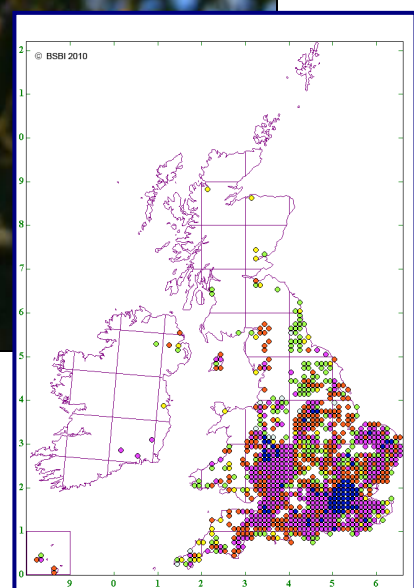


Viscum album – our flagship species for the start of Date Class 5.
Blue dots show records so far in 2010.



BSBI Recorder No. 14

A newsletter for county recorders, referees and herbarium curators in the Botanical Society of the British Isles

Spring 2010

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Summary and action points

Our annual checklist of suggestions of the most important things to do.

1. Start recording for Date Class 5. This mainly applies to people who keep a recording card for a square for a period of several years. It does not really matter whether you saw *Anthriscus sylvestris* in a site in 2004 or 2005, but it does matter if that range is from 1994 or 1984. For those who use Mapmate or other databases, most records will have a precise date anyway. In this case, the only effect of the date classes is to encourage you to have a programme of survey around your county every ten years or so.
2. See if you can do a few Threatened Plants Project (TPP) surveys. All county recorders should have received their forms by now and they can also be downloaded from the web site. You can still do surveys of previous years' TPP species or, for that matter, any plant on the Threatened Plants Database (TPDB) list.
3. Think about a County Rare Plant Register (RPR). One of the main purposes of an RPR is to put at least your rare plant records in order. It is hard for any county recorder to get to grips with all the common plants and the critical taxa and the exotics in their county in one lifetime; but it should be possible to have a reasonable stab at just the rarities.
4. Send an annual report in for this newsletter, if you are so inclined. The purpose of *Recorder* is to share information about what everyone is doing and ideas for future projects and interesting ways of working. We love to hear what you are up to. The county roundup this year is mostly recorders' reports reprinted verbatim, so write whatever you want others to read. To add a bit of variety this year we also now have profiles of a few active members of the society (many thanks to the participants for acting as guinea pigs).
5. Come along to the Recorders' Conference or and Exhibition Meeting. The biennial Recorders' Conference is the best opportunity to meet top botanists from all around the British Isles for formal talks and informal chats. Experts run identification sessions and there will be an opportunity to get a Field Identification Skills Certificate (FISC). This year there will be a debate and a vote on the correct taxonomic rank for critical taxa. The Annual Exhibition Meetings are similarly informative. You can get details of most BSBI events at http://www.bsbi.org.uk/html/about_bsbi.html

Maps Scheme report

Alex Lockton & Quentin Groom

Welcome to Date Class 5. The county recorders have been amazing in their response to the Maps Scheme. In just 5 years you have sent in 1.17 million hectad smarties for the latest date class (a smartie is a dot on the Maps Scheme maps: a species in a hectad in a date class in a vice county).

Another startling set of numbers concerns the level of computerisation of older data sets. In 2005 we had just a third of a million smarties for Date Class 1. Now there are more than one and a half million (plus quarter of a million more for DC0, which was not counted separately in 2005). This shows that people have been computerising old data sets even more quickly than they have been doing the current recording. We would be willing to bet that there are just as many records lurking in old herbarium collections, so DC0 can eventually be as well populated as 1, 3 & 4. Will DC2 ever be able to catch up, though? Maybe. It seems to have made good progress too.

Table 1: the number of Maps Scheme smarties five years ago and now

	No. of computerised records in 2005	No. of computerised records in 2010
DC0 (-1929)	-	251,233
DC1 (1930-1969)	325,148	1,564,319
DC2 (1970-1986)	186,464	917,456
DC3 (1987-1999)	1,818,116	2,194,252
DC4 (2000-2009)	316,154	1,168,662

Below is the league table that we produce each year, showing in the right-hand column the level of re-recording in DC4 compared with DC3. Some counties are yet to send in their data. Please do not wait until your records are perfect, because they never will be. The best thing to do is to send them in straight away and get the feedback. For instance, we can tell you if we spot errors. We also produce checklists for each county annually, and you can see how your county compares with its neighbours – e.g. which species are spreading close to your borders.

Table 2: number of smarties in each county in each date class. The right-hand column shows the percentage re-recording since DC3.

VC	DC0	DC1	DC2	DC3	DC4	DC5	4/3	VC	DC0	DC1	DC2	DC3	DC4	DC5	4/3
1	9,094	16,050	14,191	17,715	18,101	254	102%	21	1,434	8,800	2,314	7,267	6,511	7	90%
2	8,959	17,085	12,149	24,010	21,611	22	90%	22	1,602	18,852	8,663	24,008	23,792	9	99%
3	2,416	24,534	28,455	36,629	15,300		42%	23	1,847	19,121	18,820	17,389	3,617		21%
4	1,134	16,487	20,832	21,291	9,566		45%	24	6,636	14,155	18,604	21,275	9,628	2	45%
5	1,181	11,810	3,385	26,312	15,214	1	58%	25	1,986	21,696	21,464	21,406	19,344		90%
6	5,444	15,313	11,646	28,236	16,935	85	60%	26	1,413	13,497	14,004	13,728	14,089		103%
7	512	11,486	6,827	14,017	8,473		60%	27	2,448	15,616	4,268	27,077	18,351	102	68%
8	629	12,876	9,076	19,462	11,077	2	57%	28	3,427	15,273	4,521	26,972	19,932	1	74%
9	2,538	24,571	11,285	31,555	14,849		47%	29	3,318	17,017	12,058	16,604	12,078	1	73%
10	1,447	4,938	2,403	3,016	6,757		224%	30	516	10,736	13,613	13,072	11,288		86%
11	7,166	15,368	8,684	24,963	20,446	6	82%	31	999	6,230	8,922	5,477	6,274	1	115%
12	6,857	13,367	10,106	18,257	14,423		79%	32	5,610	12,163	7,347	20,567	8,158		40%
13	1,355	14,351	2,218	16,022	19,394	296	121%	33	777	10,583	6,273	18,128	11,068	73	61%
14	1,747	16,915	3,550	16,583	20,803	120	125%	34	1,481	11,657	9,832	19,938	13,515	200	68%
15	1,355	18,517	6,793	21,424	15,604		73%	35	2,168	6,383	3,052	19,378	1,221		6%
16	1,284	13,300	4,823	15,158	15,238	3	101%	36	2,582	10,256	7,619	20,488	10,953		53%
17	3,737	20,702	10,004	23,953	19,179	134	80%	37	1,252	10,352	5,384	22,399	21,837		97%
18	1,178	10,540	4,626	13,223	10,334	4	78%	38	2,577	19,453	2,158	15,832	2,314	1	15%
19	1,780	15,114	7,562	22,364	7,503		34%	39	1,901	16,141	5,440	25,206	31,155		124%
20	1,435	12,969	4,657	18,156	4,036	8	22%	40	10,178	3,714	20,324	20,991	21,342	10	102%

VC	DC0	DC1	DC2	DC3	DC4	DC5	4/3	VC	DC0	DC1	DC2	DC3	DC4	DC5	4/3
41	1,542	13,572	9,731	17,438	1,506		9%	98	771	16,774	2,831	19,981	10,141		51%
42	1,329	8,943	5,119	12,410	13,634		110%	99	220	3,218	6,124	6,851	939		14%
43	441	8,186	8,945	9,223	2,165		23%	100	700	4,871	4,124	7,079	7,253		102%
44	331	10,432	3,085	22,876	13,007		57%	101	155	9,749	4,723	11,096	1,564		14%
45	441	11,092	10,136	14,907	3,652		24%	102	175	7,083	1,873	9,558	650		7%
46	558	9,053	5,054	20,227	18,327		91%	103	446	11,040	2,999	9,327	8,652		93%
47	337	8,474	3,390	15,572	5,289		34%	104	1,713	14,540	9,432	14,119	15,032		106%
48	751	9,263	3,436	8,948	1,295		14%	105	761	11,774	2,790	9,857	1,748		18%
49	1,777	11,722	4,064	19,311	16,375	1	85%	106	2,741	13,232	5,771	13,685	15,363	356	112%
50	702	8,165	13,709	16,986	2,198		13%	107	342	8,832	3,594	7,009	1,407		20%
51	307	5,226	2,752	6,095	998		16%	108	7,979	11,399	5,205	12,819	6,228		49%
52	621	5,985	3,228	9,262	7,608		82%	109	751	5,956	7,552	3,427	3,111		91%
53	712	14,213	4,320	19,092	1,404		7%	110	1,518	16,680	5,763	15,070	13,341		89%
54	1,525	22,865	6,988	28,536	3,417		12%	111	2,322	7,453	2,922	8,043	6,511		81%
55	1,044	13,157	17,913	12,169	1,869		15%	112	2,206	7,730	5,744	10,591	3,710		35%
56	475	14,854	1,778	17,131	2,547	2	15%	113	3,571	5,405	3,882	8,434	3,824	70	45%
57	2,607	13,619	5,201	17,953	16,270	1	91%	1b	823	1,620	1,400	2,078	1,814		87%
58	2,235	14,518	3,587	23,302	20,336		87%	201	677	10,163	825	13,295	3,850		29%
59	7,322	14,973	5,146	25,003	29,014	23	116%	202	377	3,356	574	14,509	2,610		18%
60	1,742	9,830	4,207	12,513	16,302		130%	203	261	9,947	178	16,952	3,753		22%
61	457	14,543	14,233	15,490	9,232		60%	204	171	5,861	214	13,170	420		3%
62	1,470	16,144	3,305	21,763	21,025		97%	205	190	5,894	211	12,652	82	1	1%
63	1,456	13,448	13,810	18,228	17,499		96%	206	2,117	6,335	1,458	14,554	19,273	110	132%
64	1,878	16,124	8,904	27,347	9,612	165	35%	207	364	5,002	188	7,910	266		3%
65	885	11,131	6,100	12,411	3,073		25%	208	348	5,444	195	12,057	2,176		18%
66	2,510	15,284	21,000	18,107	15,757	60	87%	209	1,233	8,701	1,995	10,894	5,697		52%
67	828	18,124	10,824	17,123	13,208		77%	210	859	4,275	1,401	13,580	63		0%
68	873	11,224	7,212	10,525	6,722		64%	211	1,135	4,723	155	7,316	2,006		27%
69	1,514	12,828	24,566	25,329	7,852		31%	212	886	9,011	2,302	15,301	11,462	451	75%
70	1,067	19,092	34,058	35,052	12,302		35%	213	1,156	4,097	310	3,008	545		18%
71	811	5,975	1,478	8,317	2,395		29%	214	914	4,918	268	5,221	1,321		25%
72	874	10,547	4,266	11,204	6,979		62%	215	911	4,895	250	6,259	1,873		30%
73	1,057	11,359	7,171	15,822	4,902		31%	216	1,171	7,854	2,261	10,409	4,397		42%
74	2,507	6,668	4,089	8,714	5,640		65%	217	1,164	5,196	400	6,668	2,387		36%
75	439	11,816	2,533	15,475	1,424		9%	218	875	4,865	80	9,070	1,770		20%
76	156	2,703	3,789	5,227	658		13%	219	996	3,488	2,507	6,560	1,417		22%
77	292	7,226	2,326	13,666	1,480		11%	220	1,236	5,654	447	11,081	558		5%
78	948	4,888	4,319	4,472	960		21%	221	814	3,191	912	8,574	341		4%
79	488	2,293	1,206	4,125	2,161		52%	222	622	4,734	361	12,421	124		1%
80	1,631	7,866	2,575	10,426	3,933		38%	223	922	5,099	2,727	9,566	139		1%
81	2,345	8,057	6,133	10,140	7,669		76%	224	568	2,467	171	5,478			0%
82	312	4,879	2,121	6,119	2,027		33%	225	1,029	5,983	189	10,157	750		7%
83	1,187	6,702	2,995	6,695	1,144		17%	226	424	5,293	380	7,671	315		4%
84	145	2,315	2,004	4,663	1,056		23%	227	2,084	11,805	300	13,039	453		3%
85	2,388	9,232	6,654	13,042	1,502		12%	228	943	6,947	366	10,218	180		2%
86	379	4,267	1,596	8,344	3,563		43%	229	961	3,949	576	11,346	388		3%
87	1,138	4,596	8,518	8,897	2,233		25%	230	424	5,289	126	6,969	124		2%
88	4,937	15,005	11,981	15,360	11,989		78%	231	739	2,098	505	5,453	60		1%
89	2,700	7,813	8,451	11,432	7,054		62%	232	147	2,800	450	8,596	3,961		46%
90	1,158	10,472	2,874	11,646	8,673		74%	233	441	8,475	5,620	13,185	708		5%
91	978	3,895	1,032	5,579	6,148	4	110%	234	171	4,901	181	11,120	1,320		12%
92	1,048	8,485	2,522	8,192	3,199	49	39%	235	381	9,497	487	13,358	82		1%
93	352	6,816	3,378	11,240	1,905		17%	236	706	9,438	4,163	22,838	10,540		46%
94	6,676	7,957	9,220	6,600	8,181	19	124%	237	316	5,696	2,635	7,798	445		6%
95	1,799	10,830	3,973	13,655	9,498	133	70%	238	764	10,261	8,740	17,429	7,983		46%
96	1,039	19,341	20,241	13,769	8,791		64%	239	655	11,405	11,555	18,879	4,259		23%
97	755	16,040	7,685	15,829	5,877		37%	240	211	5,841	5,181	12,140	3,430		28%

Filling the Gaps

Quentin Groom

One might think that the gathering of tetrad records over the past ten years has been too patchy and inconsistent to create national maps. However there is an interpolation technique known as kriging which is able to make an informed guess at the presence or absence of a species based upon the presence and absence of the species in nearby tetrads. The following maps show the actual presence and absence of *Buddleja davidii* since 2000, but the second map also has predictions of the distributions in the place of the gaps.

Kriging is possible on our data, not only due to the counties which have been conducting county-wide tetrad surveys, but also because we conducted the Local Change project. This project gave us just enough information in otherwise unsurveyed areas to fill the gaps.

One advantage of these maps is that you can see much finer detail in species distributions. If you compare these maps with the hectad map of *Buddleja davidii* online, the latter looks very crude.

You can make your own mind up, as to how successful these predictions are. Certainly, I'm encouraged that urban areas in the Midlands and Wales have been identified, while upland areas have remained empty. It would also be interesting to confirm the 'hotspot' in North Lincolnshire, which I had not expected.

My apologies to Scotland, Ireland, Anglesey and the Isle of Wight, I had to leave you off for now. These calculations are very memory intensive and my computer couldn't be pushed any further.

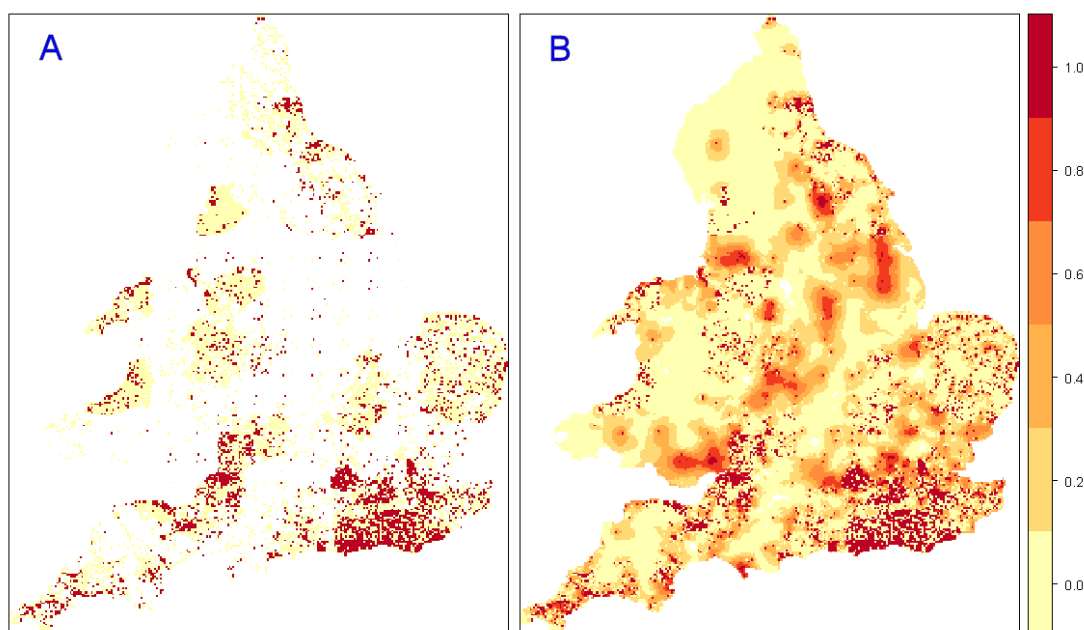
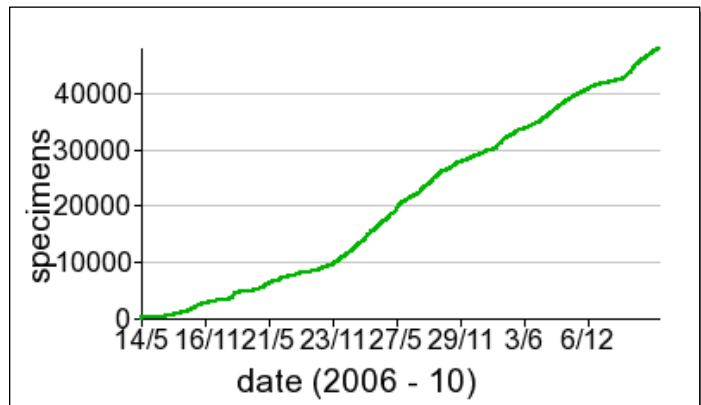


Fig 1: (A) The actual records of *Buddleja davidii* between 2000-2009 (red dots). Surveyed tetrads where no *B. davidii* was found are in yellow. White represents areas with no tetrad records. (B) A combination of the actual and predicted distributions of *Buddleja davidii* for dates between 2000-2009.

Herbaria at Home

Tom Humphrey & Alex Lockton

'Steady progress' is probably the best way to describe the performance of Herbaria at Home in 2009. We put in some bids to charities for money to expand the project, but were only successful with one small grant from Opal. The problem is that we do herbarium digitization better than we do fundraising – a dilemma familiar to anyone involved in the charities sector.



-- The number of sheets documented on Herbaria at Home --

Nevertheless, Herbaria at Home is growing. During 2009 over 15,000 specimens were documented, bringing the total to nearly 50,000. We still have thousands of images yet to be worked on, mainly from the University of Birmingham (BIRM) but also, this year, we have started receiving images from Bolton Museum (BON) and the Charterhouse School collection at the University of California at Berkeley (GOD). As always, we are enormously grateful to the collections managers who allow us to use their herbaria.

The main collections so far digitized on Herbaria at Home

Herbarium	No. sheets
Bolton Museum	890
Tullie House Museum	38
Shrewsbury School	2,585
Oxford University	382
National Museums Liverpool	569
National Botanic Gardens, Glasnevin	231
Manchester Museum	6,674
Launceston Museum	797
Charterhouse School Herbarium	72
Cambridge University	877
Botanical Society of the British Isles	23
University of Birmingham	16,052
University of Aberystwyth	15,460

For the county recorders, Herbaria at Home is a unique asset. You can see all the details of the specimen, including (usually) the original label. What the contributors to Herbaria at Home do is make a first attempt at digitizing the data, by inputting the site, vice county, date, collector's name etc into a database. This allows a county recorder to easily select all the specimens from their county. It is a good idea to look up the sheets yourself – not just to rely on the initial round of digitization. No-one will know the sites, species and botanists of your county as well as you do, and there will inevitably be corrections to be made. But you can do this on-line, and help to improve the database. Referees can also look up all the specimens of their species of interest. Most of the time accurate identifications can be made from the images but, in the worst scenario, you only have to request the specimen from the herbarium in the traditional way. At least Herbaria at Home allows you to select which specimens you need to ask for.

So do log on to the site and see what there is. A County Flora can no longer be considered complete unless at least an attempt has been made to review the vast mass of historical information that is becoming available online: but this is not difficult work. Visit <http://herbariaunited.org/atHome/> and give it a try.

Alex Lockton

A lot of what goes on in the BSBI is now done via the web. Given that the society consists mostly of far-flung members whose main interest is in information, it has completely transformed the way we work in the last decade or so. If you are not making use of the internet you are missing out on much of modern botany.

>> Advertise on the web

The BSBI's web sites receive about 1 million hits from some 4,000 visitors every month – many of them botanists who return to the site frequently to find out what's happening. It's a good way of letting people know about your field meetings, new publications, conferences and whatever. County recorders can have pages of their own which, because of this traffic, will receive a lot more visits than if they set up web sites on their own domains. It's also completely free.

>> Access resources

We deliberately put a lot of botanical resources on the web site - identification guides such as the Plant Crib, County Rare Plant Registers and, increasingly, all of the BSBI's journals dating back to at least the 1940s. Everything is there in full detail or can be uploaded on demand. Our Digital Archive currently contains some 1,300 files, where a file can be a paper in *Watsonia* or *Proceedings* or an entire issue of *BSBI News* or *Recorder*. The most popular document on our site is Mick Crawley's *Rare Plant Register of Berkshire*, which is downloaded by about 1,500 people every month.

>> Make your own resources available

Editors and authors should think about electronic publication if they have not done so already. Since *Watsonia* went online its readership around the world has increased enormously, and we have realised that we were not reaching our target audience, many of whom are taxonomists around the world rather than members of the BSBI. This is one of the reasons for our plans to re-launch the journal. Please note that it is infinitely better to produce an electronic copy of a document at the time you produce it than it is to scan it later. The quality is better and it is more easily searched.

>> Find botanical records

There are important botanical records for every county lurking on the internet. No matter how thoroughly you think you have sought out historical publications or scoured herbaria, you can be certain that there is significant material yet to be found. One of the best of these is *Herbaria at Home*, which has a habit of surprising everybody with the records it turns up. The whole of the *Vascular Plants Database* is available in full via the *NBN Gateway*, and we regularly post useful data sets on things such as hybrids for county recorders to download and make use of. Keep an eye on the coordinator's blog for details.

>> Dip a toe into writing

Our *Species Accounts* web pages are there to enable 'ordinary' botanists to make a contribution towards our understanding of plants. How many people ever get to write a scientific paper or a *County Flora*? Yet we know so little about most species that only an effort by many people will even begin to fill in the gaps. Individuals can write a species account according to our standard format and embellish it with their own individual interests. It will be read by more people than any book on paper; you can be sure of that. Or you can just contribute some comments at the bottom of someone's else's account. If you are tempted, give it a go.

Plant Record Notes

Mike Porter

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New system of publishing Plant Records

Publishing Plant Records in two sections (Natives and Archaeophytes in section 1, Neophytes and Casuals in section 2) has provoked a mixed response. Some BSBI members have found it 'unnatural' while others have said they find it useful and time-saving since they do not have to wade through large quantities of Alien records which are of no interest to them in order to find the records they are looking for. If you have strong opinions on the subject I would be very happy to hear from you. I find it takes me a little longer to compile records in this format but I am happy to continue doing it in this way if this is what the majority of readers want.

One of the most exciting aspects of Plant Records is what they reveal of the movement of plant species within the British Isles, in particular the inexorable spread northwards of 'southern' plants, both Natives and Aliens. For instance, *Dactylorhiza praetermissa* has now reached and established itself in Cumbria, *Lactuca serriola* is pushing up to the Scottish border, *Senecio inaequidens* has been spotted by the M6 in N. Lancashire and that rare garden fern *Polystichum munitum* is suddenly occurring sporadically throughout England. Intriguingly many species seem to advance more rapidly north along the eastern side of England and Scotland, progress appearing somewhat slower along the western side. Why should this be, since the western side is warmer and damper and, apparently, more conducive to plant growth?



Polystichum munitum in Cumbria

Hieracium – an explanation

Vice-county Recorders may have noticed that very few *Hieracium* records have appeared in Plant Records recently. This is simply because, following the publication of the relevant volume of Sell and Murrell, there are many *Hieracium* species that do not have Kent numbers and so cannot be fitted into a coherent system of numbering. My hope is that by the time I come to compile records in the autumn of this year there will be an operational system and that I will be able to add the missing records. In the meantime I offer my apologies for these omissions. Please let me know if *Hieracium* records you have sent still do not appear in Plant Records after that date.

Level of coverage of the British Isles in Plant Records

In England, Scotland and Wales there are 113 vice-counties and, over the past 4 years, at least one record has been received from 74 of them, giving a coverage of 66%. (The island of Ireland has been excluded from this list on the grounds that vice-county recorders there may well publish their records elsewhere (Irish Naturalists' Journal, Irish Botanical News), although I am always happy to publish them in *Watsonia*.) It has to be admitted that there have been very few records from some of the 74 vice-counties mentioned above while others have sent in more than 100 records. As a result, coverage is rather patchy but still gives a useful general picture of changes and developments in plant ranges. It would be even more informative if the level of coverage could be increased to 100%. If VCRs who do not send in records could send them in once every two or three years that would make a great difference to the overall picture. Although it would be good to have such records from a number of recent years, records simply from the last couple of years would be extremely useful as well as being easier to cope with – for both the VCR concerned and for me.

The status of *Fumaria purpurea* Pugsley in Britain

Alex Lockton

Purple Ramping-fumitory is one of the species we record on the Threatened Plants Database, partly because it is a UK BAP plant, and partly because it is a difficult plant to identify, so voucher specimens are required for all new records.

Over the last ten years Tim Rich and I have gathered some 576 records for Britain that have full details to at least tetrad level, and a high degree of confidence in the identification. Most of these are supported by voucher specimens in herbaria that have been seen and confirmed. Ireland and the Channel Isles are excluded from this analysis because we have seen very few specimens from the former and in the latter *F. purpurea* is nothing more than a casual. These territories are also largely outside the area covered by the UK BAP.

The map here shows the tetrad distribution with dots size-scaled to date class, the smallest dots being for DC0 (before 1930) and the largest (which are shown with a diameter of 6 km) being for DC4 (2000-2009). This style of map has the effect of emphasising the core distribution pattern by reducing the influence of casual occurrences outside its normal range. It is a process that only works well if you have consistent levels of recording.

Assuming that to be true, it reveals a very curious pattern, in a line from Cornwall to Orkney. I cannot think of any other plant with a similar distribution.

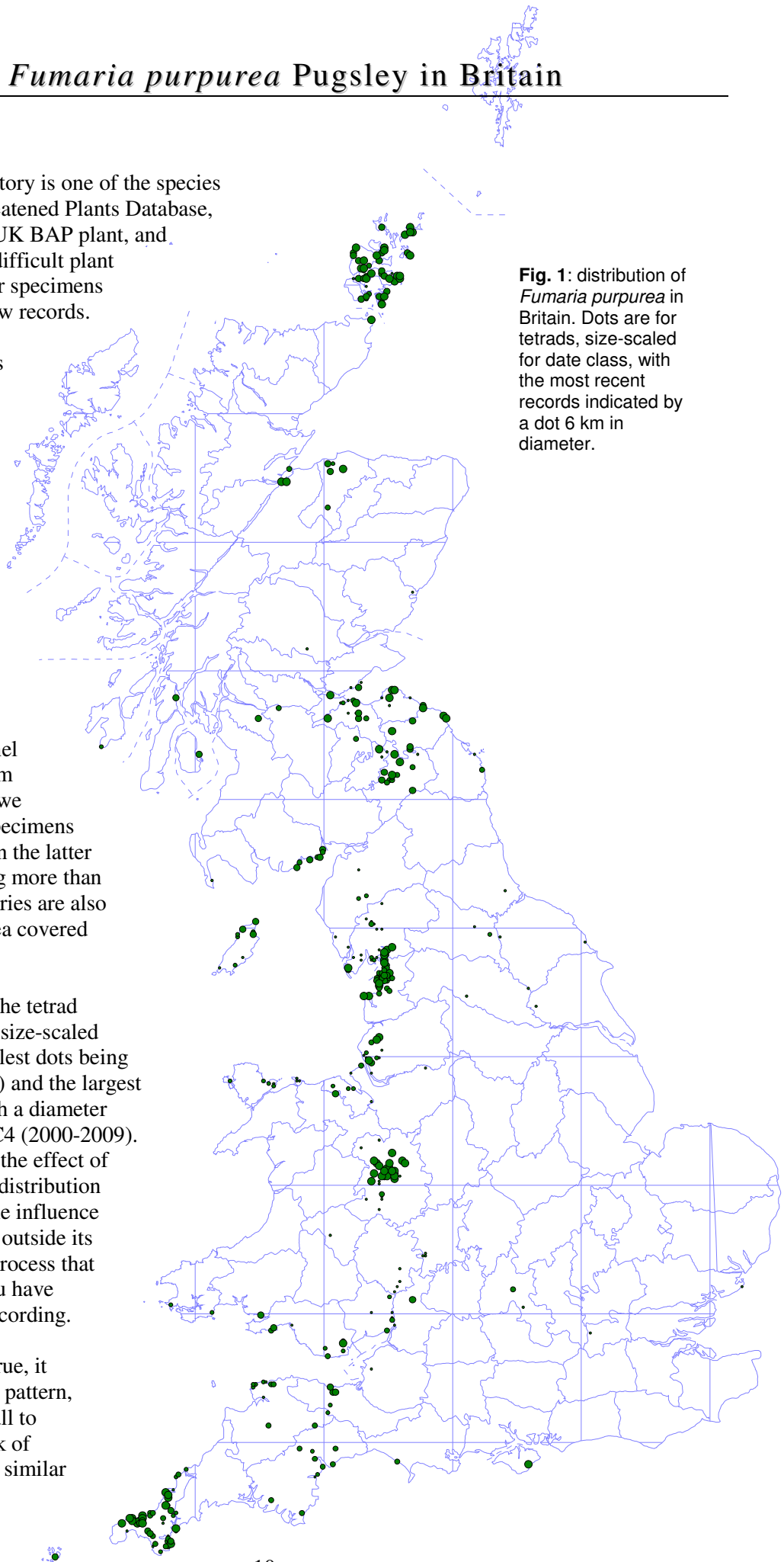


Fig. 1: distribution of *Fumaria purpurea* in Britain. Dots are for tetrads, size-scaled for date class, with the most recent records indicated by a dot 6 km in diameter.

How well is it faring?

One of the key questions for the Biodiversity Action Plan is how well a species is faring. As *F. purpurea* is endemic to the British Isles, British plants make up a large proportion of the entire population, so this is a question we should ideally want to be able to answer. Unfortunately it is an annual and therefore the ‘population’ probably consists more of seeds buried in the soil somewhere than of plants that can be counted and measured. Combine that with what is undoubtedly a low level of detection probability, and you have a significant problem.

The graph below show the number of tetrads in which it has been recorded in each decade since the 1830s (prior to that there is only one record, from the 1720s, which is excluded). This shows two peaks in recording – one in the early 20th century that corresponds with Pugsley’s efforts, and another in modern times that is due to the recent surge in recording.

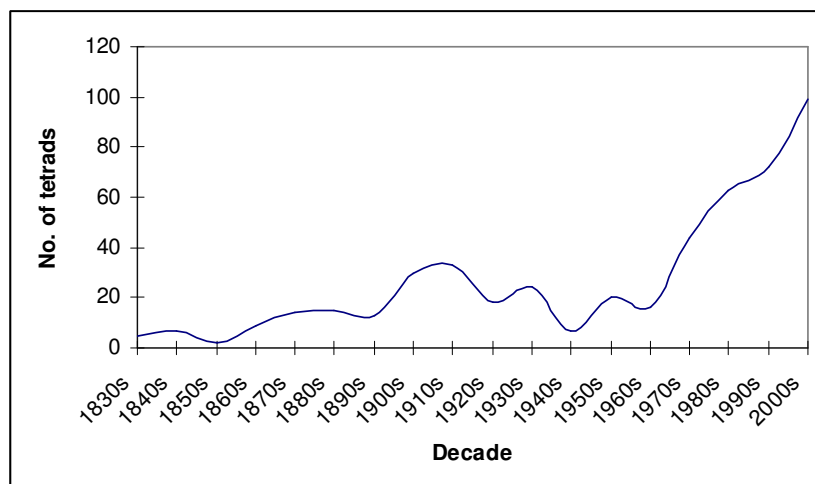


Fig. 2: the number of tetrads in which *F. purpurea* has been recorded in each decade since the 1830s. This graph largely reflects recording effort rather than the actual population size.

An alternative analysis is to count the number of new sites (here assumed to be the same as tetrads) found each year and the number lost – defined as any tetrad that has not had a record for ten years or more. In this analysis we make the assumption that each site is occupied continuously from the first record till the last one. This shows a fairly similar rate of gain and loss each decade. The dotted line shows the difference between the cumulative gains and losses – i.e. the extant sites. From about 1900 onwards (which is about when it was first described as a species) the number of extant sites has remained fairly constant at about 20.

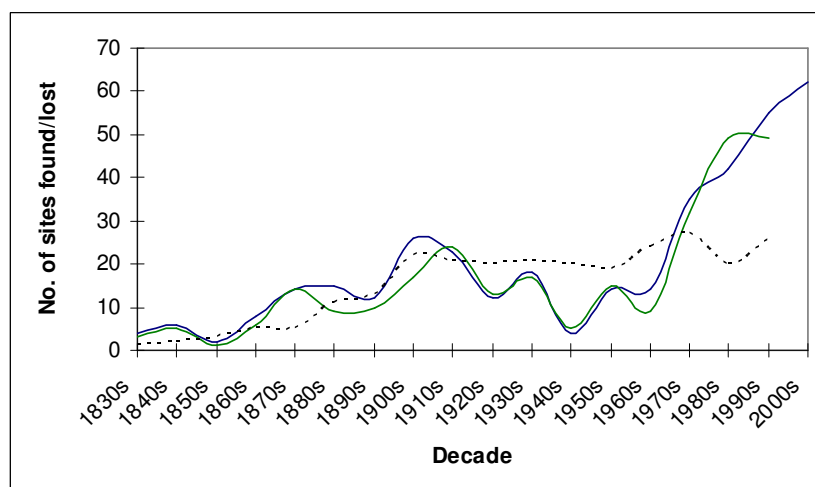


Fig. 3: the number of sites (measured as tetrads) gained (blue line) and lost (green line). The dotted line shows the difference, or number of extant sites at any time which irons out some of the distortions caused by effort.

Given a high enough level of recording, these techniques could be used to monitor a plant like *F. purpurea*. Assuming the current high level of activity continues, it seems likely that the number of known sites would rise to 30 or 40 and then level off. For any level of recording, if sustained, there will be a concomitant population size – up to a limit. That limit is the actual population size, which is the result that would be achieved if we had very thorough recording and every plant was found (i.e. the probability of detection approaches 1).

Is there any way we can forecast when that plateau might be reached? Not before the event. All we can do is record thoroughly and see what happens to the data. Revisiting old sites regularly helps, as any re-find boosts the apparent population by one between the last record for that square and the new one.

Extrapolating from this graph by eye, it looks as if a new plateau might be imminent, given our current level of recording. This might show something like 30 sites in any one year. Is that a realistic estimate of the size of the British population? It is as close as we can get. But what about the seed bank? It has been recorded in 367 different tetrads over the years: is it realistic to imagine that there are seeds in all these places, but plants in just 30 (8%) of those sites each year? That would mean that each population comes up once every 12 years on average.

There is no way to know if that is a realistic estimate or not. Experience suggests that it is an oversimplification. Some populations are clearly large and strong, and plants can be found every year. For instance, at Duck's Nest Hill in Cornwall it has been recorded fairly constantly since 1905. There are records for Shrewsbury for whenever anyone has looked for it from 1726 until the present day – a span of 284 years. Meanwhile, in most (306) sites it has only been recorded once, suggesting that it is often a purely transitory casual. In the sites where it has been recorded more than once, the average period of occupancy between first and last record is 47 years. But there is no site where we have records for every year, or anything approaching that.

If the purpose of collecting data for the TPDB is to be able to report on how a species is faring, then we must admit that cannot accurately do that in the case of an annual weed such as *Fumaria purpurea*. However, it can help to quantify what we understand by studying the plant. Overall, our best guess is that there might be about 100 populations of *F. purpurea* in Britain, of which about a third produces plants in any one year. There is no reason to believe it is either increasing or decreasing, but more populations are known now than at any point in the past, so there is no need to be concerned. Continued detailed and regular recording will help us to firm up these ideas over the next few decades. An important point to remember is that it is not enough simply to find a new site for this species – we need recorders to regularly revisit sites and see if it is still there. If it can be found at least once a decade, that would be a start.

If you find a plant of *F. purpurea*, please collect a voucher specimen and send it to Tim Rich at the National Museum of Wales for confirmation. Detailed records, including at least a 6-figure grid reference, assessment of population size, habitat, etc., are stored on the TPDB, so please make sure you send that information to me.

My thanks and acknowledgements are due to everyone who has sent in a record in the last ten years or so, specifically: Ian Bennallick, Michael Braithwaite, Frances Clements, John Crossley, Michael Daker, Sarah Fairhurst, Colin Ferench, Graham French, Michael Foley, Ian Lewis, Luke Gaskell, Paul Green, Eric Greenwood, Maurice Hoare, David Hughes, Heather McHaffie, Rebecca Johnson, Rose Murphy, Bridget Ozanne, Alicia Prowse, Gail Quartly-Bishop, Tim Rich, Jane Squirrell, Rob Stokes, Sue Swales, Sarah Whild and Dan Wrench.

The status of *Crepis mollis*, Northern Hawk's-beard

John O'Reilly & Alex Lockton

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Northern Hawk's-beard is a European endemic and a plant that is seemingly in rapid decline. There is very little known about its ecology in Britain. It seems to occur most commonly in MG3c *Anthoxanthum odoratum*-*Geranium sylvaticum* grassland; *Arrhenatherum elatius* subcommunity in road verges and on un-mown banks in meadows beside upland rivers. Sometimes, in the past, it was recorded in lightly wooded river valleys. The map below shows how dramatically it has declined by comparing post-2000 records (dark dots) with all previous records (open circles). However, this analysis is based on the assumption that it was once in all these sites, and has been lost from some but not from others. Our aim, over the next year or two is to find out more about it and see if we can determine its true status.

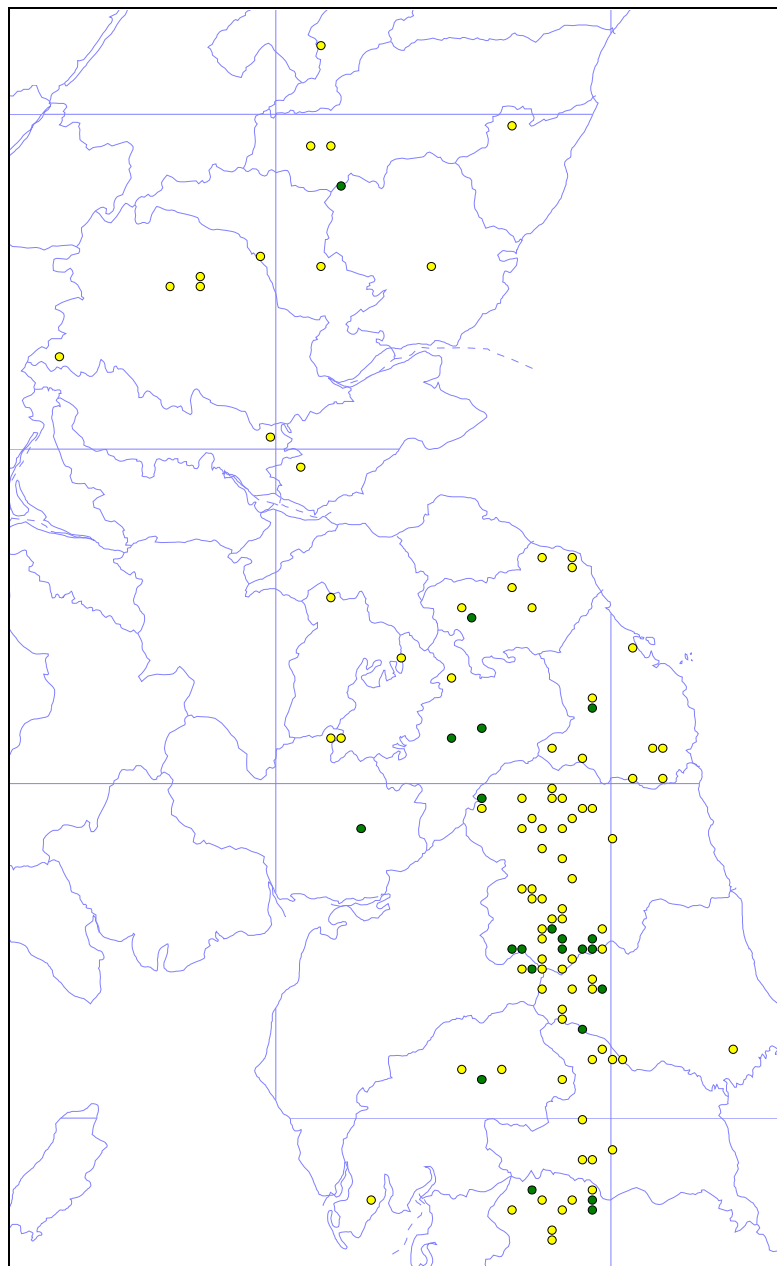


Fig. 1: *Crepis mollis* in Britain (excluding two old sites further south).
The recording unit used is 3km x 3km.

An alternative analysis

If we do not assume that *Crepis mollis* was once present in all its known sites, the picture is very different. The number of records fluctuates dramatically from decade to decade (Fig. 2).

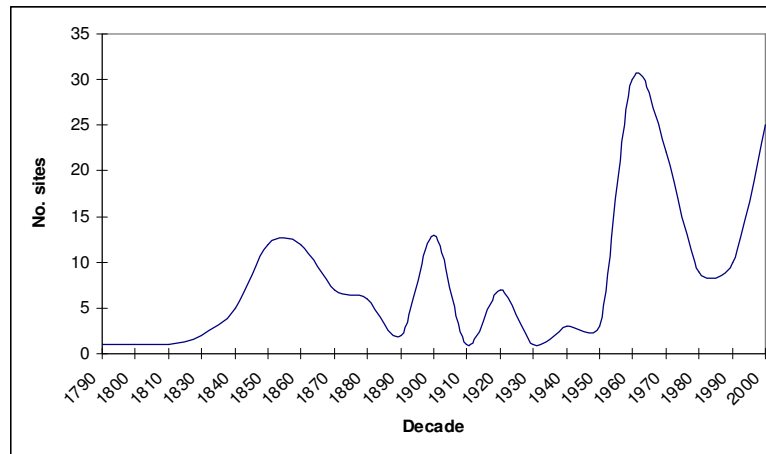


Fig. 2: the number of sites (monads) in which *Crepis mollis* has been recorded each decade since the 1790s. A huge surge in the number of records in the 1960s and 1970s led to the impression that it had declined dramatically in the 1990s.

If we assume that *C. mollis* is a mobile species, and that recording levels are very high, so it is discovered in each new site as soon as it arrives there, then the picture is very different (Fig. 3). This shows no great change in the number of sites. This analysis most closely resembles the plant hunters' view of the world – at any point in time, there would have been about 10 places in Britain where you could go and see it.

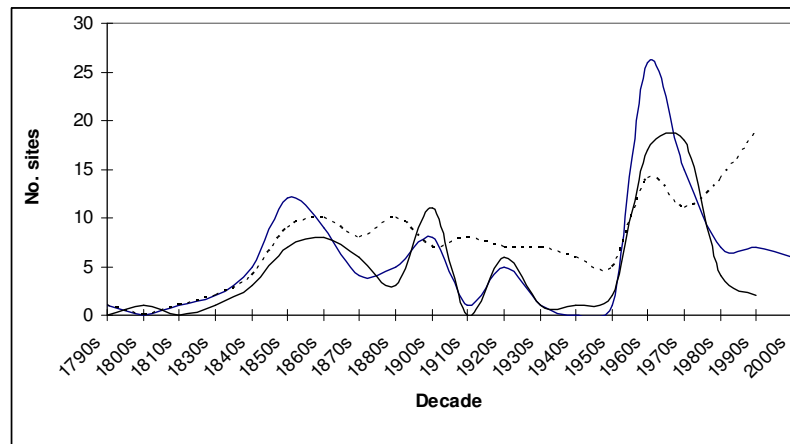
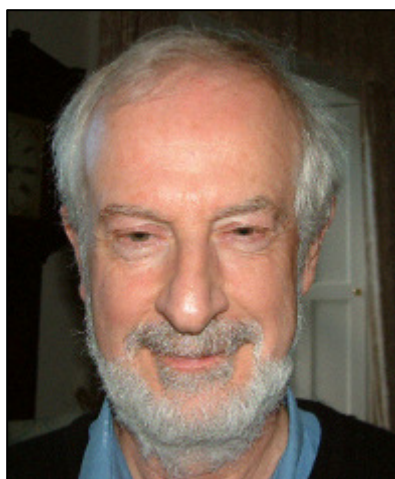


Fig. 3: the number of new sites (monads) found (top line) for *Crepis mollis* and the number of old sites lost (lower line) since the 1790s. The dotted line shows the number of extant sites at any point.

So, which is correct? We will not know that until we have collected a lot more data. The problem is that the new populations that were found in the 1960s and '70s may have been there for decades or centuries. But a lot of them seem to have gone extinct almost as soon as they were discovered. As always, we need more data – ideally, a survey of each site every decade. However, you can see the effect of the TPP already, in causing a nice little boost to the number of extant sites at the end of the graph.

Our thanks to: Alison Lean, Mark Spencer, Michael Braithwaite, Kevin Walker, Jeremy Roberts, Fiona Corby, Clare O'Reilly, Rod Corner, Julia Quinonez, Linda Robinson, John Richards, Chris Miles, Bob Ellis, Eric Meek & A.M. Hall.

Meet the BSBI



Richard Pankhurst has been a database designer for the BSBI for the last twenty years, having created the 'Leicester Database' that underpins Clive Stace's *New Flora* and the Vice County Census Catalogue.

He was born in Swindon, Wiltshire, in 1940, to John and Blanche Pankhurst, who were staunch members of the Wild Flower Society, and taught him flower identification from the age of 6. He took a degree in physics at Cambridge in 1960 and then went to Geneva to work in the computing section of CERN. On returning to Britain he became more involved in botany and worked as a curator at the Natural History Museum between 1974 and 1991. During this time he started computerising the British herbarium, much to the disapproval of the management at that time, who clearly thought computers were just a passing fad. Eventually he was ejected from there and ended up at the Royal Botanic Gardens, Edinburgh, where modern technology was more welcomed. What was England's loss was Scotland's gain, and RBGE has played and continues to play a leading role in developing information technology for the botanical and museums sectors – hence some of its close ties to the BSBI. He has long been keen on computerising keys (the PANKEY programs) and has made computer keys to British *Carex* (with A.O. Chater), *Taraxacum*, *Euphrasia*, *Rubus* and vegetative grasses (with J. Allinson).

Q: Apart from BSBI, what other organisations are you involved in?

A: Botanical Society of Scotland, Scottish Naturalists' Trust, Linnean Society, Systematics Association – but losing interest in it now it only does molecular systematics.

Q: Involvement in BSBI... what committees, roles, etc?

Have been Chairman of Scottish BSBI, in and out of Council and Records Committee, only committee currently is Database. My colleague Martin Pullan, at RBGE, is taking over the programming for the Leicester Database when it migrates onto the web in 2010.

Q: What do you see as the main purpose of the BSBI?

Studying British plants, but that mostly means recording.

Q: You have been county recorder for the Outer Hebrides (v.c. 110) since 1993: what have you done and what are your ambitions?

A: Wrote a Flora with Mike Mullin (1991). Database started 1991 now has 140,000 records in Recorder 3 over all taxa, all time and all known literature. Aim to include records from SNH reports not done yet. A Rare Plant Register was done by my co-recorder Paul Smith and is now on the web. Recording is in progress by tetrads, for a new flora to be done by Paul about 20 years hence.

Q: How do you see BSBI Scotland developing?

A: Recruitment of more Recorders from England.

Q: On the web site you invite people to send you photographs for identification... how popular is that?

A: About one a fortnight in the summer. Much less than I expected.

Q: What do you do when you're not doing botany?

A: Piano (classic), travel (but that nearly always involves botanising) and we have a timeshare in Madeira, daughter and two grand-daughters in London. The Times crossword. Scottish Episcopal Church. Some bird-watching. Also do Sudoku and PC patience games but trying to stop.



Sylvia Reynolds has been Recorder for Co. Limerick (H8) since 1983, has served on the Committee for Ireland and as Irish representative on Council, and is currently an elected member of Council. She is the author of *A catalogue of alien plants in Ireland* (2002), which was published by the National Botanic Gardens, Glasnevin (and is available in full on their web site).

Sylvia was born in Co. Dublin, the eldest of five. Her father was a mining geologist from Co. Limerick, and her mother Hungarian. She has a degree in Botany from Trinity College, Dublin (1967) and an MSc on a large kelp from Simon Fraser University, Vancouver, after which she taught biology and botany at the Universities of British Columbia and Victoria. She returned to Ireland in 1977 with her zoologist husband Julian, and they have three children.

Q: What got you interested in botany?

A: My grandfather and grand-aunt showed me wild flowers from an early age; that liking stuck. I knew I wanted to be a botanist after a two week BSBI junior field meeting in 1964 at Roundstone, Co. Galway, at the end of my first year at Trinity; Prof. David Webb was also an encouraging influence.

Q: What have been the highlights of your career?

A: The publication of my *Catalogue of alien plants*. I have been fortunate to be able to spend a lot of my time on botanical work, some paid for, mostly not. I was delighted to be awarded Honorary Research Fellowship by the National Botanic Gardens late in 2008. I enjoyed doing research work for David Allen on Irish plants for *Medicinal plants in folk tradition* (2004) and intermittent consulting work, more recently including surveys of rare and scarce plants in Limerick and part of Co. Dublin.

Q: What thoughts do you have about the BSBI?

A: The interaction with BSBI botanists visiting Ireland is always stimulating. I find the referees and other specialists amazing! If you send them good specimens and provide sufficient background detail, you not only get determinations, but usually a lot of extra information as well.

A bonus of going to Council meetings in London is having the chance to talk to other botanists and I can also visit our youngest son and my aunt Elinor Wiltshire, a former BSBI field meetings secretary.

Q: Apart from BSBI, what else are you involved in?

A: Mainly Dublin Naturalists' Field Club, including many years field work for the *Flora of County Dublin* (which I also co-edited) and former President, but not much involved now; on board of *Irish Naturalists' Journal* and served as Plant Records editor for a number of years.

Q: Tell us about being Recorder for Co. Limerick

A: The most enjoyable part is the field work, but also puzzling out identifications afterwards using a microscope. I have numerous field cards, nine field notebooks pre-1984 to 2004 and over 1000 pages of field notes since then, mainly gathering habitat information for a proposed Flora. My records are on old-fashioned 6 x 4 file cards in three shoe-boxes, and I have made the choice to write rather than computerize my records at this stage. My current ambition is to complete writing the Limerick Flora (now writing the monocots), and perhaps a Rare Plant Register after that.

Q: What do you do when you're not doing botany?

A: I love to be outside, preferably in the hills or other wide open spaces; also doing hard physical work such as clearing brambles, bracken and nettles from around more than a hundred trees which Julian and I have planted on Foynes Island in the Shannon Estuary where we have a (nearly no facilities) cottage – and after all that work, a glass or two or more of wine! When in the city I have done some one-to-one adult literacy tutoring – makes one look at language in a new way, very enjoyable.



Quentin Groom is the computer man behind the Maps Scheme database. His job includes taking species lists with any imaginable variation of the spelling of a species name, grid reference or date, and converting them into standard lists that can be used by the scheme. He is also responsible for Botanicalkeys – one of the most popular plant identification sites on the internet.

Quentin was brought up in Cookham-on-Thames, within walking distance of two SSSIs. He studied Botany at Reading University and did a PhD at Essex, followed by various postdoctoral posts in the USA and UK. He says ‘research was fun, but marriage, money and children put an end to it, so I learnt IT and reinvented myself. Eventually, trailing my wife’s work, I came to Belgium where I was taken in by the National Botanic Garden.’

Q: What is your involvement in BSBI?

A: I’ve been a member for about 10 years. Alex soon roped me in to various activities, recognising that people with computer skills were a bit thin on the ground. For much of my time I’ve served on the Science and Research committee.

Q: Tell us about being a Vice County Recorder.

A: I’ve never been a VC Recorder in my own right, at the moment I look after south Northumberland with John Richards. Most of my work involves databasing the records others collect. I’ve set up a website where people can see maps for the north-east (www.floranortheast.org.uk). I hope to encourage our small band of local recorders by providing rapid feedback on their queries and showing them that their records are put to good use. Funnily, I think my absence from the county makes me work harder to prove it’s worth my retention. I usually get back to the county once a year for some intensive recording. Usually, I go to the most isolated corners of the county and walk around ticking. We do need to start getting more organised to produce a rare plants register!

Q: Apart from BSBI, what other organisations are you involved in?

A: I’ve recently joined the British Plant Gall Society. It seems logical to collect records of galls at the same time as plants; most galls are easy to recognise. There are so few people who look for them there is even a chance you could discover a new species to science in the UK.

Q: Tell us about your involvement in Brussels Botanic Garden.

A: Later this year we will launch an Internet flora of the Democratic Republic of Congo, Rwanda and Burundi. I’ve been digitising all volumes of the Flore d’Afrique Centrale so that the whole text on more than 6,000 species can be put in to a database and displayed online. Although this may be interesting to us northern botanists, the primary aim is to enable African botanists to work on their own floras.

Q: What does the BSBI do well?

A: To me it’s all about communication. Whether this is the publication of keys, floras and guides or whether it is the free flow of records and the referee system. All this communication makes botanical recording in the UK much stronger than the sum of its parts.

Q: What would you have it do differently?

A: Be more scientific in its recording strategy and promote better recording strategies. While it is most fun just to walk and tick, it is very difficult to interpret such data when you don’t know all the biases a recorder might have.

Q: What do you do when you’re not doing botany?

A: There has only been one time in my life when I wasn’t botanising 24/7. That was when I got the fishing bug. Although landing a big salmon was one of my biggest thrills, it was seeing the myriad of wildlife along the rivers that was a real privilege.



Paul Hackney recently retired from his post of Curator of Botany at Ulster Museum, Belfast. He was Recorder for Co. Down from 1970 until 1999 and has been a member of the BSBI Committee for Ireland, on and off, over many years, some of them as its Secretary. He represented the Committee for Ireland on Council in the 1990s.

Paul was born in Blackley, north Manchester 1945 and educated at North Manchester Grammar School. He studied Botany and Chemistry at University of Leeds. After graduation in 1966 he took up the post of Trainee Assistant in the Botany Dept., Liverpool Municipal Museum, where his boss was Eric Greenwood. He moved to Belfast in 1968 to become Assistant Keeper of Botany at Ulster Museum.

Q: What have been the highlights of your botanical career?

A: From 1976 I worked with members of the Belfast Naturalists' Field Club and others to produce a third edition of the Flora of the North-east of Ireland, originally produced by S.A. Stewart in 1888. This appeared in 1992. I was also involved in the production of John Harron's Flora of Lough Neagh, published in 1986. Since then I became involved with Ian McNeill, the recorder for Co. Tyrone, in preparing a Flora of Co. Tyrone which should appear in early 2010. I was on the management and editorial board of the Irish Naturalists' Journal for many years as well.

Q: Tell us about your involvement in CEDaR

A: CEDaR was founded in 1994. My principal claim to fame is that jointly with colleagues in the Dept. of the Environment (NI), I appointed the principal staff (Damian McFerran and Julia Nunn) who manage and run it on a daily basis. One of the first major projects of CEDaR was the involvement in the BSBI's New Atlas scheme, in which CEDaR acted as repository and clearing house for the N. Irish records. When this project was completed I encouraged the development of the web-based product, the Flora of Northern Ireland, to make the data available generally in the public domain.

Q: What do you see as the main purpose of the BSBI?

A: BSBI's principal strength is undoubtedly the way it acts as a forum for both amateur and professional botanists in the fields of taxonomy, ecology and general field studies and recording. Its main purpose is the collection of accurate and authenticated records of plant distributions.

Q: What does the BSBI do well?

A: The referee system is excellent.

Q: What would you have it do differently?

A: I feel its Irish activities are under-developed.

Q: You've recently retired from Ulster Museum. What are your plans now?

A: I left the Museum in Autumn 2008, my two colleagues retiring around about the same period, so the old Botany Department ceased to exist and sadly none of us has yet been replaced by the museum authorities, which I think is regrettable to say the least. My wife and I live in an old farmhouse which we have done up gradually over the past twenty-five years (I'm a DIY enthusiast!), but there is still a lot to do, and the garden needs a lot of attention.

Q: What do you do when you're not doing botany?

A: I have pursued something of a parallel academic career in the field of Buddhist studies (I have an MA from Sunderland University in this) with an interest in Buddhist philosophy, meditation and history, and a general fascination with Indian and Chinese philosophy. Many years ago I was only inches away from becoming a Buddhist monk in Thailand, but, as the saying goes, 'the moment passed'. I am currently learning Sanskrit. More down to earth, perhaps, ever since I was a child I have loved trains! For me it's the only civilised form of transport and I spend a little time each year travelling on railways at home and abroad just for the pleasure of it.

County Roundup

England & Wales

E From **North Somerset** (v.c. 6) Helena Crouch reports that 'recording in 2009 has again been focused on updating records for the Rare Plant Register, which is of course an endless task. The discovery of a completely new site for *Dianthus gratianopolitanus* illustrates the fact that, even for the most famous of rare species, we cannot necessarily be certain of the exact distribution. I have now written nearly fifty species accounts, which can be seen on the Somerset Rare Plants Group website (somersetrareplantsgroup.org.uk). Any feedback, corrections or additions would be most welcome.

'New vice-county records this year have nearly all been aliens, some distinctly unwelcome. *Eichhornia crassipes* was found new for v.c. 6, growing with *Pistia stratiotes* in the King's Sedgemoor Drain. The habit of peering into basements whilst negotiating busy city streets continues unabated and is clearly contagious: three new species of alien fern - *Pteris umbrosa*, *Polystichum tsus-simense* and *Cyrtomium fortunei* - have been found in unkempt basements in Bath this year (and no arrests have been made). The only new native taxon for v.c. 6 this year was *Callitriche brutia* var. *brutia*, found by Fred Rumsey at the edge of a small pond on the Mendips. Somerset Rare Plants Group held 16 field meetings, Somerset Botany Group met weekly, I led 23 walks for my local wildlife group and one for Bristol Naturalists' Society; with all the walks of other local groups as well, there has been a lot of botanical activity in N. Somerset. Yet there are vast tracts of the vice-county I have yet to explore, species I have never seen and backlogs of records waiting to be input - there is no danger that I will ever have nothing to do!'

From **Sussex** (v.cc. 13 & 14), Alan Knapp and Paul Harmes report that 'recording for the new flora continued with around 35,000 new records in 2009 and has now reached the point where all except one of the complete Sussex tetrads have over 200 records and 36% have over 300. We hope to complete most of the recording during 2010 with 2011 as a "tidying up" year for those things which have been missed. Data from Mapmate continues to be synced with the BSBI roughly every month. We also continue a two-way annual exchange of data with the local records centre.

'This year these included first records for v.c. 14 for *Rumex cristatus*, *Polycarpon tetraphyllum*, *xDactyloдения legrandiana* and the second UK record for *Erigeron acer* x *Conyza sumatrensis*. In v.c. 13 we had a first record for *Dipsacus laciniatus* together with the hybrid with *D. fullonum*, confirmed the presence of *Ranunculus aquatilis* sens. str., and found a large population of *Chenopodium chenopodioides*, which was thought to have gone from W. Sussex. The colony, near Selsey, appears to be the furthest west of any extant population on the British mainland.

'We have continued writing draft species accounts for the flora and so far around 65% have been done. We are still on track for publication around the end of 2012. We managed to visit most of the sites in v.cc. 13 & 14 for the BSBI Threatened Plant Project. One species we had hoped to re-find was *Gnaphalium sylvaticum* but it really does seem to have gone from everywhere except the western side of West Sussex so it will be interesting to see what has happened elsewhere.'

Ann Sankey (**Surrey**, v.c. 17) reports that 'the Surrey Botanical Society organised a record number of seventeen Field Meetings, from January to September. In addition, a lot of informal meetings were arranged by e-mail, mainly to update records for the Surrey RPR. As always there were some good finds and re-finds but the excitement of these had to be tempered by the inevitable losses. It was pleasing to see that our score for DC3/DC4 was 85%. This was without any effort to square bash. When all the records for DC4 have been entered and the records from SyBRC have been incorporated, I expect the % to be much higher. No interpolation nor extrapolation!

'The SBS website goes from strength to strength. In addition to being a route for new members to join, we use it to post lists of records in need of updating - how did people disseminate this information before the e-mail/internet era? An increasing amount of archive material is put there, including some old floras. The latest of these is the 1819 Surrey section of a publication called *The New British Traveller* by James Dugdale. Included in this is a list of the flora of the county, a very early list indeed.

'An axiophyte list should be ready soon and will be used to select Conservation Verges in the administrative county.

‘Progress with the RPR has been slower than hoped but it does give us another year in which to update records, even if this does not neatly fit within a recording date class. I now have a long list of records from SyBRC for the RPR species and am checking through this for their validity, which is quite a task.

‘We ran an in-house MapMate workshop in December to which 16 SBS members attended – about as many as a field meeting. These were both seasoned users and beginners. There are several advantages to members using this database. These include help with data input and increased recorder effort, for it is noticeable that those who have access to the full database are mainly the ones that go out recording on their own initiative and then database their finds soon afterwards. It is relatively easy for me to check their entries.’

David Broughton (**Huntingdonshire** v.c. 31) has a very informative page on the BSBI web site, where he reports in great detail (often with excellent photos of the plants concerned) on all the botanical developments in the county. He says that his predecessor considered that because he published important records in the local naturalist society journal that there was no need to also use *Watsonia*; but David sends records to both publications because they have different readerships, members and accessibility (the local journal being much more ephemeral in nature). He says that as county recorder the BSBI is the primary organisation to which he is affiliated, and he considers publication to be a good way to ‘reward’ people who make the effort to submit records.

As for the role of county recorders within the society, he says the current approach is the best option and has served the Society well. VCRs are in a position to know their county best and are able to gain a better understanding of the strengths and weaknesses of both local botanists and the historic dataset. They are also in better position to follow up records that need more attention or confirmation. If county recorders were bypassed, by the time data filtered through the national system they may have missed the opportunity to check unexpected but potentially valid records. We totally agree with these statements with the proviso that, if a county recorder is not very active – and especially if they are not computerised – then we have to allow other people to submit records as well.

From **Shropshire** (v.c. 40) Sarah Whild reports on the formation of an embryonic distributed data

network in lieu of a conventional Local Records Centre. ‘It will take time to find out whether this approach works but it certainly has potential – vice-county recorders are small paid contracts (between £500 and £5,000 p.a.) by Shropshire Council and Natural England to provide datasets to the network and to the NBN. The County Recorders are also asked for advice on ecologically sensitive planning applications, biodiversity reporting, etc. Getting the cash to filter all the way down to the experts in biodiversity has always been a problem for the sector, and Shropshire Council has been finding that the expertise is an even more valuable asset than the raw data.

‘On the recording front, 2009 has been our second year of intensive monad bashing (mainly down to my other half!) with interesting records of *Pimpinella major* and *Cardamine impatiens*. Brian Laney has been surveying roadsides and has turned up an extraordinary number of first county records including *Spergularia rupicola* and *Fumaria densiflora* so, at a tetrad level, v.c. 40 looks rather more respectable at the end of date class 4 than it did a few years ago.’

Arthur Chater (**Cardiganshire**, v.c. 46) writes: ‘Some v.c. Recorders are good at finding and mobilising other members, others (like me) are less good at it, perhaps because we just do not have anyone out there willing to do more than they are doing at present. Network projects, which did not rely on the Recorders but on a central organiser, seem to have died out – why? – because of the difficulty of finding projects, or organisers? They used to be a good way of involving the general membership.

‘There has been limited fieldwork by myself this year because of the need to finish the county Flora (this is now all written, and is being formatted for the printer by Paul Smith and ought to be published during 2010). The Threatened Plant Project work was all completed. The only new native taxa sent in have been *Carex strigosa*, *Rubus lettii* and *Dactylorhiza x transiens* (the latter detected by Steve Chambers). New aliens were *Pseudofumaria alba* (Ray Woods), *Phormium cookianum* (Steve Chambers) and *Cotoneaster hsingshangensis*. Two useful recording field meetings were organised by the local Records Centre, and there was a weekend meeting of the South Wales branch of the British Pteridological Society in the north of the county, all of which I attended.’

Wendy McCarthy (v.c. 49, **Caernarvonshire**) held six monthly recording meetings from April to September 2009, recording in tetrads and updating records. On January 30th, she held an indoor meeting of participants to discuss progress so far, and plans for future recording. She surveyed target species for Threatened Plants Project, began updating the Caernarvonshire Rare Plant Register, and tutored classes in the use of keys for wildflower identification at a local conservation centre.

She says 'I am still struggling with areas of my county boundary, and other people spring surprises on me by saying that they use different boundaries to me, albeit for very small areas. This happened again this week and I have now got to remove a substantial number of records which will also be on the BSBI database. I will, too, have to go out and record that tetrad all over again. I believe that one of the most important items to provide a new recorder with is a decent size map showing their county boundary. The Watsonian maps are too small in detail to be of much use. Where can one obtain a definitive boundary of one's county?'

The answer is: from your local government office. Wendy, like many county recorders, supplies detailed records to the Countryside Council for Wales and/or the Local Records Centre or County Council. These organisations all have Geographical Information Systems with Ordnance Survey maps on them, and they can download detailed county boundaries for free from the National Biodiversity Network web site. They will be only too pleased to provide you with print-outs of the county boundary in return for your data. We can't produce such maps centrally because it would cost a fortune to buy a licence for all the digital maps of Britain.

Ian Bonner (**Anglesey**, v.c. 52) has continued to develop recording on the island, with some success. 'The Flora Group held a pre season indoor series of talks at Treborth in March, a plant identification workshop (joint with NWWT) in April, followed by three field excursions. This was a more modest programme than in recent years to encourage small groups to undertake a wider range of recording and monitoring project throughout the year. This has had mixed results, some excellent records, either from monads or for a range of taxa from 4-5 members; but the majority prefer organised field visits.

'Most of the 2009 records have been entered into MapMate and progress has been made

computerising paper records from 1991 to date, with about 61,000 records now in the database, which has been synched to the BSBI Hub. A spreadsheet has been set up to keep track of the number of taxa and the number of records from each of the 801 monads covering Anglesey. Progress in compiling a comprehensive checklist of Anglesey plant taxa continues; but it is taking longer to complete than originally expected. It is planned to include the axiophyte list as part of this.

'The updated Rare Plant Register has not been made available to the LRC (COFNOD), as no records have been received from the LRC for verification/validation, as per the Data Exchange Agreement (DEA). However a meeting between the N. Wales VCRs, Kevin Walker and COFNOD staff will hopefully produce an early resolution to this.

'In November a meeting between Anglesey County Council, Plantlife and BSBI used the RPR to revise the vascular plant component of the County BAP.'

Michael Jeeves (**Leicestershire**, v.c. 55) says, of Watsonia records: 'firstly, when I became recorder, no-one encouraged me then to send in records, so I never got into the habit. Secondly, I am not sure of the value of publishing records in Watsonia. However, it won't take much effort, so I will start filling in some cards.' His ambivalence is shared by just about everybody – publishing the records is definitely valuable, but is it valuable enough to justify the cost and the effort? This looks like being a debate that will run for some time yet.

In **Derbyshire** (v.c. 57) Alan Willmot organised eight summer outdoor recording meetings in 2008, which were attended by around 10 people each on average. These resulted in a significant body of records, all recorded at least at the monad level, that are being added to the database at Derby Museum. He also personally made several other recording trips in the county for the Maps Scheme and the TPP, and there was one indoor meeting on local field botany and a newsletter with news of recent records and activities.

He has worked with Nick Moyes of Derby Museum and other volunteers (particularly Roy & Ann Branson, who did most of the data entry) to produce a computerised database of all the specimens in the Derby Museum Herbarium. It is hoped to get this on line soon through one of the herbaria websites. Probably the most significant activity for the year was setting up the

Derbyshire Flora web site, which contains maps on a tetrad and hectad basis for virtually all the vascular plants known to occur in the wild in Derbyshire. There are written accounts for around 100 species and now pictures for an increasing number of species using Flickr.com. It is hoped to soon add accounts for most of the remaining species. The web site can be accessed through the Derby City Council website under 'Flora'. It received over 8,000 hits last year.

Alan says: 'work has begun on a new Red Data List for vascular plants in the county which it is planned to finalise in 2009. Finally work has progressed, but progressed very slowly, on our proposed Derbyshire Flora. Records are still being collected and entered on our database. Accounts are still being finalised with drafts for many species on the website mentioned above. In the meantime the flora website at least makes records available to anyone who wants to use them.'

Dave Earl (**South Lancashire**, v.c. 59) sent the following report: '10 km text file updates were created on the 31st December 2009 and have been supplied to the BSBI thereby reporting progress made during 2009. Recording was directed to those tetrads in the vice-county where common species had not been recorded whilst at the same time it was generally the case that all the vascular plants seen in each 1 km square visited were recorded which consequently greatly increased the number of new species records at tetrad level.'

'Our web site now contains images of approximately 1,200 vascular plant species taken in vice-county 59 by a number of local botanists. Visit: <http://www.southlancsflora.co.uk/>. During the winter months of 2009 a proportion of Wild Flower Society diaries made by the late Audrey Franks and Doris Nash have been worked through providing a significant number of additional records.'

Eric Greenwood (v.c. 60, **West Lancashire**) reports that 'a draft text for a Flora of North Lancashire is almost complete. Putting text with figures and maps and publishing is quite another matter. A lot of help is required. As in previous years our fieldwork concentrated on rare species recording and filling gaps.' Like many recorders, Eric has a wide range of commitments outside BSBI: he has maintained active participation in the work of the Wildlife Trust for Lancashire and continued to participate in the work of the Lancashire BAP Technical Working Group by producing a draft 'long list' of rare species for the

administrative county to be included as SAP species is nearing completion. These species are essentially axiophytes.

He is a member of the Technical Advisory Group for the Natural Environment Record Network being established as a local record centre. The network is a partnership between Natural England, Lancashire County Council, the Environment Agency and the Wildlife Trust.

From v.c. 62, **N.E. Yorkshire**, Mike Yates and Vince Jones say: 'At the completion of entry of the 2009 data, there is a total of approximately 233,300 records on the vice-county Mapmate database. Tetrad recording has continued, mainly in the hectads that have been under-recorded. It has been possible in the last three years to visit every such hectad in the vice-county, sometimes recording several tetrads in each. Pleasing progress has been made in *Hieracium* and *Taraxacum* recording. In the vice-county there are 46 hawkweeds recorded, 40 of which have been seen recently; and 123 dandelions, most of which are recent records. A start has been made on recording *Rubus*, spurred on by a week's visit by Alan Newton to the county in 2008.'

'The advent of the new date class for recording gives us a worthwhile opportunity to revisit the North York Moors, which comprises almost half of the vice-county. This area was well-recorded for native taxa, but many of these records are now 30 years old and contain very few localised records, so updating is certainly necessary. A recording plan has been devised for the next decade with three main aims :-

1. 'Revisit the richest areas (but also visiting every hectad) in the North York Moors, enabling us to update tetrad records and to localise details for the Rare Plant Register. The latter we view as a priority in future recording.'
2. 'Continue to record tetrads in under-recorded hectads.'
3. 'Revisit, in the second half of the decade, some of the richest tetrads recorded in 2007 to 2009, with particular reference to urban hectads where the flora is most rapidly changing.'

'The recording plan comprises a list of tetrads to visit in each hectad (more visits will be made to the richest hectads); and a list of sites to visit to try to re-find, update and localise records for the Rare Plant Register.'

John Durkin (v.c. 66, **Co. Durham**) says ‘recording effort this year was directed at the least well recorded hectads, mostly in the far corners of the county. The actual number of new records has reduced to 12,000 this year, compared to my peak of 23,000 when I started as v.c. recorder and was doing the near-at-hand squares. My main motivation for recording, apart from the fun of it, is nature conservation, so I need up-to-date data for all parts of the county. I measure this by comparing pre and post 2000 records for each hectad on Mapmate. The average hectad now has 32% ‘new’ records, which would be fine, but there is a broad range of scores from 10% in far-flung hectads to 70% in the home hectad. A lot more effort is needed both to record in the furthest hectads and to establish relations with people or groups who may be recording in those areas, but not databasing their records. My scoring system is slightly different from the BSBI date class system, but its better for local nature conservation purposes, and easy to derive from my database.

‘There have been useful recording efforts from John O’Reilly and from Andy McLay, but all three of us are based at the north and west of the county. Andy is just starting his last recording year for his Flora of Gateshead. He was added to the BSBI Mapmate network this year.

‘Survey work in brownfield sites and urban back lanes added more than 10 new species for the county. It was also apparent that several species are spreading quite rapidly, sometimes outside of their traditional habitats. Blue fleabane, yellow wort, bee and pyramidal orchids are spreading outside of the limestone areas, on road verges and brownfield sites. Black spleenwort and rustyback ferns, once rare species in the Durham Dales, are now frequent on walls in the urban back lanes of Gateshead and Sunderland.

‘I haven’t updated the *Watsonia* records, partly because I inherited a backlog of 25 years, and partly because this function of *Watsonia* may now be a bit dated—with widespread availability of the database, anyone can look up the records for themselves. I am, though, possibly missing out on giving recorders the little bit of kudos that goes with publishing a first for the county under their name.’

Scotland

David Hawker (v.c. 73, **Kirkcudbrightshire**) reports that it has been a hectic year, partly because of the inputting of about 25,000 records under the Computerisation Project. He says: ‘my wife is doing a sterling job typing in the data as I sit alongside dictating the info. Because of this work, I started going through the numerous diaries, papers and books inherited from my predecessor and have discovered early 20th century records which pre-date those included in the 1990 Flora. For example, a record of *Erinus alpinus* for 1928 – 40 years before the first published record – and for *Rhododendron ponticum*, 45 years before. In a very few cases there’s even basic population data.

‘I think I started the year with a paper in the Scottish Newsletter (31) 2009 on coastal plant populations in v.c. 73 detailing the changes in distribution and population size of *Calamagrostis epigejos*, *Centaureum littorale*, *Crambe maritima*, *Euphorbia paralias*, *Carex punctata* and *Raphanus raphanistrum* ssp. *maritimus*, probably linked to climate change. And followed that with further population monitoring of the v.c. 73 section of the Solway Firth SSSI covering *Thelypteris palustris*, *Juniperus communis*, *Centaureum littorale*, *Fumaria purpurea*, *Limonium humile*, *Lychnis viscaria*, *Carex punctata*, *Hierochloa odorata*, and *Coicya monensis* ssp. *monensis*; coincidentally also monitoring some of my VC’s scarcer species *Artemisia stelleriana*, *Eryngium maritimum*, *Euphorbia paralias*, *Milium effusum* and *Sanguisorba officinalis* as well as some tetrad recording! All of the above species are doing well and/or expanding, with the exception of juniper.

‘Then of course there has been the monitoring of a few plant populations under the TPP with *Vicia orobus* monitored during an outdoor historical performance, inevitably in pouring rain, for primary school children at a medieval settlement – becoming a very small part of the performance into the bargain. Some species doing OK (*Vicia orobus*), some barely hanging on (*Dianthus deltoides*, *Gentianella campestris*) and one not surveyed because of lack of time (*Gnaphalium sylvaticum*). One of the surprising things about the TPP is how many of the TPP database records I don’t actually have on my files and how few of mine are on the TPP database.

‘Apart from these, I seem to have done relatively little recording in Kirkcudbrightshire and far

more in v.cc. 74, 75, 79, 84 and 88. That's the problem with being a working ecologist.

'There have been requests for data, including one for a grid connection corridor running through the NW of my county, from two proposed large wind farms, interestingly through some of the better habitats, with a number of NS and locally rare species such as *Gentianella campestris*, *Meum athamanticum*, *Platanthera* spp., *Vicia orobus*, *Populus tremula*, *Viola lutea* and *Coeloglossum viride*. Some consultancy work to support an objection to a forestry application in this corridor resulted in tetrad recording which produced additional records for *Vaccinium oxycoccos* and *Viola lutea*, the latter scarce in the v.c. I also found Google Earth unexpectedly helpful in outlining the extent of *Zostera* spp. on one local estuary – a low tide aerial photo in 2004 showed up the community very clearly. Hope the website is upgraded in the not too distant future. The other v.c. 73 estuaries were unfortunately photo'd at high tide!

'Then there was training for various organisations, from ancient woodland species indicators for a D&G Council Woodland Guardians project, plant recognition days for Solway Heritage, to plant photography for two local community organisations. Topped off by a BioBlitz, lead by various experts, on a local Wildlife Site which produced 407 species of all groups of plants and animals, again with a training element.

'That's now the end of DC4; I agree with the 2008 views of Andy Amphlett (v.c. 94) and feel that recording in this v.c. will only be adequate over a 20-year term. Good to see that the BSBI Co-ordinator has recognised this problem in the latest e-news (Oct 2009).'

Rod Corner (v.cc. 79 & 80, **Selkirk & Roxburgh**), started the year with his attendance at the inquiry into the proposed Dunion wind farm at Jedburgh where *Crepis mollis* (Northern hawksbeard) occurs. He writes 'in the event I was not required to give evidence opposing the development and happily it was refused. Unfortunately the *Crepis* site has now been planted with native hardwoods and efforts are now being made to remove those which threaten the colony.

'The local Biological Record Centre for the Scottish Borders has closed and is now run by Lothian Wildlife near Edinburgh with Bob Saville as the Biodiversity Data Officer. The botanical records for the two vice-counties in

their data base were reviewed and contentious records removed by mutual consent.

'Field work was carried out on four of the species relevant to the Threatened Plant Project with *Dianthus deltoides* (Maiden Pink) taking most time and effort. The weekend field meeting based at Town Yetholm was well supported and useful tetrad records made (see BSBI News 113:70-1). Elsewhere updated records were made for candidate species on the Rare Plant Register and combined with general tetrad recording.

'Two records stand out: Luke Gaskell's *Pyrola rotundifolia* (Round-leaved Wintergreen) from a basic wooded bank, a habitat completely different from the usual base rich mires from where it was previously known in v.c. 80 and Jeff Waddell's new population of the nationally rare hybrid grass *Calamagrostis x gracilescens*. (Narrow x Purple Small-reed) from v.c. 79.'

Michael Braithwaite's plans for **Berwickshire** (v.c. 81) in 2010 include a resurvey of three hectads, NT55, NT77 & NT84 with special emphasis on monitoring rare and scarce plants. This is a useful strategy for keeping up with the Maps Scheme by visiting parts of the county each year. He hopes to get around the whole county again by 2014. He is planning a dedicated survey for Lycopods on moorland tracks.

In 2009 he made 8,282 records, and received 2,411 records of arable plants from Luke Gaskell. He completed his digitization of Berwickshire Grammar School Herbarium and researched the history of a folio of grasses c. 1900. His computerisation of Captain F.M. Norman's herbarium catalogue is about one third done, but only 20% relates to v.c. 81 and it has few records of interest as the scarce species are from well known populations.

David Welch is recorder for v.cc. 91 & 93 (**Kincardine and North Aberdeen**) as well as *Myosotis* referee. He writes: 'another busy year, and in some weeks I seemed to be working full time as a v.c. recorder. Besides the Trump Inquiry and the mass consulting on statements, precognitions and rebuttals, there was the Threatened Plants recording, site visits assessing routes for the Aberdeen by-pass, meetings to revise the county SINS (sites of interest to natural science!), computerisation of records on my v.c. 91 cards, and site condition monitoring of the Hill of Towanreef SAC. With seven rare species there and most having multiple populations, so many photos and pro-formas went to Jim McIntosh that he is still processing, en route to SNH. A highlight was refinding *Carex spicata* on

a steep brae at St Cyrus, perhaps its furthest north extant UK colony, and realising that what the late Noel Pritchard wrote on his specimen in ABD was not crack, but track.

‘There is need for a simple way of correcting gaps in the VCCC. For instance, because we (or at least some recorders) never saw proofs or the final layout, we have gaps for abundant species like *Betula pubescens* (I and my neighbours recorded as the species, but only the ssp. went into VCCC). I simply don’t want to put in a new record for these, which would fill up space unnecessarily.

‘Having plunged into a series of meetings to revise the boundaries of the SINS with reports coming in from NESBREC surveyors and then pundits assessing, I shudder to think of another set of meetings to decide what should and shouldn’t be on the list. Only a few months ago I was having to defend the alpine hawkweeds against some conservationists/planners who thought they were only species subdivisions of interest to a handful of taxonomists.’

Stephen Bungard (**North Eubodes**, v.c. 104) has recently created a web site for his Flora of Raasay and Rona, which has been visited by over 550 different people so far. He also has a botanical blog which has received over 2,100 visits. He says: ‘Putting this material on the web has been a great boon in terms of people contacting me with interesting records and, in one case, a guy who reads meters all over Skye, an offer to look out for things for me.’ (Readers can find these from the ‘Recorders’ page of the BSBI web site.) Stephen has responded to the end of the date class by spending several days camping on Canna and Muck in 2009 to ensure reasonable coverage of the Small Isles.

The **Easter Ross** (v.c. 106) recorders, Barbara and Brian Ballinger, say: ‘this year we were finally persuaded to organise a BSBI field meeting to the Fearn Peninsula and it seemed to go well. We managed to fit more people into our little Easter Ross flat for a cup of tea than we thought was possible. We have also given talks and arranged outings for various local natural history groups over the year.

‘We have continued to try to fill in the squares as the 2010 deadline approaches. Slightly to our surprise, we are still managing to get up remote mountains to visit the more distant parts of the vice-county. There have been gains and losses during the year - the most notable loss was *Oxytropis halleri* from its Black Isle site, where it could no longer be found on two occasions.

‘We have updated our Rare Plants Register for the website and also produced a printed version. We are very keen to receive updates, corrections and additions to this document, even if they seem relatively mundane. We have been making slow progress with the checklist.

‘Plans for next year include starting work on the new date class and producing a first draft of a checklist. We will see if we can get to our new threatened plant survey sites, which are likely to include *Sibbaldia* and *Polystichum lonchitis* and will be some way from the road.’

Ken Butler reports that all the post-2000 records for v.cc. 107 (**East Sutherland**) and 109 (**Caithness**) are now in Mapmate. He says that after 8 years of post-2000 recording the coverage is patchy with several remote hectads not visited at all. Ken sits on the local Biodiversity Group and on the Plantlife management committee for the local reserve.

In 2008 he ran a Field Meeting in Thurso which was attended by 15 members and 2 non-members at various times over the four days. Some 1,384 records were made including 5 new county records to add to the list of new species in 2008: *Circaea x intermedia*, *Euphorbia cyparissias*, *Glyceria maxima*, *Hammarbya paludosa*, *Lythrum portula*, *Poa compressa*, *Rosa x dumalis* and *Sedum forsterianum*. But last year, due to a foot problem, he was unable to do much fieldwork. His book ‘The Wild Flowers of the North Highlands of Scotland’ was published in August 2009.

The annual report from Paul Smith and Richard Pankhurst in the **Outer Hebrides** (v.c. 110) reads: ‘We continued with tetrad recording in 2008, gathering together many of the usual visitors to have a blitz on one part of the islands in July, which proved fruitful. Tetrad recording is still throwing up lots of interesting species in areas which are at best underworked and many probably unvisited. Even tetrads in honeypot areas have turned up new species, since we have tried for good coverage of the habitats, not restricting ourselves to the well-known sites. For example *Potamogeton praelongus* was found in Lewis in a loch very near Berie, the first record for v.c. 110 outside the Uists. A *Taraxacum* expedition to the Uists in May produced many records of familiar taxa but, even so, there were 6 new first county records among them.

‘Like the Ballingers in v.c. 106 we contribute records of other organisms from remote bits of the islands as we go, in 2008 including dragonflies, Lepidoptera, bees, amphibians, galls

and fungi. Some of this is repaid in kind with reports of plants, and the network of contacts seems to work well. We started off on TPP recording, but were not in the right parts of the islands at the right time of year to cover all the selected sites.

‘There are not many well-defined “sites” in the Outer Hebrides, but small islands are well-defined, and have generally small but sometimes interesting florulas. As a result of some visits to small islands in 2008, Paul has drafted a site flora for one, utilising an earlier article on a visit from the 1970s.’

John Crossley (**Orkney**, v.c. 111) says that ‘in my first year as county recorder I started a programme of events for local BSBI members, not attempted here before. Five or six of us participated in three field meetings. Herb-rich heath on the island of Westray yielded a second county record for *Viola canina* – probably we have been missing this in similar habitats before. The highlight of heavy and treacherous going amongst crags in Hoy was a new site for *Draba incana*. And a very late season outing had us getting to grips with identifying conifers – normally we ignore these trees so this was an unusual and very interesting session.

‘In July I led a ‘Getting to know wildflowers’ session for beginners. I decided to stick quite rigorously to keys, in the belief that the experience of identifying an unknown plant from scratch by this method is an eye-opener, and fun, and this proved very successful, although I myself found the process of working through keys from beginning to end quite a challenge!

‘Orkney is a well-recorded county, with much of it already covered to tetrad level, but there is much other to do, and new discoveries still waiting. For instance *Parentucellia viscosa* in unpromising wet grassland was a new county record this year: my guess is that it had been there for a long time. Work has started on a County Rare Species Register; there are many old records to track down and verify, which will take several years. Another thing is that, in general, recording to sub-species level has been very patchy; it provides an interesting challenge to up one’s skills a notch by recording to this level as much as possible and achieve a more complete knowledge of the local flora.

‘The Local Authority has been commissioning Phase 1 surveys of ‘Sites of Local Conservation Interest’ over the last few years for its update of the Local Plan. I have done many of these, and made site lists of plants whenever possible. This

year I did the uninhabited islands of Scapa Flow – four of them. *Ophioglossum azoricum* turned up on two islands. It can be more difficult than I had realised to distinguish this species from diminutive forms of *O. vulgatum*: Mike Wilcox has provided invaluable guidance, based on shape of the leaf cells.’

Ireland

Paul Green (Co. **Waterford**, v.c. H6) reports that the Waterford and Cork Botany Group have had a number of meetings to record in 1-km squares with no records as well as neighbouring counties. They had a Mapmate workshop at the National Biodiversity Data Centre in Waterford. Results of meetings - Irish Spurge was found on the rock ledge of Coum Eag in the Comeragh Mountains, first time it has been found at high altitude in the county. *Stellaria pallida* turned up on the sandy areas at Ferry Point overlooking Youghal in Co. Cork making it the most westerly site in Ireland.

Sylvia Reynolds reports that her main activity in **Limerick** (v.c. H8) in 2009 was to continue writing species accounts for a proposed Flora of the county, while much of the season’s field work was directed towards answering queries as they arose from the writing. Field work included trying to sort out *Viola* taxa, checking whether *Quercus cerris* was suckering or self-sown, having the complexities of *Dactylorhiza* explained by Ian Denholm and Richard Bateman, updating some century-old records of rare plants, e.g. *Valerianella locusta* and *Vulpia myuros*, and doing a few TPP surveys. New sites were also explored, e.g. good grassland with outcropping limestone beside a ring fort near Lough Gur, the top of a volcanic hill. Aliens were not entirely neglected, with the finding of *Polypogon viridis* at Foynes Port and in Limerick City. Many records were made in 2009 and a list of new or updated hectad records was sent to the BSBI for the web maps. Most Limerick records are still on paper and have not been computerized.

Paul Green was invited to a meeting with the **Wexford** (v.c. H12) Naturalists Field Club in May to start working on a Flora of the county. Field meetings have been arranged to teach members the plants and recording cards were sent out to all members. 2008 had been a very good year for *Lotus subbiflorus* with some populations 1000’s strong. *Lemma minuta* has been having a population explosion in the county and is turning up on every pond.

Referees

Geoffrey Kitchener (**Epilobium**) received 13 batches of material for identification in 2008 and also a series of specimens from WOS and NMW, the latter including a scarce hybrid, *E. x waterfallii*, from v.c. 44. He recorded *Epilobium* hybrids in the field in v.cc. 3, 15, 16, 17, 28, 33, 62, 66, 69, 70 and conducted experimental cultivation of natural F2 *E. x palatinum* plants. Identifications made and records received were incorporated into the *Epilobium* hybrid database.

Geoffrey is also referee for **Rumex**, and in this capacity had just one identification query to deal with plus the specimens from WOS and NMW. The latter included *R. x abortivus* material collected in 1911 which, with a similar gathering from BM, was identified as involving *R. obtusifolius* ssp. *transiens* as parent, the first British record for this combination. He recorded *Rumex* hybrids in the field in v.cc. 15, 16, 28, 65, 66, 69, 70 and conducted germination experiments on seeds from cultivated *R. x akeroydii*. A backcross of *R. x ruhmeri* was also identified, with parentage from two different formae of *R. sanguineus*.

Allen Coombes (**Quercus**), of the Sir Harold Hillier Gardens, wrote: 'I am afraid that as I shall be moving to a position in Mexico at the beginning of May 2009 I need to offer my resignation as referee for *Quercus*. I apologise for the inconvenience but I think it will not be practical for me to continue on this basis. With best wishes, Allen.'

Herbaria

At Manchester Museum (**MANCH**) Leander Wolstenholme reports that 'for the past five years we have been counting and cataloguing all specimens, noting down the species name, the donor of the specimen, its location in the museum and how many of each species we have. We have now catalogued of over 80% of the collection in this way and as a result have revised our estimate of the size of the collection. We now think it contains about 620,000 specimens. This is divided up as follows:

- British & Irish vascular plants (85,000)
- European vascular plants (185,000)
- Worldwide vascular plants (150,000)
- British & Irish mosses (39,000)
- Worldwide mosses (30,000)

- Liverworts (25,000)
- Fungi (9,000)
- British & Irish lichens (7,500)
- Worldwide lichens (4,000)
- Algae (15,000)
- Charophytes (2,500)
- Cultivated flowering plants (40,000)
- Exsiccatae (125 volumes)
- Economic botany (3,000)
- Fruits and seeds (1,500)
- Timber (1,000)
- Microscope slides (9,000)
- Unsorted specimens (15,000)

'The collections can be searched using this link: <http://emu.man.ac.uk/mmcustom/BotQuery.php>

'We have set up a herbarium blog which you can find at <http://herbologymanchester.wordpress.com/>. During this process we found two specimens collected by Charles Darwin that we didn't know we had. Also, as a curiosity, we had a hermit living in our tower.'

Tim Rich sends the following news from the **Welsh National Herbarium** (NMW): 'Two documentation projects have been finished, and it is hoped to begin to make parts of the NMW data available on-line by Easter on the museum's website. Tom Humphrey completed documenting John Richard's national *Taraxacum* collection in March, and Bert Reid has been through and checked our data against his database and the corrections now need incorporating into our databases before the data are released. The Biodiversity Action Plan priority species have now all been documented by Catalane Angele, and data are available on request to T. Rich.

'DNA bar-coding of the Welsh flora is progressing well, with the bulk of the 3800 specimens required coming from our herbarium. Selecting good quality material which is correctly identified is essential for the success of the project, and it has been found easier to systemically extract DNA from well-collected specimens, some over 100 years old, than from fresh material. Whilst the bulk of the samples have been selected from material collected in v.c. 35 (Trevor Evans), v.c. 44 (Flora of Carms.) and v.c. 46 (Arthur Chater), quite a range of other collections from throughout Wales have been used. Very occasionally we've had to stray in England or Scotland to get good material.

‘Another project completed was a botanical audit of the museum’s eight sites. A total of 456 vascular plants have been recorded on our sites to date, representing 26% of the Welsh flora (not necessarily the most interesting 26%, but it did include some nice species like *Groenlandia densa*). This should provide a baseline for managing our sites effectively and for monitoring changes in the future.

‘George Hutchinson will be retiring in spring 2010 after 20 or so years working in the herbarium. The herbarium is now stuffed with Carmarthenshire plants, providing useful, modern, well-documented material and George’s detailed knowledge and care with the collections will be impossible to replace.

‘I did virtually no field work this summer after snapping my Achilles tendon in May. Despite being on crutches, I refound the Glamorganshire Hawkweed (not seen knowingly since 1906). Our *Sorbus* monograph is now being prepared for publication, and hopefully should be printed for Easter.’

From the **Natural History Museum**, Mark Spencer reports ‘The British and Irish Herbarium has recently been moved into new facilities in the Darwin Centre at the Natural History Museum and are once again fully open for business. The collections are now housed in a store with a temperature and humidity controlled environment. The new facilities are also considerably more accessible than previously.

‘The herbarium and associated library provides a valuable resource for British and Irish botanists. Recent examples of where the collections have proved useful include:

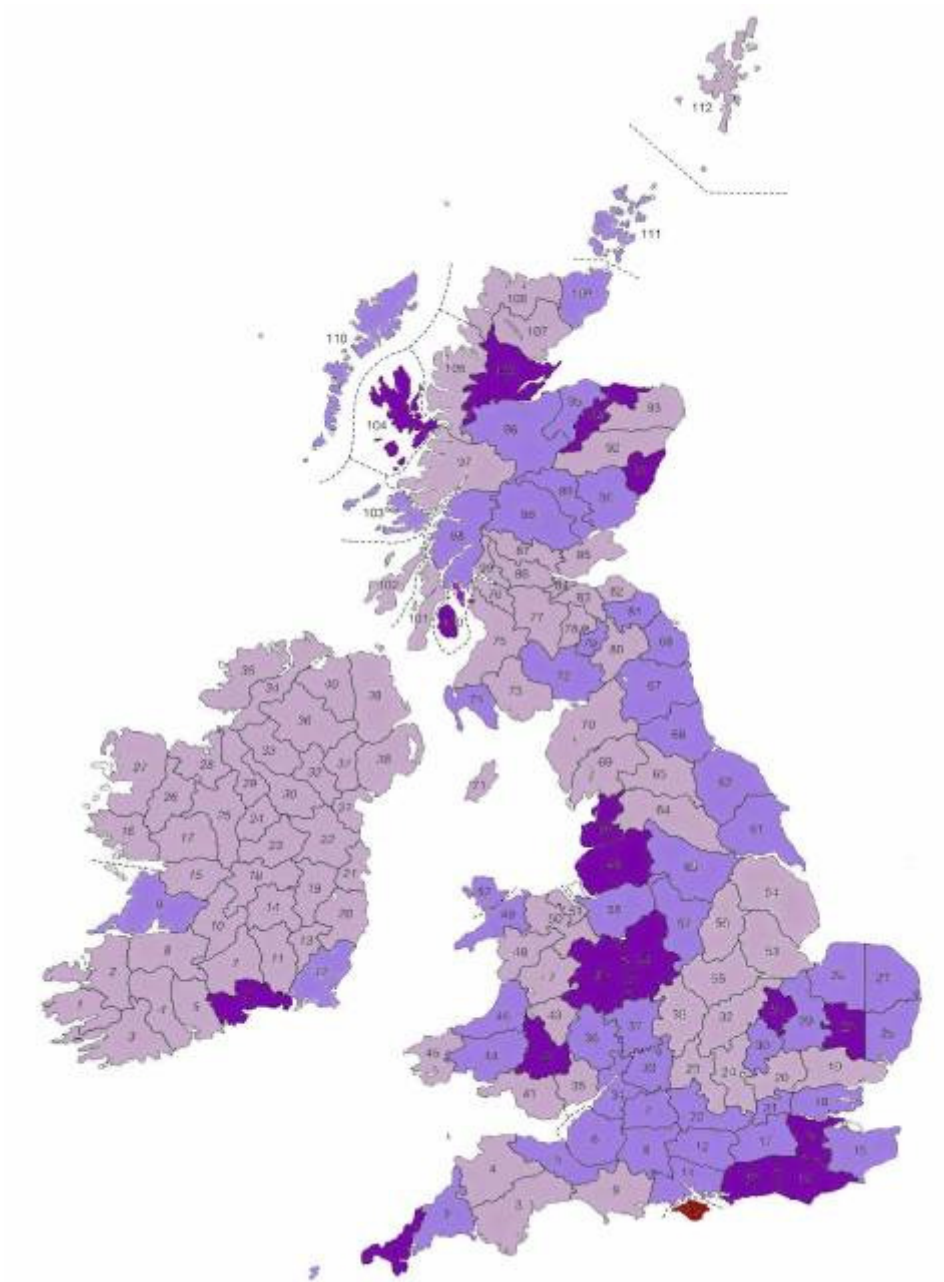
- ‘Clarification of the location of a historic record of *Artemisia scoparia* mentioned by D.H. Kent in his supplement to *The Historical Flora of Middlesex* (2000). Three specimens held in the collection show that the plant was collected by W.T. Thistleton-Dyer in 1865 and 1870 on the site of the former International of 1862, or Great London Exposition, the site is now occupied by Imperial College, the Science Museum and the Natural History Museum.

- ‘Databasing the herbarium’s collection of *Caucalis platyphyllos* (small bur-parsley) added a further 37 localities to the 123 records already held (excluding those with more location information or only resolved to hectad) by the BSBI.
- ‘The potential value of for phenological studies is currently being investigated. The Museum holds large quantities of ‘historic’ (i.e. pre-1950) specimens that are localized and accurately dated. Preliminary studies of approximately 30 widespread British and Irish taxa suggest that these data may be compatible with more recent field observations. A paper on the effect of seasonal temperature changes on the flowering a rare British orchid has recently been submitted for review.

‘If you have not visited the herbarium before but would like to take a look or discuss some ideas please contact Mark Spencer by phone (020 7942 5787) or e-mail (m.spencer@nhm.ac.uk).

‘The British Herbarium is now located on the Lower Ground floor of the Darwin Centre next door to the Angela Marmont Centre for UK Biodiversity. The Centre is for anyone with an interest in UK natural history. It will be a hub for amateur naturalists, enthusiasts and other societies to study wildlife. Visitors can investigate all aspects of the natural world, from animals, insects and plants to fossils and minerals. More information about the Centre can be found at: <http://www.nhm.ac.uk/nature-online/british-natural-history/uk-biodiversity-portal/the-marmont-centre/index.html>

‘The Centre also hosts the London Natural History Society’s library, see: <http://www.lnhs.org.uk/library.htm>.’



Coverage achieved so far in Date Class 4 (2000-2009) compared with DC3 (1987-1999): red: over 200%; dark purple: over 100%; blue: over 50%; pale purple: less than 50%.