

THE WASPS AND BEES (HYM., ACULEATA) OF RAUCEBY  
WARREN NATURE RESERVE IN WATSONIAN LINCOLNSHIRE  
WITH A COMPARISON WITH OTHER LINCOLNSHIRE SITES

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Rauceby Warren nature reserve is an important site for species of aculeate wasps and bees with 109 recorded species including eight species of national importance. The aims of this paper are to describe the aculeate wasp and bee fauna of this nature reserve and compare its fauna with other Lincolnshire sites.

The nature reserve (TF0344) is situated about 4km west of Sleaford and consists of a 1.3km linear strip of land of 8.8ha along the side of the A153 Sleaford-Grantham road. It has a golf course on one side and intensive farming on the other. Rauceby Warren is owned and managed by The Lincolnshire Trust for Nature Conservation to whom I am grateful for permission to carry out this survey.

The reserve mainly consists of sandy warrens overlying sandstone, which were formed by glacial melt waters carrying sand through the Ancaster Gap. Much of it consists of abandoned sand and gravel pits which were worked between 1920 and 1967. The sandy sides of these pits provide nesting sites for aculeate wasps and bees. The reserve is rich in flowering plants, e.g. hawthorn, gorse, viper's bugloss, which provide food resources. The branches and leaves of oak act as mating sites, and the limited amount of dead wood with bramble provide nesting sites for aerial nesters.

SAMPLING METHODS

Between 1989 and 2003, 25 visits were made to Rauceby Warren distributed throughout the year as follows: April (3 visits), May (5), June (5), July (6), August (5) and September (1). All visits were made during warm sunny weather when adult aculeate wasps and bees are active. During each approximately three hour visit, all species of aculeate wasps and bees were recorded and usually collected with a hand net for identification (Archer sample). Further records were provided by A.P. Fowles (June 1966), A. Godfrey (June 1993) and A.S. Lazenby (June 1993, July 1996, June 1997). The specimens collected by Godfrey and Lazenby were seen by the author and included one species, *Tiphia minuta*, not represented in the Archer sample. The dryinid, *Gonatopus sepsoides*, collected by Fowles, was not seen by the author and was not represented in the Archer sample.

In the following account, the nomenclature can be related to that given by Kloet & 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 species recorded, with authorities, is given in the Appendix. 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 families, Pompilidae and Sphecidae, and the solitary bee subfamilies, Andreninae and Halictinae, are the dominant families 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 RAUCEBY WARREN.

	No. species	No. records
Solitary wasp species		
Dryinidae	1	1
Chrysididae	4	7
Tiphiidae	1	1
Pompilidae	13	63
Eumeninae	2	3
Sphecidae	31	118
Total	52	193
Solitary bee species		
Colletinae	3	8
Andreninae	11	42
Halictinae	19	81
Megachilinae	3	5
Anthophorinae	8	18
Total	44	154
Total solitary wasps and bees	96	347
Social wasp and bee species		
Vespinae	4	
Apinae	9	
Total	13	
Total wasp and bee species	109	

June and July were the best months for recording solitary wasp species, with May, June and July the most productive months for the first recording of species (Table 2). The species most evident were the spider hunters, *Anoplius infuscatus*, *Pompilus cinereus* and *Episyron rufipes*; the fly hunters, *Crabro cribrarius*, *C. peltarius*, *Oxybelus uniglumis* and *Crossocerus podagricus*; the aphid hunter, *Diodontus minutus*; the grasshopper nymph hunter, *Tachyphex pompiliformis* and the honeybee hunter, *Philanthus triangulum*. All these species are subterranean nesters, except for *C. podagricus* which is an aerial nester in dead dry wood.

May and June were the best months for recording solitary bee species with May the most productive month for their first recording (Table 2). The species most evident were the sweat bees, *Lasioglossum cupromicans*, *L. villosulum*, *L. leucopus* and *L. minutissimum* with their

probable cleptoparasite *Sphecodes geoffrellus*; *Halictus rubicundus* with its possible cleptoparasite *Sphecodes ephippius*; the mining bees, *Andrena scotica* with its cleptoparasite *Nomada marshamella*, and *A. nigroaenea* with its cleptoparasite *N. goodeniana*, which was only seen during one visit. All the host species are subterranean nesters.

TABLE 2. — THE NUMBER OF SPECIES AND FIRST RECORDS OF SPECIES OF SOLITARY WASPS AND BEES RECORDED PER MONTH AT RAUCEBY WARREN BASED ON THE ARCHER SAMPLE.

	April	May	June	July	August	September
Solitary wasps						
First records	0	16	16	16	2	0
Recorded	0	16	27	34	23	2
Solitary bees						
First records	11	19	7	3	2	2
Recorded	11	26	25	15	10	5

#### SPECIES QUALITY

According to Shirt (1987) five Red Data Book species were recorded: *Priocnemis gracilis*, *Philanthus triangulum*, *Sphecodes niger*, *Nomada fulvicornis* and *N. lathburiana*. Falk (1991) introduced the Notable status for species, a status that is lower than the Red Data Book status. He also (*op. cit.*) suggested that the status of *Priocnemis gracilis* should be downgraded to Notable status and the following further six species should have Notable status: *Priocnemis coriacea*, *P. schioedtei*, *Arachnospila minutula*, *Nysson dimidiatus*, *Lasioglossum xanthropus* and *Sphecodes crassus*. Recent work carried out by BWARS members indicates that three of these species should lose their statuses either because they have recently increased their geographical range (*Philanthus triangulum*, *Nomada lathburiana*) or their geographical distribution has become better known (*Priocnemis schioedtei*, *Nomada lathburiana*).

To take account of these recent changes in status, Archer (1999, 2002) has developed a national scoring system of high and low quality scoring species. High quality species have a scarce, rare or very rare status, while low quality species have a universal, widespread or restricted status. According to this national quality scoring system, six species have a scarce status: *Priocnemis gracilis*, *Arachnospila minutula*, *Nysson dimidiatus*, *Lasioglossum xanthropus*, *Sphecodes crassus* and *Nomada fulvicornis*, and two species a rare status: *Priocnemis coriacea* and *Sphecodes niger*.

By giving each of the 95 species of solitary wasps and bees an Archer national status, a national quality score of 203 can be calculated (Table 3), with a national species quality score of 2.1 (203 divided by the 95 solitary species).

TABLE 3. — THE ARCHER NATIONAL QUALITY SCORES OF THE SPECIES RECORDED FROM RAUCEBY WARREN (*Gonatopus clavipes* excluded).

Status	Status score (A)	No. species (B)	Quality score (A x B)
Universal	1	51	51
Widespread	2	36	72
Restricted	4	0	0
Scarce	8	6	48
Rare	16	2	32
Total		95	203

Species Quality Score (SQS)  $203/95 = 2.1$

How do these scores compare to similar scores for other Lincolnshire sites? Table 4 shows the quality characteristics from the Lincolnshire sites of Gibraltar Point (Archer, 1998), Saltfleetby-Theddlethorpe sand dunes (Archer, 2000), Kirkby Moor (Archer, 2001), Messingham Sand Quarry (Archer, 2003) and Risby Warren (Archer, 1994). Although the quality scores, and the number of solitary and high quality species could be influenced by the site areas, the species quality scores are relatively independent of site area (Archer, 1991), so can be used to compare sites. Rauceby Warren (Table 4) has the highest species quality score for Lincolnshire and, despite being the smallest site, has the highest quality score and, with Messingham Sand Quarry, the largest number of high quality species.

TABLE 4. — SPECIES QUALITY CHARACTERISTICS OF SOME LINCOLNSHIRE SANDY SITES.

	No. of solitary species	No. high quality species	Quality score	Species quality score	Area (ha.)
Gibraltar Point NNR	86	4	140	1.7	437
Saltfleetby-Theddlethorpe	63	4	114	1.8	313
Kirkby Moor	72	3	136	1.9	75
Messingham Sand Quarry	101	8	187	1.9	41
Risby Warren	63	5	118	1.9	170
Rauceby Warren	95	8	203	2.1	9

Species quality scores from English sandy sites have been found to vary from 1.6 (Lindisfarne NNR, Northumbria) (Archer, 2004) and 5.5 (Holt Heath, Dorset) (Archer & Edwards, 2002). The Lincolnshire species quality scores relative to the English range are similar to each other and nearer to the lower end of English species quality scores. These lower Lincolnshire scores are probably a consequence of the cooler climates found in northern sites, in combination with being on the eastern side of England.

## 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, but are not yet recorded. Recent advances in non-parametric statistical procedures offer a way of addressing this problem. The presence/absence estimate of Chao (in Colwell & Coddington, 1994) and Jackknife estimate (Heltshe & Forrester, 1983) are two procedures that estimate the potential number of species (species-richness) likely to be found on a site after a number of samples (visits) have been taken. The Chao estimate is based on the number of species that are recorded on just one (singletons) or two (doubletons) samples in the survey. The Jackknife procedure is based on singletons only. Because some aculeate species are only active in the spring or summer it is advisable that samples be distributed throughout the months of adult activity. The software to carry out these statistical procedures is provided by Pisces Conservation Ltd. In practice the software takes one, two, etc. samples at random a number of times, each time calculating a mean estimate of species-richness. With a small number of samples the estimates are highly variable, but as more samples are selected these may stabilize, giving confidence in them.

The estimates of species-richness, with 95% confidence limits after all 25 samples have been considered, differ widely from each other (Table 5).

TABLE 5. — NON-PARAMETRIC ESTIMATES OF SPECIES RICHNESS OF SOLITARY WASPS AND BEES FROM RAUCEBY WARREN USING THE PRESENCE/ABSENCE CHAO AND JACKKNIFE PROCEDURES BASED ON THE ARCHER SAMPLE.

	Chao	Jackknife
All species		
No. species recorded	94	94
No. species estimated	134	129
95% confidence limits	63–125	114–144
% estimated species recorded	68.6	72.9
Tourist species removed		
No. species recorded	84	84
No. species estimated	107	109
95% confidence limits	87–126	97–121
% estimated species recorded	78.5	77.1

In addition, the estimates do not stabilize (figs 1 & 2). Recorded species at any site could be resident, tourist or vagrant species. Resident species obtain all their resources, mainly nesting sites and food, from the site under study, while tourist species, although living in the geographical area of the site, do not normally obtain their resources from the site. Vagrant species, normally occurring away from the geographical area of the site, were not found at Rauceby Warren. However, since Rauceby Warren is a narrow strip of land it might be particularly vulnerable to tourist species invasion. It is often difficult to separate resident and tourist species.

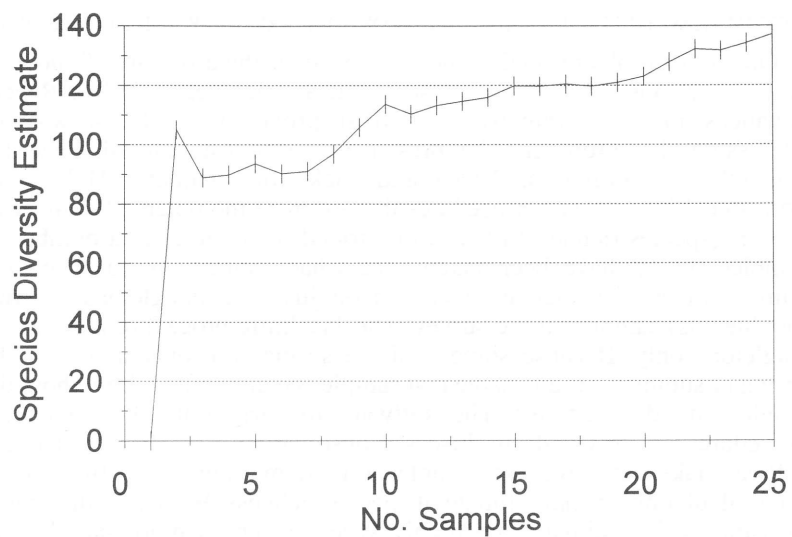


Fig. 1 — The Chao presence/absence estimate of species richness of solitary wasp and bee species from Rauceby Warren.

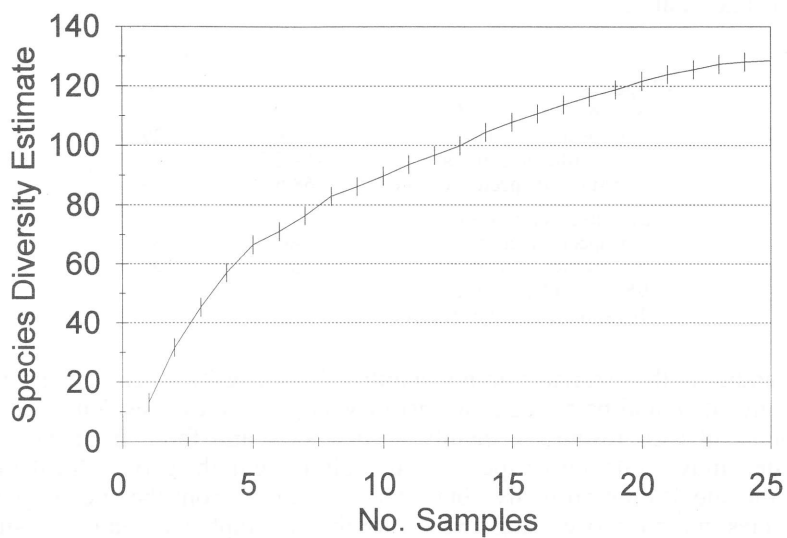


Fig. 2 — The Jackknife estimate of species richness of solitary wasp and bee species from Rauceby Warren.

Tourist species tend to be found on one occasion, as only small numbers would be expected to be present on the site and hence they are unlikely to be found. Unfortunately, singleton species could also be rare resident species, which have small numbers on site and are hence again unlikely to be found. It is therefore necessary to generate more specific arguments to begin to separate the rare resident from tourist species.

Two suggestions can be proposed to separate out some tourist species.

1. Species that are generally common and widespread would be expected to be found on several visits if they are resident species, e.g. *Crossocerus wesmaeli*, *Andrena cineraria*, *Andrena wilkella*, *Halictus rubicundus*.
2. Cleptoparasites whose host species are tourist species (from 1.) or are not found, e.g. *Sphecodes hyalinatus*, *Nomada lathburiana*.

Using these two criteria, ten species can be considered tourist species and were removed from the re-run of statistical procedures for estimating species-richness. The new species estimates are given in figs 3 & 4, and the species estimates after all the 25 samples were considered with their 95% confidence limits are given in Table 5. The two estimates now stabilise and the stabilised estimates are very close to each other. From this analysis it can be predicted that Rauceby Warren has a resident number of solitary wasps and bees of over 100 species with an unknown number of tourist species.

This prediction of the number of resident species of solitary wasps and bees on Rauceby Warren still is problematic in that a large number of samples are needed to get stabilised estimates even after tourist species are removed. The more samples that are taken the greater the probability that more tourist species will be taken. This is particularly the case if a host species is mistaken for a resident species. Removing potential tourist species from the first 16 samples or the first 20 samples does not give stable estimates of species-richness, although they nearly stabilise at 20 samples.

At other Lincolnshire sites it was possible to get stable species-richness estimates after a smaller number of visits. At Saltfleetby-Theddlethorpe sand dunes, only twelve visits were needed, at Gibraltar Point 13 visits and at Risby Warren and Kirby Moor 14 visits. The exception was Messingham Sand Quarry which required 28 visits, although by removing twelve tourist species stable estimates of species-richness could be achieved after 14 visits. What do Rauceby Warren and Messingham Sand Quarry have in common that makes them open to tourist invasion and differentiates them from other Lincolnshire sites? Messingham Sand Quarry and Rauceby Warren are isolated nature reserves surrounded by very different habitats including intensive agriculture. By contrast, Risby Warren and Kirby Moor are surrounded by habitats similar to themselves, and Saltfleetby-Theddlethorpe sand dunes and Gibraltar Point form a part of extensive sand dune systems that occupy most of the Lincolnshire

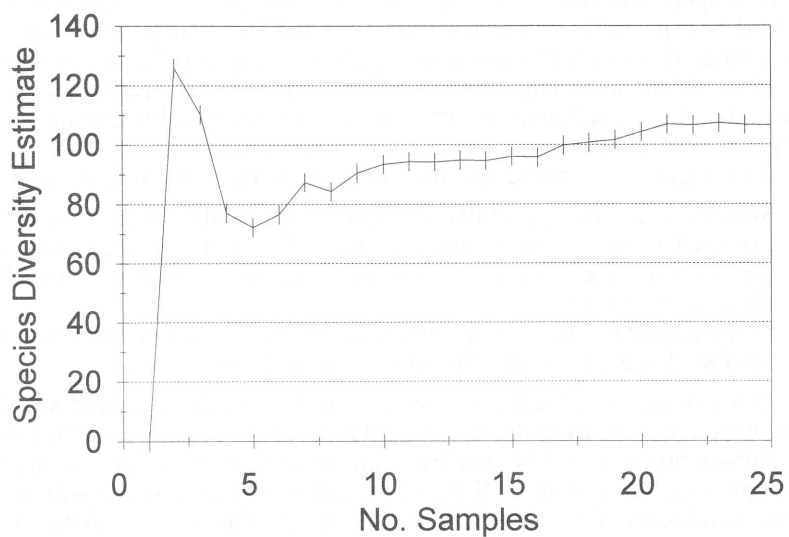


Fig. 3 — The Chao presence/absence estimate (with tourist species removed) of species richness of solitary wasp and bee species from Rauceby Warren.

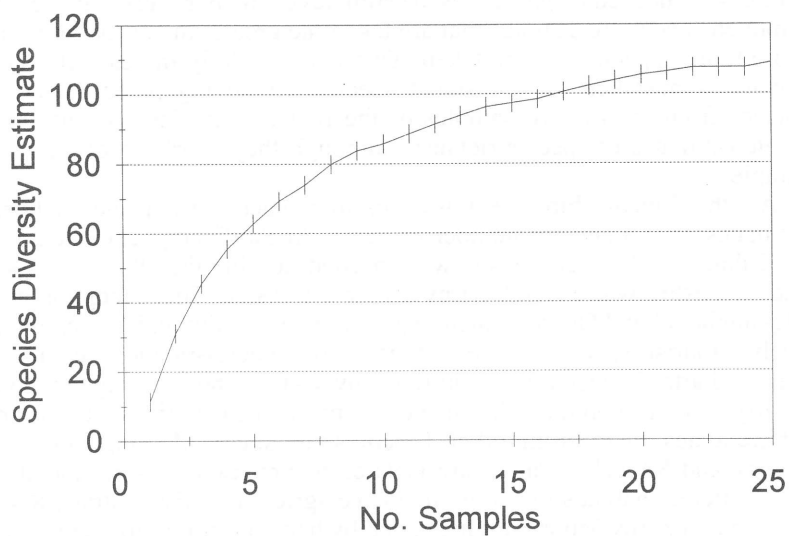


Fig. 4 — The Jackknife estimate (with tourist species removed) of species richness of solitary wasp and bee species from Rauceby Warren.



coast. The isolated sites of Messingham Sand Quarry and Rauceby Warren are probably open to invading tourist species because the different surrounding habitats have different species assemblages, while the other four sites are surrounded by similar habitats with similar species assemblages.

However it is still a puzzle as to why the removal of tourist species from Messingham Sand Quarry gives stable estimates of species-richness at a sample size similar to those of the other four low sampling Lincolnshire sites, but such tourist species removal does not give the same result for Rauceby Warren. Perhaps the contrasting shapes of the two nature reserves may provide part of the answer. Rauceby Warren is a narrow linear site with a longer boundary relative to its area (area 1 : 1 boundary) while Messingham Sand Quarry is more compact with a shorter boundary relative to its area (area 4 : 1 boundary). Perhaps tourist species have a greater chance of entering Rauceby Warren?

#### CLEPTOPARASITIC LOAD

The cleptoparasitic load (CL) is the percentage of aculeate species that are cleptoparasites (or parasitoids) on other host aculeates. Wcislo (1987) showed that parasite behaviour among aculeate Hymenoptera correlated with geographical latitude. Thus the parasitic rates are higher in temperate regions as host populations are more synchronised in their life-history characteristics, except for hot deserts where the occurrence of rainfall tends to synchronise life-history characteristics. From a review of the literature Wcislo (1987) found that the CLs for bees in Europe varied between 16% and 33%, a range of 17%. As such, sites in Britain should have similar values. For the north Midlands and north England, the CLs for species of solitary bees vary from 21.7%–36.6% (range 14.9%) (Archer, 1999). The CL for Rauceby Warren (Table 6) falls within this range and therefore supports Wcislo's hypothesis.

TABLE 6. — THE RELATIVE FREQUENCY OF THE CLEPTOPARASITIC (OR PARASITOID) SPECIES AMONG THE SOLITARY WASP AND BEE SPECIES RECORDED FROM RAUCEBY WARREN (*Gonatopus clavipes* excluded).

	No. hosts (H)	No. cleptoparasites (C)	Cleptoparasitic load $CL = 100 \times C/(H+C)$
Solitary wasps	44	6*	12.0
Solitary bees	29	15	34.1

\* *Tiphia minuta* excluded as parasitic on a non-aculeate species

Wcislo (1987) gives no CLs for wasps, but Archer (1999) found that CLs of solitary species of wasps from north Midlands and north England varies from 10.3%–22.2%. The CL for Rauceby Warren (Table 6) falls within this range.

## AERIAL NESTER FREQUENCY

The aerial nester frequency (AF) is the percentage of host aculeate species that have aerial nests. Aerial nesters use old beetle burrows in dead wood, central plant stem cavities (e.g. bramble), old snail shells, or crevices in 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 in holes and crevices after being altered. The AFs for the solitary wasp and bee species for Rauceby Warren are given in Table 7. The AF for all British solitary wasp species is 46.2% and for solitary bee species is 17.9%. The AFs for Rauceby Warren are similar to the British percentages indicating a good representation of both aerial and subterranean nesters at Rauceby Warren.

TABLE 7. — THE NESTING HABITS OF THE HOST SPECIES OF SOLITARY WASPS AND BEES RECORDED FROM RAUCEBY WARREN.

	No. aerial nesters (A)	No. subterranean nesters (S)	Aerial nester frequency $AF = 100 \times A/(A+S)$
Solitary wasps	17	27	38.6
Solitary bees	6	23	20.7

## SUMMARY

Rauceby Warren:

1. has 109 recorded species of aculeate wasps and bees, of which eight species are of national importance;
2. has a higher species quality score than other sandy Lincolnshire sites, although in an English context it is rather low;
3. has tourist species among the recorded species with a tentative estimate of just over 100 resident solitary species of wasps and bees and an unknown number of tourist species;
4. has solitary wasp and bee cleptoparasitic loads similar to other north Midland and north England sites supporting Wcislo's hypothesis;
5. has aerial nester frequencies of solitary wasp and bees species similar to the British percentages.

## LIST OF SPECIES RECORDED

DRYINIDAE: *Gonatopus clavipes* (Thunberg) (= *sepsoides* Westwood).

CHRYSIDIDAE: *Hedychridium ardens* (Latreille in Coquebert), *Chrysis angustula* Schenck, *C. impressa* (Wesmael), *Trichrysis cyanea* (L.).

TIPHIIDAE: *Tiphia minuta* Vander Linden.

POMPILIDAE: *Priocnemis exaltata* (Fab.), *P. gracilis* Haupt, *P. parvula*, Dahlbom, *P. schioedtei* Haupt, *P. coriacea* Dahlbom, *Dipogon subintermedius* (Magretti), *Pompilus cinereus* (Fab.), *Episyron rufipes* (L.), *Anoplius infuscatus* (Vander Linden), *Arachnospila anceps* (Wesmael), *A. trivalis* (Dahlbom), *A. minutula* (Dahlbom), *Evagetus crassicornis* (Shuckard).

EUMININAE: *Ancistrocerus oviventris* (Wesmael), *A. trifasciatus* (Muller).

VESPINAE: *Dolichovespula norwegica* (Fab.), *Vespula rufa* (L.), *Paravespula germanica* (Fab.), *P. vulgaris* (L.).

SPHECIDAE: *Tachysphex pompiliformis* (Panzer), *Trypoxylon clavicerum* Lepeletier &

- Serville, *T. figulus* (L.), *Crabro cribrarius* (L.), *C. peltarius* (Schreber), *Crossocerus elongatulus* (Vander Linden), *C. tarsatus* (Shuckard), *C. wesmaeli* (Vander Linden), *C. annulipes* (Lepeletier & Brullé), *C. megacephalus* (Rossi), *C. nigrinus* Lepeletier & Brullé, *C. podagricus* (Vander Linden), *C. quadrimaculatus* (Fab.), *Ectemnius cavifrons* (Thomson), *Entomognathus brevis* (Vander Linden), *Oxybelus uniglumis* (L.), *Minumesa dahlbomi* (Wesmael), *Psenulus pallipes* (Panzer), *Stigmus solskyi* Morawitz, *Pemphredon lugubris* (Fab.), *P. inornata* Say, *P. lethifera* (Shuckard), *Diodontus luperus* Shuckard, *D. minutus* (Fab.), *Passaloecus corniger* Shuckard, *Ammophila sabulosa* (L.), *Mellinus arvensis* (L.), *Nysson dimidiatus* Jurine, *Gorytes quadrifasciatus* (Fab.), *Harpactus tumidus* (Panzer), *Philanthus triangulum* (Fab.).
- COLLETINAE: *Hylaeus brevicornis* Nylander, *H. communis* Nylander, *H. hyalinatus* Smith.
- ANDRENINAE: *Andrena barbilabris* (Kirby), *A. bicolor* Fab., *A. chrysosceles* (Kirby), *A. cineraria* (L.), *A. fulva* (Müller in Allioni), *A. haemorrhoea* (Fab.), *A. minutula* (Kirby), *A. nigroaenea* (Kirby), *A. scotica* Perkins, *A. subopaca* Nylander, *A. wilkella* (Kirby).
- HALICTINAE: *Halictus rubicundus* (Christ), *H. tumulorum* (L.), *Lasioglossum calceatum* (Scopoli), *L. cupromicans* (Pérez), *L. leucopus* (Kirby), *L. leucozonium* (Schrank), *L. minutissimum* (Kirby), *L. morio* (Fab.), *L. rufitarse* (Zetterstedt), *L. villosulum* (Kirby), *L. xanthopus* (Kirby), *Sphecodes crassus* Thomson, *S. ephippius* (L.), *S. geoffrellus* (Kirby), *S. hyalinatus* von Hagens, *S. monilicornis* (Kirby), *S. niger* von Hagens, *S. pellucidus* Smith, *S. puncticeps* Thomson.
- MEGACHILINAE: *Megachile centuncularis* (L.), *M. versicolor* Smith, *M. willughbiella* (Kirby).
- ANTHOPHORINAE: *Nomada flava* Panzer, *N. fulvicornis* Fab., *N. goodeniana* (Kirby), *N. lathburiana* (Kirby), *N. marshamella* (Kirby), *N. ruficornis* (L.), *Anthophora plumipes* (Pallas), *Melecta albifrons* (Forster).
- APINAE: *Bombus lucorum* (L.), *B. terrestris* (L.), *B. hortorum* (L.), *B. lapidarius* (L.), *B. pratorum* (L.), *B. pascuorum* (Scopoli), *B. bohemicus* (Seidl), *B. vestalis* (Geoffroy in Fourcroy), *Apis mellifera* L.

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December 14th, 2004.

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*Notes on the bugs Buchananiella continua* (Buchanan White) (Hem., Anthocoridae) and *Kleidocerys resedae* (Panzer) (Hem., Lygaeidae). — The anthocorid bug *Buchananiella continua* is a recent addition to the British fauna. Dr B. Verdcourt reported its occurrence in his garden at Maidenhead (Berks) (2005, *Entomologist's Monthly Magazine*, **141**: 124, 166) and P.F. Whitehead reported it from two sites, one in the city of Hull (S.E. Yorkshire) in 2001 (per W.R. Dolling), the other a garden in Evesham (Worcestershire) in 2004 (2005, *Entomologist's Monthly Magazine*, **141**: 166). These three sites are additional to the original central London site mentioned by the above authors.

I can add to the above the following Bedfordshire sites: Flitwick Moor on 20.ix.2002, 24.ix.2002, 18.x.2003 & 13.v.2004; Ampthill Park 31.x.2002 and Cockayne Hatley on 9.viii.2003, plus Hertingfordbury (VC 20, Herts) by John Widgery on 27.xi.2004 and Nonsuch Park (VC 19, Surrey) by Roger Hawkins on 1.ix.2004.

The diversity of the habitats at these sites is interesting. At Flitwick Moor, Sheila Brooke and I found adult bugs in numbers in a wet fen in stacks of cut sedge, and on the 24.ix visit there were late instar nymphs as well as adults so the bug was clearly breeding there. The Ampthill habitat was a complete contrast: here, on a sandy escarpment of the Lower Greensand, we shook three adults from fallen Mistletoe after a gale, in an avenue of very tall lime trees. At Cockayne Hatley the single male was taken in a Rothamsted-type light trap run in his garden by Ian Woiwod; this garden is surrounded by arable farmland on Boulder Clay. The Hertingfordbury specimen was beaten from Ivy, and the Nonsuch Park specimen was a teneral male beaten from Sycamore. Clearly this predacious bug is already widespread in England and has a catholic taste in habitat. Péricart considered it to be a pan-tropical species imported to the western Palaearctic (1972, *Hémiptères Anthocoridae, Cimicidae et Microphysidae de l'Ouest-Paléarctique*, Masson et Cie, Paris.) and he also states that it was first noted in the south of France in 1968, and probably feeds on psocids. It is not yet clear whether the bug has a single generation a year in Britain, or two as in various of our other anthocorids.

Further to the additional plant associations of the lygaeid bug *Kleidocerys resedae* reported by Professor T.R.E. Southwood (2005, *Entomologist's Monthly Magazine*, **141**: 138), I can add tamarisk (*Tamarix* sp.). I have observed the bug on this shrub at three sites, all coastal, and in each case a number of individuals were beaten from the plants: Shingle Street (E. Suffolk) on 27.ix.2002, Deal (E. Kent) and Walmer (E. Kent) both on 12.ix.2004. — B.S. NAU, 15 Park Hill, Toddington, Dunstable, Beds LU5 6AW, U.K.: August 14th, 2005.