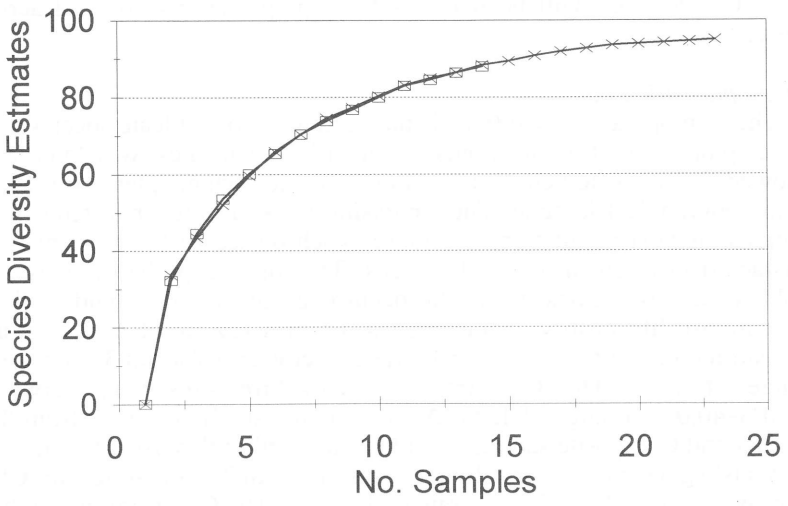

Fig. 3 — The Bootstrap estimate of species richness of solitary wasp and bee species from Highgate Common (Archer and Composite samples).

The social species are all common and widespread species except for *Bombus jonellus* which is more locally distributed being particularly associated with heathland.

TABLE 5 — NON-PARAMETRIC ESTIMATES OF SPECIES RICHNESS OF SOLITARY WASPS AND BEES FROM HIGHGATE COMMON USING THE PRESENCE/ABSENCE CHAO, JACKKNIFE AND BOOTSTRAP PROCEDURES WITH THE ARCHER AND COMPOSITE SAMPLES

	Chao	Jackknife	Bootstrap
Archer sample			
Number of species			
– recorded	77	77	77
– estimated	91	98	88
95% confidence limits of estimates	77–105	90–107	
% of species recorded	84.6	78.6	87.5
Composite sample			
Number of species			
– recorded	86	86	86
– estimated	93	101	95
95% confidence limits of estimates	85–101	91–111	
% of species recorded	92.5	85.1	90.5

COMPARISONS WITH OTHER SITES

Since the species diversity investigations have shown stable estimates, sufficient species have been recorded to carry out comparisons with other sites. Comparisons will be made as to cleptoparasitic loads and aerial nester frequencies.

Cleptoparasitic Load

The cleptoparasitic load (CL) is the percentage of aculeate species that are cleptoparasitic (or parasitoids) on other host aculeates. Wcislo (1987) showed that parasite behaviour among aculeate Hymenoptera correlated with geographical latitude. Thus, parasitic rates are higher in temperate regions, as host populations are more synchronised in their life-history characteristics than in tropical regions. This finding probably does not hold for desert regions where the occurrence of rainfall would tend to synchronise life history characteristics. From a review of the literature Wcislo found that the CLs for bees varied between 16% and 33%, with a range of 17%. The CLs from 27 Yorkshire sites vary between 25.0%–40.0%, a range of 15% (Archer, unpublished). The CLs from the Archer and Composite samples (Table 6) fall within this Yorkshire range.

Wcislo gave no CLs for solitary wasps but from 27 Yorkshire sites CLs vary between 10.3%–25.0%, a range of 14.7%. The CLs from the Archer and Composite samples are low with the CL from the Composite sample falling in the lower end of this range and the CL from the Archer sample

falling below the lower end of this range. Since very few cleptoparasites were recorded it is possible that further cleptoparasites with their subterranean hosts remain to be recorded. Falk's List shows that a further three species of cleptoparasites of the genus *Nysson* and their hosts of the genera *Gorytes* and *Argogorytes* have now been recorded.

All the social species are host species except for *Bombus bohemicus* and *B. vestalis* which are social parasites on other species of *Bombus*.

TABLE 6 — THE RELATIVE FREQUENCY OF THE CLEPTOPARASITIC (OR PARASITOID) SPECIES AMONG THE SOLITARY WASP AND BEE SPECIES RECORDED FROM HIGHGATE COMMON (ARCHER & COMPOSITE SAMPLES)

	No. hosts (H)	No. cleptoparasites (C)	Cleptoparasitic load CL = 100 x C/(H+C)
Archer sample			
Solitary wasps	21	2*	8.7
Solitary bees	35	18	34.0
Composite sample			
Solitary wasps	23	4*	14.8
Solitary bees	37	21	36.2

* *Methocha articulata* excluded as its host is non-aculeate

Aerial Nester Frequency

The aerial-nester frequency (AF) is the percentage of host aculeate species that have aerial nest sites. Aerial nesters use old beetle burrows in dead wood, central stem cavities (e.g. bramble), old snail shells, or crevices in cob walls, old mortar or exposed on the surface of rock or other hard material. Subterranean nesters nest in the soil, usually in burrows dug by themselves, but sometimes holes and crevices are used after being altered.

The AFs for the solitary species are given in Table 7. The AFs for all the British species of solitary wasps is 46.2% and solitary bees is 17.9%. For both the Archer and Composite samples the AFs for the solitary wasp and bee species are very low. This observation just reflects that attention was only given to the open habitats of heathland and acid grassland.

TABLE 7 — THE NESTING HABITS OF THE HOST SPECIES OF SOLITARY WASPS AND BEES RECORDED FROM HIGHGATE COMMON (ARCHER AND COMPOSITE SAMPLES)

	No. aerial nesters (A)	No. subterranean nesters (S)	Aerial nester frequency AF = 100 x A/(A+S)
Archer sample			
Solitary wasps	0	21	0.0
Solitary bees	2	33	5.7
Composite sample			
Solitary wasps	0	23	0.0
Solitary bees	3	34	8.1

Of the social species, the host species of *Bombus* are generally either subterranean nesters usually small mammal burrows or nest at ground level under leaf litter and tussocky grass, although *B. pratorum* has been found nesting in aerial situations such as old birds' nests. The social wasps are usually subterranean nesters although *Dolichovespula sylvestris* can be either a subterranean nester, usually in a shallow cavity, or an aerial nester.

CONCLUSIONS

1. From the open dry sandy habitats of Highgate Common 100 aculeate species have been recorded with 17 species of national importance so making this site the most important within the West Midlands.
2. The conservation value of the site, as measured by the species quality score, relates it to other Midland and north-west English sites rather than the poorer sites of Yorkshire, Lincolnshire and Northumbria and the richer sites of East Anglia and south-east England.
3. It is estimated that 85%–93% of the solitary wasp and bee assemblage has been recorded with, on average, about 7–15 species remaining to be found. The remaining species could be cleptoparasites with their subterranean hosts.

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APPENDIX –

LIST OF SPECIES RECORDED IN THE COMPOSITE SAMPLE

CHRYSIDIDAE: *Elampus panzeri* (Fab.), *Hedychridium ardens* (Latreille *in* Coquebert).
TIPHIIDAE: *Methocha articulata* Latreille (= *ichneumonides* Latreille).
MUTILLIDAE: *Myrmosa atra* Panzer.
POMPILIDAE: *Priocnemis parvula* Dahlbom, *P. perturbator* (Harris), *P. pusilla* Schiødte, *P. susterai* Haupt, *Arachnospila trivalis* (Dahlbom), *Evagetes crassicornis* (Shuckard).
VESPINAE: *Dolichovespula sylvestris* (Scopoli), *Vespula rufa* (L.), *Paravespula germanica* (Fab.), *P. vulgaris* (L.).
SPHECIDAE: *Tachysphex pompiliformis* (Panzer), *Crabro cribrarius* (L.), *C. peltarius* (Schreber), *Crossocerus ovalis* Lepeletier & Brullé, *C. pusillus* Lepeletier & Brullé, *C. quadrimaculatus* (Fab.), *C. tarsatus* (Shuckard), *Lindenius albilabris* (Fab.), *Oxybelus uniglumis* (L.), *Mimesa equestris* (Fab.), *M. lutaria* (Fab.), *Diodontus insidiosus* Spooner, *D. minutus* (Fab.), *Ammophila sabulosa* (L.), *Mellinus arvensis* (L.), *Cerceris arenaria* (L.), *C. rybyensis* (L.), *Philanthus triangulum* (Fab.).
COLLETINAE: *Colletes succinctus* (L.).
ANDRENINAE: *Andrena barbilabris* (Kirby), *A. bicolor* Fab., *A. bimaculata* (Kirby), *A. cineraria* (L.), *A. denticulata* (Kirby), *A. dorsata* (Kirby), *A. fucata* Smith, *A. fulva* (Muller *in* Allioni), *A. fuscipes* (Kirby), *A. haemorrhoa* (Fab.), *A. humilis* Imhoff, *A. nigriceps* (Kirby), *A. nigroaenea* (Kirby), *A. nigrospina* Thomson, *A. nitida* (Muller), *A. ovatula* (Kirby), *A. scotica* Perkins, *A. semilaevis* (Pérez), *A. synadelpha* Perkins, *A. wilkella* (Kirby).
HALICTINAE: *Halictus rubicundus* (Christ), *H. tumulorum* (L.), *Lasioglossum brevicorne* (Schenck), *L. calceatum* (Scopoli), *L. leucopus* (Kirby), *L. leucozonium* (Schrank), *L. minutissimum* (Kirby), *L. morio* (Fab.), *L. punctatissimum* (Schenck), *L. quadrinotatum* (Kirby), *L. villosulum* (Kirby), *Sphecodes crassus* Thomson, *S. ephippius* (L.), *S. geoffrellus* (Kirby), *S. gibbus* (L.), *S. pellucidus* Smith, *S. puncticeps* Thomson, *S. reticulatus* Thomson, *S. rubicundus* von Hagens.
MELITTINAE: *Melitta haemorrhoidalis* (Fab.), *M. leporina* (Panzer).

MEGACHILINAE: *Osmia rufa* (L.), *Megachile versicolor* Smith, *M. willughbiella* (Kirby).
ANTHOPHORINAE: *Nomada flava* Panzer, *N. flavoguttata* (Kirby), *N. flavopicta* (Kirby), *N. fulvicornis* Fab., *N. goodeniana* (Kirby), *N. integra* Brullé (= *pleurosticta*), *N. lathburiana* (Kirby), *N. marshamella* (Kirby), *N. ruficornis* (L.), *N. rufipes* Fab., *N. signata* Jurine, *N. striata* Fab., *Epeolus cruciger* (Panzer).
APINAE: *Bombus lucorum* (L.), *B. terrestris* (L.), *B. hortorum* (L.), *B. lapidarius* (L.), *B. jonellus* (Kirby), *B. pratorum* (L.), *B. pascuorum* (Scopoli), *B. bohemicus* (Seidl), *B. vestalis* (Geoffroy *in* Fourcroy), *Apis mellifera* L.

York St John College, Lord Mayor's Walk, York, YO31 7EX, U.K.
March 29th, 2005.

Is Nysius senecionis (Schilling, 1829) (Hem., Lygaeidae) omnivorous? — On 23.vii.2006 a male *Nysius senecionis* (Schilling) was found in my garden at Little Comberton, Worcestershire (VC37 SO94), during a prolonged heat-wave. It is believed to be a new regional record. This was at a time when a variety of grass and herb-dwelling Hemiptera had become dispersive and mobile over a wide area, especially at night, recalling the circumstances of 1995 (Whitehead, P.F., 1997, *Entomologist's Gazette*, **48**: 23–33). *Nysius senecionis* was first recorded in Britain in 1992 (Hodge, P.J. & Porter, D.A., 1997, *British Journal of Entomology and Natural History*, **10**: 1–2), since when it has been moving north. Unlike its congeners it is more frequently found on tall herbs, in particular Ragwort, *Senecio jacobaea* L.

The specimen in my garden was found patrolling the foliage of cultivated Night-flowering Catchfly *Silene noctiflora* L. which it proved reluctant to leave. Like the equally hispid cultivated *Nicotiana sylvestris* Speg. & Comes (which supports breeding populations of Hemiptera adapted to avoid entrapment; Whitehead, P.F., 2005, *Het News*, **6**: 8 [www.hetnews.org.uk]) the upper parts of *S. noctiflora* are invested with viscid glandular hairs which entrap a variety of insects. I clear the plants early to avoid too much seed dispersal, and on 23.vii.2006 observed dead insects entrapped on the hairs of five plants. They included the beetles *Anotylus rugosus* F. 1, *Amischa analis* (Gravenhorst) 2, *Meligethes nigrescens* Stephens 1, *Aridius bifasciatus* (Reitter) 1, *Stethorus punctillum* Weise 1, and *Longitarsus parvulus* Paykull 1, although the most abundant trapped insect was *Thrips tabaci* Lindemann (>200). A live weevil *Sitophilus oryzae* (L.) was struggling to avoid the hairs. Flies as large as *Limnophila* sp. and *Melanostoma mellinum* L. had also been restrained and killed, together with an ant *Lasius niger* (L.). This and the *Limnophila* had been sucked dry of their soft internal tissues; the *Limnophila* was also slightly disarticulated. At the time of clearing the *Silene*, its ripe seeds had not been liberated and, although I did not see the *Nysius* consuming any of the dead insects, its behaviour suggested that it may well have been capitalising on the entomological charnel-house. — P.F. WHITEHEAD, Moor Leys, Little Comberton, Pershore, Worcestershire WR10 3EH, U.K.: *August 2nd*, 2006.

[After I had submitted the first draft of the above account for publication, a second Worcestershire male *N. senecionis* was found in an Evesham (SP04) town garden on 8.viii.2006. It had been killed by a spider and attached by it to a cultivated plant, *Lilium* 'Pink Perfection', about 1m from the ground. This implies that *N. senecionis* is now dispersing rapidly in Britain, and may well be attracted to herbaceous plants other than those in the genus *Senecio*. — P.F.W.]
