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Nature in Avon

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Bristol Naturalists' Society

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Editorial

“There is a tide in the affairs of men, which, taken at the flood, leads on to fortune” and the converse is true too. The natural world, and the world of men, is cyclic, as Shakespeare and the mediaeval world understood, a vast fantastic ediface of cycles of varying lengths and kinds, all interlinked within the ecosphere. The idea that anyone could end the business cycle, and that “sustainable growth” could last for ever is hubris. It can’t, and won’t.

Ashton Marsh and Bristol’s green belt is under threat, as indeed is much of our local countryside, as a result of absurd and unsustainable plans for unnecessary urban expansion being imposed by central government on local authorities. Sharon Dallin’s plea is heartfelt, and I make no apology for printing it.

Emma Davis’ study of the value to birds of the Downs’ clumps of vegetation is a fine example of the way in which a simple study, carefully interpreted, can shed significant light on an important controversy.

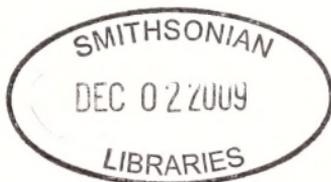
Personal circumstances prevented Clive Lovatt from completing his Bristol Botany Report for 2007 in time for publication last year, so this issue has the Botany Report for two successive years. It also marks the death of two prominent local botanists, Pat Hill-Cottingham, and Margaret Rogers.

I am delighted to be able to print an intriguing note about research into native wildlife from Clifton Zoo, and a detailed article on Lapwings in the Gordano Valley.

As Editor I find myself irritated by a creeping modern habit of not giving capital letters to the names of plants and animals. Apparently this is now the vogue in academic circles, and I regret it deeply. There is a huge difference between the report of a little owl or of a Little Owl, or between a grey squirrel and a Grey Squirrel, and it carries the vague and insulting suggestion that a Raven is less important than, say, Bristol City or Richard Bland. Capitals help to breed respect, and wildlife needs that respect. Contributors take note.

Disclaimer. In a world where the precautionary principle is widely at work, and has the potential to snuff all new ideas out at birth, I am duty bound to make it clear that where views are expressed in this journal they are those of the authors concerned, and cannot be held to be those of the Society itself. Comments, criticisms, and articles for next year are welcome.

Richard Bland
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Weather report for 2008

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The BNS has been given privately printed weather records for the 19th century by SM Taylor which has enabled me to take the temperature averages back to 1853. This has made minor changes to the long-term averages previously quoted in the annual weather record. 2008 was the coldest year since 1996, and the fourth wettest since 1853. It began with a warm winter, which was followed by nine months with below normal temperature and, from May to September, with above average rainfall, despite which 228 days (61%) had no rain at all. February broke records for sunshine, and August for cloud.

The overall mean maximum temperature was 13.7C°, just a tenth of a degree warmer than the average since 1853 of 13.6C°. Overall rainfall was 1150mm compared with the average since 1853 of 894mm. It was only beaten by 1862, 1924 and 2000.

Year	1999	00	01	02	03	04	05	06	07	2008
Avg Max C°	14.6	14.1	13.8	14.3	15.0	14.3	14.4	14.7	14.5	13.7
Ten year avg C°	13.8	13.8	13.8	14.0	14.2	14.3	14.2	14.4	14.4	14.3
Rainfall mm	1106	1250	860	1178	758	951	896	955	1107	1150
Ten year avg mm	966	1003	995	1010	978	970	954	973	997	1005

Table 1 Decadal average mean maximum temperature and rainfall

Seasons. The average for the **winter** (Dec.-Feb.) was 9.1C°, the warmest since 1998/99. Rainfall at 118mm was well above average, and just less than the previous winter. There were 32 frost nights (October to April), the last on March 5th. There were five nights with cold enough to create ice, and one day with snow lying. The coldest spell was from Feb. 14th to Jan. 19th.

Spring. (March-May) Temperature was 13.3C°, close to the long term average of 12.9C°. Rainfall was a third higher than the average.

Summer. (June-Aug.) at 19.4C°, a little below average, was identical to 2007. Rainfall was 40% above average and greater than in 2007. August was the wettest since 1997. It was a second disastrous breeding season for many birds.

Autumn. (Sept.-Nov.) at 13.6C° was the coldest since 1993. Rainfall in September was the wettest since 2000, but October and November were near normal.

Seasonal Comparisons. To put the 2008 seasonal average temperatures into perspective, Table 2 shows the seasonal temperature extremes, with their year, and the average since 1853.

	2008	Min	Max	Avg
Winter	9.1	1917 2.5	1920 10.6	7.5
Spring	13.3	1887 10.4	1893 16.6	12.9
Summer	19.4	1883 18.0	1976 23.9	20.2
Autumn	13.6	1915 10.6	1959 16.8	13.9
Annual	13.7	1892 12.1	1921 15.6	13.6

Table 2 2008 season average temperature compared with minimum, maximum and average since 1853.

	2008	Min	Max	Avg
Winter	118	1964 21	1995 154	78
Spring	94	1893 17	1981 107	60
Summer	101	1995 11	1879 140	73
Autumn	102	1978 26	1935 173	87
Annual	1150	1864 590	1882 1253	894

Table 3 Average monthly rainfall in mm for each season in 2008 compared with maximum, minimum and average since 1853 .

Monthly deviation from the average since 1853.

Temperature. Three months, Jan, Feb and May were warmer, and nine were colder. Only January lay outside the standard deviation.

Rainfall. Eight months were wetter than the long term average, four drier. Six months, January, March, May, July, August, September, were outside the standard deviation.

	Temp	Rain		Temp	Rain
Jan	36	95	Jul	-3	61
Feb	23	-32	Aug	-6	67
Mar	-3	97	Sep	-4	65
Apr	-3	11	Oct	-3	-14
May	10	65	Nov	-2	8
Jun	-3	-27	Dec	-18	-41

Table 4 Monthly percentage deviation from norm

Monthly summary 2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Temp C°	9.8	9.3	9.7	12.3	17.9	18.6	20.3	19.2	17.2	13.7	10.0	6.5	13.7
Rain mm	164	42	118	63	102	45	116	142	130	82	94	52	1150

Table 4 2008 Monthly average temperatures and total rainfall

January. 9.8C°, the warmest since 1990, and the 8th warmest since 1853. Rainfall 164mm, the wettest since 1995, and the 4th wettest since 1853. Three frost nights. The whole month was dominated by W or SW winds, and a constant series of depressions.

February. 9.3C°, the warmest since 2002, rainfall 42mm. Sunshine was the most unusual feature of the month, averaging 4.8 hours a day, double the normal average. 12 frost nights, three cold enough to cover ponds in ice. The first two weeks were relatively warm with SW winds, even though high pressure brought clear skies and frost nights. From 13th winds turned easterly and temperatures fell, but rose again on 22nd when S winds between high pressure in Europe and low in the Atlantic.

March. 9.7C°, below average and, unusually, colder than January. Rainfall 118mm, double the average, and the 14th wettest since 1853. Two frost nights. There was a considerable storm from 9th to 12th. From 16th winds turned northerly and temperatures fell, but westerlies took over from 27th.

April. 12.3C°, just below the long-term average, rainfall 63mm. Six frost nights. Began with light westerlies but from 15th easterlies between low pressure in Spain and high in Iceland, which held sway until 22nd, when more normal westerlies and low pressure came in, and by 27th the temperature reached 18C°.

May. 17.9C°, the warmest May since 1992. Rainfall 102mm, the third wet May in a row. Easterly winds dominated from the start, and from 6th to 14th the temperature was always over 20C, reaching 25C on 11th, and making that week the second hottest of the year. High pressure over the Baltic or the UK was in control, and until 22nd the month was almost completely dry, but between 25 and 30th 80mm of rain fell and on 26th the temperature fell to 12C°.

June. 18.6C, below the long-term average, Rainfall 45mm. There was a warm spell from 8th-11th, but from 17th a succession of low pressure systems and westerly winds saw very dull days, though very little rain.

July. 20.3C°, below average, and rainfall 116m, a second wet July. 32 mm fell on 8th, one of the wettest days of the year, and then virtually none from 12th to 27th. There was a brief touch of summer from 22nd to 31st with temperatures over 20C°, reaching 28C° on 28th, the hottest day of the year. This was associated with SE winds and high pressure.

August. 19.2C°, the coldest since 1994, and rainfall was 140mm, the wettest since 1997. It was a spectacularly dull month with an average of only 3.5 hours sunshine a day, less than February. Winds were generally W or SW round low pressure systems.

September. 17.2C°, rainfall 130mm, the wettest since 2000, and it all fell in the first 15 days, to the despair of farmers. The first half was dominated by westerlies and low pressure, the second by high pressure and easterly winds.

October 13.7C°, just above average, rainfall 82mm, and three frost nights at the end. Dominated by W winds, with low pressure to N and high to south. Almost dry until 17th. Temperature fell sharply at the end of the month as N winds set in round a high in the Atlantic.

November. 10.0C°, rainfall 94mm, both close to the average. Nov 9th saw 34mm of rain, the second wettest day of the year. One frost night. W winds and low pressure took over from 6th, and dominated until 18th when they moved to NW between a low in the Baltic and high pressure in the Atlantic.

December. 6.5C°, coldest since 1996, rainfall 52mm, 17 frost nights. For the first three weeks winds were northerly, and then from 24th set in from the east. On 31st the maximum temperature fell to -1C, the lowest temperature of the year, and since January 1997

Weather Extremes.

The table below gives figures for extreme annual events over the past decade, enabling the extreme events of 2008 to be put in perspective. There seems to be no pattern in these figures, except for the number of days without any sun to increase from around 50 to around 100. It is also interesting that, contrary to common perception, two days in every three have no rain at all.

		99	00	01	02	03	04	05	06	07	08	
Hottest	c	30	30	30	26	32	28	30	35	27	28	Jy 28
Coldest	c	3	3	2	0	1	3	0	0	2	-1	Dec 31
Wettest	mm	28	55	55	60	45	45	47	39	40	35	Jan 11
Sunniest	hr	14	15.5	14	14.9	15.1	13.9	14.8	14.7	14.1	14.9	Ju9
Longest dry	days							14	22	24	16	Fe6-21
Longest wet	-days							7	11	8	8	Jan13-20
Frost	days	29	28	46	14	49	30	32	33	25	44	
Snow	days		4	0	0	0	6	2	2	2	1	
Storms	days							1	3	6	4	
+ 25C	days	20	12	15	3	22	13	14	27	1	7	
- 5C -	days	9	13	34	17	25	15	26	39	18	14	
+10hr sun	days	41	32	45	30	42	19	38	36	45	29	
No sun	days	44	51	62	78	56	90	89	107	99	95	
No Rain	days					263	231	248	234	238	228	

Phenology 2008

RLBland

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2008 began with a warm January and February, but from June to October temperatures were consistently below average. January, March, May, and July to September were also exceptionally wet. The records in this report are based on the evidence recorded every week of the year on a standard 2km walk through ST5673, half of it walking north along the edge of the Avon Gorge, the second half walking South through suburban Clifton. Monitoring, to be of value, must be done consistently and for a long period. Cycles and trends rarely become apparent in less than ten years. I have therefore this year given in outline the detail of the evidence on which the analysis is based so that any other observer, at any other time or place, could produce comparable results. Gilbert White began the formal study of Phenology, and listed the events he noted and their dates.

Spring events.

(In the charts that follow the dates on the Y axis are give in Julian days, ie days after January 1st. It helps to remember that April 1st is Day 90, June 30th Day 181, Nov. 1st Day 305).

Chart 1 shows the average date of 18 species coming into flower. Their individual average first date varies between day 15 and day 143, and all have been well recorded since 2000. The chart shows that 2008, which had the warmest January temperature, was the earliest spring, and 2006, which had a very cold March, was the latest. The range is 26 days. The events, all based on monitoring the Downs, are listed in the appendix.

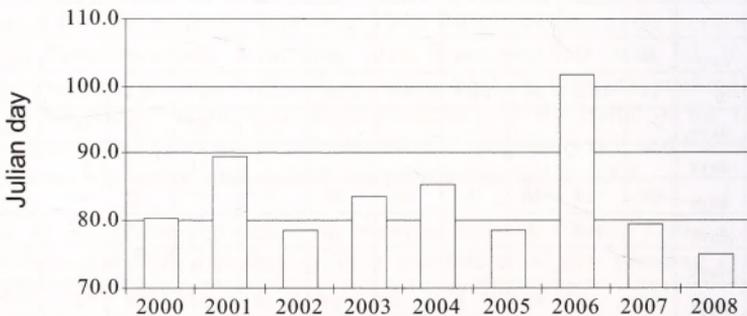


Chart 1 Average date of 18 spring events, 2000-2008.

Chart 2 shows the relationship of these events to the January temperature. Roughly speaking a one degree C change in temperature causes an eight day change in the average date of events. Because of the range of first flowering dates of the 18 species that have been averaged any correlation is going to be imprecise, but this sort of relationship between temperature change and the timing of events is typical.

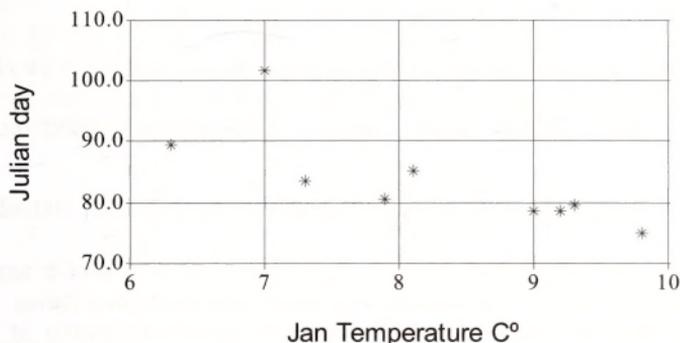


Chart 2. Relationship of January temperature to average date of spring events 2000-2008.

Plant first flowering dates.

During 2008 first flowering dates in the whole Bristol region were obtained for 405 species, bringing the total of first dates obtained in two years to 499. 38 were new species, and as many as 97 were earlier dates than obtained in 2007. The objective of this exercise is to produce both earliest and average first flowering dates for all species in the region, as an essential measuring rod for the impact of future climate change.

Autumn events.

The phenology of autumn events is much less well studied than that of spring, as a recent article in the British Wildlife magazine makes clear. However both are affected by climate change.

Leaf fall

Chart 3 shows the average date when 13 native tree species, listed in the appendix, became bare on the Downs between 2002 and 2008. In 2008 the average date was Nov 7th (day 311), virtually the same as 2007 despite a colder autumn. There is a spread of 20 days in this small sample, though the autumn of 2005 was clearly exceptional.

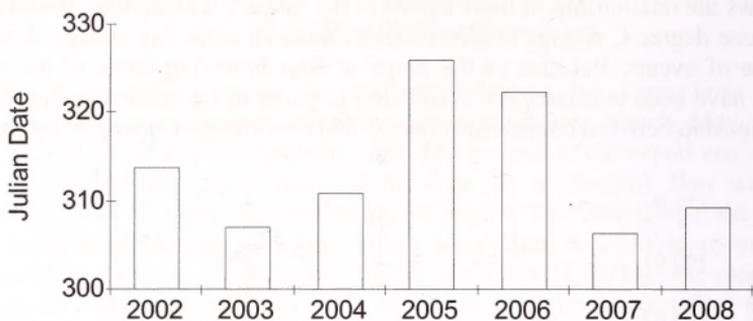


Chart 3. The average date when 13 tree species became bare, 2002-2008

Chart 4 shows the relationship between these dates and the October temperature. Unsurprisingly the warmer the autumn, the longer trees keep their leaves. The chart makes clear that the relationship between temperature and timing of events is similar to that in the spring. One degree C temperature change makes about eight days difference.

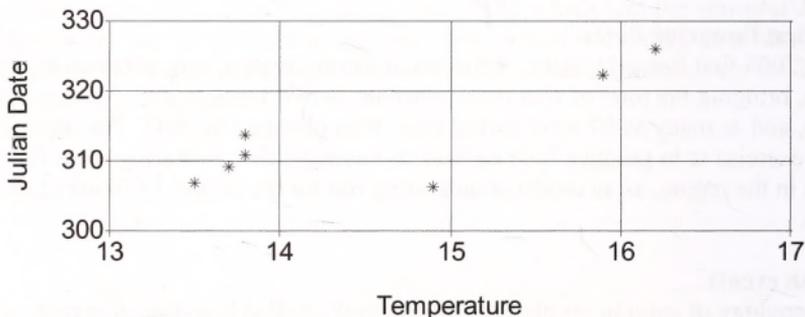


Chart 4. Relationship between October temperature and the average date trees becoming bare, 2001-2008. See appendix for species.

The active life of trees.

By comparing the average date of bud burst with the average date of becoming bare one can calculate the average active life of each tree species. This will affect the overall ring width for each year, and thus the growth rate in girth of a tree, and also the flower buds laid down for the following year. The quantity of rain and the temperature during the growing season, as well as its length, will also affect both the growth rate and the physiology of a tree. Though most trees manage to flower every year, some do not, and the annual harvest varies every year in every species,

in part dependent upon the weather in the course of the year, and in part on the amount of blossom produced, which itself will be controlled by the weather the previous autumn. Any change in climate will affect different species in different ways, and again this information, derived from monitoring the Downs, gives a basis for measuring future change. In 2008 the average active life of eleven native species was 217 days, very similar to the 2007 figure, as both years had warm Januaries and cold summers. The variation between the six years, a small sample, is 26 days.

Chart 5 shows the figures for active life since 2003 and Chart 6 the correlation for these species between average active life in days and the average of January and October temperatures.

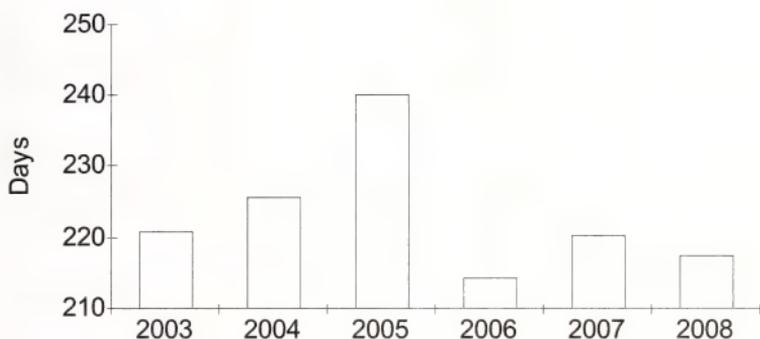


Chart 5. Active life of 11 native species 2003-2008

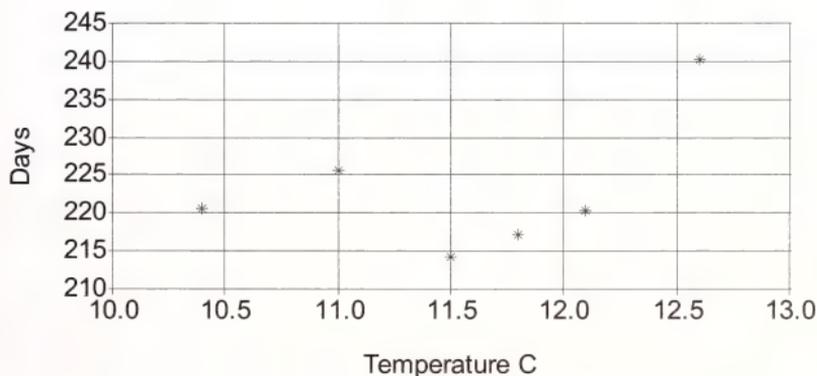


Chart 6 Average active tree life for 11 species compared with the average of January and October temperature. See appendix for species.

Flowering plant survival

Since 2000 a survey of the Downs on New Years Day has found 44 species in flower, though the maximum in any year has been 25. In 2008 the total was 22, four of them new. Four species (Adria Bellflower, Daisy, Gorse and Ivy-leaved Toadflax, have been found every year and three (Groundsel, Trailing Bellflower, and Yellow Fumitory) on eight of the nine years. 18 species have only been seen once. There seems to be a strong element of chance involved in whether a species survives or not, as there is no clear correlation between the number of species and the temperature of the preceding period. The table lists the species and the number of years in which they were found.

Species	Years	Species	Years	Species	Years
Adria Bellflower	9	Shepherds Purse	4	Chickweed	1
Daisy	9	Small Scabius	4	Clary	1
Gorse	9	Oxford Ragwort	3	Golden Rod	1
Ivy-leaved Toadflax	9	Wood Avens	3	Hairy Bittercress	1
Groundsel	8	Alexanders	2	Hawkweed	1
Trailing Bellflower	8	Feverfew	2	Hazel	1
Yellow Fumitory	8	Herb Robert	2	Hedge Mustard	1
Red Valerian	7	Holly	2	Hogweed	1
Smooth Sowthistle	7	Mexican fleabane	2	Nettle	1
Ivy	6	Ragwort	2	Nipplewort	1
Dandelion	5	Yarrow	2	Ox-eye daisy	1
Alkanet	4	Barren Strawberry	1	Snapdragon	1
Blackberry	4	Bristly Oxtongue	1	Thyme	1
Petty Spurge	4	Canadian Fleabane	1	Wallflower	1
Red Nettle	4	Celandine	1		

Dormancy

In most winters almost all species cease flowering at some point, but a few survive. Records from the last eight winters show that there are only two species that have been in flower continuously from the start of October to the end of March in every winter, and they are Gorse and Daisy. Chart 7 shows the relationship between the number of species that never became dormant and the winter temperature. Both 2006-07 and 2007-08 were very warm, with winter temperatures of over 9C°, and a total of 10 species survived continuously in 2007/08, including Mexican Fleabane, Green Alkanet, and Smooth Sowthistle. The 2008/09 winter was the coldest since 1995/96, and included ten days of frozen ground and snow cover, and this ensured that only Gorse, Daisy and Groundsel managed to survive.

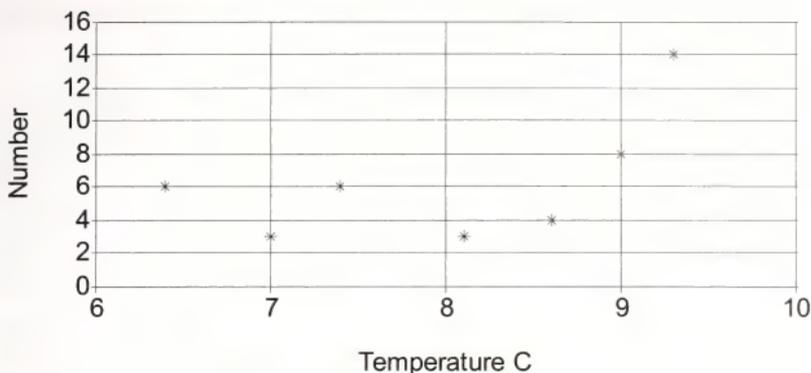


Chart 7 The relationship of the winter temperature (Dec-Feb) to the number of species in flower throughout the winter.

The frequency of harsh winters.

Since 1860 there have been nineteen harsh winters with an average of below 6C°, and 24 warm winters with an average of over 9.0C°. The pattern is interesting; in the fifty years between 1860 and 1910 there were only three warm winters, and 13 harsh ones; 1910-1960 had twelve warm winters, and four harsh ones (1917, 1929, 1940 and 1947,) and in the past fifty years there have been nine warm and two harsh (1963 and 1979). The thirty year average winter (Dec-Feb) temperature climbed from 1890 to 1950, then dropped a little, and has since almost climbed back to the previous level. From the point of view of being forced into dormancy the temperature of 8.5C° appears to be critical. Should winters become warmer the ability of some species to flower continuously would have an impact on plant populations.

Appendix.

Chart 1, 2. The spring events were the first flower date of these species;-

Hazel	Celandine	Prunus pisardii	Daffodil	Wallflower
Alexanders	Blackthorn	Ash	Laurel	Lilac
Wild Cherry	Horse Chestnut	Sycamore	Cow parsley	
Ox-eye	Elder	Dog Rose	Hawthorn	

Leaf Fall Chart 3 The 13 tree species were;-

Whitebeam	Ash	Lime	Beech	Silver Birch	Poplar	Elm
Norway Maple	Oak	Maple	Chestnut	Sycamore	Elder	

Active tree life, Charts 5, 6; The 11 tree species were the same, less Elder and Norway Maple.

Notes on the breeding biology of Northern Lapwing *Vanellus vanellus* and other wader species in the Gordano Valley

Lyndon Roberts

Introduction

This article is based on data that I collected in the Gordano Valley between 1994 and 2005. During this period, I searched Walton and Weston Moors intensively in most years for nests of Lapwing and other wader species, to monitor breeding success. Once located, nests were visited on a regular basis to record progress, culminating with the ringing of the chicks, usually at between one and five days old. The Gordano Valley NNR comprises over 100 hectares of fen peatland, containing a wide variety of semi-natural habitats that includes rhynes, fen meadows, tall fen, scrub and woodland (Robinson, 2005). It lies at the northern and eastern limit of the North Somerset Levels and has long been known as one most productive areas for breeding Lapwing in the old county of Avon.

Breeding Lapwing are concentrated at two sites, Walton Moor and Weston Moor, which together form the bulk of the Gordano Valley National Nature Reserve (NNR) and Site of Special Scientific Interest (SSSI). Historically, good numbers of Lapwing have also nested nearby at Clapton Moor, which (together with parts of Weston Moor) is now managed by Avon Wildlife Trust.

National and regional decline

Surveys in England and Wales showed a 49% decline between 1987 and 1998 (Wilson *et al.* 2001). This decline was most marked in lowland farmland and is generally accepted to be a direct result of changes in farming practices, resulting in lower productivity (Hudson *et al.* 1994). In 2002, the BTO Breeding Waders of Wet Meadows Survey found that, while Lapwing was still the most widespread wader on lowland wet grassland, the species had become scarce in SW England (35% decline between 1982 and 2002) and Wales (69% decline). In the latest review of the status of birds occurring in the UK, Birds of Conservation Concern 3, Lapwing has been moved from the Amber list to the Red list, following a breeding population decline equal to or exceeding 50% in the last 25 years (Eaton *et al.*, 2009).

In Avon, the decline was a staggering 88% (Wilson *et al.* 2001). Recent atlas surveys in Avon show a reduction in the percentage of tetrads where Lapwing has been found in the breeding season, from 17% (in 1988-91) to 5% (2007 onwards) (Richard Bland, pers. comm.)

Recent analysis of BTO ringing (and recovery) data has shown that it is not possible to explain variations in population decline between regions through source-sink dynamics, nest failure rates or adult/first-year survival rates. It is more likely that, after habitat loss, chick mortality is the main determinant of poor Lapwing productivity and population decline (Sharpe *et al.* 2008).

Laying date and clutch size

From 64 nesting attempts in the Gordano Valley where the first egg laying date could be estimated with reasonable certainty, the earliest laying date was 18th March and the latest was the 13th of May. The mean first egg laying date was 31st March (median 26th March), with a standard deviation of 12.9 days. Figure 1 below shows the frequency distribution of first egg laying dates. The overall picture is complicated by replacement clutches. Lapwings are generally single-brooded, but where the first or subsequent clutch is lost, females may lay up to four replacements (Nethersole-Thompson, 1986). Thus, whilst unseasonably cold weather can delay the onset of laying, clutches started after April 15th are likely to be replacement rather than late clutches.

Where clutch size could be reliably determined, 89% of nests contained four eggs and the other 11% contained three eggs, giving an average clutch size of 3.89 (standard deviation 0.32, $n = 71$). This corresponds fairly closely with the average for grassland habitats in England and Wales (average clutch size 3.63, standard deviation 0.7, $n = 2,269$) (Shrubb, 1990). The smaller clutches (containing only three eggs) were started mainly in March (five between 18th and 26th March and one on April 16th), which would suggest that these were not replacement clutches, unless failures occurred very early in the breeding cycle. Equally, however, partial egg losses due to early predation could be the explanation for these smaller clutches.

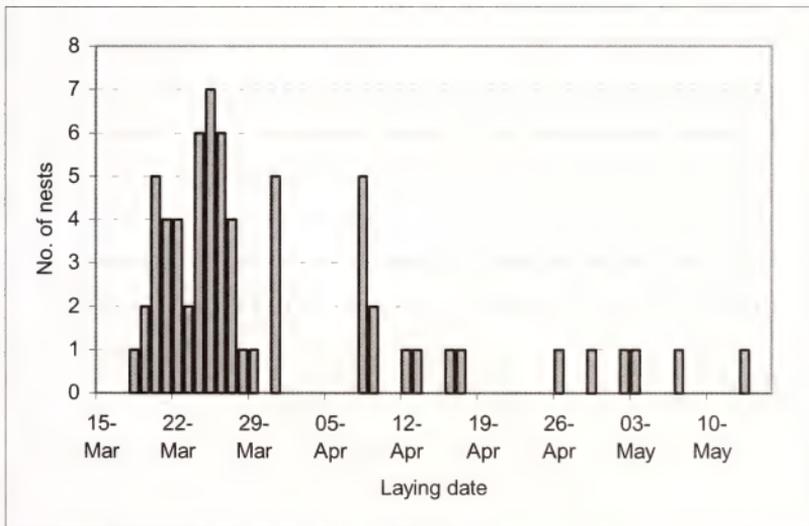


Figure 1 Distribution of laying dates (1st egg laid), 1996 – 2005, $n=64$.

Egg size

Lapwings lay large eggs, relative to body size, compared with most other wader species. A clutch of four eggs represents 40 to 50% of female body weight (Galbraith, 1988a). I measured and weighed eggs from 47 clutches in the Gordano Valley between 1996 and 1999, using digital callipers and scales. This was partly to determine egg density (weight divided by volume) as an indicator of the number of days to hatching (eggs become less dense as the hatching date approaches, due to evaporative losses).

While some random variation in egg size was to be expected, I was surprised to find such a diverse range of egg measurements. For example, out of 173 eggs from 47 clutches, the largest egg was 66% larger (by volume) than the smallest. Egg biometrics obtained are summarised in Table 1 below.

	1996			1997			1999			96-99		
	L	B	V	L	B	V	L	B	V	L	B	V
mean	45.6	33.4	23.2	45.5	32.8	22.4	44.9	32.8	22.1	45.5	33.1	22.8
med	45.6	33.3	23.2	45.1	33.1	22.9	45.2	32.9	22.3	45.3	33.2	22.8
std dev	1.9	0.9	2.0	2.1	1.2	2.2	1.4	0.5	0.9	1.9	1.0	2.0
min	40.0	30.0	16.5	39.1	29.5	16.7	42.5	31.7	20.1	39.1	29.5	16.5
max	50.0	35.2	27.4	50.5	34.6	26.6	46.9	33.6	23.1	50.5	35.2	27.4
eggs			94			61			18			173
clutches			25			16			6			47

Table 1 Lapwing egg biometrics, collected between 1996 and 1999. Length (L) and breadth (B) are measured in millimetres. Egg volume (V) is expressed in millilitres, using the formula: $0.457 \times LB^2$ where L = length and B = breadth (Galbraith, 1988a).

Biometrics obtained from the Gordano Valley population reveal Lapwing eggs that are smaller, lengthwise, than the average, although only marginally so (mean dimensions are given by Cramp and Simmons (1982) as 47 x 33mm). Variability of egg size in the Gordano Valley breeding population is further illustrated in the scatter diagram (Figure 2) below.



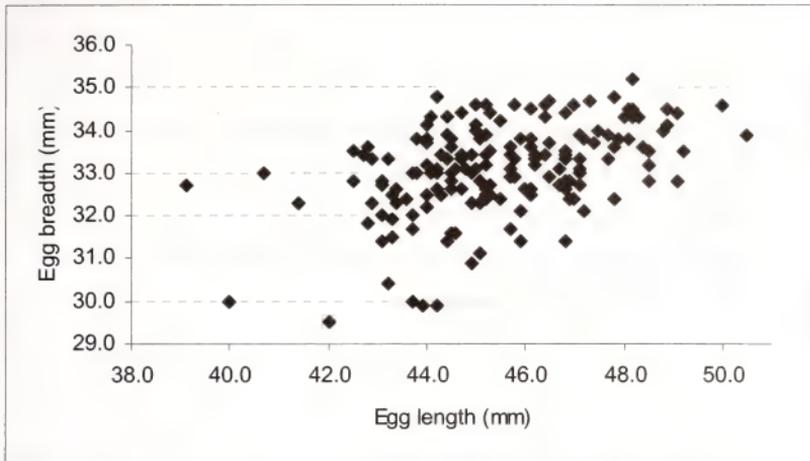


Figure 2 Lapwing egg biometrics (mm), 1996 – 1999, n=173; egg length (horizontal axis) plotted against egg breadth (vertical axis).

From 148 eggs measured in clutches containing four eggs, 87% of the total variance in egg volume was attributable to differences *between* clutches. In contrast, 13% of the variance in egg volume was attributable to differences *within* clutches.

Other studies have also found significant between-clutch variation in egg size and further, that mass and condition of breeding females is positively correlated with egg volume (Galbraith 1988a, Blomquist and Johansson 1995). Also, Gronstol (1997) found that egg volume differed between females of primary and secondary status, secondary females producing eggs with a smaller volume. Eggs of replacement clutches were also found by Gronstol to be markedly smaller than eggs of first clutches.

Measurements obtained in the Gordano Valley from chicks up to five days old are shown in Figure 3 below, which plots weight against bill length. Data from other studies give an average bill length of 10.6mm at hatching, but increases steeply thereafter (Beintema & Visser, 1989). Using bill length as a proxy measurement of elapsed time, Figure 3 demonstrates how chicks of precocial species, such as Lapwing, generally lose weight initially, following hatching, after which weight tends to increase rapidly. Again, this finding is supported by other studies, which have found small (or negative) weight gain in the first 2-3 days after hatching. The likely explanation is that newly-hatched chicks spend a lot of time being brooded and/or being moved to more productive feeding sites (Beintema & Visser, 1989).

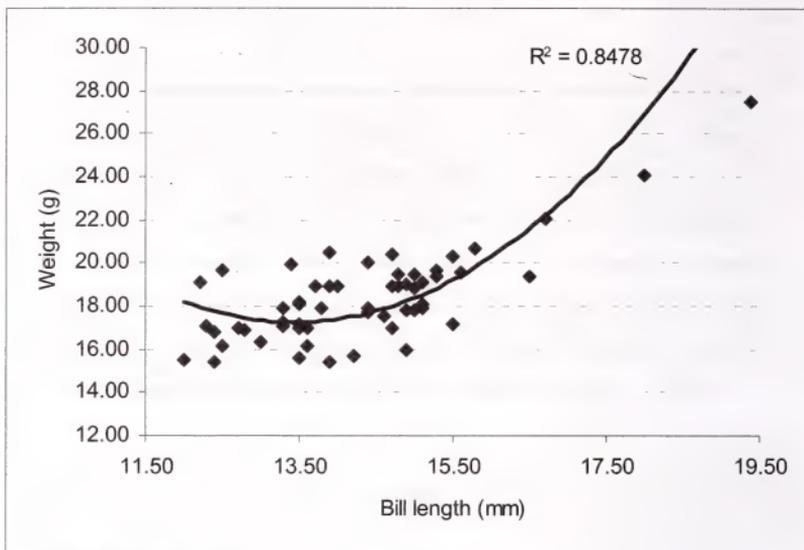


Figure 3 Lapwing chick biometrics at one to five days old, 1996 – 1999, n=57; chick weight (horizontal axis) plotted against bill length (vertical axis).

Breeding population

Throughout the period of my study, the size of the breeding population within the Gordano Valley NNR has varied considerably from year to year, both in terms of the total number of pairs present and their spatial distribution across the Reserve. Management of the breeding habitat has been a key factor, breeding pairs tending to cluster in areas that were cut and/or grazed the previous summer and autumn and therefore having mainly short or sparse vegetation. The highest number of pairs recorded in any one season was 28, in 1996. This was also the best ringing year, with 79 chicks ringed or 2.82 per breeding pair. In other years the total number of pairs has varied between 3 and 16, but the general trend has been downwards.

Declines are due largely to a lack of management of key breeding areas, which has particularly affected Weston Moor. As a result, breeding birds now concentrate mainly within Walton Moor, which is still agriculturally managed and therefore benefits from regular mowing and grazing. Even prior to cessation of grazing, a significant problem was the presence of young cattle at high stocking ratio, resulting in nests being deserted, trampled or exposed to predation. As a rough estimate, whereas in the early to mid 1990s the Gordano Valley (excluding Clapton Moor) held up to 30 pairs of breeding Lapwing, numbers are now at around 10 pairs in most years.

Breeding productivity

Breeding Lapwing pairs need to rear between 0.8 and 1 chick per season to maintain the population (Peach *et al.*, 1994). Most chick mortality occurs in the first ten days after hatching (Shrubbs, 2007). Of 111 Lapwing territories monitored in the Gordano Valley between 1994 and 2001, 63% were successful to at least the hatching stage and a further 15% were probably successful. The latter category covers situations where chicks were not seen but there were positive indicators, such as small egg fragments found in the nest scrape (indicating hatching) or adults visibly alarmed in the vicinity of the nest.

Combining these two categories yields an overall breeding success rate of 78% which, by any standard, is high. Many hundreds of hours of nest surveillance produced no cases of successful predation. In fact, my observation was that adult Lapwings were very adept at seeing off the carrion crows that frequented the site in the summer, as has been noted by other authors (e.g. Shrubbs, 2007). So what little predation there was, must have come from other sources. A recent study has indicated that 88% of Lapwing nest predations occur during darkness, suggesting nocturnally active mammals are to blame (Bolton *et al.* 2007). Foxes, mustelids, badger and hedgehog have all been implicated (Shrubbs, 2007).

Areas (including within Weston Moor) under AWT management have fared much better (*pers. obs.*), although data from Clapton Moor for the period 1999 to 2004 strongly suggest a decline, based on breeding season peak counts of adults (a reduction from nine probable pairs between 1999 and 2002, to five pairs between 2003 and 2004). It is possible to speculate that, for a while at least, more favourable conditions on AWT managed land resulted in a short-distance displacement of some birds from areas like Weston Moor that had become suboptimal.

Chick survival, dispersal and return

Lapwings generally return to the natal area in their first or second summer. They are known to be highly site faithful, almost always nesting in the same or adjacent fields from one year to the next. Not surprisingly, therefore, 61% of recoveries of Lapwings ringed as pulli are within 10km of the natal site, whereas only 10% are more than 100km distant (Thompson *et al.* 1994).

Lapwings breeding in Britain are partly migratory. While some winter close to their breeding sites, others move substantial distances, particularly to France and Iberia (Wernham *et al.*, 2002), often in response to cold weather. An interesting aspect of these winter movements is the phenomenon of *abmigration*, noted particularly in Lapwing and species of wildfowl. This occurs most often when a male pairs on the wintering grounds with a female from another natal region and follows her back to her own breeding area. It is speculated that, in the case of Lapwing (and other species), *abmigration* has the function of increasing gene flow and explains the absence of any subspecies (Mead *et al.* 1968).

Between 1994 and 2004, a total of 232 Lapwing were ringed in the Gordano Valley (GV), all at ages ranging from one to 15 days old, but the majority at one of five days old. According to statistics from the BTO Ringing Scheme, pulli account for around 98% of the annual ringing total for Lapwing and the recovery rate currently runs at about 1.5% (Coiffat *et al.*, 2008). From these figures, it would be reasonable to expect that, to date, up to five of the GV-ringed birds would have been recovered. In fact, there has been only one such recovery. DB87405, ringed in April 2000 in the Gordano Valley, was *controlled* (caught and released) in August 2006 at Sunderland Point in North Lancashire. Although far from conclusive, this does strongly indicate low post-hatching survival of chicks in the Gordano Valley, perhaps as a result of predator pressure.

Other breeding waders in the Gordano Valley

Lapwing is not the only wader species breeding in the Gordano Valley. Until the late 1990s, Redshank (*Tringa totanus*) was a regular breeding species at Weston Moor. Breeding was confirmed between 1995 and 1998, with up to six territories annually. Fourteen Redshank chicks were ringed during this period. Sadly, Redshank is now appears to be extinct as a breeding species in the Gordano Valley.

I also heard Common Snipe (*Gallinago gallinago*) ‘drumming’ and ‘chipping’ during many of the breeding seasons spent monitoring Lapwing nests in the Gordano Valley and, eventually, after much searching, I flushed a Snipe incubating four eggs in 1998. This proved to be first confirmed breeding of the species in Avon in nearly ten years. There have been records since, my last nest record being in 2006. Although under-recording is likely (I suspect Snipe breeds every year in the Gordano Valley and has done for some considerable time), I think it likely that the Gordano Valley is the last remaining breeding site for this species in Avon.

Finally, turning to Curlew (*Numenius arquata*), the Gordano Valley was the last breeding refuge of this species in Avon. A nest with two eggs at Walton Moor in 1958 (finder unknown) was the first proved breeding in the Bristol District since 1925. There were also breeding records in four of the years between 1959 and 1964, and in 1966 at Clapton Moor (Bristol Bird Reports).

Concluding remarks

Without doubt, the Gordano Valley is the most important site within the old county of Avon for breeding birds of wet meadows, especially wading birds. It is an invaluable resource, not just for birds, but for a broad range of rare flora and fauna.

In terms of its full potential for breeding waders, however, the Gordano Valley is seriously under achieving, with most of the SSSI-designated land in “unfavourable declining” condition (Natural England, 2009). To prevent Lapwing from going the same way as Redshank in the 1990s and Curlew in the 1960s, a coordinated conservation effort is needed that focuses on habitat quality, groundwater levels,

stocking densities, predator control and, to inform all of these measure, monitoring. Action is needed rather than well meaning words. Hopefully this article will go some way towards raising awareness of the problem.

Acknowledgements

I would like to thank the following: past and present members of the Gordano Valley Ringing Group (and helpers) for their assistance in finding Lapwing nests in the Gordano Valley, especially Andrew Beattie and Pete Evans; Polly Glazebrook for providing data for the AWT Reserve at Clapton Moor; Natural England, for permission to carry out survey work and ringing activities within the NNR.

Line drawing by Dan Powell, RSPB.

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Avian feeding associations at a captive Prairie Dog colony

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Interactions often evolve when two lineages live in the same place over evolutionary timescales. These can benefit both parties (e.g. between ants and honeydew-producing aphids; Way 1963), benefit one and be neutral to the other (e.g. birds following army ant raids; Boswell *et al.* 1998) or harm one party through predation or parasitism. In the latter, selection pressures operate on both parties, and is an important driver of evolutionary change (for review see Jones 1993). In contrast, novel interactions occur in zoos as animals from different biogeographic zones are exposed to local species that they may not have encountered before. We noticed such an interaction developing while studying the socio-biology of Black-tailed Prairie Dogs at Bristol Zoo, where we observed several bird species exploiting food resources associated with Prairie Dogs.

Study site and methods.

All observations were made at the Prairie Dog colony at Bristol Zoo. The colony was enclosed by nylon wires about one metre apart, allowing most species of bird to access the colony, with the exception of gulls. There were 38 burrow entrances in the colony in which the Prairie Dogs lived; in addition, food was provided in underground feeding holes at three points. A proportion of the Prairie Dogs were captured and marked with coloured dyes so that they were individually identifiable, although these markings had largely faded by the end of the study. Fieldwork was conducted between October 2008 and February 2009. Observations were made while collecting other data on Prairie Dogs, mainly in the form of focal watches. All instances of klepto-parasitism were recorded, while other interactions were not always noted.

Observations and discussion

Klepto-parasitism by Jackdaws

Fifteen incidents of klepto-parasitism were noted during fieldwork. Two thirds of these attacks were successful. Neither age nor sex of the Prairie Dog influenced the outcome of the attack (Fisher's exact tests, $p = 0.6$ and 0.524 respectively). Prairie Dogs avoided attack by going down burrows. This was not always successful: on one occasion a Jackdaw took a food item from a female Prairie Dog that was sheltering in a burrow. On two occasions Prairie Dogs evaded attack by staying above ground, either scattering or turning to avoid losing food. Hard food items were taken in 85.7% of incidents where the food was noted. No aggression was noted from Prairie Dogs towards Jackdaws, and the presence of Jackdaws in the enclosure did not elicit alarm calling.

Klepto-parasitism of mammals by birds occurs in other species (e.g. Fork-tailed Drongos and Meerkats; Thornton 2008), and Jackdaws have been recorded klepto-parasitising other bird species (e.g. Kestrels; Kitowski 2005), thus it is perhaps not surprising that they should klepto-parasitise Prairie Dogs. What is more surprising is that Prairie Dogs direct very little aggression towards Jackdaws. Having captured Prairie Dogs for marking we are only too aware that they are strong and capable of a painful bite, so should be able to defend themselves. It is possible that in a zoo environment, with plentiful food, the cost of klepto-parasitism is low. In contrast, the cost of being injured in a conflict remains high. Thus it pays the Prairie Dog to avoid conflict and surrender a food item.

Other foraging associations

Jackdaws and Moorhens both exploited food put out for Prairie Dogs. This was mostly taken from the surface. However, Moorhens and to a lesser extent Jackdaws often entered the feeding holes, and sometimes entered Prairie Dog burrows. Feeding in burrows lasted for up to 30 seconds, during which time the bird was often out of sight. Five incidents of aggression between Moorhens and Prairie Dogs were noted, four of which initiated by the Prairie Dog. However, Prairie Dogs usually tolerated Moorhens and Jackdaws feeding in close proximity to them.

Blackbirds, Dunnocks and Robins were frequently seen foraging in the Prairie Dog enclosure. However, they seemed to mainly take natural food. All three species sometimes fed on the burrow rims, and even inside burrows. This was especially evident in snowy weather. Burrow maintenance by Prairie Dogs disturbs the earth, which could expose soil dwelling invertebrates.

Gulls were excluded from the enclosure during fieldwork. Prior to this they had been reported taking food from the enclosure and even preying on newly emerged Prairie Dog pups. Gulls were the only birds to regularly elicit alarm calls from Prairie Dogs during our study.

How did these foraging associations develop?

Jackdaws and Moorhens may have been initially attracted to the colony by food placed on the surface. If they entered the feeding holes they would have got a positive stimulus (food), with little or no negative stimulus (aggression). They could then generalise this behaviour to feeding down burrows. However, as feeding down burrows was noted from the beginning of fieldwork we can only speculate on how the behaviour developed.

Conclusions

The Prairie Dog colony at Bristol Zoo was established in 2002 (Sue Dow, personal communication). Since then five bird species (not including Gulls) have developed foraging behaviours that exploit the feeding opportunities provided by Prairie Dogs. Of these, only the foraging behaviours of Jackdaws and Moorhens are in conflict with the interests of Prairie Dogs. Our observations highlight the speed with which birds can exploit new food resources.

ACKNOWLEDGEMENTS

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Where do flies go in winter?

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A survey of railings at Oldbury Court by the River Frome, Bristol, ST632769 in the autumn and winter of 2006-07.

The situation

In early November 2006, one of a party of Bristol Naturalists returning from a botanical walk along the river in evening light, noticed that there were many insects on the upper rail of 5cm galvanised steel tube people barrier along the bank of River Frome near Oldbury Court. Several of us were fascinated by this unlikely phenomenon. The double railing extends for about 250m and is based on a concrete-edged wall that makes the pathway along the riverbank. It is about 3m clear of the water surface. The structure is composed of 3m lengths of pipe supported on pipes of the same width and the bits are joined together by X- or T-pieces fixed by grub screws.

Cold blood

It was astonishing that cold, smooth surfaces, with hardly any crevices for concealment would be populated by any wildlife at all, especially not shivering insects. Later visits led me to understand that the railings were being used as winter-long shelter by a range of species. A cold surface might prove favourable to the cold-blooded, though one would have thought that tree bark with its crevices would be at a higher premium. These thoughts prompted me to look at other man-made structures and compare their use with the natural provision of bark and rock. Sturdy park benches and picnic tables were also used but to a very much lower frequency and creatures did not persist as they did on the railings. No use was made of crevices at the back of notice boards. In all the local walls, which are made of pennant grit, with an abundance of spaces, there was a surprising lack of insects in hibernation. There are other railings, of wrought iron, solid, some painted green and having rusty gaps that looked ideal but these other rails were all further away from the river and I found only a pair of Harlequin Ladybirds in that situation. It seems that the 5cm galvanised pipe has suitable angles giving cover and the situation is nearest the river.

First impressions

That first afternoon, we found tiny greeny-black Flea Beetles, Hawthorn Shield Bugs, Parent Bug, Orange Ladybirds, Kidney-spot Ladybird, 10-spot Ladybird, a Ground Bug, a Flower Bug and a Hazel-nut Weevil, the latter with its amazingly long curving rostrum. There were also many tiny spiders with little bits of nest silk in the angles of the pipe joints. I made a couple of other visits in November but started my proper investigation in early December. The insects and others were still there and so I started to write down names on the back of an envelope as I slowly inspected each section, again finding that virtually all were on or under the top rail and especially clustered round the joints of the top rail.

This study revealed that these tiny creatures were using the tiny spaces, 1 or 2mm deep between the joint and the pipe. Some few used the actual hexagonal cavity of the grub screw

and some, especially the Orange Ladybirds, were on the metal surface, as though clamped down like a tortoise. In general, the creatures did make use of the right-angled nature of the construction, making the corner a smoother outline.

In a survey like this it is necessary to have some sort of measure of constancy and this was provided by the Orange Ladybird. Month after month the numbers of this species remained constant and individuals were found in the same place throughout.

The unlikely railings

The railings are used by people for steadying themselves, for leaning against as they scan the tree branches and the rocks of the far riverbank for signs of Kingfisher, Wagtail or Dipper. Mud is splashed on to the rail as the mountain bikers dash along the footpath but nothing seems to unseat the inconspicuous winter residents.

More residents

As the winter season progressed some more species came to stay. The creatures of this microcosm are springtails, earwigs, bugs, beetles (including ladybirds), lacewings, moths, caddis flies and true flies as well as numerous spiders. In studying them it was important to avoid disturbance to the population so that the situation was as natural as possible. The creatures named are within my competence to identify by viewing through X10 hand lens and so a careful scrutiny of my list by the reader would reveal specifically a lack of named flies and spiders. I hope that this does not lessen the value of my study. The results of the surveys are summarised below.

Feeding types

In this habitat there are predators and prey and it is likely that these are two main groups. Also there are those that need to be there and just sleep out the winter, such as bugs and those that are active and use the railing as their territory, such as spiders. A third group might be those that just land on the rail because they have jumped or landed randomly. The largest population at any one time is the Flea Beetle and one would place them in the third category. Next most numerous are the Orange Ladybirds that just sit tight. There are many tiny spiders, shiny black money spiders that remain active predators and just use the rail as their base. There are also many Springtails that may be just randomly present but they may be active as they search for organic particles in the corners. Perhaps the most surprising member of the group is a Ground Bug with the splendid name *Kleidocerys resedae* and may be given the trivial name, Mignonette Ground Bug.

This ornate bug manages to hide away in the angles of the joints and sometimes in the holes in the grub screws. It was found regularly and much more numerous than one would expect as a normal resident. Why this one and not other bugs?

Spring

By mid March and the warmer weather it was just possible to find insects and other invertebrates on the bark of trees and soon afterwards the inhabitants of 'The Railings' were quietly moving away. In warmer weather there are insects on the railings but they are a mobile population of aphids, flies, alderflies, bugs, wasps, ichneumons, anything in fact that is just passing through or has fallen from the overarching trees.

The creatures of the railings

Most numerous were the Money Spiders with 95 counted, then came the Orange Ladybird with a total of 80. One of the Flea Beetles came next with 68 but if all Flea Beetles are grouped together they come to 98. The Mignonette Ground Beetle was fourth most numerous with 50 counted and then came one of the Springtails at 32. Sixth place fell to Aphids as a group, then another Flea Beetle and then the Orb-web Spider group. Of course, these numbers are not significant since the same animal may be counted twice but they give some feeling of an idea of the use of the railings as habitat in winter. In total there were 40 named species and there were representatives from beetles (7 flea beetles, 6 weevils, 4 ladybirds and a longhorn beetle, among them), 6 true bugs and 3 plant hoppers, moths, both the Winter Moth and the Northern Winter Moth, ants, wasps and ichneumons, gnats and midges and larger true flies and more than 6 representatives of different spider families.

It is amazing what you find in the valley of the river Frome, only an easy walk from the city centre along the Frome Valley Walkway.

Bristol & District Invertebrate Report, 2008

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Introduction

2008 will be remembered as a very poor year in terms of both the lack of periods of settled warm and sunny weather and in the corresponding poor numbers and variety of invertebrate life recorded. The numbers of insects, in particular, seemed very low even taking into account the lack of opportunity to get out and record them, as there were so few favourable days. Despite this, and as is the norm given the large number of species and the small number of recorders, there are sightings worth recording in print.

Concern was expressed during 2008 for one of our most familiar butterflies, the Small Tortoiseshell, whose numbers appeared to have crashed. It has been speculated that this may be due to the arrival from continental Europe of a tachinid fly parasitoid *Sturmia bella*. These two species seem to coexist in Europe and so it is to be hoped that the populations in this country settle into a balanced ratio, if indeed this has been the cause of the decline of the butterfly. (Early suggestions in the spring of 2009 would suggest that the species had a recovery late in 2008 as the number of examples seen on the wing after emerging from hibernation have been much more encouraging than might have been expected.)

As in 2007, immigration of insects into the region (and the country more generally) was low in 2008 with just the odd record of Lesser Emperor Dragonfly and Humming-bird Hawk-moth. There was some suggestion that numbers of Large White butterflies increased at the end of the summer which could have been due to immigration. Moth immigrants were, in the main, notable by their absence.

Insect species (both native and non-native), which have established themselves in the region in recent years, maintained their presence but did not necessarily increase greatly in abundance or distribution. Small Red-eyed Damselfly and Roesel's Bush-cricket both continued to be found at their isolated sites where they occurred in 2007. Small Blue and Chalkhill Blue butterflies were both seen in the Gully in the Avon Gorge, confirming 2007 sightings as those of established colonies. The Small Blue was rediscovered in north Bristol and the Brassica Bug's colonisation of the region seemed to continue. The Hornet, Long-winged Conehead cricket and the hoverfly *Volucella inanis* retained their newly found status as widespread (if localised) in the region. The Harlequin Ladybird, although widespread was perhaps not present in the expected large numbers that had been predicted, although this was a purely subjective view.

2008 ended on a rather cold note and the winter looked set to be the coldest for some time. Following two wet and fairly miserable summers, the effect on invertebrate populations in 2009 will be interesting to observe.

After many years of promising, the *Moths of the Bristol Region* was published towards the end of the year. As well as establishing the known current distribution and status of both 'macro-moths' and 'micro-moths' in the region (approximately 1,500 species) it collates in one place important historic published information on each species much of it taken from previous Proceedings of the Bristol Naturalists' Society. Members of the Society have contributed to the current recording initiative and the Society has greatly assisted publication (by the Bristol Regional Environmental Records Centre – BRERC) through a financial contribution.

The Society was saddened to learn of the death in 2008 of Geoff Sorrell of Congresbury. Geoff contributed very many records of Lepidoptera during the 1980s.

My thanks to all who have submitted records directly to the Society (particularly to Robert Cropper, Paul Chadwick, Edward Niblett, Jon Mortin, Andy Pym and John Burton) the Bristol Regional Environmental Records Centre (BRERC) and to the Bristol Wildlife E-group. The importance of receiving, not just the records picked out here, but those of perhaps less noteworthy species cannot be understated in terms of monitoring the ever changing status of the invertebrate fauna.

Scientific nomenclature follows that given in Bradley (2000), Brooks (1997), Chandler (1998), Duff (2008), Fitton *et al* (1978) and Potts (1964).

Species of note in 2008

INSECTA

Odonata (damselflies and dragonflies)

Small Red-eyed Damselfly *Erythromma viridulum* (Charpentier)

Orchard Pools, Severn Beach, South Gloucestershire ST54 83 (vc 34) 28 July 2008 Paul Bowerman (per Bristol Wildlife E-group), estimate of population size – 112 individuals. Bath University Campus ST772 644 (vc 6) 14 August 2008 5 pairs seen Dr Robert Kelsh. First noted in the British Isles in 1999 and first recorded as breeding in 2002, the species has undergone rapid colonisation, spreading out from south east England. The third year of records from these two sites in our region. Smaller than the Red-eyed Damselfly it also is on the wing later in the year (late July/August) but the two species can fly together.

Lesser Emperor Dragonfly *Anax parthenope* (Sélys) Weston Sewage Works, North Somerset ST36 65 (vc 6) 25 June 2008 per Bristol Wildlife E-group. An occasional immigrant.

Golden-ringed Dragonfly *Cordulegaster boltonii* (Donovan) Portbury Lane, North Somerset ST4 7 (vc 6) 22 August 2008 Bob Wraxall (per Bristol Wildlife E-group), one found dead. A species mainly of acidic moors and heaths, this record presumably represents a wandering individual.

Scarce Chaser *Libellula fulva* Muller Abbot's Leigh, North Somerset ST54 73 (vc 6) 10 June 2008 John Sparks, one photographed in a garden by a small pond. Salford, Bath & NE Somerset ST6 6 (vc 6) 23 June 2008 Des Bowring per Bristol Wildlife E-group, 37 seen. A localised species which can occur in numbers where it is found.

Orthoptera (grasshoppers and crickets)

Southern Oak Bush-cricket *Meconema meridionale* (Costa) Gloucester Road, Burnham-on-Sea ST311 494 (vc 6) 20 October 2008 Robert Cropper. This is the first record for vice-county 6 (North Somerset) and indeed for the whole of Somerset. Following the discovery of a male on a window frame, a search after dark on nearby trees on 22 October revealed at least 6 females ovipositing into crevices on bark on one tree and a further female on a tree close by. Peak activity appeared to be between 21.00 and 22.00 hours. Last year it was reported new to vice county 34 (West Glos.) and the whole of Gloucestershire from a garden in North Bristol, following its first record in the British Isles in 2001. This would suggest that the Bristol record was not an isolated one but that the species is becoming established across England.

Long-winged Cone-head *Conocephalus discolor* (Thunb.) Brandon Hill, Bristol ST57 72 (vc 34) 18 July 2008 Tim McGrath, this city-centre sighting reflects the expansion in distribution and abundance of this species in the last few years.

Roesel's Bush-cricket *Metrioptera roeselii* (Hagenbach) Newton St Loe, Bath ST702 653 (vc 6) 2008 Mike Williams (per Bristol Wildlife E-group), the colony, first recorded last year, was reported as being 'almost deafening!' Carr's Woodland LNR, Bath, Bath & NE Somerset ST71 64 (vc 6) 2008 Mike Williams (per Bristol Wildlife E-group) the first record in the region away from the colony at Newton St Loe, suggesting it may well spread further over coming seasons.

Dermaptera (earwigs)

Lesser Earwig *Labia minor* (Linnaeus) Newton St Loe, Bath & NE Somerset ST7 6 (vc 6) 8 August 2008 Mike Williams, a species easily overlooked but often associated with compost heaps.

Lesne's Earwig *Forficula lesnei* Stoke Gifford, South Gloucestershire ST614790 (vc 34) 5 October 2008 Sebastian Bawn (per Jon Mortin). A species which has been increasing and spreading from the south.

Hemiptera (true bugs)

Brassica Bug *Eurydema oleracea* (Linnaeus) Badocks Wood LNR, Bristol ST578 776 (vc 34) 14 May 2008 Ray Barnett, one swept. The Gully, Bristol Downs ST563 745 (vc 34) 31 May 2008 Ray Barnett, one seen. Confirmation of the establishment of this species in the region following its discovery in 2007.

Empicoris vagabundus (Linnaeus) Parkway Railway Station, Filton, South Gloucestershire ST628 798 (vc 34) 26 August 2008 Andy Pym. Few recent records received.

Ant Damsel Bug *Himacerus mirmicoides* (Costa) Parkway Railway Station, Filton, South Gloucestershire ST628 798 (vc 34) 27 July 2008 Andy Pym. Although not a nationally rare species very few records received of this bug which is probably severely under-recorded locally.

Calocoris alpestris (Meyer-Dur) Lower Farm, Charterhouse, Somerset ST487 560 (vc 6) 7 June 2008 Robert Cropper, eight on nettles, beneath hedge in lane. A localised species usually found on nettles in upland areas including hills of southern England.

Lepidoptera (butterflies)

Small Blue *Cupido minimus* (Fuessly) The Gully, Bristol Downs ST56 74 (vc 34) 6 May 2008 Hugh Welford, confirms the existence of a breeding colony following the sightings of last year at this location. Parkway Railway Station, Filton, South Gloucestershire ST628 798 (vc 34) 7 June 2008 Rupert Higgins and then 17+ counted by Andy Pym on 9 June 2008, not seen in this vicinity for many years. A worn individual was noted at the Parkway site on 26 August 2008 by Andy Pym, an example of the usually much smaller in numbers second brood. A very localised butterfly in the region although easily overlooked.

Chalkhill Blue *Lysandra coridon* (Poda) The Gully, Bristol Downs ST56 74 (vc 34) 1 August 2008 Hugh Welford, 7 males seen confirming the existence of a breeding colony, noted in 2007. Brean Down, Somerset ST28 58 & ST29 58 (vc 6) 26 July 2008 Robert Cropper, several seen. Restricted to calcareous grassland with Horse-shoe Vetch, with few colonies remaining in the region.

Small Pearl-bordered Fritillary *Boloria selene* (Dennis & Schiffermuller) Dolebury Warren, North Somerset ST45 58 (vc 6) 30 June 2008 Polly Glazebrook per Bristol Wildlife E-group, 2 seen at one of the few sites left locally for this species.

Silver-washed Fritillary *Argynnis paphia* (Linnaeus) Leigh Woods, North Somerset ST56 73 (vc 6) 23 August 2008 Tony Cottrell, one example of the *valezina* form seen. This is the most widespread fritillary in the region and this dark form has been reported previously in local woods eg Cheddar Wood.

Glanville Fritillary *Melitaea cinxia* (Linnaeus) Sand Point, North Somerset ST32 65 (vc 6) 21 May 2008 per Bristol Wildlife E-group, 12+ individuals seen at this site of introduction.

Wall *Lasiommata megera* (Linnaeus) Walborough Hill, Uphill, North Somerset ST31 57 (vc 6) 16 August 2008 Robert Cropper, one seen. An unusual and rare butterfly now in the region.

Grayling *Hipparchia semele* (Linnaeus) Brean Down, Somerset ST29 58 (vc 6) 26 July 2008, Robert Cropper, very good numbers seen of this localised primarily coastal species.

Lepidoptera (micro-moths)

Lampronia capitella (Clerk) Wetmoor, South Gloucestershire ST7 8 (vc 34) 20 May 2008 Martin Evans & Roger Edmondson, one recorded. A declining species across the British Isles. The small larvae feed inside the fruit of currants in the summer and then in the leaf buds in spring.

Oegoconia deauratella (Herrich-Schäffer) Weston-super-Mare, North Somerset ST32 61 (vc 6) 24 July 2008 David Agassiz, identified by genitalia dissection as it can only be reliably separated from *O. quadripuncta* in this fashion. Considered rarer than the *O. quadripuncta* and perhaps more confined to the south east, this may be more due to recorder bias than reflecting a true distribution. This is the first record for the region.

Grapholita compositella (Fabr.) Parkway Railway Station, Filton, South Gloucestershire ST628 798 (vc 34) 15 July 2008 Andy Pym. Thinly distributed where clovers grow.

Oncocera semirubella (Scopoli) Chew Valley Lake, Bath & NE Somerset ST656 57 (vc 6) 31 July 2008 Mike Bailey, one at light. The only other known record for the region was one from Compton Dando in 1953. An attractive species unlikely to have been overlooked, associated with limestone grassland where the larvae feed on bird's foot trefoil so could become established.

Lepidoptera (macro-moths)

Yellow-legged Clearwing *Synanthedon vespiformis* (Linnaeus) The Gully, Bristol Downs ST56 74 (vc 34) 2008 Martin Evans & Roger Edmondson, at least 7 individuals recorded. Regularly recorded at this site since 2002 and prior to that in the 19th century. Otherwise only known from one or two sites in the region. **(Nationally Notable - Nb)**

Small Eggar *Eriogaster lanestris* (Linnaeus) Shapwick Heath NNR, Somerset ST446 398 (vc 6) 25 May 2008 Robert Cropper, larval web on hawthorn near track. Leek Bed Lane, West Huntspill, Somerset ST298 464 (vc 6) 25 May 2008 Robert Cropper, one larval web and two more webs seen nearby (ST299 463 and ST298 464) by same recorder on 7 June 2008. **(Nationally Notable - Nb)**

Hummingbird Hawk-moth *Macroglossum stellatarum* (Linnaeus) Newton Park, Newton St Loe., Bath & NE Somerset ST69 64 (vc 6) 16 July 2008 Darrell Watts, one adult. Kensington, Bath & NE Somerset ST72 65 (vc 6) 2 August Pete Taylor, one adult. Newton St Loe, Bath & NE Somerset ST70 64 (vc 6) 29 July 2008 Pete Taylor, eight larvae on potted *Galium verum* (per Bristol Wildlife E-group).

Silky Wave *Idaea dilutaria* (Hübner) Avon Gorge, Bristol ST56 73 (vc 34) 10 June 2008 Warren Spencer, an extremely early record. Seems to be doing well at its only English site (two sites in Wales). **(Red Data Book - RDB3)**

Chalk Carpet *Scotopteryx bipunctaria* (Denis & Schiffermüller) Avon Gorge, Bristol ST56 73 (vc 34) 23 June 2008 Warren Spencer & Mark Parsons, an early record. A very localised moth which is holding its own in the Avon Gorge. **(Nationally Notable - Nb)**

Speckled Yellow *Pseudopanthera macularia* (Linnaeus) Sandford Hill, North Somerset ST42 59 (vc 6) 24 May 2008 Robert Cropper, one flying. Mainly found on or near the Mendips in our region. A day flying and attractive species.

Round-winged Muslin *Thumatha senex* (Hübner) Weston Moor, North Somerset ST44 73 (vc 6) 25 July 2008 Paul Chapman *et al.* Very thinly scattered across our region.

Broad-barred White *Hecatera bicolorata* (Hufnagel) Parkway Railway Station, Filton, South Gloucestershire ST628 798 (vc 34) 15 July 2008 (larva) Rupert Higgins and Andy Pym. Seen in ones or possibly twos at light traps, we get few records of the larva, this one feeding on Cat's Ear.

Small Ranunculus *Hecatera dysodea* (Denis & Schiffermüller) Keynsham, Bath & NE Somerset ST6 6 (vc 6) 15 July 2008 John Aldridge. The first record for the region was in 2007 (Brislington) and this example, seen at light, is the second. The moth became extinct in Britain in the early part of the 20th C before recolonising in the late 1990s, firstly in the south east of England and then in South Wales.

Double Kidney *Ipimorpha retusa* (Linnaeus) Weston Moor, North Somerset ST44 73 (vc 6) 25 July 2008 Paul Chapman *et al.* Very localised to damp woodland, with only two other known localities in the region, away from the Gordano Valley.

Olive *Ipimorpha subtusa* (Denis & Schiffermüller) Weston Moor, North Somerset ST44 73 (vc 6) 25 July 2008 Paul Chapman *et al.* Not as unusual as the former, rather similar species, but still local.

Silky Wainscot *Chilodes maritimus* (Tauscher) Weston Moor, North Somerset ST44 73 (vc 6) 25 July 2008 Paul Chapman *et al.* In our area restricted to the wetland habitat found in the Gordano Valley and at a few other places like Chew Valley Lake.

Coleoptera (beetles)

Coelambus impressopunctatus (Schaller) Weston Level, Westonzoyland, Somerset ST357 332 (vc 6) 27 September 2008 Robert Cropper, three in a rhyme. A very local and scarce species of water beetle.

Rhantus suturalis (Macleay) Priddy, Somerset ST546 511 (vc 6) 24 August 2008 Robert Cropper, one in spring. Widespread but localised. (**Nationally Notable - Nb**).

Anomala dubia (Scopoli) Berrow Dunes, Somerset ST291 519 (vc 6) 19 September 2008 Robert Cropper, one resting on vegetation. Very local on sand dunes. Recorded here 12 July 1987 by same recorder.

Glow worm *Lampyrus noctiluca* (Linnaeus) Blagdon Lake, North Somerset ST505 604 (vc 6) 4 August 2008 J.C. Rawlinson 16 glowing females seen. Draycott Sleights, Somerset ST48 51 (vc 6) 17 May 2008 Robert Cropper, larva under stone in grassland. Very localised and now a Biodiversity Action Plan (BAP) species in South Gloucestershire, for example.

Cantharis fusca Linnaeus Tucking Mill. Bath & NE Somerset ST76 61 (vc 6) 11 May 2008 Mike Williams. Uphill, North Somerset ST315 579 (vc 6) 31 May 2008 Robert Cropper, one on *Lotus corniculatus*. Somerset is a national stronghold for this species of wet meadows. (**Red Data Book - RDB3**)

Harlequin Ladybird *Harmonia axyridis* (Pallas) Many recorders – widespread and well established (vc 34 and 6). Any possible detrimental impact upon native ladybirds or indeed other insects by the arrival of this species is yet to be demonstrated.

Meloe rugosus Marsham Shirehampton, Bristol ST544 766 (vc 34) between 6 and 20 November 2008 undergraduates at the University of Bristol (per Prof. Jane Memmott), three taken in pit fall traps. A very localised species and the only oil beetle to be seen in the autumn, the only previous records in the region are from near Bath in 1976 and 1998. **(Red Data Book - RDB3)**

Leptura quadrifasciata (Linnaeus) Avon Gorge, North Somerset ST56 73 (vc 6) 14 July 2008 Tony Cottrell, one photographed. Localised in woodland.

Stenurella melanura (Linnaeus) Parkway Railway Station, Filton, South Gloucestershire ST628 798 (vc 34) 10 June 2008 Andy Pym, a widespread but localised longhorn beetle.

Phytoecia cylindrica (Linnaeus) Lower Farm Charterhouse, Somerset ST487 560 (vc 6) 7 June 2008 Robert Cropper, one swept from hedgerow in lane. Local and scarce on Cow Parsley. **(Nationally Notable - Nb)**

Cryptocephalus bipunctatus (Linnaeus) The Gully, Bristol Downs ST563 745 (vc 34) 31 May 2008 Ray Barnett. Confirmed at this site for a second year running, a species of calcareous grassland. **(Nationally Notable - Nb)**

Hymenoptera (bees, wasps and ants)

Chalcis sispes (Linnaeus) West Huntspill, Somerset ST293 457 (vc 6) 29 June 2008 Robert Cropper, one on vegetation on the north side of the Huntspill River, near sluice. This striking chalcid wasp has bright red and swollen hind legs. It is a parasitoid on the larvae of the larger aquatic soldier flies eg *Stratiomys* spp.

Hornet *Vespa crabro* Linnaeus Clevedon, North Somerset ST4 7 (vc 6) 17 July 2008 Roger Symes. Brandon Hill, Bristol ST57 72 (vc 34) 18 July 2008 Tim McGrath. Folly Farm, AWT Reserve, Bath & NE Somerset ST60 60 (vc 6) 3 August 2008 Andy Pym (nest in bat box). Lords Wood, North Somerset ST63 63 (vc 6) 14 July 2008 Des Bowring. Tucking Mill. Bath & NE Somerset ST76 61 (vc 6) 11 May 2009 Mike Williams. Binegar, Somerset ST6249 (vc 6) 11 May 2008 Robert Cropper, one queen hunting in quarry. Westhay Moor, Somerset ST45 43 (vc 6) 30 August 2008 Robert Cropper, one hunting along border of wood. These sightings reflect the expansion in distribution and abundance of this species in the last few years.

Gorytes laticinctus (Lepeletier) Julian Road, Sneyd Park, Bristol ST562751 (vc 34) Jon Mortin 14 March 2008 8 emerged inside flat (only previously known record in the region:– ST669 478 11 July 2005 Janet Boyd). A very local species found in southern England primarily in Dorset/Hants with records up into East Anglia. **(Red Data Book - RDB3)**

Colletes hederæ Schmidt & Westrich Sand Bay, North Somerset ST33 64 (vc 6) 18 September 2008 Robert Cropper, several, mostly along dune system. Brean Down, Somerset ST298 587 (vc 6) 12 October 2008 Robert Cropper, in numbers. First discovered as new to the British Isles in Dorset in 2001 and has been rapidly colonising southern England..

Andrena praecox (Scopoli) The Gully, Durdham Down, Bristol ST563 746 (vc 34) 11 February 2008 Jon Mortin. A very early record even for this spring species. Only the second record held on the BRERC database for the region.

Bombus hypnorum (Linnaeus) Westonbirt Arboretum, Gloucestershire (vc 34) ST8 8 May 2008 Darrel Watts per Bristol Wildlife E-group. Bath University Campus, Bath & NE Somerset ST771 643 (vc 6) 2008 Chris Eiles per Bristol Wildlife E-group. A species of bumble bee first recorded as new to the British Isles in 2001 and now colonising southern England.

Diptera (true flies)

Bombylius discolor Mikan Carr's Woodland LNR, Bath, Bath & NE Somerset ST71 64 (VC 6) 7 April 2008 Mike Williams. Tucking Mill. Bath & NE Somerset ST76 61 (vc 6) 11 May 2009 Mike Williams. Purn Hill, Bleadon, Somerset ST332 571 (vc 6) 12 April 2008 Robert Cropper, one visiting Cowslip. Cheddar Wood, Somerset ST445 549 (vc 6) 3 May 2008 Robert Cropper (last recorded at this site by RC on 6 May 1979).

Phasia hemiptera (Fabricius) Parkway Railway Station, Filton, South Gloucestershire ST628 798 (vc 34) 28 June 2008 Andy Pym. Carr's Woodland LNR, Bath, Bath & NE Somerset ST71 64 (vc 6) 6 August 2008 Mike Williams. Newton St Loe, Bath & NE Somerset ST70 64 (vc 6) August 2008 Mike Williams. Leigh Woods, North Somerset ST56 73 (vc 6) 2008 John Sparks. Pavement outside the City Museum & Art Gallery, Bristol ST581 733 (vc 34) July 2008 Ray Barnett. A sudden and unusual increase in sightings of this parasitic species on hemiptera (also reported from Nailsea, North Somerset ST46 70 (vc 6) in July 2007 by Grant Burleigh).

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Book Review;-Moths of the Bristol Region, Ray Barnett *et al.*

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The long awaited third volume in the series *Wildlife of the Bristol Region* is not a disappointment. It was optimistically promised for publication in 2002 but when one considers the size of the volume and the meticulous detail that has gone into its production, one can appreciate the delay.

The volume sits nicely on the shelf with its two companion volumes. It follows the same format with the history of recorders and recording in the region and detailed background information to habitats and trends. Interestingly, the trends in our moth distribution are very complex and while many species have suffered decline, there have been beneficial changes for other species, and newcomers to the area since recording began.

Again, the volume has a delightful dust jacket in Brin Edwards' distinctive style: a moonlit scene depicting moths on scented garden plants. What a pleasure it now is to be able to reach for this volume to check one's own observations. My well thumbed provisional atlas has been gladly recycled.

What is particularly special about *Moths of the Bristol Region* is the fact that it covers micro moths as well. This coverage is not typical of all county moth books. It was good recently to be able to check out a Bee Moth (*Aphomia sociella*) that had arrived one evening in my lounge. I was able to verify its presence in my home kilometre square, dutifully recorded in the distribution map. This experience has sent me looking for my light trap and making me vow to start recording again.

The *Moths of the Bristol Region* is also a wonderful historic record of the contributions of many people who have recorded these fascinating creatures. It is to be hoped that the publication will not only encourage current recorders to keep on recording moths, but also cause others to take up this pursuit.

The majority of the book is given over to the distribution of each moth species to be found in our region. This amounts to approximately 1500 species and reflects the true dedication and enthusiasm of Ray Barnett and the team of authors, most of whom are stalwarts of the Bristol and District Moth Group. There is frequent use of photographs, mainly in colour, as well as line drawings. Although the book will have specialist appeal, there is a lot to satisfy anyone with a general love of nature or a fascination with insects.

Many people regret not having obtained a copy of the Flora and it would also be a mistake to miss out on this attractive and superb publication. In 2000 the Flora mentions a forthcoming fourth in the series: *Dragonflies of the Bristol Region*. The promised date has already passed but it would be good to encourage all those involved with the production of this series to press on. I shall be looking forward to it.

Bristol Botany in 2007

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"Surely there can be nothing ...less attractive and satisfactory than a bare list of plant names and localities with scarcely a line to enliven its dreariness from beginning to end!" (J. W. White in the Preface to the *Flora of Bristol*, March 1912)

Introduction

White himself had written about an alien Comfrey which he had been observing for four years, "nearly all destroyed...whilst in full flower, by a road-man acting, as he said, under [*idiotic*] orders". In 1917, Dr Newman Nield wrote to H. Stuart Thompson about a botanical walk in Leigh Woods. "I found two plants of **Belladonna** at the top of the quarry south of Lily Point, possibly descendents of those mentioned in White. One was small and fairly happy, but a large stone, *the brute*, had knocked off the upper two-thirds of the latter."

Two of the present generation of Bristol botanists submitted records for this year in similar terms. After revisiting the site of an uncommon alien grass he had found near the M5, John Martin complained that it had been "sprayed with herbicide *by an annoying person*" as though it was a personal affront. Edward Niblett wrote as if some criminal investigation was required when his searches for orchids on the limestone slopes near Walton-in-Gordano were spoilt by finding some decapitated, "*but by whom I do not know*". As was explained in 1836, if you marry the facts of *natural history to human history*, it is full of life.

My own best find of 2007 was *Centaurea cyanus*, **Cornflower**, scattered in a harrowed field on a stony headland above an ancient wood, with *Chrysanthemum segetum*, **Corn Marigold**, and the cornfield variant of *Galium aparine*, **Cleavers**, as they made their once-in-a-generation escape from dormancy, before the field reverted to grass as it did in 2008. But this was in v.c.33, East Gloucestershire, by the ancient Lineover Wood near Cheltenham, and outside our area of interest. There are a good number of records of our declining arable weeds in the Bristol area below.

Amongst the native plants, four hybrids, one subspecies and one variety are new to the Bristol area and occur in the northern or southern half as indicated: *Equisetum x rothmaleri* (*E. arvense* x *E. palustre*), **Ditch Horsetail**, (S); *Polypodium x shivasiae* (*P. cambricum* x *interjectum*), **a hybrid polypody** (S, and an old probable record from G is also reported) *Polystichum x bicknellii* (*P. setiferum* x *P. aculeatum*), (S), **Lowland-hybrid Shield-fern**; *Juncus x kernreichgeltii*, (*J. conglomeratus* x *effusus*), **a hybrid rush**, (G); *Molinia caerulea* ssp. *arundinacea*, the less common subspecies of **Purple Moor-grass**, (G); and *Ophrys apifera* var. *belgarum*, the pretty "**Winchester Bee-orchid**" (G, S).

There are a number of particularly interesting records, some showing the persistence of species at known sites, or the re-finding of species though lost to the Bristol area, and others the spread of uncommon natives and in one case an evident extinction, for instance: *Atriplex littoralis*, **Grass-leaved Orache**, *Atriplex laciniata*, **Frosted Orache** and *Salsola kali*, **Prickly Saltwort**, occurring on the bank of the River Brue near Berrow, **S**; *Armeria maritima*, **Thrift**, newly found at Aust Cliff, (**G**); *Lotus glaber*, **Narrow-leaved Bird's-foot-trefoil** near Kingston Seymour (**S**); *Euphorbia serrulata*, **Upright Spurge** discovered along a green lane south-west of Yate, **G**; *Torilis arvensis* **Spreading Hedge-parsley** near Aust, **G**; a second Somerset site for *Poa infirma*, **Early Meadow-grass**, at Wells; and *Gastridium ventricosum*, **Nit Grass**, seen again at its 'Clifton Down' site, **G**. *Orchis purpurea*, **Lady Orchid**, discovered there in 1990, appears to have gone from its Leigh Woods, **S**, locality, and was last seen in 1999, all of this only raising further questions about its status there. The following alien (in the places discovered) plants are not reported in the main text of *Flora of the Bristol Region (FBR)* or in *Bristol Botany 2000* or subsequently. They are therefore either new to the Bristol district or have not recently been seen there, or were overlooked during the compilation of the *Flora*. Where specified, they are new to one or other county, vice-county or part of the Bristol region: *Dianthus deltoides*, **Maiden Pink** (previously known as a presumed native); *Rumex scutatus*, **French Sorrel** (**S**); *Hypericum x inodorum*, **Tall Tutsan** (v.c.34); *Iberis amara*, **Wild Candytuft**; *Eruca vesicaria*, **Garden Rocket**; *Lopezia coronata*, **Crown-jewels** (Somerset); *Echium plantagineum*, **Purple Viper's-bugloss**; *Symphytum bulbosum*, **Bulbous Comfrey** (v.c.34); *Amsinckia micrantha*, **Common Fiddleneck** (v.c.6); *Verbena bonariensis*, **Argentinian Vervain** (v.c.6); *Mentha x smithiana*, **Tall Mint**; *Sutera cordata*, **Bacopa** (v.c.6); *Phuopsis stylosa*, **Caucasian Crosswort**; *Iris xiphium*, **Spanish Iris** (identification "probable"; Somerset).

At a finer scale, several records are apparently new to the 10 km squares in which they occur, so far as the standard published and online sources reveal. These are marked with a * preceding the grid reference in the main text.

There are four corrections to *Bristol Botany* in 2006. *Vaccinium myrtillus*, **Bilberry**, on Felton Common, **S**, had been found there in a survey a few years earlier by Phil Quinn. *Scilla messeniaca*, **Greek Squill** was a repetition of the earlier misnomer for *Scilla bithynica*, **Turkish Squill** at the place recorded in the *Flora of the Bristol Region*. The record for *Dryopteris carthusiana*, **Narrow Buckler-fern**, should be attributed to Nick Hudson, and was only confirmed and communicated by the Kitchens. *Ophrys apifera* var. *trollii*, the **Wasp Orchid** is incorrectly mentioned as var. *apifera*.

Bristol Botanists

I have managed to continue my monthly essays on Bristol Botanists for the BNS Bulletin. They remain somewhat ephemeral (the electronic copies are online only for a year) and are therefore summarised here, continuing from July/August 2007 to February 2008. Three essays on J. W. White were reprinted in the Society's Proceedings, *Nature in Avon*, for 2007, a fitting tribute (April 2008), White and White's Whitebeam (April 2006) and the botanical manuscripts and other memorials (September 2006).

In November 2007, I was able to present some of my historical researches at the London exhibition of the Botanical Society of the British Isles. Some of the material appeared in the February 2008 Bulletin entitled "Humbug!", after **David Fry**'s opinion of the author of the *Flora of Somerset*: "there is certainly a lot of ...humbug about this clerical botanist", he wrote to White. Unfortunately the significance of White's private annotation is lost to us: "those how know Mr **Murray** and Mr Fry will appreciate the significance of Mr Fry's remarks".

I have not been able to prove that **Alexander Catcott** (1725-1779), best known as an early field geologist (to use a later term) met Lightfoot and Banks, as the "third man" in their second visits to the Avon Gorge on 25 June 1773, but it remains highly likely. My five essays (with a transcript of his manuscript *Catalogue of the more scarce Plants growing near Bristol* still outstanding) were completed in the September 2007 bulletin. Catcott's letter book at Bristol's College Green Reference Library makes fascinating reading and includes a letter dated 9 March 1774 from Joseph Banks asking for specimens of the Bristol Rock-cress in flower. There is a pencil sketch of the plant on the letter, but whether it is by Banks or Catcott is unclear. Catcott records three attempts and eventually collected "one in flower (blighted)" on 15 May 1778. Was it really so rare and hard to find, when nowadays we can see it on Observatory Hill?

To judge from published and online correspondence about the tour, several others who may have been on the Welsh tour at its commencement at Bristol included: Charles Blagden, a Gloucestershire man, who resided in Bristol from time to time and who became Secretary to the Royal Society in 1784; Jesse Ramsden, a renowned scientific instrument maker from London; Banks' scientific secretary, Daniel Solander, who had travelled with Captain Cook and Banks on the Endeavour (1768-1771) and had been a pupil of Linnaeus; Mr Greville, a son of Lord Warwick; and Jean-Andre de Luc, the Genevan who had recently arrived to be a scientific mentor to Queen Charlotte, wife of George III, and who seems to have somewhat shared Catcott's conception of the geological effect of the deluge, Noah's flood.

The Catcott letters help to establish his place in the “Republic of Letters”; naturalists had broad interests in those days and were few and far between. William Jones (1726-1800), a friend from their Oxford days as students, wrote from Northamptonshire in December 1765, “I often wish for an opportunity of visiting you and your rocks at Bristol in the proper season for botanising”. Lightfoot seems to have had no such concerns, for he “climb’d the rocks” just a few weeks later, as he explained in a letter to Banks, finding *Hornungia* and *Trinia*.

In 1770 Mary Delany, the companion of the Duchess of Portland, Lightfoot’s employer, asked Catcott to collect some plants and a puff ball (in a cubic foot of earth) for the Duchess. In her published letters Mary Delany described Catcott as the “little philosopher” and a “very good man and a great virtuoso”, even if his heart was “of the petrified kind, and encrusted with avarice”, for in 1756 he failed to give her any of the rocks and minerals from his collection. Thomas Chatterton in his *Epistle to the Rev. Mr Catcott* (1769) delivered a triumph of sustained invective against him following his publication of the better-known second edition of his *A Treatise on the Deluge*; and later in his mock will (1770) Chatterton offered Catcott “some little of my free thinking, that he may put on the spectacles of reason and see how vilely he is duped in believing the scriptures literally”. Fortunately field botany did not demand grand theorising or adherence to biblical teaching and Catcott’s manuscript *Catalogue* with its 50 or so entries is a precious and intended survival. Whilst it mostly covers the Avon Gorge, there is also a first local record for *Cymbalaria muralis*, **Ivy-leaved Toadflax** “In the road (on the wall) up Clifton Hill from Jacob’s Well. June & July”. It is still there.

H. Stuart Thompson (1870-1940) is a fascinating character, now better illuminated by three photos from the Linnean Society, and some hint of an understanding what attracted him to continental botany- his parents were married in Switzerland. In October 2007 Bulletin I described some memorials of his life. They are scattered in several museums (Bristol, Wales, Geneva), universities (Bristol, Birmingham) and libraries (BNS, Bristol University, Bristol Reference library, and one in my collection). The essay was spotted by Kathleen Ungless, a descendent of Thomson’s sister, Margaret. She has also explained why the painting of a marsh marigold by Miss Gulielma Stephens (1837-1892) of Bridgwater was of such sentimental value to Thompson that it hung above his herbarium. Miss Stephens was an elder relative. After 40 years at the Botany Department at Bristol University and 30 years with me it has gone back to the family (see June 2009 bulletin). Our Society has several of Thompson’s scrapbooks in the locked-up archives, containing his published botanical papers and his newspaper articles on fishing, art and botany, and the reviews of his books.

Thomas Bruges Flower (1817-1899) is often described as enigmatic, partly because of his vague and misleading statements about plant localities, and partly because of the loss of his library and notes, and the disappearance from view of his herbarium for many years. In the November 2007 Bulletin I wrote about as many of his foibles as I could then gather together, "Don't repeat it, but do be cautious about T. B. Flower's statements: they often require "verification", wrote R. P. Murray in 1885. White remarked in BB 1914 that when following up imprecisely localised old records and drawing a blank, Flower (without mentioning him by name), thus thwarted, might declare that the site had been destroyed by quarrying, when "as it eventually proved, no quarryings were thereabout!".

In the following month I wrote about *Sorbus bristoliensis*, the **Bristol Whitebeam**, and Flower's custody for almost 50 years of the knowledge of the whereabouts of what (in a combination of two quotes) was "only one tree I believe [but] I can always find it with ease". It is still there, as described in White's *Flora*, overhanging a precipice on the south side of Nightingale Valley, its very form showing how it escaped grazing. If so inclined, I wrote, you can sit on the trunk and dangle your legs above the drop.

Bristol botany bibliography

In November 2007, our good friend Trevor Evans – now well into his 80's and still active - published his *Flora of Monmouthshire*, the Welsh county (v.c.35) on the other side of the Severn Estuary west of the River Wye. Trevor often used to pop across to meet Adrian Grenfell and occasionally myself and Tony Titchen, or join excursions to tips around 1980. We owe a lot to Tim Rich for making sure that Trevor's book was completed. Like Bishop's *New Flora of Gloucestershire*, it is tetrad based, and has only a little introductory material, but it is not dominated by the maps. Quite unusually for a local flora nowadays, every genus, species, hybrid and variety mentioned (other than in the large critical genera) is described, in Trevor's own words, and with some emphasis on passing on his own expertise as a field botanist. There are also almost 50 of Trevor's line drawings and diagnostic sketches and 150 photos of plants, localities, and occasionally fellow botanists in action. The work is dedicated, with great fondness, to Trevor's late wife, "by 1998, we had walked much of the county, recording as we went".

In the February 2007 part of *Watsonia*, the journal of the Botanical Society of the British Isles (BSBI) pages 271-290, David Pearman, in a deliberately provocative paper entitled "Far from any House", reassesses the status of some doubtfully native British species. He includes case studies and several are rare Bristol species and (strangely for a former accountant: we confine ourselves to *opinions*) gives *decisions* in each example. The following are judged to be aliens, probably neophytes: *Aconitum napellus*, **Monk's Hood**; *Anisantha madritensis*, **Compact Brome**; *Euphorbia serrulata*, **Upright or Tintern Spurge**; *Euphorbia villosa*,

Hairy Spurge (extinct); *Fritillaria meleagris*, **Fritillary**; *Prunella laciniata*, **Cut-leaved Selfheal**; and *Stachys alpina*, **Limestone Woundwort**. For the Tintern Spurge George Peterken, author of a recent *New Naturalist* on the Wye Valley regards the case as uncertain (*BSBI News* for September 2007, pages 30-31). The Kitchens also found it in a green lane near Yate this year.

Determination of status at a local level remains harder than deciding the “best” or “normal” national status and David Pearman draws attention to the tendency of provincial botanists to over-emphasise the probability of native status where the plants are in their own patch. He particularly mentions our own J. W. White as “a strong optimist over plant status”. In White’s defence it must be pointed out that he normally gave detailed explanations of his opinion and referred to the available European floras and his own extensive field experience in southern and western parts of Europe; and in some of these examples, he uses the qualifier “probably”. Increasingly *Allium sphaerocephalon*, **Round-headed Leek**, is being assessed as doubtfully native, but David Pearman (who is familiar with my researches) thankfully only mentioned it in passing as cultivated in Britain (1759) long before its discovery in the wild. The note in the *New Atlas* account “normally thought to be native but may be alien” attributed to me is a misrepresentation of what I wrote in my 1982 Thesis. Its association in native vegetation in which it occurs is adequately replicated in Europe. Its late discovery in 1847 (but in the same decade as *Tilia cordata*, **Small-leaved Lime** was first recorded by a botanist in the Avon Gorge) remains a mystery. However the weather was just right that year for it to flower in profusion, so it was certainly already well established (see my essay in the *BNS Bulletin* for March 2006). It is also not in an earlier plant catalogue of the famous nursery, Miller’s, on Whiteladies Road.

Nature in Avon Volume 66, our Proceedings for 2006, has several papers with botanical records. *Crataegus laevigata*, **Midland Hawthorn**, found by Pauline Wilson, appears on the cover as an isolated specimen in a hedgerow otherwise containing *Crataegus monogyna* at Little Sodbury, ST7583, **G** (see page 2). A photographic insert includes the rarely noticed *Linum bienne*, **Pale Flax**, on Clifton Downs. On pages 57-58 Pam Millman briefly describes the botanical importance of the Tyntesfield Estate, mainly ST5071, **S**, where there are many wild and planted species of interest but which could not be recorded for the *Flora of the Bristol Region*.

On pages 59-67 Richard Bland, with information from John Purkiss, gives an account of the origin and wildlife of the New Cut of the River Avon, from Ashton Gate to Temple Meads ST5672 to ST5972, **G**. There are English-name lists of trees and shrubs, distinguishing planted from wild occurrences, and about 140 other plants. Some of these have been mentioned in the pages of *Bristol Botany*, though more of the infrequent garden escapes might also have merited notice.

Richard Bland has also looked into the history and current distribution of the street trees of Bristol, updating and extending an account in the 1991 Proceedings by Tony Titchen and the late Adrian Grenfell. Such trees are subject to fashions in planting and are often the source of naturalisation; on pages 94-97 Richard reports more of his detailed survey work, this time on regeneration of tree species in ST57 and the potential impact on what he delightfully describes as the forests of the future.

On pages 68-70, Robert (Bob) Buck describes St George's Flower Bank, ST5075 to ST5175, **G**, one of an increasing number of small wildlife havens now being held with deep affection and involvement by interested locals. Terry Smith (pages 71-78) describes the ancient Towerhouse and Spilsbury woods, near Wraxall, ST4771, **S**, noting an old ditch and later parish wall such as occurs in Leigh Woods, and indicator species such as *Orchis mascula*, **Early-purple Orchid**.

Plant records

The area covered by this report remains that defined and mapped in White's *Flora of Bristol* (1912); in turn this reflected the scope of interest of the Society almost from its inception. White described the area as an irregular right-angled triangle of 720 square miles from Dursley in the north southwards to the east of Bath to Frome, and thence west to the Severn at Huntspill, south of Burnham.

Following White, the portion falling into the Watsonian vice-county of West Gloucestershire (v.c.34) is designated **G**. Except for a small portion south of the New Cut, the boundary follows the Avon to Swineford, and from there it proceeds north of easterly, five km north of the centre of Bath. The southern portion, designated **S**, falls within North Somerset (v.c.6). The *Flora of the Bristol Region* (2000) mapped the vascular plants of the former administrative county of Avon and therefore excluded a strip of White's triangle some 13 km south of Breaun Down; that area is mapped at a lower scale in the *Atlas Flora of Somerset* (1997).

The plant records are arranged into two groups, Natives and Archaeophytes, and Aliens. Archaeophytes are plants that behave as natives but which were, or seem to have been, anciently introduced by man. Neophytes (also known as aliens) are plants found in the wild but which are more recent introductions. These are often merely casual - neither surviving long nor regenerating. Ideally the groups would be distinguished at the local rather than the national level.

The plant names and sequence within both lists follow the second edition of Stace's *New Flora of the British Isles* (1997) are therefore compatible with the *Flora of the Bristol Region*. Accordingly, the Latin names (*in italics*), which necessarily take precedence, despite the standardisation of English names (**in bold type**), can be unambiguously cited without authors' names, except for the occasions when something new is reported.

The vice-county catalogues, online at the BSBI website, and their *New Atlas of the British and Irish Flora* (2002) and its CD and online update are also useful for assessing the importance of the plant records. A reasonable familiarity with the contents of a contemporary botanical library is assumed. In many cases online or unpublished resources are used. Where new to Gloucestershire or Somerset, or to the vice counties v.c.34 (West Gloucestershire) or v.c.6 (North Somerset), this is stated. The symbol * before a grid reference designates a record apparently new to the 10 km square; it can be difficult to be sure. Where the symbol * appears before **G** or **S**, or a site name such as the Avon Gorge, it indicates the species is new to that part of the Bristol area, having previously been recorded only in the other district. For aliens new to the area a brief description is usually given, with more detail where not mentioned in Stace's *New Flora*.

Following the practice commenced in Bristol Botany in 2006, 1 km grid references are again given. The plant records are more precisely localized, geographically or by habitat, where possible, and where it seems important to do so. Names of the principal contributors of the 1,300 or so plant records received are abbreviated as below, listed alphabetically by surname. The full list of submitted records may be obtained from the author or office bearers of the Botanical Section. *FBR* refers to the *Flora of the Bristol Region*, published in 2000 and un-attributed comments are those of the author (CML). *BB* abbreviates this title, *Bristol Botany* which has been issued in that name for almost an unbroken century.

RLB Richard Bland; JPM John Martin; RSC Robert (Bob) Cropper; EJM Elizabeth (Liz) McDonnell; HJC Helena Crouch (Recorder, VC 6); RGM Richard Mielcarek; CVWG Cam Valley Wildlife Group; PM Pam Millman; SRPG Somerset Rare Plants Group; EN Edward Niblett; PH Peter Hilton; HP Howard Parsons; LH Libby Houston; RDR Robert (Rob) Randall; NH Nick Hudson ; FR Fred Rumsey; CK & MARK Clare and Mark Kitchen (Recorder VC 34); MW Margaret Webster; CML Clive Lovatt

Natives and Archaeophytes

Equisetum ramosissimum **Branched Horsetail** Ellenborough Park, Weston-super-Mare, ST3160, **S**, **HP**. Still at the site mentioned in *FBR*. In the *New Atlas* it is considered to be a neophyte, whereas in *FBR* it is "probably native". It is still only known from one other site in the British Isles.

Equisetum x rothmaleri C. N. Page (*E. arvense* x *E. palustre*) **Ditch Horsetail** Priddy Mineries, a few shoots on southwest side of linear slag heap, ST5451, **S**, SRPG, conf. FR. This sterile hybrid is **new to Somerset** and has been recorded in at least 15 vice-counties across Britain. It is described as intermediate between the parents, but with 'fertile' stems similar to the sterile stems.

Equisetum telmateia **Great Horsetail** Portbury Wharf, ST4877, S, HP. Surprisingly, *FBR* has only one site in this 10km square.

Botrychium lunaria **Moonwort** Brean Down, ST2959, S. Ten fronds found this year in "the usual area", RSC. White mentions it as occurring in fair quantity there in the early 1900's.

Polypodium x shivasiae Rothm. (*P. cambricum* x *interjectum*) **A hybrid polypody** Blackrock, Cheddar, ST4854, S, forming a small patch (0.5m wide approx) on face of a rocky outcrop Matt J. Stribley, conf. Rob Cooke. **New to v.c.6**, according to the 2007 SRPG newsletter. There is a polypody with sterile spores collected from St Vincent's Rocks, ST 5673, G, by J. F. Young in 1844 in the herbarium at the Natural History Museum in London which although identified as the hybrid of *P. cambricum* and *P. vulgare* (*P. font-queri* Rothm.) in 1960, was later examined at my behest by R. H. Roberts. He was 90% certain that it was *P. x shivasiae*. Though ecologically distinct, both parents occur about the cliffs but *P. vulgare* is several km distant. This record is the basis of the misplaced 10km square record for *P. font-queri* in the 1978 *Fern Atlas*.

Polystichum x bicknellii (H. Christ) Hahne (*P. setiferum* x *P. aculeatum*) **Lowland-hybrid Shield-fern** Ham Woods, Croscombe, ST6145, S. Beside gate at entrance to woods, near the Windsor Hill Quarry, HJC & FR. **A first reliable record for v.c.6**, though this sterile hybrid has long been suspected to be there.

Dryopteris carthusiana **Narrow Buckler-fern** *FBR* has only six records of this fern, all from the 1980's. NH confirms the persistence of two of the sites, Lord's Wood (the record in BB 2006 was based on his specimen confirmed and communicated by CK & MARK), occasional in a pathside *Sphagnum* flush, ST6363, and in small quantity in the Avon Wildlife Trust Weston Moor reserve, ST4373, both S. JPM noted it there later, but gives ST4473 as the site.

Helleborus viridis **Green Hellebore** Edge of wood north-east of Gurney Slade, ST6350, S, RSC. There seem to be no recent records for this 10 km square.

Ranunculus parviflorus **Small-flowered Buttercup** South Hill, Bleadon, a single large plant in farmyard, ST3456, S, JPM. Although historically chiefly a downland plant in the Bristol Region, it can occur in disturbed sites (White mentions it on molehills) and it may have a persistent seed bank. *FBR* shows it only at Sand Point (it also occurs at Brean Down) and its appearance with a few large clumps of a plant of similar ecology and local rarity, *Erodium moschatum*, **Musk Stork's-bill**, is particularly intriguing as the latter has a long record as small plants on nearby Purn Hill. The occurrence in the same place of a single plant of *Silybum marianum*, **Milk Thistle**, a long established alien below Brean Down (*FBR* has only a single record) raises further questions about the origin of these plants.

Ranunculus ophioglossifolius **Adder's-tongue Spearwort** As described in BB 2005, no plants flowered that year at Inglestone Common, ST7588, **G**, and scrapings were made to encourage germination of buried seed. 16 plants were counted in 2006 and 67 plants in 2007. It is shown "in full bloom" on the cover of our Proceedings, *Nature in Avon*, for 2007 and there is an excellent paper by Hazel Wilmott (pages 22-35) describing the history, ecology, status and management of the site for this rare plant, now otherwise only known in the British Isles at Badgworth, also in Gloucestershire.

Ranunculus baudotii **Brackish Water-crowfoot** In ditch along public footpath, Portbury Wharf, ST4877, **S**, **HP**. Shirehampton, ST5377, **G**, was one of the sites reported when Babington first recognised the species as British.

Aquilegia vulgaris **Columbine** By side of path, Westridge Wood, Wotton-under-Edge, ST7595, **G**, **RSC**, persisting in a site recorded by him in BB 2000. This represents a native occurrence, in a site included in the *Flora of Gloucestershire* (1948).

Berberis vulgaris **Barberry** Extending over 5m of roadside hedge, east side of Badenhill Road, Tytherington Hill, ST6788, **G**, **CK** & **MARK**. According to the New Atlas, not reported in this 10km square since before 1970.

Papaver dubium ssp. *lecoqii* **Yellow-juiced Poppy** Near Castle Farm, Dundry, ST5466, near Weston-super-Mare, ST3360, **MW**, and on edge of quarry, South Hill, Bleadon, ST3456, **JPM**, all **S**.

Urtica urens **Small Nettle** On waste adjacent to Collum Farm, north of Weston-super-Mare, ST3465, **S**, **PH**.

Atriplex littoralis **Grass-leaved Orache** Burnham-on-Sea, ST3047 and ST3048, **S**. Flowering for some distance along the River Brue, **RSC**.

Atriplex laciniata **Frosted Orache** Burnham-on-Sea, ST3048, **S**. A single plant on blown sand on bank of River Brue, **RSC**. Both rare *Atriplex* species were first reported as occurring in the neighbourhood of Weston-super-Mare by St Brody in his *Flora of Weston* (1856). The records were amongst those considered doubtful by later botanists, until refound many years later. They are not amongst the specimens explicitly localised in St Brody's Weston collection at Bristol Museum. The two species are sporadic in appearance and have been under **RSC**'s periodic observation for over 30 years.

Salsola kali **Prickly Saltwort** Burnham-on-Sea, ST3048, **S**. Two plants on blown sand on bank of River Brue, at the same 100m grid reference as the two *Atriplex* species, **RSC**.

Stellaria pallida **Lesser Chickweed** Several plants growing on introduced sandy area near the bandstand, Bristol Castle, ST5973, **G**, **CK** & **MARK**.

Stellaria uliginosa **Bog Stitchwort** Tyntesfield, ST5071, **S**, **PM**. *FBR* shows that it is very scattered in the vicinity.

Spergula arvensis **Corn Spurrey** Charterhouse, ST5056, S. Thousands of plants in a field, Swymmer's Farm, with poorly growing cereals, PM. Ten plants or more in arable fields in the Gordano valley, ST4373, S, HP. Near buildings at Folly Farm, ST6060, S, JPM. Still rather rare, as it was in White's day.

Lychnis flos-cuculi **Ragged-Robin** Portbury Wharf, ST4877, S, HP.

Agrostemma githago **Corncockle** Portbury Wharf, ST4877, S. Six or more scattered plants noted, HP.

Rumex pulcher **Fiddle Dock** Six plants in grassland, Tytherington Hill, ST6788, G, CK & MARK.

Armeria maritima **Thrift** A single patch on Aust Cliff, ST5689, G, R. A. Burberry, per CK & MARK. This marks the northern-most spot in the Bristol region, though it was found in 1988 by Stephen Bishop at Hock Cliff, 30 km further up the Severn estuary.

Hypericum androsaemum **Tutsan** Great Quarry, Avon Gorge, ST5674, G. A single plant in a scrubby part of the quarry bottom, RSC. This is the first record for the Clifton side of the Gorge for many years, though the status is difficult to determine. Also found by RSC in Goblin Combe, ST4765, S.

Malva neglecta **Dwarf Mallow** South Hill, Bleadon, frequent in farm yard, ST3456, S, JPM. Also at Hanham, ST6372, G, RLB.

Rorippa palustris **Marsh Yellow-cress** Tealham Moor, ST4045, S, RSC. Also along track of crane in harbour side, Bristol, ST5872, G, PH, with *R. sylvestris*, **Creeping Yellow-cress**, nearby.

Rorippa amphibia **Great Yellow-cress** Henleaze Lake, ST5877, G, RLB. Otherwise recorded only by the Avon from Keynsham eastwards.

Erophila glabrescens **Glabrous Whitlow-grass** Burnham-on-Sea, ST3149, S, RSC. Not often recorded, but recognised by the shiny petiolate leaves, almost devoid of hairs on the surface.

Cochlearia danica **Danish Scurvygrass** A single plant at the roadside, Westerleigh Village, ST6979, G, CK & MARK. Also particularly prolific on the B3124 between North Weston and Weston-in -Gordano, ST4574 and ST4674, S, EN.

Lepidium campestre **Field Pepperwort** Tyntesfield, ST5071, S, PM. Also at Horton, ST7685, G, RLB, both some distance from the sites in *FBR*.

Lepidium ruderalis **Narrow-leaved Pepperwort** A single plant on a road verge, New Passage, ST5585, G, JPM. Apparently not recorded in this 10 km square since before 1970. With *Puccinellia distans*, **Reflexed Saltmarsh-grass**.

Cakile maritima **Sea Rocket** Burnham-on-Sea, ST3048, S. In blown sand by River Brue, RSC.

Vaccinium myrtillus **Bilberry** Avon Valley Woodlands LNR, Hanham Green, ST6371, **G**, on lower slopes south of quarry, NH. Not recently recorded in this 10 km square, by reference to *FBR* and the *New Atlas*, though White knew it hereabouts, in wood he saw cut down. Phil Quinn has drawn my attention to the fact that he surveyed and prepared a management plan for Felton Common, ST5265 **S**, for the Parish Council in 2003 and found the *Vaccinium* and the other calcifuges species mentioned there in BB 2006 as found by JPM in 2005.

Lysimachia vulgaris **Yellow Loosestrife** A small clump on the edge of a ditch on Weston Moor, ST4473, **S**, EN.

Saxifraga granulata **Meadow Saxifrage** River Chew, ST5862, **S**, RLB.

Rosa tomentosa **Harsh Downy-rose** Wotton-under-Edge, ST7594, **G**. A bush by track to Westridge wood, RSC. The *New Atlas* has no record for this 10 km square since before 1970.

Sorbus eminens **Round-leaved Whitebeam** Portishead, ST4677 and ST4777, **S**, LH, in 2005, confirming an earlier record for the area of a single shrub, possibly bird-sown (East Wood, P. J. M. Nethercott, BB 1996).

Crataegus laevigata **Midland Hawthorn** Stapleton, *ST6176, **G**, RLB. Also noted by RLB at Henleaze, ST5877.

Lotus glaber **Narrow-leaved Bird's-foot-trefoil** Sea bank near Kingston Seymour, *ST3767, **S**. A large colony and two smaller plants 300m away, RSC.

Vicia tetrasperma **Smooth Tare** Lulsgate Quarry, ST5166, MW. Also Tyntesfield, ST5071, PM, and Publow Hill, ST6365, RSC, all **S**.

Lathyrus nissolia **Grass Vetchling** Great Quarry, Avon Gorge, ST5674, **G**, PH. Still growing where discovered by P. J. M. Nethercott some years ago (BB 1999).

Ononis spinosa **Spiny Restharrow** Winford, ST5465, **S**. In unimproved grassy meadows here and nearby at Regil, near Chew Stoke, ST5462, filling gaps in its mapped distribution in *FBR*. *Trifolium fragiferum*, Strawberry Clover (the subject of one of the most exquisite coloured illustrations in Curtis's *Flora Londinensis* of over 200 years ago) was growing in both meadows, MW.

Medicago polymorpha **Toothed Medick** Weston-super-Mare, ST3160, **S**. Still on the seafront lawns where first found by Andy Byfield in 1980 and noted by RSC in BB 2001, PH.

Epilobium x interjectum Smejkal (*E. ciliatum* x *E. montanum*) **American x Broad-leaved Willowherb** Spike Island, Bristol Docks, ST5872, **G**, CK & MARK. Abundant about the railway lines within the (near) island. Thought to be the most common British willowherb hybrid, but not recognised by many botanists; hence not recorded in v.c.34 since before 1970.

Viscum album **Mistletoe** Ashton Vale, ST5671, **S**. On Norway Maple, a first local record on this host, RLB.

Euphorbia platyphyllos **Broad-leaved Spurge** Rough bank on the pedestrian access from Filton to Filton Abbeywood Station, ST6178, **G**, J. S. Rees, per CK & MARK. Many plants in a cultivated field, Bonnyleigh Hill, near Frome, ST7950, **S**, RSC.

Euphorbia serrulata **Upright Spurge** Locally abundant along a long stretch of Broad Lane, an unmade green lane between Westerleigh and Ram Hill, *ST6880 and *ST6979, G, CK & MARK. The Tintern Spurge, as it is perhaps better known, was discovered in Britain by Banks and Lightfoot in 1773 but its status even in the Wye Valley is under debate. It has very rarely been seen in the Bristol region, and then only near Bath, and it is difficult to know what to make of it in this new site.

Linum bienne **Pale Flax** South Hill, Bleadon, ST3456, S, common on lower slopes. Close examination of the dots on the map in *FBR* (the overlay for the 1993 *Wiltshire Flora* is helpful as the maps are almost at the same scale) shows that the records in *FBR* map it on Hellenge Hill, ST3457 and ST3557, immediately north. White did not mention it on this part of the Mendips. Also at Chew Valley Lake, ST5559, S, RLB, who again in 2007 saw it in flower on Clifton Downs near the Zoo, ST5673, G, confirming its permanence after refinding it there last year. There is a photo of the flower in *Nature in Avon* for 2006.

Geranium sanguineum **Bloody Crane's-bill** Norton's Wood, Clevedon, ST4372, S, PM. Recorded by Mr. Nethercott in 1980 on this rocky bank. He considered it introduced there.

Geranium columbinum **Long-stalked Crene's-Bill** A good patch on Jurassic limestone grassland below Great Moody's Wood, Cold Ashton, ST7572, G, CK & MARK, seen on a BNS/Bath Naturalists excursion. Also abundant on the floor of a carboniferous limestone quarry, Tytherington Hill, ST6788, G, CK & MARK and R. A. Burberry.

Geranium purpureum **Little-Robin** Ashton Vale, ST5770, S, RLB. 2 km south of its well-known localities in the Avon Gorge, and well marked by its yellow stamens and small unlined flowers.

Eryngium maritimum **Sea Holly** Last seen in v.c.6 at Uphill in 1983 (BB 2002), it was refound as a single plant in Sand Bay in 2006 by the SRPG, as described in their annual Newsletter, which has only lately come to my attention. White's *Flora* also reported just a single plant there (as Kewstoke Bay), found by Miss Roper in 1907.

Sium latifolium **Greater Water-parsnip** Persisting at the site of introduction on Clapton Moor, S, mentioned in BB 2006, JPM.

Torilis arvensis **Spreading Hedge-parsley** Thirty plants counted in wheatfield beside Severn Way footpath, Aust, ST5790 and three plants just in ST5789, G, J. A. Bailey, CK & MARK. Only one record in *FBR* and now considered an endangered cornfield weed in Britain (2005 Red Data List).

Torilis nodosa **Knotted Hedge-parsley** Salthouse Bay, Clevedon, ST4071, S. Two plants at edge of pavement by railings, PM. Also abundant along grass verge at edge of the old services car park, Aust, ST5689, G, J. A. Bailey, CK & MARK.

Cuscuta europaea **Greater Dodder** River Avon, south of Batheaston, S, HJC & RDR. *FBR* reports this parasitic plant only on the riverbank between Brislington

and Batheaston (ST7867). The 1993 *Wiltshire Flora* shows it extending 10km into Wiltshire (v.c.7 mostly in ST86) and mentions it at Winsley Bridge, Dundas Aqueduct, and Warleigh, continuing into Avon. The vice county boundary takes a complex path in this area and Warleigh at least (3km south of Batheaston), is within v.c.6 and the scope of *FBR*. HJC & RDR have recorded the plant in eight places, on both sides of the river, and on an island, between Warleigh and the east of the railway station at Freshford, ST7862-63, ST7964 and ST7960, all within v.c.6, therefore adding four squares to the distribution map in *FBR*.

Lamium amplexicaule **Henbit Dead-nettle** A few plants in a vegetable patch, Tyntesfield NT Garden and Orangery area, ST5071, S, PM. Also a few plants in a cereal field near Littleton Wood, Dyrham, ST7474, G, Richard & Pauline Wilson, per CK & MARK.

Mentha spicata **Spear Mint** Tyntesfield NT Garden and Orangery area, ST5071, S, PM. Although not shown in the Avon Gorge in *FBR*, I have at least three field records, most recently (2005) at the Burwalls Road entrance to the new walkway through Burwalls Wood, ST5672, S.

Salvia verbenaca **Clary** Pur Down, ST6176, G, RLB suggesting that there may be other relict plants to be found on Pur Down. CK & MARK have an unpublished record for this 10 km square, but otherwise, new.

Verbascum virgatum **Twiggy Mullein** A single plant at entrance to Bristol Parkway Station, ST6279, G, JPM. Also at Montpelier, ST5974, G, RLB.

Kickxia elatine **Sharp-leaved Fluellen** One plant amongst stubble, field east of Tormarton, south of M4, ST7978, G, CK & MARK, who also forward records from Richard & Pauline Wilson: several flowering in cereal field near Littleton Wood, Dyrham, ST7474; and a few plants, Sayscourt Farm, Nibley, ST6981, both G.

Kickxia spuria **Round-leaved Fluellen** Plentiful amongst stubble, field east of Tormarton, south of M4, ST7878 and ST7978, G, CK & MARK; also abundant along north edge of wheat field on Severn Way footpath, Aust Cliff, ST5789, G, CK & MARK with J. A. Bailey.

Melampyrum pratense **Common Cow-wheat** Avon Valley Woodlands LNR, Hanham Green, ST6371, G, on very steep track up through woods, NH. This is an additional square to the six in *FBR*, of which two (confirmed by NH) are adjacent.

Euphrasia tetraquetra **'Four-angled Eyebright'** Plentiful in closely grazed carboniferous limestone turf, Stroud Common, Alveston, ST6287, G, CK & MARK, conf. A. J. Silverside. There are three records in *FBR*, all for S. It is known from the Gully on the Bristol Downs, ST5674 (BB 1970) and P. F. Yeo confirmed it in my 1980 collections and commented, in conjunction with Bucknall's and Garlick's from the same site, "it seems clear that there are a few specimens of *E. tetraquetra* [with possible hybrids], which is found on both the Mendips and the Cotswolds".

Lathraea squamaria **Toothwort** EN has recorded its frequency in three woodlands, all S: 111 (2006, 89) in Prior's Wood, Portbury, ST4874 and ST4974; 40 (2006, 120; 2005, two dozen) in a late count in Weston Big Wood, ST4574; but

in Lime Breach Wood, ST4672 it was not at all common (first seen by EN in 2006 and not marked in *FBR*).

Orobanche hederæ **Ivy Broomrape** Tyntesfield, ST5072, S. The unusual and rarely recorded yellow form (it is reported in Hampshire) is also known to PM in verges on Belmont Hill, ST5170, S.

Campanula glomerata **Clustered Bellflower** Clandown Bottom, *ST6756, S. Near the top of a steep west-facing side of grassy knoll to east of valley, CVWG, per HJC.

Legousia hybrida **Venus's-looking-glass** A single fruiting plant in cereal field near Littleton Wood, Dyrham, ST7474, G, Richard & Pauline Wilson, per CK & MARK. Also found, a few *Chaenorhinum minus*, **Small Toadflax**; and plentiful *Euphorbia exigua*, **Dwarf Spurge**.

Valerianella locusta **Common Cornsalad** Several plants near the roadside at the Portbury end of Caswell Lane, ST4975, S, EN.

Carduus tenuiflorus **Slender Thistle** South Hill, Bleadon, a clump by the quarry, ST3456, S, JPM. *FBR* shows it nearby at Uphill and White's records are purely coastal.

Onopordum acanthium **Cotton Thistle** Berrow, ST2952, S, RSC. A dozen large plants in a ditch near the church, and occurring regularly there since 1996 (see also *Somerset Atlas*). The plant has been known at Berrow - generally on the dunes - since 1834. Also at Bower Ashton, beside the A369 (Parklands/Clanage Road) ST5671, S, PH.

Lactuca serriola forma *serriola* **Prickly Lettuce** Several plants over a distance of 100m on the north side of the road in Westerleigh village, ST6979, G, CK & MARK, who add that they seldom encounter this form with deeply dissected leaves.

Lactuca virosa **Great Lettuce** Tyntesfield NT Garden and Orangery area, ST5071, S, PM.

Crepis biennis **Rough Hawk's-beard** Two flowering plants in improved grass ley with many non-flowering rosettes, east of Tormarton, south of M4, ST7878, G, CK & MARK.

Aster linosyris **Goldilocks Aster** Uphill, ST3158, S. LH and HJC counted 55 flowering stems this year (SRPG newsletter for 2007).

Juncus foliosus **Leafy Rush** A good colony of this rare annual rush in bare areas adjoining a rhyne, Tealham Moor, *ST4145, S, RSC.

Juncus x kernreichgeltii Jansen & Wachter ex Reichg. (*J. conglomeratus x effusus*) **A hybrid rush** Michael P. Wilcox (through CK & MARK) in about 2002 at Michael Wood, ST7095, G, at edge of wood by M5 north-bound services. **New to v.c.34 and Gloucestershire**. This fertile hybrid, is difficult to identify because of the similarity of the parents (see Plant Crib 1998). Plants with an intermediate number and prominence of stem ridges beneath the inflorescence deserve a closer look.

Luzula pilosa **Hairy Wood-rush** Avon Valley Woodland local nature reserve, ST6371, Hanham Green, ST6371, **G**, with *L. sylvatica*, **Great Wood-rush**. Also in woodland between Dundry Park and Conham Road, ST6272, **G**, both NH.

Schoenoplectus lacustris **Common Club-rush** Portbury Wharf, ST4877, **S**, HP. There are a few coastal records in *FBR*, but otherwise it is a riverside or peatland plant.

Eleogiton fluitans **Floating Club-rush** Weston Moor in one field, ST4473, **S**, JPM. *FBR* mentions four squares in the Gordano valley, without listing or mapping them. *Potamogeton coloratus*, **Fen Pondweed** also confirmed, and *Eriophorum angustifolium*, **Common Cottongrass** and a single plant of *Platanthera bifolia*, **Lesser Butterfly-orchid**, both as reported in *FBR*.

Cyperus fuscus **Brown Galingale** Walton Moor, ST4372, **S**. Nine plants found: a poor year here, and also in small quantity in its Hampshire sites, RSC.

Carex rostrata **Bottle Sedge** Still at Weston Moor, ST4473, **S**, JPM, where mentioned in *FBR*. White was perhaps deliberately vague in print as to which part of these moors he had found it on.

Carex extensa **Long-bracted Sedge** In salt marsh, Portbury Wharf, ST4877, **S**, HP.

Carex viridula ssp. *oedocarpa* **Common Yellow-sedge** Siston Common, damp area beside track, ST6674, **G**, NH, as mapped in *FBR*. Persistent in the damp ditch beside the track above Paradise Bottom, Leigh Woods, ST5474, **S**, CML, c.1979 and 2003.

Carex pilulifera **Pill Sedge** Avon Valley Woodland LNR, on edge of track through wood, ST6371, **G**, and later at several other spots in ST6370, **G**, over 40 plants in total, NH. *FBR* reports only six sites, but it remains easily found on dry acidic soil at the gorge edge in the northern part of Leigh Woods, Bristol, ST5574, **S**, wherever *Calluna vulgaris*, **Heather** is found.

Poa infirma **Early Meadow-grass** Wells, ST 5444, **S**, in small quantity in cracks in paving adjacent to south end of car park, Paul Stanley. Second record for v.c.6 and the Bristol Region.

Holcus mollis **Creeping Soft-grass** Tyntesfield NT Garden and Orangery area, ST5071, **S**, PM. Another uncommon plant added to this site for which no records were included in *FBR*.

Gastridium ventricosum **Nit Grass** Clifton Down, ST5673, **G**, PH. Good numbers of plants again at the site reported by P. J. M. Nethercott in BB 1973. This rare annual grass plainly maintains a seed bank as I have visited the spot quite often over the last 25 years, and have rarely seen it there.

Calamagrostis epigejos **Wood Small-reed** Hamfield Lane, Ham, several clumps along road verge, ST6799, **G**, CK & MARK. JPM reports that the colony mentioned in *FBR* at Goblin Combe, **S**, ST4765 ("established on dumped mushroom compost") is still there, but in reduced quantity.

Molinia caerulea **Purple Moor-grass** CK & MARK report that amongst five clumps inspected on Siston Common, ST6674, **G**, three were referable to ssp. *arundinacea* (Schrank) K. Richt., a larger plant normally of fens, and two to ssp. *caerulea*, the more common subspecies.

Gagea lutea **Yellow Star-of-Bethlehem** Stoke St Michael, ST6747, **S**. 31 plants, but none found at: Littleton Wood, Dyrham ST7474, **G**; Grandmother's Rock, ST7071, **G**; Bonnyleigh Hill, ST7950, **S**; or Murdercombe, ST7448, **S**, this site being overgrown with brambles, **RSC**.

Paris quadrifolia **Herb-Paris** Two colonies now known to **EN** in Weston Big Wood, ST4575, **S**, each around 40 plants. Some again "pentafoliate". **EN** also counted over 50 plants in a colony bisected by a fallen tree, Prior's Wood, Portbury, ST4874.

Allium oleraceum **Field Garlic** Abbots Leigh, ST5374, **S**. Over a thousand plants along the roadside bank, **RSC**.

Narcissus pseudonarcissus ssp. *pseudonarcissus* **Daffodil** Coley, ST5856, **S**. A small patch by the bank of the River Chew, **RSC**.

Epipactis purpurata **Violet Helleborine** Hunstrete, ST6462, **S** **RGM** noted four peloric flowers- of two types- on an otherwise normal flower stalk. **HP** noted six plants, possibly at a distinct locality (ST6263).

Epipactis helleborine **Broad-leaved Helleborine** Lord's Wood, ST6362, **S**. A single plant, in a 1 km square additional to *FBR*, although it has long been known from Lord's Wood and the vicinity, **RGM**.

Neottia nidus-avis **Bird's-nest Orchid** Ammerdown Park, Kilmersdon, ST7052, **S**. 21 spikes under lime trees on north side of drive, **RSC**, who has previously found *Ophrys insectifera*, **Fly Orchid**, in the same vicinity (**BB** 2003).

Spiranthes spiralis **Autumn Lady's-tresses** Breakheart Hill, Dursley, ST7596, **G**, **N. Lusmore**, per **CK & MARK**, over 40 spikes on limestone turf to the east of the reservoir.

Anacamptis pyramidalis **Pyramidal Orchid** Great Quarry, Avon Gorge, ST5674, **G**. Two spikes at base of quarry, **RSC**. White gives a number of historical and contemporary (1900's) records for the Avon Gorge but this is a new site, probably naturally derived from roadside populations in the Bristol region rather than one of the three recent arrivals in the Avon Gorge mentioned in **BB** 2004. Also plentiful on south embankment of M5 at Junction 17, Cribbs Causeway, ST5781, **G**, **CK & MARK**; a single spike on a road verge near the M4, Redwick, ST5585, **G**, **JPM**; strong colonies on both sides of the A369, Easton-in-Gordano by-pass, ST5175, **S**, **EN**, some plants particularly large; and 250 spikes on a grassy bank near the M5 bridge, Burnham Moor Lane, Edithmead, ST3348, **S**, **RSC**.

Dactylorhiza maculata **Heath Spotted-orchid** **MW** and **RGM** have independently reported hundreds of plants of this orchid in a meadow near the reservoirs at Barrow Gurney, ST5366 and ST5466, **S**. **RGM** also mentions it at Blagdon Lake, ST5258, **S**.

Dactylorhiza praetermissa **Southern Marsh-orchid** Two plants at Orchard Pools, Severn Beach, ST5483, **G**, JPM. *FBR* and the *New Atlas* have no record in this 10 km square, though White had it at Aust. Also *Samolus valerandi*, **Brookweed**. Fifteen plants in a quarry near Winford Manor, ST5363, **S**, MW. *Ophrys apifera*, **Bee Orchid**, also present. Walton-in-Gordano, field adjoining Arodene, off Down Road, ST4273, **S**, EN, who adds, "about 100 plants, as in 2006; quite a few individual specimens had been decapitated, but by whom I do not know".

Orchis mascula **Early-purple Orchid** Walton Common, ST4373, **S**. At least 20 plants scattered through the woodland, HP. EN only found two spikes surviving and eight decapitated, adding "here again I do not know who the culprit was". Also a single plant on the north shore of Blagdon Lake, ST5160, **S**, with leaves almost solidly dark, RGM.

Orchis morio **Green-winged Orchid** Failand, ST5171, **S**. John Burton notes that since the 1980's the area covered and the numbers of this orchid have been greatly reduced at the Failand Golf Club. He noted 20 plants; I recall thousands hereabouts (ST5272) in a variety of colours in the late 1970's. In small quantity near the house at Tyntesfield, ST5071, **S**, JPM.

Orchis purpurea **Lady Orchid** The SRPG visited Leigh Woods in March 2007 and searched for any sign of this plant which had appeared in Nightingale Valley-behind a tree hardly five metres from the path. They report it was last seen in 1999 and must now be considered extinct. Although heralded as a native at the time MARK felt it was in pot-bound soil and planted.

Himantoglossum hircinum **Lizard Orchid** Still at the A432 **G**, site mentioned in BB 2006. CK & MARK report that the site seems to be well known, as there was much trampling around the plants; they saw five flowering plants during a Gloucestershire Naturalists' Society meeting led by Chris Hurfurt, who had seen another earlier.

Ophrys apifera **Bee Orchid** The orchid has appeared spontaneously in RGM's garden near Chew Magna, ST5563, **S**; however, it did not appear at a known site near Weston Big Wood, ST4575, **S**, EN. Only one plant, near St George's junction, Easton-in-Gordano by pass, ST5175, **S**, EN. Two plants of the var. *friburgensis* have been found at Ubley Warren, ST5055, by RGM and Nigel Milbourne and this year there were two flowering at Walton Moor, ST4473 **S**, JPM (BB 2006, six). The well-known var. *trollii*, **Wasp Orchid**, has been noted by RLB at Avonmouth, ST5378, **G** and Bedminster Down, ST5669, **S**.

Ophrys apifera var. *belgarum* D. M. T Ettlinger "**Winchester Bee-orchid**" This variety was described in 1998 (*Watsonia* 22 (1) 105-107) and there are photographs in *BSBI News* 89 (January 2002) and 90 (April 2002). Richard J. Laurence from Frome, reported three sites in v.c.6, without further details, two north of Bath (1991), and one near Street (1985 and also apparently 1991, see the photograph in *BSBI News* 90).

The labellum has a symmetrical yellow pattern on a chestnut background, and is rounded rather than blunt, and the side lobes are much reduced. It sometimes occurs in small numbers in mixed populations with the type. I have not noticed it in the Avon Gorge but have received the following records for 2007: RGM has identified four plants at Cuckoo Lane, Winterbourne Down, ST6678, **G**; JPM has seen it on the A432 verge near Moorend, ST6678, **G**; RSC reported three normal plants and one with characteristics of the variety at an adjacent six figure grid reference (i.e. possibly the same place) and noted several similar plants in a rough area near Berrow church, ST2952, **S**.

Aliens

Pteris cretica **Ribbon Fern** Bath, ST7565, **S**. A single plant, by the basement of a house in Laura Place, HJC & FR. Another single plant, the cultivar '*Wimsettii*', found previously by R.D. Randall (per HJC), also on the stonework of a basement, Sydney Buildings, Bath, ST7564, **S**.

Pteris multifida Poir. **Spider Brake** Bath, ST7465, **S**. Three mature plants and three young ones, under grille to basement in Lansdown Road. This is a second site in Bath, HJC & FR. Known at this site by CK & MARK for a number of years. The one reported in BB 2006 may be in danger of loss: JPM saw a planning permission notice there in April 2007.

Azolla filiculoides **Water Fern** Shapwick Heath, ST4440, **S**. Described as only locally common on the Levels in the *Atlas Flora of Somerset*, RSC observes that it is becoming dominant for some way along the South Drain.

Helleborus foetidus **Stinking Hellebore** Avon Valley Woodland LNR, Hanham Green, ST6371, **G**, a single plant at top of west facing valley slope, thought by NH to be garden escape here. Not recorded for this 10 km square in *FBR* or the *New Atlas*.

Nigella damascena **Love-in-a-mist** RLB has noted this garden escape in four additional squares to the 23 in *FBR*: Lockleaze, ST6076; Stapleton, ST6176; Hillside, ST6474 and Avonmouth, ST5379, all **G**.

Aconitum napellus **Monk's Hood** Established as a garden throw-out by the New Cut, ST5772, **G**, RLB. *FBR* describes it as an occasional garden escape.

Ranunculus lingua **Great Spearwort** Introduced in ponds at the Royal Fort, ST5873 and at Hanham, ST6372, both **G**, RLB.

Mahonia aquifolium **Oregon-grape** Frenchay, ST6377, **G**; Ashton Park, ST5472, **S**, and Long Ashton, ST5571, **S**, all RLB. There is no record in *FBR* for this 10 km square though it is recorded from there during the same survey period in the *New Atlas*. RLB is finding it increasingly self-sown in the wild.

Papaver pseudoorientale **Oriental Poppy** Garden throw-out, in hedgerow, Barrow Gurney, *ST5367, **S**, RLB.

Eschscholzia californica **Californian Poppy** Lulsgate Quarry, ST5166, **S**, MW. *FBR* had only four records, all from the 1980's.

Dianthus deltoides L. **Maiden Pink** A single plant by Bath-Bristol Railway path, Siston Common, ST6674, **G**, amongst *Galium saxatile*, **Heath Bedstraw** and near to *Calluna vulgaris*, **Heather**, found by Duncan Jones. Later determined and

communicated by CK & MARK and confirmed still there by them in June 2008, during a BNS excursion. Possibly introduced here. The native locality reported by White at Keynsham, S, had become scarce by the time he was compiling his *Flora of Bristol* account (about 1908) and was down to one plant according to his informant, A. W. Cottle in 1916 (annotation by White in his copy of the *Flora*). Colin Trapnell and Noel Sandwith later noted fire damage and just the leaves of two plants (BB 1923). Last recorded in the region by Adrian Grenfell on the Bedminster Tip (BB 1979); therefore not included in the main text of *FBR*.

Persicaria amplexicaulis **Red Bistort** New Passage ST5486, G, JPM. Reported from there as a single spike by B. Lancaster in BB 2004 and evidently persisting. There are only five records in *FBR*.

Rumex scutatus L. **French Sorrel** Lower Peasedown, Peasedown St John, ST6957, S. At base of house wall alongside footpath. CVWG, per HJC. There does not appear to have been a record for the Bristol Region for half a century.

Hypericum x inodorum Mill. (*H. androsaemum* x *H. hircinum*) **Tall Tutsan** On a wall near roundabout with other wall plants, Redland ST5775, G, JPM. Thought to have been last recorded in the Bristol Region in 1953, but there is an ST57 record in the *New Atlas* for the period 1970-1986. **Apparently new to v.c. 34.**

Lavatera thuringiaca **Garden Tree-mallow** Hanham, ST6372, G. Appearing wild, but only a garden throw-out, RLB. *FBR* has only a single record.

Sisymbrium orientale **Eastern Rocket** Lulsgate Quarry, ST5166, S, MW.

Hesperis matronalis **Dame's-violet** Bedminster Down, ST5770, S and Avonmouth, ST5379, G, both RLB; New Passage, ST5485, G, JPM.

Iberis sempervirens **Perennial Candytuft** Leigh Woods village, ST5472, S, RLB. *FBR* has only two records.

Iberis amara L. **Wild Candytuft** Near Faulkland, ST7254, S. With other casuals, on verge by A366 near Bladdock Buildings turn, HJC & JC. A rare casual infrequent casual in South-west England; not recorded in *FBR* and last recorded in about 1950 according to the *Somerset Atlas*.

Diplotaxis tenuifolia **Perennial Wall-rocket** Claverham, ST4467, S. Near railway line, RSC. Although well-known around Bristol, it is uncommon to the south and west.

Eruca vesicaria (L.) Cav. **Garden Rocket** Near Faulkland, ST7254, S. With other casuals, on verge by A366 near Bladdock Buildings turn. HJC & JC. Presumably attributable to ssp. *sativa* (Miller) Thell. Last recorded in BB 1978.

Hirschfeldia incana **Hoary Mustard** A single plant on Broad Lane, an unmade green lane between Westerleigh and Ram Hill, *ST6880, G, CK & MARK.

Lysimachia punctata **Whorled loosestrife** In 2006, on wasteland beneath the M5 junction, Lawrence Weston, ST5739, S, RLB, who adds that the plants had petals which were orange at the centre of the flowers and which have sometimes been segregated as *Lysimachia verticillaris*. I cannot find any records of the plant in the British Isles under that name.

Sedum dasyphyllum **Thick-leaved Stonecrop** Locally abundant on garden pennant sandstone walls, Westerleigh, ST6979, G, CK & MARK.

Tellima grandiflora **Fringecups** Stoke Bishop, ST5675, **G**. An uncommon escape with five records in *FBR*, RLB.

Kerria japonica **Kerria** Coombe Dingle, ST5477, **G**. Growing as a garden throw-out, RLB. The latest record in *FBR* was by the late Florence Gravestock (1990).

Alchemilla mollis **Garden Lady's-mantle** Goblin Combe, near reserve entrance, *ST4765, **S**, JPM. Only three records in *FBR* but one of the fastest spreading neophytes in the country.

Rosa rubiginosa **Sweet-briar** Two bushes on an old tip, an alien species in this context, Weston Moor, ST4473, **S**, JPM. *FBR* has just seven records, with no indication of persistence at any site.

Prunus dulcis **Almond** New Cut, ST5872, **G**. Three self-sown plants, RLB. *FBR* has only a single record.

Prunus cerasifera **Cherry Plum** RSC adds in-the-wild records from Clifton, ST5773, Badock's Wood, Bristol, ST5777, both **G**, and by the River Chew, Keynsham, ST6568 and north of Leigh Woods, ST5475, both **S**.

Prunus domestica **Plum** Hengrove, ST6169, **G**. On old railway, RLB.

Sorbus cf. *intermedia* **Swedish Whitebeam** Avon Valley Woodlands LNR, Hanham Green, ST6371, in quarry, and also in a small open area in woodland between Dundridge Park and Conham Road, ST6372, both **G**, NH.

Galega officinalis **Goat's-rue** Litton, ST5954, **G**, RLB. *FBR* has four records from the 1980's.

Onobrychis viciifolia **Sainfoin** Keynsham Community Forest, ST6667, **S**, found on a BNS meeting, with MW and BP. The *New Atlas* has no record for this 10 km square since before 1970.

Vicia sativa ssp. *sativa* **Common Vetch** A few plants in gateway to New Gaol, Bristol, ST5872, **G**, CK & MARK, who comment that they now seldom come across this former agricultural subspecies.

Melilotus albus **White Melilot** Lulsgate Quarry, ST5166, **S**, MW.

Melilotus officinalis **Ribbed Melilot** Portbury Wharf, ST4877, **S**, HP. In his paper on the alien plants of the Avon Gorge, published in these Proceedings for 1988, Adrian Grenfell wrote that it occurred "on waste ground". So far as I am aware, this was a general statement of its occurrence around Bristol and the docks rather than in the Avon Gorge. I recall seeing it with him at St Philips, ST6072, **G**, and near the Royal Portbury Docks, ST5076, **S**.

Trifolium incarnatum ssp. *incarnatum* **Crimson Clover** Near Faulkland, ST7254, **S**. With other casuals, on verge by A366 near Bladdock Buildings turn, HJC & JC. The only record in *FBR* dates back to 1984.

Myriophyllum aquaticum **Parrot's-feather** Conham, *ST6372, **G**, RLB. Also seen in 2006 and persisting in 2007 at Orchard Pools, Severn Beach ST5483, **G**, JPM.

Lopezia coronata Andrews **Crown-jewels** Folly Farm, ST6060, **S**, Mary Woods, a single plant on a soil ramp behind farm buildings in the course of renovation, with no other unusual alien plants nearby.

Named by JPM from a photograph. According to the standard list of alien plants of the British Isles (Clement & Foster 1993), there were no modern records for this garden plant, an American member of the willowherb family. It has escaped in Austria.

Buxus sempervirens **Box** Tyntesfield, ST5071, S, PM. Several other sites in the wild close to Bristol are reported by RLB.

Euphorbia dulcis L. **Sweet Spurge** In BB 2006 I mentioned a tantalising *Euphorbia* from the edge of Leigh Woods. Eric Clement has kindly identified it for me. It was growing in the grass on both sides of the tarmac path beside North Road above Nightingale Valley, ST5673, S, next to Alpenfels. There are three previous records in v.c.6 and the Bristol Region of which I am aware. In BB 1947, I. W. Evans reported it sparingly (evidently as a purple variety, which mine is not) on a bushy roadside by houses in Leigh Woods, but his herbarium states it was near Beggar's Bush Lane (hence ST5573). However, my notes mention another specimen of his from a road above Nightingale Valley dated 1925. JPM also included it in a list of Avon Gorge plants shown in late May 2000 to the Bristol University Birding Organisation, a group of former students, but is unable to confirm the site.

Euphorbia lathyris **Caper Spurge** RLB adds 11 new squares to the 56 in *FBR*. It is sporadic in and near Burwalls Wood, ST5672, S. After the droughts in the 1970's it was for a while abundant close to the Suspension Bridge. In 2003 I saw one on disturbed ground in the woods, and in 2007 RLB noted it on the Towpath below.

Frangula alnus **Alder Buckthorn** Bower Ashton, ST5671, S. In a planted hedge, RLB. *FBR* mentioned its occurrence in such situations but gave no examples.

Oxalis articulata **Pink-sorrel** New Cut, ST5872, G. Established as a garden throw-out, RLB.

Geranium endressii **French Crane's-bill** Hanham, ST6372, G. Also at Easton, ST6073, G and by the walkway on the old railway near Saltford ST6867, S, all RLB. *FBR* has only three records, all from the 1980's.

Geranium x oxonianum (*G. endressii* x *G. versicolor*) **Druce's Crane's-bill** New Passage, *ST5486, G, JPM. *FBR* has only two records.

Geranium maderense Yeo **Giant Herb-Robert** Tyntesfield, ST5071, S. Introduced, near garden in the orangery area, PM. Not included in *FBR* and there are no mainland records in the *New Atlas*. The polyploid species is adequately described by its name.

Geranium phaeum **Dusky Crane's-bill** By a stream, Long Wood, near Charterhouse, ST4855, S. Presumably the site by water in a little dell at Charterhouse-on-Mendip, south-east of Blackdown, mentioned in White's *Flora*, RSC. It is much less commonly found nowadays. Perhaps also the origin of the 2km square record in the *Somerset Atlas*.

Impatiens parviflora **Small Balsam** Beggar's Bush Lane, ST5573, S, RLB. First found there by Ivor Evans in 1949.

Ammi majus **Bullwort** A single plant near the Bristol Flyer public house, Gloucester Road, Bristol, ST5975, G, found by Rupert Higgins (per JPM), with *Linum usitatissimum*, **Flax**.

Heracleum mantegazzianum **Giant Hogweed** Dunsdown Lane, West Littleton, ST7576, G, CK & MARK. Abundant along sides of lane and between lane and pond to south.

Nicotiana glauca **Sweet Tobacco** Floating Harbour, ST5872, G, RLB. *FBR* has only one record, from 1984, and the *New Atlas* has no post-1970 record for the 10km square.

Calystegia pulchra **Hairy Bindweed** Well established in flower bed beside car park, Berkeley, ST6899, G, MARK. Reported in the same tetrad in Bishop's *New Flora of Gloucestershire* but not shown in that 10 km square in *FBR* or the *New Atlas*.

Phacelia tanacetifolia **Phacelia** West Littleton Down, ST7776, G. Two plants at edge of farm track, Paul J. Chadwick, *per* PM. Also near Horton, *ST7685, G, RLB. There are just two records in *FBR*.

Echium plantagineum L. **Purple Viper's-bugloss** Near Faulkland, ST7254, S. With other casuals, on verge by A366 near Bladdock Buildings turn, HJC & JC. Not mentioned in *FBR*, although the *New Atlas* shows it in ST57 post-1986.

Symphytum x uplandicum **Russian Comfrey** Tyntesfield NT Garden and Orangery area, ST5071, S, PM.

Symphytum orientale **White Comfrey** On grassy verge near the Suspension Bridge, Clifton, ST5673, G, PH. Also in Stoke Bishop, ST5675, G, RLB.

Symphytum bulbosum K. F. Schimper **Bulbous Comfrey** A good flowering patch near top of steps on east bank of M5, Cuttsheath, ST6789, G, CK & MARK, first noticed in 2006, **new to v.c.34 and the Bristol Region**. Known in Dorset since 1893. It has tuberous rhizomes and pale yellow flowers with prominently exerted corolla scales.

Amsinckia micrantha Suksd. **Common Fiddleneck** Stockwood, ST6268, S. On waste ground by house, RLB. Not included in *FBR* but there is a contemporary record in the *New Atlas* for ST78. **Apparently new to v.c.6.**

Verbena bonariensis L. **Argentinian Vervain** Chew Magna, ST5762, S, RLB. Found as a garden escape in 2007 and persistent in 2008. It is distinguished from the wild *V. officinalis*, **Vervain**, by its larger purple flowers and serrate stem leaves. First recorded near Bristol on the Portway Tip ST5575, G, by Mrs. Sandwith (BB 1949) but not mentioned in the appendix of aliens not recently recorded in *FBR*. **Apparently new to v.c.6.**

Melissa officinalis **Balm** A small clump in the grassy bank beside the A369 footpath, near the road to Leigh Court, Abbots Leigh, ST5374, S, RSC.

Mentha x smithiana R.A. Graham (*M. aquatica* x *M. arvensis* x *M. spicata*) **Tall Mint** A good sized clump in pill near footbridge, New Passage ST5486, G, JPM. Last recorded in the Bristol Region in BB 1973, by Joan Appleyard, near Clandown Bottom, ST6855, S.

Linaria maroccana **Annual Toadflax** Near Faulkland, ST7254, S. With other casuals, on verge by A366 near Bladdock Buildings turn, HJC & JC. *FBR* had only two records.

Erinus alpinus **Fairy Foxglove** Stoke Bishop, ST5675, **G**, RLB. *FBR* had only a single record for this rock-garden escape.

Sutera cordata C. E. O. Kuntze **Bacopa** Bath, ST7565, **S**, HJC & FR. One plant on the steps of 54 Great Pultney Street, Bath, January 2007. Wells, ST5445, **S**, HJC. One plant in December 2007 at edge of pavement, against wall of building in Broad Street. **First and second records for v.c.6**. A flowering basket plant in the figwort family, from South Africa.

Lobelia erinus **Garden Lobelia** Stapleton, ST6176 and Conham, ST6372, both **G**, RLB.

Phuopsis stylosa (Trin.) Benth. & Hook. F. ex B. D. Jacks. **Caucasian Crosswort** Goblin Combe, near reserve entrance, *ST4765, **S**, JPM, a patch in the middle of a track. Last recorded in the Bristol Region in 1979 (BB 1979) by Dave Green near Midsomer Norton, **S**, and therefore not in the main account in *FBR*.

Leycesteria formosa **Himalayan Honeysuckle** Further records additional to those few in *FBR* are given by RLB for Blaise, ST5577 and Henleaze, ST5976, both **G**, and near Long Ashton, ST5470 and ST5571, both **S**.

Lonicera nitida **Wilson's Honeysuckle** Tyntesfield, ST5071, **S**, PM. Also in seven further squares in ST57 and at Hengrove, ST6169, **S**, all RLB.

Lonicera xylostium **Fly Honeysuckle** New Cut, ST5872, **G**, RLB, who comments that the edges of the New Cut show attempts at planting, supplemented by a variety of garden throw-outs, so that the precise source of introduction is therefore unclear. One persistent site in v.c.6 mentioned in *FBR*.

Echinops sphaerocephalus **Glandular Globe-thistle** Wedmore, ST4447, **S**. A garden throw-out established in grassy verge of Mill Lane, EJM in SRPG newsletter for 2007. First county record since several in 1984 (see *FBR*).

Tragopogon porrifolius **Salsify** Kings Weston, ST5377, **G**, RLB.

Pilosella aurantiaca **Fox-and-cubs** The 11 squares in *FBR* seem to suggest under-recording. RLB adds sites at Shirehampton, ST5477, Golden Hill, ST5876 and Hanham, ST6371, all **G**. At its site in Quarry 2, Leigh Woods, ST5574, **S** (BB 1979, and long known there) it seems to have been replaced by *Succisa pratensis* by the 1990's.

Erigeron philadelphicus **Robin's-plantain** A single clump by the A369 near Portishead *ST4875, **S**, JPM. *FBR* has only four records, including well established sites in the village of Leigh Woods, some 10 km eastwards on the same road.

Erigeron karvinskianus **Mexican Fleabane** Also well under-recorded with eight squares in *FBR* and was persistent on Black Rocks, in the Avon Gorge, ST5674 from 1980 and throughout the recording period. RLB adds four new squares in ST57, **G** and **S**, and Conham, ST6372, **G**.

Leucanthemum x superbum **Shasta Daisy** Castle Park, Bristol, ST5973, **G**. Growing wild, but perhaps originally planted, RLB.

Brachyglottis "Sunshine" **Shrub Ragwort** Ashton Park, ST5671, S. Growing on a wall, not obviously planted, RLB, though the author of the *Flora of Berkshire* (Crawley, 2005) states it does not self-seed. Also known to gardeners as *Senecio x greyii*. *FBR* has a single record.

Galinsoga parviflora **Gallant-soldier** In a "set-aside" field near Portbury Church, ST5075, S, EN; more widespread and numerous than when discovered in 2006, now in thousands. There are just two records in *FBR*, and one subsequently (BB 2004) four km away, and none in the northern half of our area since the 1930s.

Melampodium montanum Benth. **Black-foot** Paulton, ST6556, S. Self-sown at base of wall of the Red Lion, but not seen in the window-box above, HJC. This yellow-flowered member of the daisy family from the Americas was first found wild in the British Isles by I. P. Green at the City Arms, Wells ST5445, S (BB 2000 and in *BSBI News* 94 for September 2003). There are photographs of plants found in Hampshire in *BSBI News* 107 for January 2008.

Elodea nuttallii **Nuttall's Waterweed** Orchard Pools, Severn Beach *ST5483, G, JPM.

Lemna minuta **Least Duckweed** Marlpool, Breadstone, near Berkeley, SO7101, G. Abundant in a cattle trough, CK & MARK. This duckweed has been under-recorded, but is also increasing; in the *New Atlas* it is not shown in this or any adjacent 10 km squares although the updated online BSBI maps show many new records.

Briza maxima **Greater Quaking grass** New Cut, ST5772, G. Established as a garden throw-out. Also at Ashton Vale, ST5770, both RLB. *FBR* has only three records, but there is another in BB 2006.

Phalaris aquatica **Bulbous Canary-grass** East of Cleaves Wood, Hinton Charterhouse, ST7657, S. In corner of arable field with border of sunflowers. Few spikes just inside gateway. CVWG, per HJC; identification confirmed by Ian P. Green. There are only two records in *FBR*.

Phalaris canariensis **Canary-grass** Lulsgate Quarry, ST5166, S. A single plant, MW.

Polypogon viridis **Water Bent** Plentiful at footings of White Hart Inn, Bitton in 2006, ST6869, G, CK & MARK. Not in *FBR* but regularly reported in BB subsequently.

Anisantha diandra **Great Brome** Clay Pitch, Horton, small patch by cornfield, *ST7683, and Cold Ashton, in good quantity at corner of rape field, ST7572, both G, CK & MARK. As indicated in *FBR*, an increasing introduction.

Anisantha madritensis **Compact Brome** Norton's Wood, Clevedon, ST4372, S. Ten plants on a rock outcrop facing south, about 20m from a footbridge over M5, PM. Thousands were reported by I. P. Green in BB 2000 on the north verge of the M5 between Clevedon and Portbury, so the current record may only be part of the population.

Echinochloa crus-galli **Cockspur** Redwick, ST5485, **G**. Six plants growing along pavement just north of motorway bridge, HP. JPM (who also saw it thereabouts in 2006) added it was "later sprayed with herbicide by an annoying person". In a short paper, illustrated with a distribution map, Simon Leach describes its spread in the last 10 years onto Somerset roadsides (*BSBI News* 104 for January 2007, page 38).

Setaria pumila **Yellow Bristle-grass** Good colonies of plants are reported by the railway track at the Floating Harbour, ST5872, **G**, by PH and at the edge of a field near Lullington, ST775, **S**, by RSC.

Setaria verticillata **Rough Bristle-grass** Spike Island, (the land between the Floating Harbour and the New Cut from Cumberland to Bathurst basins) Bristol Docks, abundant along railway line running along floating harbour for more than 100m, ST5872, **G**, CK & MARK. Recorded at Wapping Wharf by Ivor Evans in 1949, and collected by the Sandwiths at Eastville (before 1932) Avonmouth Docks (1928) and Bedminster (1930).

Sorghum halapense **Johnson-grass** Spike Island, Bristol Docks, plentiful along railway line running along the New Cut, ST5772, **G**, CK & MARK. A rare alien, but with a history of records around the Bristol, Avonmouth and Portbury docks.

Muscari armeniacum **Garden Grape-hyacinth** Hartcliffe, ST5868, **S**, RLB. Although only eight records are shown in *FBR*, the *New Atlas* shows it to have been more evenly spread across the Bristol region.

[*Scilla messeniaca* Boiss. **Greek Squill** This species, reported in BB 2006 as new to the Bristol Region from Smallcombe Wood, ST7664, **S**, was *S. bithynica*, **Turkish Squill**, at the site mentioned in *FBR*. When first found an incorrect name was used and this has remained in circulation.]

Allium triquetrum **Three-cornered Garlic** RLB reports three additional localities for this increasing introduction: Penpole wood, ST5377; Henbury, ST5779; and Henleaze, ST5877, all **G**. CK & MARK add that it is well established in Fernhill Lane, Lawrence Weston, ST5478, **G**.

Galanthus nivalis **Snowdrop** Clifton Down, *Avon Gorge, ST5673, **G**. At the edge of the plateau, beside the Promenade, CML & LH. RLB continues to add records close to Bristol additional to those in *FBR*.

Ruscus aculeatus **Butcher's-broom** RLB reports three additional localities for this introduction: Westbury, ST5776 and ST5777; and Frenchay, ST6377, all **G**.

Sisyrinchium striatum Sm. **Pale Yellow-eyed-grass** Farrington Gurney, ST6355, **S**. At base of wall on north side of street, HJC & Linda Carter. **New to v.c.6**. Last recorded in the Bristol Region in 1979 according to *FBR* and therefore excluded from the main flora account.

Iris xiphium L., **Spanish Iris** (probable) is reported in the 2007 SRPG newsletter in a field near the west end of Mascall's Wood, Cheddar, ST4653, **S**. The finder, EJM, noted several in a row and considered them obviously planted, but **new to Somerset** in the wild.

Crocsmia x crocosmifolia **Montbretia** New Cut, ST5872, **G**, RLB.

Acknowledgements

I would again like to thank all contributors for their interesting plant records. I thank the Editor and our Society for their indulgence of the delays in submission of Bristol Botany in 2007. I particularly thank Clare and Mark Kitchen for continuing to keep me in touch and Pam Millman for acting as receiving secretary for records.

Bristol Botany in 2008

Clive Lovatt

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“*Lovely golden fronds which catch the wandering rays of sunshine*” (G. W. Garlick lyrically describing the sight of the Beech Fern in Leigh Woods in 1951 in a note in his unpublished Avon Gorge Survey, now in the ownership of the Bristol Naturalists’ Society)

Introduction

By the time I met the late George Garlick in 1979, the **Beech Fern** seems to have died out, and he could not quite recall the exact hollow he had discovered it in over a quarter of a century earlier, somewhere on the Leigh Woods plateau above Quarry 4. As we walked through the woods, he described to me how excited Noel Sandwith had been to be shown it the following year (see BB 1952): he had jumped into the air with glee. The same image, captioned “a new species” appears on a hand-drawn family Christmas card for 1890 amongst H. Stuart Thompson’s papers in the Bristol University Library.

It was only recently I learnt of Garlick’s own pleasure as so beautifully described above. Multiply such joy manifold and you have Bristol Botany. This year we have our Bristol botanists botanising up ladders, down steps, in cemeteries, outside public houses, and from boats, and cars in the fast-lane. I should add, in wellington boots in the estuarine mud, for how else might a *Zostera* (**Eelgrass**) have been found? Now based in Lagos, Nigeria, I remain only a minority contributor of botanical records to this annual report.

The following natives are new to the Bristol area and occur in the northern or southern half as indicated. In February 2009, a new species of whitebeam was described from the Avon Gorge: *Sorbus leighensis*, the **Leigh Woods Whitebeam**, previously referred to as ‘Bristol *porrigentiformis*’ (S). Four new *Sorbus* hybrids were also described (see summary below), one named after its discoverer, the poet, climber and botanist, Libby Houston. Also new to our area as natives are: *Dryopteris x complexa* nothosp. *complexa*, a **hybrid Male-fern** (S); *Erophila majuscula*, **Hairy Whitlowgrass**, (G, S); and *Agrostis curtisii*, **Bristle Bent** of which a few plants, quite remarkably, were found on Black Down, S. *Elytrigia x drucei*, the **Hybrid of Common and Sea Couch**, is confidently reported (S) and might well prove to have been previously misidentified and more widespread.



View of a Downs' clump see page 114. E Davis



Lapwing Chicks. See page 12. L Roberts



Spider's web, R Symes



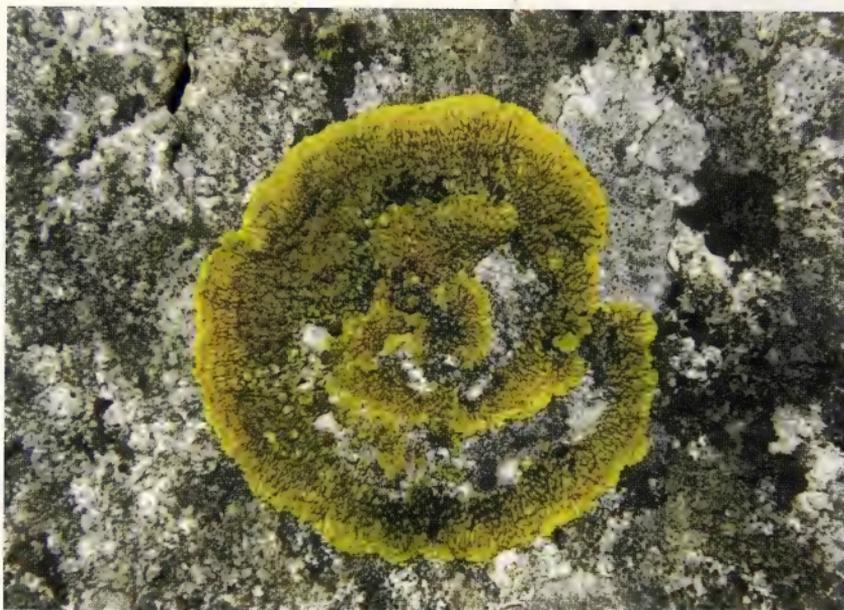
Garden Invader. R Symes



Banded Snail. R Muston



Fritillary R Muston



Lichen R Muston



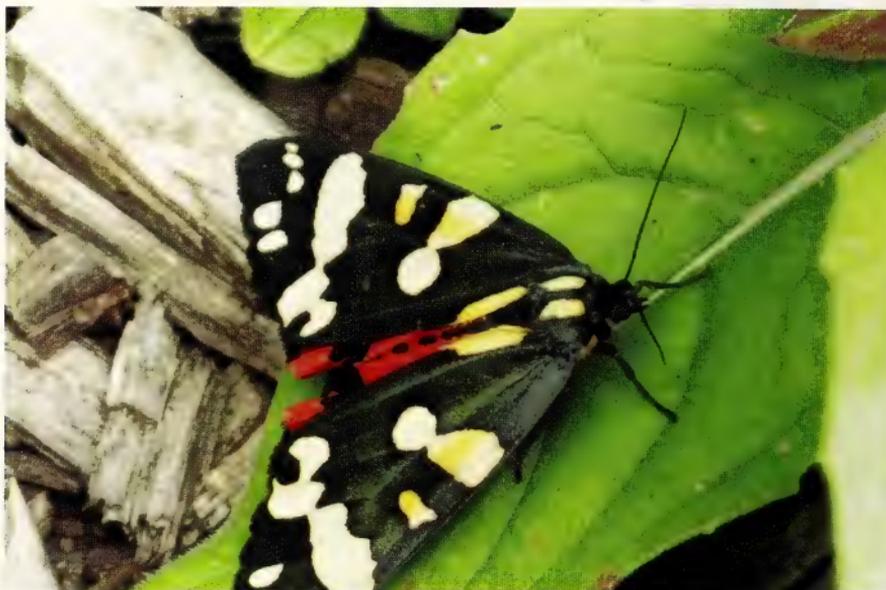
The Society at work. R Symes



Southern Oak Bush-cricket oviposting. See page 29 R Cropper



Rough-bark Maple, Tyntesfield See page 87 R Bland



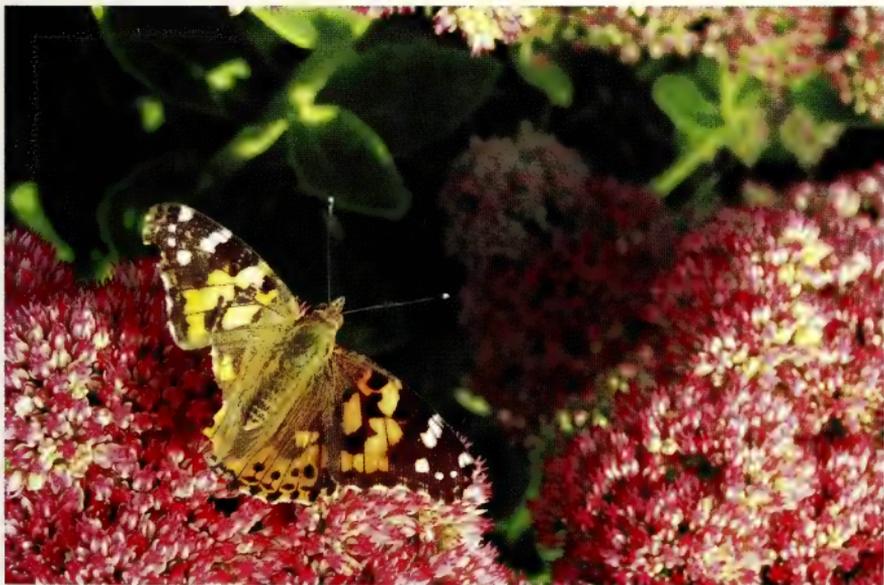
Scarlet Tiger. R Muston



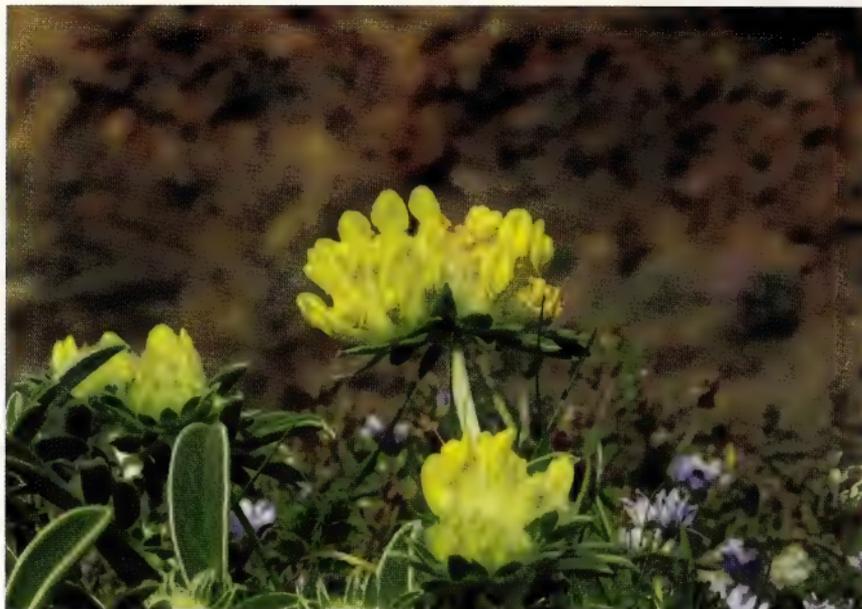
Camperdown Elm, Tyntesfield R Bland



Spindle web caterpillar. R Symes



Battered Painted Lady R Symes



Kidney Vetch. R Muston



Salsify. R Bland

There are a number of reports of the persistence of species at known sites, or the re-finding of species though lost to the region. *Glaucium flavum*, **Yellow Horned-poppo** has been found in three places on the north Somerset coast, having last been seen there as a single plant in 1992. *Calystegia soldanella*, **Sea Bindweed** was also last reported in 1992 and has been seen again (S).

Polygala calcarea, **Chalk Milkwort**, still occurs in the Combe Hay/Southstoke area (S), where first found in 1909. *Isolepis cernua*, **Slender Club-rush**, though known more recently at another site, has been found again where discovered by the Sandwiths in 1945 (S). In the case of *Sorbus bristoliensis*, **Bristol Whitebeam**, the persistence of two individual trees which occur in the early records has been adequately demonstrated (G, S).

The following alien (in the places discovered) plants are not reported in the main text of *Flora of the Bristol Region (FBR)* or in *Bristol Botany 2000* or subsequently. They are therefore either new to the Bristol district or have not recently been seen there, or were overlooked during the compilation of the *Flora*. Where specified, they are new to one or other county, vice-county or part of the Bristol region: *Adiantum raddianum*, **Delta Maidenhair** (Somerset); *Rumex frutescens*, **Argentinian Dock** (S); *Sarracenia purpurea*, **Pitcherplant** and an uncertainly determined *Sarracenia* species *S. cf. flava*, **Yellow Pitcherplant** (Somerset); *Passiflora caerulea*, **Blue Passionflower** (Gloucestershire); *Oenothera x fallax*, **Large-flowered x Common Evening-primrose** (v.c.6); *Acer saccharinum*, **Silver Maple** (Somerset); *Geranium asphodeloides*, a **Crane's-bill** (v.c.6) *Nicotiana sylvestris*, **Tobacco Plant** (Somerset); *Cephalaria gigantea*, **Giant Scabious**; *Carthamus tinctorius*, **Safflower**; *Cosmos bipinnatus*, **Mexican Aster**; *Chionodoxa forbesii*, **Glory-of-the-snow**; and *Crocus speciosus*; **Bieberstein's Crocus** (Somerset).

At a finer scale, several records are apparently new to the 10 km squares in which they occur, so far as the standard published sources reveal. These are marked with a * preceding the grid reference in the main text. *Anaphalis margaritacea*, **Pearly Everlasting** and *Muscari armeniacum*, **Garden Grape-hyacinth** are new to the flora of the Avon Gorge.

Studies in *Sorbus*

In the February 2008 part of *Watsonia*, the journal of the Botanical Society of the British Isles (BSBI) pages 37-49, Libby Houston, Ashley Robertson and Tim Rich describe the distribution, population size and growth of *Sorbus bristoliensis*, the striking Avon Gorge endemic, the **Bristol Whitebeam**. The first and last authors had previously given a similar account of *Sorbus wilmottiana*, **Wilmott's Whitebeam** in the same journal in 2004 (pages 185-191). They attest to a population of at least 262, significantly more than estimated from previous less systematic observations.

The paper also demonstrates by tree ring counts and girth measurements that there were far more trees in the 19th century than contemporary botanists realised. As described in my essay in the BNS Bulletin for December 2007, from its first discovery above Nightingale Valley in Leigh Woods in 1852, until a dark and wet Monday in 1901 only one tree was known; and on the Clifton side it was first discovered only in 1909. The survey has also allowed us to match historical accounts with the actual trees; Miss Atwood's growing horizontally away from former grazing at the top of a cliff beside North Road; and the Clifton one also escaping sheep on a small cliff above the lower part of Bridge Valley Road, at a geological junction.

In the same *Watsonia*, pages 69-72, there are records of chromosome numbers of British *Sorbus*, and several anomalies are mentioned, some of which are being investigated by Tim Rich and co-workers, using genetic fingerprinting (*Botanical Journal of the Linnean Society* for 2007, Vol. 154 pages 291-304) as well as field survey and traditional and modern morphological methods. This is perhaps not the place and time to give a full summary of recent *Sorbus* researches; as Tim Rich explained to me, "there are still a lot that can't be named reliably".

Sorbus x vagensis, the **Wye Valley Whitebeam** (*S. aria* x *S. torminalis*) is misreported in *BSBI News* 107 for January 2008, page 44, as occurring in the Avon Gorge. The short note refers back to a paper by David Price and Tim Rich in the August 2007 edition of *Watsonia*, pages 419-432 which adds no sites to those mentioned in the *Flora of the Bristol Region*.

The February 2009 part of *Watsonia* has two *Sorbus* papers which, to avoid delay, are noticed here. Plants put under *S. eminens* have long been known to be variable and *S. eminentiformis* has been described for the Lower Wye Valley plants (Rich & Proctor, Some new British and Irish *Sorbus* L. taxa, pages 207-216). The plant of our region, the leaves of which I always mentally tally with a picture of a fresh white tennis ball, is *S. eminens*.

In Rich, Harris & Hiscock, Five new *Sorbus* (Rosaceae) taxa from the Avon Gorge, England, pages 217-228, one new species and four new hybrids are described and illustrated. *Sorbus leighensis* T. Rich, the **Leigh Woods Whitebeam** is what has for some years been referred to as "Bristol *porrigentiformis*". (*S. porrigentiformis* itself also occurs in the Avon Gorge, and T. B. Flower managed to recognise it as distinct and worth collecting.) It is thought to be an apomict (clonal) derivative of the variable *S. aria* and *S. porrigentiformis* and has obovate leaves (some truncate). It is described as endemic to the Somerset side of the Avon Gorge, some 80 plants being known from quarry 4 northwards, ST5673, ST5674 and ST5574, S

The name, *S. x avoniensis* T. Rich, **Avon Gorge Whitebeam**, is given to one-off hybrids of the same parentage (*S. aria* x *S. porrigentiformis*). Certain identification depends on DNA analysis, but specimens are cited from both sides of the Avon Gorge, ST5673, **G** and **S**.

Sorbus x houstoniae T. Rich, **Houston's Whitebeam** is of course named after Libby Houston, herself described as the guardian angel of the Avon Gorge, and frequently sharing the habitat of these whitebeams, "clinging to impossible cliffs in remote parts of the Gorge". This is an evident hybrid of *S. aria* and *S. bristoliensis*. Libby showed me the only known example, below Stokeleigh Camp, ST5673, **S**, in late 2008.

Sorbus x robertsonii T. Rich, **Robertson's Whitebeam** is the hybrid *S. aria* x *S. eminens* with broadly elliptic leaves. Just one is so far known, at the Great Fault, ST5673, **G**, but it is expected that DNA analysis will confirm similar appearing plants from elsewhere within the limited range of *S. eminens* as now circumscribed.

Sorbus x proctoris T. Rich, **Proctor's Rowan** is a hybrid of native *S. aucuparia*, **Rowan**, and *S. scalaris* Koehne, a cultivated Rowan from China which has not itself been found in the wild in the Avon Gorge or Bristol area. The hybrid, a single small tree, new to the wild in Britain and technically a native, was found in 2004 by Tim Rich, Ashley Robertson and Libby Houston above Quarry 2, Leigh Woods, ST5574, **S**. The finders noted it looked unusual, as the leaves had about 10 pairs of lateral leaflets, more than found in *S. aucuparia*. Ashley Robertson confirmed its hybrid status by DNA analysis and the origin was suggested by Hugh McAllister, who had earlier produced the hybrid in cultivation.

Bristol Botanists

I have managed to continue my monthly essays on Bristol Botanists for the BNS Bulletin. They remain somewhat ephemeral (the electronic copies remain online only for a year, but I have a complete set) and are therefore summarised here, continuing from March 2008 to February 2009. Three of the essays on **J. W. White** were reprinted in the Society's Proceedings, *Nature in Avon*, for 2007. I have also written about White's support of the younger generation of botanists, and on the writing of his *Flora* (May, June and July/August 2008 bulletins).

Miss Martha Maria Atwood (c.1810-1885) and her three volume collection of British mosses were mentioned in BB 2006, and I described and illustrated them for the BNS Bulletin for March 2008. One of the volumes has the epitome, 'Tis but a moss/ And yet it speaks/ Its Master's handiwork'. Adolph Leipner underestimates her contribution when he mentioned her in our 1866 Proceedings: "altogether the [Bristol] district yielded about one hundred species, most of which he had discovered himself, and the remainder had been found by Miss Attwood [sic]". It is probably by this reference, or conversations with Leipner, that White came to mention her as a "prominent muscologist".

George Henry Kendrick Thwaites (1812-1882) left Bristol in 1849 to take up the position of Superintendent of the Royal Botanic Gardens in Ceylon, and never returned. To date (May 2009) I have completed eight consecutive instalments of his biography, beginning in the September 2008 bulletin. Thwaites had met Charles Darwin at a meeting of the British Association for the Advancement of Science at Oxford in 1847 "I am so glad to hear about Thwaites", wrote Charles Darwin to their mutual friend Joseph Hooker on 3 March 1860, when he learned of Thwaites' approval of the theories recently described in the *Origin of Species*. Hence Thwaites became one of the 15 naturalists listed as early supporters in an attachment to that letter. Two others of local interest are Leonard Jenyns of Bath and Dr W. B. Carpenter, who left Bristol in 1844 to take up a professorship in London. This news came out, fittingly, in February 2009, the month of the 200th anniversary of Darwin's birth. Thwaites was the founding Secretary and Treasurer of the Bristol Microscopical Society in 1843, and in the March 2009 bulletin I summarised the affairs of that Society under his direction, having recently read the early minute books preserved in our Society's archives.

George Garlick (d. 1998) was mentioned in BB 2004. I now find that his survey books in my possession, a massive species abundance/site matrix, are complemented by an Avon Gorge survey manuscript record book, which had all this time been with my predecessor author, and which Professor Willis passed on to our Society before he died. Although the survey books minutely tabulate the same data (but with additional sites outside the Avon Gorge), this record book lists out, one site to a page, the plant species and their abundance, and gives survey dates mainly in 1951. It also has more clear physical locality descriptions and diagrams, though it almost entirely lacks habitat notes and rare plant population counts. Critically, the large Avon Gorge map in my survey book can be directly linked to the alternate site numbering in the new source, so that it is now easy to see roughly where *Gastridium*, **Nit-grass**, grew in Fairyland, and how much *Erica cinerea*, **Bell Heather**, was in the Gully (locally abundant) before it shrank to two clumps by 1980 and none all too soon later. Of particular importance are his base map of relict downland and the tracing paper overlays mapping the distribution, or rather the local abundance, of almost 50 grassland and scrub species. These can, and one day must, be compared with other records from the early 1970's to more recently to show, very clearly, the extent of change over this period. Thank you George! He made two bryophyte collections and both are now in the National Museum of Wales, together with the late Joan Appleyard's Somerset and general collection (6,726 specimens). One of Garlick's collections was originally at Bristol University and when I referred to it I noted 839 numbered packets in old gym pump boxes. The Museum records the accession in 1991 of 490 mosses and 175 liverworts, suggesting some losses. The second collection, received in 1988, is bigger, with 4,173 mosses (specimens so far databased collected 1954-1981) and 979 liverworts (1967-1981). The latter date tallies with the bryological field meeting he led for us in Leigh Woods one wet day.

Bristol botany bibliography

When Stephen Bishop died in 1997, he left some 200,000 tetrad (2km x 2km squares) records for Gloucestershire, but recording was perhaps only half-complete, and particularly sparse in the south of the county. In 2000, the first part of his *New Flora of Gloucestershire* was published as a special issue of the Gloucestershire Naturalist (no 13) and included the species for which he had written accounts, and the maps, where required. Following the standard sequence of the ferns and flowering plants, this reached into the first few crucifers.

The second and final part was published in 2008, as special issue no 14, edited by the current recorders for Gloucestershire, Clare and Mark Kitchen, and Ian Carle. It includes the remaining maps (plus four missed in the earlier volume), four pages of unmapped taxa, mainly scattered and infrequently recorded casuals, with a few more widespread segregates only recorded as aggregates on the maps. As the editors remarked, (and one can only thank them and agree) “we felt it was better to publish it, and place this vast amount of field work in the public domain rather than leave it to sit...unloved and forgotten”. Despite this remark, the Kitchens tell me they have referred to it both affectionately and regularly. The work here presents, after all, “the first ever distribution maps produced for the county for the majority of species at this level of detail”.

In 1992, Geraldine Taylor’s *The Secret Bristol Downs*, was published, with the descriptive sub-title, *a wildlife diary with walks for each month of the year*. In 2008 it has been reconceived as *The Bristol Downs- a natural history year* and the body is now made up of accounts of selected flowers, grasses, trees and shrubs, fungi, birds, mammals and butterflies, with original illustrations by Dru Marland. Revised monthly walks are given amidst a gentle plethora of detailed observations, such as jays flying across the gorge, to plant acorns on the Downs.

The interests of the Somerset Rare Plants Group extend beyond what might be implied by their name. Their annual newsletters, from 2000 onwards, are available online. I have used the 2007 and 2008 newsletters in the compilation of BB 2007 and 2008, but have not scoured the earlier editions for additional records which might have been reported. Bristol Botany is intended to be a main source for plant records for the geographical area but cannot be the *only* source.

Nature in Avon Volume 67, our Proceedings for 2007, has several papers with botanical records. My own compilation account of the Liverworts of the Avon Gorge (pages 105-113) will be followed in due course by a similar account of the mosses.

Mary Wood contributes an interesting article (pages 14-16) on the wildlife of Arno’s Vale Cemetery, ST6071, S. *Ononis spinosa*, **Spiny Restharrow** and *Trifolium medium*, **Zigzag Clover** are mentioned, neither of which is shown there in *FBR*. *Atropa belladonna*, **Deadly Nightshade**, is mentioned as having occurred

there in the past, but not recently. My notes reveal that interest in the botany of the site goes back far: Miss Atwood had collected mosses there in 1855.

Ian Chambers' article (pages 17-21) has a good account of the site history and wildlife of Jubilee Stone Wood nature reserve, Backwell, ST4968, S. Two notable plants occurring there are *Monotropa hypopitys*, **Yellow Bird's-nest** and *Erica cinerea*, **Bell Heather**.

Hazel Willmott (pages 22-35) describes the status, threats and conservation of *Ranunculus ophioglossifolius*, **Adder's-tongue Spearwort**, at Inglestone Common, ST7588. This complements a similar account of the plant at its other British site, Badgeworth near Cheltenham, by Lewis Frost and of the reserve by Sonia Holland.

Terry Smith (pages 94-95) writes of some botanical curiosities in Nailsea, ST4770, S. *Orobanche minor* growing, as it commonly does, on *Senecio "greyii"* is additional to sites in FBR. He mentions successfully introducing *Orobanche hederæ*, **Ivy Broomrape** to North Stockwell nature reserve ("3/4 acre in the middle of Nailsea"), and that *Ambrosia artemisiifolia*, **Ragweed**, has occurred under bird feeders there (5 records in FBR, apparently new to the 10 km square), with a *Digitaria*, **Finger-grass** species.

Plant records

The area covered by this report remains that defined and mapped in White's Flora of Bristol (1912); in turn this reflected the scope of interest of the Society almost from its inception. White described the area as an irregular right-angled triangle of 720 square miles from Dursley in the north southwards to the east of Bath to Frome, and thence west to the Severn at Huntspill, south of Burnham.

Following White, the portion falling into the Watsonian vice-county of West Gloucestershire (v.c.34) is designated G. Except for a small portion south of the New Cut, the boundary follows the Avon to Swineford, and from there it proceeds north of easterly, five km north of the centre of Bath. The southern portion, designated S, falls within North Somerset (v.c.6). The *Flora of the Bristol Region* (2000) mapped the vascular plants of the former administrative county of Avon and therefore excluded a strip of White's triangle some 13 km south of Brean Down; that area is mapped at a lower scale in the *Atlas Flora of Somerset* (1997).

The plant records are arranged into two groups, Natives and Archaeophytes, and Aliens. Archaeophytes are plants that behave as natives but were or seem to have been anciently introduced by man. Neophytes (also known as aliens) are plants found in the wild but which are more recent introductions. These are often merely casual – neither surviving long nor regenerating. Ideally the groups would be distinguished at the local rather than the national level.

The plant names and sequence within both lists follow the second edition of Stace's *New Flora of the British Isles* (1997) are therefore compatible with the

Flora of the Bristol Region. Accordingly, the Latin names (*in italics*), which necessarily take precedence, despite the standardisation of English names (**in bold type**), can be unambiguously cited without authors' names, except for the occasions when something new is reported. The vice-county catalogues, online at the BSBI website, and their *New Atlas of the British and Irish Flora* (2002) and its CD and online update are also useful for assessing the importance of the plant records. A reasonable familiarity with the contents of a contemporary botanical library is assumed. In many cases online or unpublished resources are used.

Where new to Gloucestershire or Somerset, or to the vice counties v.c.34 (West Gloucestershire) or v.c.6 (North Somerset), this is stated. The symbol * before a grid reference designates a record apparently new to the 10 km square; it can be difficult to be sure. Where the symbol * appears before **G** or **S**, or a site name such as the Avon Gorge, it indicates the species is new to that part of the Bristol area, having previously been recorded only in the other district. For aliens new to the region a brief description is often given, with more detail where not mentioned in Stace's *New Flora*.

Following the practice commenced in Bristol Botany in 2006, 1 km grid references are again given. The plant records are more precisely localised- geographically or by habitat- where possible, and where it seems important to do so.

Names of the principal contributors of the 800 or so plant records received are abbreviated as below, listed alphabetically by surname. The full list of submitted records may be obtained from the author or office bearers of the Botanical Section. *FBR* refers to the *Flora of the Bristol Region*, published in 2000 and unattributed comments are those of the author (CML). *BB* abbreviates this title, *Bristol Botany* which has been issued in that name for almost an unbroken century.

RLB Richard Bland; JPM John Martin; RSC Robert (Bob) Cropper; EJM Elizabeth (Liz) McDonnell; HJC Helena Crouch, (VC6 recorder); RGM Richard Mielcarek; CVWG Cam Valley Wildlife Group; PM Pam Millman; SRPG Somerset Rare Plants Group; EN Edward Niblett; PH Peter Hilton; KP Karen Pollock; LH Libby Houston; RDR Robert (Rob) Randall; NH Nick Hudson; FR Fred Rumsey; CH Chris Hurfurt; AGS Anthony (Tony) Smith; CK & MARKClare and Mark Kitchen (Recorder VC34); MW Margaret Webster; CML Clive Lovatt; HWHugh Welford

Natives and archaeophytes

Equisetum x litorale (*E. fluviatile* x *E. arvense*) **Shore Horsetail** A patch by one ditch in field north of lane, Kenn Moor, ST4368, S, JPM. There is only one record in *FBR*, in **G**, for this hybrid of the Water and Field Horsetails, which is perhaps under-recorded. The Somerset Atlas has four records all close to the Mendips.

Ophioglossum vulgatum **Adder's-tongue** Inglestone Common, ST7588, **G**, HW. RSC reported it beneath trees in the adjacent Spoil Coppice and White's *Flora* has a record on a grassy drove in Lower Woods. Are these all the same spot?

Asplenium adiantum-nigrum **Black Spleenwort** About 20 plants on railway bridge at Brentry, ST5779, **G**, CK & MARK. One plant on wall of boarded-up building by pedestrian crossing in supermarket car park, Midsomer Norton, ST6654, **S**, HJC.

Polystichum aculeatum **Hard Shield-fern** Shortwood near Pucklechurch. Locally frequent on a ditch edge in south of wood east of clay pits, ST6876, **G**, NH.

Dryopteris x complexa Fraser-Jenk. nothosp. *complexa* (*D. filix-mas* x *D. affinis* ssp. *affinis*) **A hybrid Male-fern** Leigh Woods, ST5573, **S**. One plant to south side of path, near top of Nightingale Valley, Matt J. Stribley per SRPG. Reportedly **new to Somerset**. There are now three subspecies of *D. affinis* (formerly *D. pseudomas* or *D. borrieri*) recognised in Stace's *Flora* and there are therefore three forms of the hybrid. It is not known which is recorded as a single specimen in Roe's *Flora of Somerset* but it presumably corresponds with the [1970's] record for ST36 in v.c.6 (a 10 km square including Worle Hill) in the 1978 *Atlas of Ferns of the British Isles*. The BSBI online annotated vice-county *Census Catalogue* lists ssp. *borrieri* and ssp. *affinis* for v.c.34 on the authority of CK & MARK, but only the former is shown for v.c.6, despite the implication of ssp. *affinis* in the parentage of the Leigh Woods plant. More field investigations would be worthwhile as there are places where all three subspecies and hybrids are found. A new taxonomy of the group, with a key and descriptions appears in *BSBI News* 108 (April 2008) pages 19-24.

Dryopteris carthusiana **Narrow Buckler-fern** Shortwood near Pucklechurch. Several plants in north central area of wood, ST6776, **G**, NH. Not recently recorded in this 10 km square.

Nymphaea alba **White Water-lily** Leechpool, ST7185, **G**, NH.

Helleborus viridis **Green Hellebore** Tyntesfield National Trust, ST5071, **S**, PM. A small clump near edge of Truckle Wood.

Ranunculus circinatus **Fan-leaved Water-crowfoot** Chew Valley Lake, ST5658, **S**, JPM. Locally frequent in Stratford Bay, observed from a boat.

Glaucium flavum Crantz **Yellow Horned-poppy** Sand Bay, ST3364, ST3365 and ST3263, **S**, twelve young plants discovered by MW and assisted by HJC, the count later increased to 39. It was also spotted there later by RSC. A single plant on the strand-line at Berrow Dunes, ST2951, **S**, also MW. HJC writes that these are the first records for v.c.6 since 1992 when Paul found a single plant at Brean Down, ST2958, **S**. RSC has also found 40-50 plants 500m from PRG's site, again in

ST2958, **S.** Roe (1981) recorded that it was last seen at Sand Bay (as Kewstoke Bay) in 1917 and at Berrow (as Burnham) in 1924. A triumphant return to the Bristol area.

Fumaria capreolata **White Ramping-fumitory** Thornbury, ST6490, **G**, CK & MARK. Flowering patch extending 6m along base of recently constructed wooden garden fence facing road verge. First record in **G** since mid 19th Century and only then nearer Bristol.

Fumaria muralis **Common Ramping-fumitory** Upper Easton, ST6073, **G**, RLB. Not in fact common, with just seven records in *FBR*. It was abundant on garden soil in a new housing estate in Wells, **S**, ST5345, where I lived in 1982-3.

Urtica urens **Small Nettle** A flowerbed weed, Brunswick Square, Bristol, ST 5973, **G**, AGS.

Carpinus betulus **Hornbeam** Long Wood, Stoke Park, ST6177, **G**, RLB. In hedgerow on western side of Valley Road, near Weston Big Wood, ST4575, **S**, EN.

Chenopodium polyspermum **Many-seeded Goosefoot** Broad Lane, Yate, ST7083 **G**, NH.

Chenopodium ficifolium **Fig-leaved Goosefoot** Tyntesfield National Trust, ST5071, **S**, PM.

Silene gallica **Small-flowered Catchfly**, A single pink-flowered plant on embankment above Portway, ST5476 (or just in ST5376) **G**, HW and later visited by other Bristol botanists. About 30 plants were reported by Lady Rosemary FitzGerald on a newly colonised roadside bank near Shirehampton Park in BB 1983 and this was perhaps the same spot.

Lavatera arborea **Tree-mallow** Coast path, Portishead, ST4476, **S**, RLB. Also found by RLB at Fishponds, ST6375, **G**, but here of garden origin.

Althaea officinalis **Marsh-mallow** Avonmouth, ST5279, **G**, JPM. Three stems but on dumped material.

Rorippa nasturtium-aquaticum **Water-cress** Stoke Gifford, ST6179, **G**, RLB. Also seen by RLB in 2007 at Hanham, ST6372, **G**, and The Mall, ST5881, **G**. Pond above Paradise Bottom, Leigh Woods, ST5474, **S**, CML in 2000 and subsequently.

Erophila majuscula Jord. **Hairy Whitlowgrass** Plentiful on a traffic island at Awkley, ST5985, **G**, CK & MARK (and a specimen retained). First Bristol Region record and first post-1970 v.c.34 record. Later found as a single plant on a rock outcrop, Purn Hill, ST3357, **S**, RSC, who adds that the seeds are quite distinctive [less than 0.5mm] when compared to the most frequently found segregate, *E. verna*, **Common Whitlowgrass**. On referring to my herbarium, I find four Avon Gorge collections are this sparsely hairy plant with variable pod shapes; Tim Rich has confirmed he has never found any other *Erophila* amongst Avon Gorge material. A distinctly more hairy plant with large seeds which I collected on Worlebury Hill, probably ST3262, in 1985, growing with the rare plants, *Trinia glauca* and *Koeleria vallesiana*, has now also been named *E. verna* by Tim Rich.

Thlaspi arvense **Field Penny-cress** In maize field to north of Fosse Lane west of Clandown, ST6755, S, CVWG.

Pyrola rotundifolia L. ssp. *maritima* (Kenyon) E. F. Warb. **Round-leaved Wintergreen** HJC advises that the population in a quarry near Croscombe, ST5944, S, the only one in Somerset, should be referred to this subspecies. In BB 2002 it is reported as ssp. *rotundifolia*.

Monotropa hypopitys **Yellow Bird's-nest**, Two plants in Jubilee Stone Wood, Backwell, ST4967, S, Ian Chambers. There is an excellent account of this new nature reserve in our Proceedings for 2007, pages 17-21, where Ian ascribes the reappearance of this infrequently seen plant to the nearby clearance of hawthorn scrub. *BSBI News* 109 for September 2008 has the species on the cover and contains two articles suggesting that the ecology of this saprophyte species is wedded to its fungal partner. Peter Rooney recorded it hereabouts in 1988 in *FBR*.

Primula x polyantha (*P. vulgaris* x *P. veris*) **False Oxlip** Oldland, *ST6572, G, RLB. Single specimens found by EN on Walton Common, ST4273, and near Lime Breach Wood, ST4672, both S.

Lysimachia nummularia **Creeping Jenny** Kingswood, ST6474, G, RLB.

Alchemilla filicaulis ssp. *vestita* **Lady's-mantle** By Oatfield Wood, near Felton, ST5066, S, MW.

Sorbus torminalis **Wild Service-tree** Shortwood near Pucklechurch, a large tree on steep slope on northern edge of wood east of clay pits, ST6876, G, NH. Two trees growing out of small cliff at Blaise, ST5678, G, HW. A fine mature tree, Stoke Gifford, ST6179, G, RLB. A good mixed age population on carboniferous limestone in long disused quarry in Priest Wood, near Cromhall, ST6890, G, CK & MARK.

Crataegus laevigata **Midland Hawthorn** A single tree at Dodington Park, *ST7579, G, CK & MARK.

Onobrychis viciifolia **Sainfoin** On steep south-west facing slope, Midford Castle, ST7561, S, HJC & FR.

Hippocrepis comosa **Horseshoe Vetch** Field to west of village, south of Sulis Manor, Southstoke, ST7461, S, HJC & RDR. White also mentions this growing with *Polygala calcarea* nearby (see account below). On steep south facing slope, Midford Castle, ST7561, S, HJC & FR.

Vicia tetrasperma **Smooth Tare** A single plant, Broad Lane, Yate, ST7083, G, NH.

Vicia bithynica **Bithynian Vetch** PH confirms its continued presence on both sides of the Portway at Sea Mills, in both ST5376 and ST5476 and CK & MARK confirm it is still present on both sides of the road at Great Stoke, ST6380, G.

Lathyrus nissolia **Grass Vetchling** Cuckoo Lane, Downend, a few plants in grass. ST6678, G, RSC. Also: occasional to locally frequent at Mangotsfield Golf Course marsh, ST6775, G, NH; Severn Beach, ST5383, G, JPM.

Trifolium micranthum **Slender Trefoil**, Sneyd Park, ST5575, G, CK & MARK and LH.

Trifolium scabrum **Rough Clover** Locally frequent on Hellenge Hill, ST3457, S, JPM.

Daphne laureola **Spurge-laurel** In wood north of Tyntesfield Battleaxes field, ST4971, S, PM.

Epilobium tetragonum **Square-stalked Willowherb** Tyntesfield National Trust, ST5071, S, PM.

Epilobium obscurum **Short-fruited Willowherb** In bare areas under flyover, Cumberland Basin, ST5672, G, PH.

Epilobium roseum **Pale Willowherb** Along edge of Dark Lane, by Holcombe Pond, Holcombe, ST6750, S, CVWG.

Euphorbia platyphyllos **Broad-leaved Spurge** Along edge of maize field by bridleway for over 100m, Faulkland ST7255, S, HJC & FR. "Absolutely masses- I have never seen so much!" (HJC). Persisting; see BB 2006 for a record by RSC, in some quantity in a bean field at the same six-figure grid reference.

Euphorbia lathyris **Caper Spurge** Coast path, Walton Bay, ST4274, S. Also many seedlings seen in January at Fishponds, ST6275, G, RLB; New Cheltenham, ST6574, G, all RLB. H. C. Watson writing in 1852 and 1870, was suspicious of claims for its native status in Warleigh Wood, ST7963, S and it is now treated as an archaeophyte.

Euphorbia exigua **Dwarf Spurge** Several plants as uncultivated weeds in PH's garden, ST5675, G. Rare at northern and eastern margin of arable field, Tormarton, ST7677 G, NH. By footpath in large wheat-field to south of Ramsgate Wood, near Faulkland, ST7455, S, CVWG.

Linum bienne **Pale flax** Malago, ST5769, S, RLB. Still on Hellenge Hill, ST3457, S, JPM.

Polygala calcarea **Chalk Milkwort** Field to west of village, south of Sulis Manor, Southstoke, ST7461, S, HJC & RDR. One flowering stem (north-facing) seen on this occasion here but several plants in ST7460 (east-facing). The record in White (F. Samson in 1909) was described as on an oolitic hill near Fortnight. The farm of that name is over 1km away (ST7360), but by the slopes of the same hill as the present records refer to. H. S. Thompson in BB 1920-21 found it over several acres half a mile from the original spot. Roe in his *Flora of Somerset* (1981) described it as still abundant on the hillside where it was first found, but not re-found at three other nearby spots subsequently discovered. BB 1982 refers to a large colony re-found by Dave Green in rough pasture at 350 feet above Combe Hay in Southstoke parish, and matches it with Thompson's site.

Geranium purpureum **Little-Robin** Three or more plants at the base of the fence overlooking the Avon Gorge by the Observatory, ST5673, G, PH. There are old records from Observatory Hill (1924 and 1927) but it is not normally visible from here.

Scandix pecten-veneris **Shepherd's-needle** Occasional on northern and eastern margin of arable field, Tormarton, ST7676, G, NH. Six records in *FBR* and none since in BB.

Smyrniolum olusatrum **Alexanders** Hanham, ST6472, **G**, flowering on 22 December 2007, Fishponds, ST6275, **G**, and New Cheltenham, ST6574, **G**, all RLB.

Sium latifolium **Great Water-parsnip** 25 plants this year and doing well at the site of the 2006 re-introduction, Clapton Moor, ST4573, **S**, **PM**.

Calystegia soldanella **Sea Bindweed** Berrow Dunes, ST2951, **S**, **SRPG**. First Somerset record since 1992.

Menyanthes trifoliata **Bogbean** Folly Farm, ST6060, **S**, **RLB**. There are only four sites in *FBR*.

Lithospermum purpureocaeruleum **Purple Gromwell** Sandford Wood, ST4258, **S**, **RSC**, who reports that in the 1980's and 1990's it flowered annually, but as the trees shaded it, flowering ceased; however in recent years, clearance has been undertaken and the plant is thriving once more.

Echium vulgare **Viper's Bugloss** Oldland, ST6572, **G**, **RLB**. At a roadside, Farley, ST4274, **S**, **RLB**.

Myosotis laxa **Tufted Forget-me-not** Occasional in ditches on Webb's Heath Common, ST6873, **G**, **NH**.

Lamium amplexicaule **Henbit Dead-nettle** Tyntesfield NT Garden and Orangery area, ST5071, **S**, **PM**.

Galeopsis bifida **Bifid Hemp-nettle** Clapton Moor, ST4573, **S**, **PM**. Four records in *FBR* for this very difficult species. I have a *Galeopsis* specimen from the fringe of Leigh Woods, ST5575, **S**, which may be this.

Clinopodium ascendens **Common Calamint** Lansdown Cemetery, Lansdown, Bath, ST7367, **S**, **NH**.

Plantago major L. ssp. *intermedia* (Gilib.) Lange **Greater Plantain** This is a smaller subspecies of the common plant, typical of somewhat saline habitats having leaves with fewer veins, a sharper apex and a somewhat toothy base. It is not included in *FBR* but is now recorded in both halves of the Bristol Region. Bishop's *New Flora* has a record in the tetrad ST5688, ***G**, on the Severn Estuary at Old Passage and BB 2003 records it as plentiful along the shore of Chew Valley Lake, **S**, on Paul Green's authority. It should be looked for elsewhere.

Chaenorhinum minus **Small Toadflax**, Lansdown Cemetery, Lansdown, Bath, ST7367, **S**, **NH**.

Kickxia elatine **Sharp-leaved Fluellen** Three plants in Broad Lane, Yate, ST7083, **G**, **NH**. Along edge of maize field by bridleway, Faulkland, ST7255, **S**, **HJC & FR**.

Kickxia spuria **Round-leaved Fluellen** Occasional at northern and eastern margin of arable field, Tormarton, ST7676, **G**, **NH**. Along edge of maize field by bridleway, Faulkland, ST7255, **S**, **HJC & FR**, persisting where reported by **RSC** in BB2006. Along north edge of wheat-field, Woodborough, ST6956, **S**, **CVWG**.

Linaria x sepium G. J. Allman (*L. vulgaris* x *L. repens*) **Common x Pale Toadflax** Severn Beach Station, ST5484, **G**, **JPM**. One plant on ballast by the platform, close to both parents. Probably last recorded by A. L. Grenfell in BB 1980 in a disused railway siding at St Philip's Marsh, ST6071 **G**, and at Parkway Station, ST6279, **G**.

Veronica catenata **Pink Water-speedwell** Rare on Webb's Heath Common, ST6873, G, NH. Not recently recorded in this 10km square.

Pedicularis sylvatica **Lousewort**, Lower Woods, Wickwar, ST7487, G, HW.

Lathraea squamaria **Toothwort** Grandmother's Rock, Wick, ST7071, G, CK & MARK. EN has again recorded its frequency in three woodlands, all S: 71 (2007, 111) in Prior's Wood, Portbury, ST4874 and ST4974; about 100 (2007, 40) in Weston Big Wood, ST4574; 6 in Lime Breach Wood, ST4672.

Orobanche rapum-genistae **Greater Broomrape** Highbury Hill, ST6358, S, HJC & FR. Five old spikes in January 2008 under broom on south-west-facing hillside, just outside fence at edge of wood. An excellent find of this uncommon and rarely seen parasitic plant. In BB 1970 it is reported on Broom in Greyfield Wood, also ST6358, but across the valley of a small stream from the present site.

Orobanche minor **Common Broomrape** Near Pennsylvania, ST7473, G, CK & MARK. 19 spikes along road verge.

Utricularia vulgaris **Greater Bladderwort** Weston Moor, ST4473, S, JPM, who adds that it is abundant in this slightly shaded ditch by the drove, where seen before. HP counted 56 flowering spikes there in 2006.

Campanula trachelium **Nettle-leaved Bellflower** Felton Common, ST5264, S, BNS. Also at Failand, ST5172, S, PM.

Crepis biennis **Rough Hawk's-beard** Two sites less than a kilometre apart on opposite sides of B4465 at Shortwood near Pucklechurch, G, are reported by NH: locally abundant in field by the western boundary of Short Wood West, ST6776, and several plants on edge of path to south of woodland east of the clay pits, ST6876. The latter is covered by a tetrad record in Bishop's *New Flora*.

Hieracium maculatum **Spotted Hawkweed** Southville, ST5871, S, RLB. *FBR* omits the summary of the distribution map for this species which is supplied by CML below. "This hawkweed is instantly recognisable by its heavily purple-blotched leaves and field records have been accepted. It is therefore the only *Hieracium* in the *Flora* with more than a few sites mapped. It occurs on old walls, in quarries and on rough waste ground and is most common in the south-east of the Bristol region in the vicinity of Midsomer Norton and Bath, remaining scattered on the carboniferous limestone."

Alisma lanceolatum **Narrow-leaved Water-plantain** Woodford Lodge, Chew Valley Lake, ST5660, S, JPM, who adds it is planted around a new pond.

Triglochin palustre **Marsh Arrowgrass** Rare on marshy bank by source of River Frome, Dodington Park, ST7679, G, CK & MARK. Not recently recorded in the 10 km square and a nice find, growing with abundant *Isolepis setacea*, **Bristle Club-rush**.

Potamogeton coloratus **Fen Pondweed** Frequent in several ditches on Weston Moor, ST4473, S, JPM with Karen Pollock (incorrectly Pollack in *FBR*) and EJM, with *Myriophyllum verticillatum*, **Whorled water-Milfoil**. Not re-found on Kenn Moor where *FBR* states it occurred "formerly", though JPM commented that they did not look in every ditch and he has no information exactly where it had previously been found. Reported in *FBR* only in four 1 km squares, but not

localised in the Gordano Valley. White mentions it in ditches on the adjacent Walton Moor.

Potamogeton pusillus **Lesser Pondweed** Kenn Moor, in several ditches, ST4368 or thereabouts, S, JPM with KP. Weston Moor, frequent in one ditch, ST4473, S, JPM. New to these squares.

Potamogeton trichoides **Hairlike Pondweed** Clapton Moor, ST4573, S, PM. Kenn Moor, in a few ditches ST4368, S, JPM with KP. Weston Moor, rare in two ditches, ST4473, S, JPM. New to the first and last squares. All records for this pondweed (21 squares) in FBR were made by KP in 1991-2.

Potamogeton pectinatus **Fennel Pondweed** Abundant at south end of Chew Valley Lake, ST5658, S, JPM, observed from a boat. Also Weston Moor, abundant in one ditch, ST4473, S, JPM. The commonest of the pondweeds but not in these squares in FBR.

Zostera marina L. **Eelgrass** Below Aust Cliff immediately south of the old Severn Bridge, ST5689, G, CK & MARK. A patch 2m x 2m in a rocky channel amongst seaweed. The only other record for v.c.34 was near Slimbridge in 1937. *Z. angustifolia*, **Narrow-leaved Eelgrass** was found at Severn Beach, ST5484, G, in 1993; *Zostera* records are infrequent and the taxonomy difficult.

Schoenoplectus tabernaemontani **Grey Club-rush** Kenn Moor, ST4268, S, JPM. In fruit and clearly distinguished by knobby lower glumes. Found there by White in 1900 but rare in the region.

Isolepis cernua **Slender Club-rush** Berrow, ST2952, S, RSC. About 20 tufts in a damp spot in front of the church. A single tuft was seen in the saltmarsh at Berrow in 1945 by the Sandwiths (BB1945). It has only ever recorded at two other sites in v.c.6, most recently at Walton Moor in 2003 (RSC in BB 2003). This is a most remarkable rediscovery which does the persistence and critical acumen of the finder great credit.

Carex ovalis **Oval Sedge** Marsh at bottom of hill, by bridleway near Hackmead Farm, Kilmersdon, ST6851, S, HJC.

Carex acutiformis **Lesser Pond-sedge** Locally frequent at Mangotsfield Golf Course Marsh, *ST6775, G, NH.

Carex rostrata **Bottle Sedge** Weston Moor, ST4473, S, JPM. Choking one ditch, but rare by another. A known location, but the record in FBR is dated 1985.

Carex vesicaria **Bladder-sedge** Siston Common, *ST6674, G, CK & MARK. In a 15m strip along path at edge of the common. FBR has three records in S and Bishop mapped it near Berkeley, G. White knew it only near Iron Acton, ST6782, G, and wrote of its discovery in 1908, "a find of the greatest interest".

Carex strigosa **Thin-spiked Wood-sedge** South of Tan House Farm, Yate, ST7185, G, NH.

Carex viridula ssp. *oedocarpa* **Common Yellow-sedge** Webb's Heath Common, rare, ST6873, G, NH.

Carex pilulifera **Pill Sedge** Lord's Wood, ST6363, S, NH, confirming a record by David Fry in White's *Flora*. Two plants on side of track down to pond.

Puccinellia distans **Reflexed Saltmarsh-grass** Central reservation of M5 for about two miles south of junction 14 northwards to ST6892, **G, JPM**, who in 2007 had noted it by the M4, New Passage, ST5585. The well-known spread of salt-tolerant and other plants along motorways is, of course, normally difficult to monitor unless you slip into the outside lane during a traffic hold-up.

Poa infirma **Early Meadow-grass** Burnham-on-Sea, ST3049, **S, RSC**. Blocking a length of gutter on a disused building and flowering profusely. Subsequently found in several other spots about the town, all on roofs and in blocked gutters, and inaccessible without a ladder. Also Batheaston, ST7768, **S**, at side of road in Catherine Way, growing on rough tarmac at top of sloping grass verge, **HJC** and **CK & MARK**. Third and fourth records for v.c.6.

Agrostis curtisii Kerguelen **Bristle Bent** Black Down, ST4658, **S**. A few plants on east side of main path running parallel to Dolebury Warren, opposite oak tree, **EJM**. **New to v.c.6 and the Bristol Region**. Our predecessors would have been amazed at this find, which I can only suppose was there all the time: it is not even amongst the 22 species of vascular plants which White listed as “not improbably natives of the district but [which] have not yet been detected”. It can be dominant in dry heathland on Exmoor, the Quantocks, and the Blackdown Hills of W. Somerset, v.c.5.

Calamagrostis epigejos **Wood Small-reed** Shortwood near Pucklechurch. On edge of path in south of wood east of clay pits, ST6876, **G, NH**.

Brachypodium pinnatum **Tor-grass** Lansdown Cemetery, Bath, locally abundant ST7367, **S, NH**. Also at Tyntesfield National Trust, ST5071, **S, PM**.

Elytrigia x drucei Stace (*E. repens* x *E. atherica*; formerly referred to *E. x oliveri*)

Hybrid of Common and Sea Couch Walborough, ST3157, **S**. Along top of sea wall, the sterile seed heads still present long after flowering, Rev. Edward Pratt. **New to v.c.6**. I have long wondered if this hybrid might not be rather frequent in the Avon Gorge saltmarshes under Leigh Woods, **S**; however, C. E. Hubbard determined a 1976 gathering by Olga Stewart (BB 1976) as the hybrid of the Sea and Sand Couches (now *E. x obtusiuscula*), the latter parent being found nowhere near. Old records under the names of *Triticum laxum* (Swete's *Flora*) and *T. acutum* (White's *Flora* and subsequently) might also belong here. The leaf and leaf-sheath structure of male sterile plants should be looked at closely.

Typha angustifolia **Lesser Bulrush** Webb's Heath Common, *ST6873, **G, NH**. Occasional but “probably planted”.

Polygonatum multiflorum **Solomon's-seal** Riverside, Midsomer Norton, ST6553, **S, CVWG**. Three stems beside shady old green lane running behind new houses off Chilcompton Road.

Epipactis purpurata **Violet Helleborine** Litley Wood, Wickwar, ST7487, **G, PH**. 11 plants counted in two places, the Wetmoor locality of *FBR*. 13 noted by M. J. Trotman in BB 2003.

Epipactis helleborine **Broad-leaved Helleborine** Chew Valley Lake, ST5661, S, JPM, although known for some time and not discovered by him. Two groups with very pink-purple flowers in the small beech plantation on Whalley Bank, the others more normally coloured. See <http://www.cvlbirding.co.uk/logbook/2008july.html>, where the name "var. *purpurea*" (which I cannot trace) is suggested.

Epipactis phyllanthes **Green-flowered Helleborine** Stowey, *ST5960, S, HP, conf. John Spencer. Four flowering stems on bank of small stream in overgrown private garden. Second record for v.c.6 and the third for Somerset.

Neottia nidus-avis **Bird's-nest Orchid** Although not all new sites, these records are valuable as the orchid is sporadic and uncommon. Two along 'The Walk', Lower Woods, ST7488, G, JPM; two at Hunstrete, ST6462, S, RGM; one beside footpath running SW from Southstoke alongside wood, Combe Hay Locks, ST7460, S, HJC & RDR; one at top of bank, north of glade filled with shrubs on main path into wood from Whitebrook Lane, Camerton Wood, ST6957, S, CVWG; eight beside private track in Cleaves Wood, ST7657, S, HJC & Linda Carter; 42 growing in clusters, on both sides of the road, Ammerdown Park, ST7052, S, RSC; two in Nap Wood, beside track, Ammerdown Park, ST7152, S, HJC & Peter Watson.

Spiranthes spiralis **Autumn Lady's-tresses** Nibley Knoll, North Nibley, ST7495, G, CK & MARK. Single spike in disused quarry. None this year in EN's garden, Portishead, ST4777, S (10 in 2004 and 2006, one in 2007).

Platanthera chlorantha **Greater Butterfly-orchid** One plant on roadside bank, Downend, *ST6679, G, RSC. Nine plants in Sandford Wood, ST4258, S, RGM. Also on Tickenham Hill, ST4472, S, PM.

Dactylorhiza x grandis (*D. fuchsii* x *D. praetermissa*) **Common Spotted-orchid x Southern Marsh-orchid** One or more with the parents in parkland near Chew Valley Lake, between Herons Green and Stoke Villice, ST5559, S, RGM.

Dactylorhiza x hallii (*D. maculata* x *D. praetermissa*) **Heath Spotted-orchid x Southern Marsh-orchid** One plant with the parents in parkland near Chew Valley Lake, between Herons Green and Stoke Villice, ST5559, S, RGM.

Dactylorhiza praetermissa **Southern Marsh-orchid** 28 at Moreton Bank, Chew Valley Lake, ST5658, S, RGM. Also one, just in ST5560, S, RGM.

Orchis mascula **Early-purple Orchid** EN writes that he has known it in three separate woodland areas adjacent to Walton Common, ST4373, S. This year, he noted 17 spikes at the eastern end of Hack's Wood, none eaten or damaged. At Weston Big Wood, ST4575, S, he found only one and at Lime Breach Wood, ST4672, S, 14 (26 in 2007 and 60 several years earlier in the same spot).

Orchis morio **Green-winged Orchid** Private field on north edge of Bitham's Wood, Upper Littleton, ST5664, S, RGM, one white-flowered plant and a few pale variants amongst about 1,000 flower spikes; four beside B3114, between Herons Green and Stoke Villice, and three nearby close to Chew Valley Lake, ST5559, S, RGM. Both are mapped in *FBR* but the status report is useful for this declining species.

Ophrys apifera var. *belgarum* **Winchester Bee-orchid** Severn Beach, ST5383, G, JPM. One in the usual spot but now recognised as this variety.

Ophrys apifera var. *chlorantha* **Pale Bee-orchid** Walborough, Uphill, ST3157, S, RSC, with 30 or so of the normal variety scattered about.

Ophrys apifera var. *trollii* **Wasp Orchid** Road verge near Portishead, ST4875, S, HP.

Aliens (neophytes)

Adiantum raddianum C. Presl. **Delta Maidenhair** Bath, ST7465, S. Four plants on and beside steps of a basement in Marlborough Buildings, Mark A. Spencer, confirmed by FR. Known at this site by Ian Green since 1997, but previously thought to be *Adiantum capillus-veneris*. A **retrospective first record for Somerset and the Bristol Region**.

Laurus nobilis **Bay** Tyntesfield Battleaxes field, ST4971, S, PM. One bush in wood by house but presumed planted.

Meconopsis cambrica **Welsh Poppy** Northville, ST6078, G, RLB. By a stream at Wick in 2004, ST6972, G, RLB. Only one record for this 10km square in *FBR*.

Eschscholzia californica **Californian Poppy** Fishponds, ST6275, G, RLB. Collected in 1950 by Mrs. Sandwith on the Portway Tip, ST5575, G, but not mentioned in BB. Four records in *FBR* and one in BB 2007 subsequently.

Morus nigra L. **Black Mulberry** Crew's Hole, ST6273, G, RLB. A fine tree on bank of Avon but presumably it was originally planted there.

Bassia scoparia **Summer-cypress** M5 central reservation for about three km south of junction 14 (Falfield), northwards to ST6892, G, JPM. The Sandwiths collected it in Avonmouth Docks, ST5178 or thereabouts, in 1928, 1930 and 1961 and at Ashton Gate in Bristol in 1922 and 1932. In more recent years (see BB 2005) it has joined the list of motorway aliens and seems to be spreading northwards. In 2006, JPM had seen it on one of the slip roads off the M5 between Avonmouth and the M4.

Amaranthus retroflexus **Common Amaranth** Kenn Moor, ST4268, S, JPM. Several plants in field margin.

Claytonia perfoliata **Springbeauty** Between Uphill and Weston, ST3159, S, MW. *FBR* has just two sites, including on sand hills at Uphill (Ian Green in 1998).

Persicaria amplexicaulis **Red Bistort** Combe Hay, ST7360, S, CVWG, a patch growing beside pile of garden waste and known here since 2002.

Fallopia sachalinensis **Giant Knotweed** In three places on Lilypool Drive, Kenn Moor, ST4268, S, JPM.

Fallopia baldschuanica **Russian-vine** Staple Hill, ST6575, G, RLB.

Rumex frutescens Thouars **Argentinian Dock** Uphill, ST3158, S, EJM. In sand dunes at entrance to beach. This is apparently the second record for Somerset and for v.c.6, and first since 1935. It is not mentioned in recent local floras but is included in Mrs. Sandwith's *Adventive Flora of the Port of Bristol* (1933) as *R. cuneifolius* and there are specimens in the Sandwith herbarium from Avonmouth Docks collected in 1923 and 1934. It has long been naturalized at Braunton Burrows (North Devon) and Kenfig Dunes (Glamorgan) and could persist at Uphill.

Hypericum calycinum **Rose-of-Sharon** Near Hutton, ST3658 (perhaps ST3558), S, JPM. On verge, far from houses.

Sarracenia purpurea L. **Pitcherplant** Westhay Moor, ST4543, S, RSC. Four or five plants growing on recently disturbed peat with lots of *Drosera rotundifolia*, **Round-leaved Sundew** (native there) and with possible (but unconfirmed due to the small size) *S. cf. flava* L. **Yellow Pitcherplant**. **Both new to Somerset**. HJC understands that the warden intended to remove these obviously deliberate introductions, which are capable of naturalisation in Britain. This insectivorous genus with its well-known pitcher or trumpet-shaped leaves needs no further description.

Passiflora caerulea L. **Blue Passionflower** Southmead, Bristol, ST5879, G, CK & MARK. Single plant by footpath, at edge of golf course by housing. **New to v.c.34 and Gloucestershire**. The well-known garden climber with tendrils and digitate and somewhat glaucous leaves; when flowering, with white petals and a blue-tipped corona.

Erysimum cheiranthoides **Treacle-mustard** Kenn Moor Gate, ST4467, S, JPM, who describes it as a common weed in the peaty northern part of field.

Lepidium latifolium **Dittander** South side of Blagdon Lake, ST5258, S, PH, recorded on BNS trip to Blagdon. Growing in shallow water at edge of lake. Waste ground at Avonmouth, ST5378, G, RLB in 2007. These are records as aliens though the plant is also known as a probable native, for instance in the upper Severn Estuary.

Lepidium draba **Hoary Cress** Lower Peasedown, ST6957, S, CVWG. By steps behind clubhouse.

Philadelphus coronarius **Mock-orange** By River Avon, St Anne's, ST6272, G, RLB. Just nine records in *FBR*.

Crassula helmsii **New Zealand Pigmyweed** Webb's Heath Common, locally frequent, *ST6873, G, NH. Later at Kingswood, throughout pond at Cock Road Ridge, ST6572, G, AGS. Three records in *FBR*.

Sedum spectabile **Butterfly Stonecrop** Aust Cliff, ST5689, G, JPM. A clump in flower in woodland under cliff. The two records in *FBR* are both in S but there is one unlocalised record in Bishop's *New Flora*. Probably this as a garden relic by a ruined building in Leigh Woods, ST5575, S, CML in 2002.

Alchemilla mollis **Garden Lady's-mantle** St George, Bristol, ST6372, G, RLB. Three records in *FBR* and two in BB since.

Prunus cerasifera **Cherry Plum** Gordano services, ST5075, S, RLB.

Prunus lusitanica **Portugal Laurel** Self sown in Chester Park, *ST6374, G, RLB. Tyntesfield National Trust, ST5071, S, PM.

Cotoneaster divaricatus **Spreading Cotoneaster** Leigh Woods village, ST5573, S, CK & MARK and LH. Single plant on carboniferous limestone bank on the corner of Church Road and North Road. Hb. Kitchen, det. J. Fryer. Second record for the Bristol Region.

Crataegus persimilis **Broad-leaved Cockspurthorn** Hanham Mills, ST6470, G, two mature trees in a field hedge, CH. *FBR* has only one record in the wild.

Colutea arborescens **Bladder-senna** Avonmouth, ST5279, **G**, JPM. Four bushes on one small bank at north end of tip. Known there by CK & MARK since 2000 and probably the Avonmouth 1999 locality of JPM in *FBR*, as one of four records there; BB 1997 may include the same place too. Mrs Sandwith had earlier collected it in **G** at Fishponds (1932) and Shirehampton (1949).

Melilotus altissimus **Tall Melilot** Lower Failand, ST5173, **S**, RLB. More frequent around Bristol and near the docks.

Melilotus albus **White Melilot** M5 junction, Clevedon, ST4170, **S**, JPM.

Myriophyllum aquaticum **Parrot's-feather** Orchard Pools, Severn Beach, ST5483, **G**, JPM, who adds that it was in small quantity in 2006 and 2007 but is now abundant amongst reeds around the edge of the pools.

Oenothera x fallax Renner (*O. glazioviana* x *O. biennis*) **Large-flowered x Common Evening-primrose** Burnham-on-Sea, ST3050, **S**, a few specimens on fore-dunes amongst scrub, EJM. Reported as the **first record for v.c.6** and Somerset since 1883, that record appearing as an unlocalised vice county record in Roe's *Flora of Somerset* (1981). White mentions a single *Oenothera* found at Berrow (v.c.6) in 1883 in his account of *O. odorata*; this would now fall under *O. stricta*. Rostanski's account of *Oenothera* in Britain (*Watsonia* 14:1 for February 1982, pages 1-34) puts the Burnham and Berrow specimens (including White's) of the period all under *O. cambrica* Rostanski with some for Burnham (especially later) and Brean under *O. stricta*. *O. x fallax* is not cited by Rostanski or in *FBR* for our region, nor is it shown there in the *New Atlas* (2002) so the current record may be absolutely new.

Buxus sempervirens **Box** Lansdown Cemetery, Bath, ST7367, **S**, NH. Locksbrook Cemetery, Bath, ST7365, **S**, NH. Three planted bushes by path in wood north of Tyntesfield Battleaxes field, ST4971, **S**, PM.

Parthenocissus quinquefolia **Virginia-creeper** Rampant by railway, Southville, ST5871, **S**; also Fishponds, ST6275, **G**, both RLB.

Acer saccharinum L. **Silver Maple** Bath, ST7564, **S**, SRPG. Five saplings, the seedlings of planted tree, in small dock beside River Avon, south of Pultney Bridge. **New to Somerset and the Bristol Region.**

Rhus typhina **Stag's-horn Sumach** RLB provides six additional records from: beside River Avon, St Anne's, ST6272, **G**; Upper Easton, ST6073, **G**; Fishponds, suckering, ST6275, **G**; Filton, ST6079, **G**; Lower Knowle, ST5970, **S**; Stockwood, ST6168, **S**.

Geranium endressii **French Crane's-bill** By River Avon, St Anne's, ST6272, **G**; Staple Hill, ST6575, **G**; Coast path Walton Bay, ST4274, **S**; Coast path, Portishead, ST4476, **S**, all RLB. It is rare and protected in France, an endemic of the western Pyrenees.

- Geranium asphodeloides* Burm. fil. ssp. *asphodeloides* **A Crane's-bill** Clutton, ST6258, S, HJC, conf. Andrew Norton. Eleven plants in grass at edge of path, self-sown from nearby grave. **New to v.c.6 and the Bristol Region.** A native perennial of the eastern Mediterranean, distinguished by a fleshy taproot, narrow entire petals 15mm (white or lilac) with darker veins. Not on the BSBI list 2007 of British plants but there is a record for v.c.5 in the *Somerset Atlas*.
- Nicandra physalodes* **Apple-of-Peru** One plant on verge, Avonmouth, ST5279, G, MARK. Ten records in *FBR*; older records go back to 1918.
- Lycium barbarum* **Duke of Argyll's Teaplant** Waste ground, Kingswood, ST6474, G, RLB.
- Solanum tuberosum* **Potato** Avonmouth, ST5379, G, JPM. Three plants flowering on slopes of old tip. 14 records in *FBR* but understandably not considered by the authors to be worth listing or mapping.
- Nicotiana sylvestris* Spig. & Comes **Tobacco Plant** Bath, ST7464, S, RDR. One plant beside the Mineral Water Hospital in Bridewell Lane, known here for at least two years. **New to Somerset and the Bristol Region.** This garden tobacco, a rare casual in Britain, is distinguished by its descending clusters of large white flowers.
- Pulmonaria officinalis* **Lungwort** Hallen, ST5580, G, JPM. One plant on verge.
- Symphytum tuberosum* **Tuberous Comfrey** Tyley Bottom, Wotton-under-Edge, *ST7895, G, CK & MARK. 50m patch associated with ruined building; wood edge by stream.
- Symphytum orientale* **White Comfrey** Cycle track, Fishponds, *ST6274, G, RLB. Henbury, a clump on verge persistent for at least two years, ST5579, G, JPM.
- Brunnera macrophylla* **Great Forget-me-not** Midford, ST7660, S, CVWG. One clump on bank beside lane. Four records in *FBR* and none since 1992.
- Mentha x villosa* **Apple-mint** A patch on old tip, Avonmouth, ST5279, G, JPM. Four records in *FBR* and two in BB 2004.
- Antirrhinum majus* **Snapdragon** Severn Beach Station, ST5484, G, JPM. Several plants including pale yellow and rich chestnut-orange flowering forms.
- Leycesteria formosa* **Himalayan Honeysuckle** Crew's Hole, ST6273, G, RLB.
- Cephalaria gigantea* (Ledeb.) Bobrov **Giant Scabious** On edge of track by allotments, Bishopston, ST5876, G, RLB. Not in *FBR*, but the BSBI Census catalogue indicates it has been recorded in v.c.34 since 1970. A 2m tall garden plant with pale yellow scabious flowers.
- Carthamus tinctorius* L. **Safflower** Two plants on verge east of Turner's Terrace, east of Faulkland ST7254, S, Alastair Stevenson. Bristol records for this orange flowered bird-seed alien go back to 1915.
- Cichorium intybus* **Chicory** Two plants near the church, Portbury village, ST5075, EN.
- Tragopogon porrifolius* **Salsify** The Mall, ST5881, G; Fishponds, ST6275, G, both RLB.
- Cicerbita macrophylla* **Blue Sowthistle** Lower Failand, ST5173, S, RLB.

Pilosella aurantiaca **Fox-and-cubs** As in BB 2007. RLB adds further sites at: Redfield, ST6173, **G**; Chester Park, ST6374, **G**; Fishponds, ST6275, **G**; Downend, ST6577, **G**; Lower Knowle, ST5970, **S**; Lower Failand, ST5173, **S**.

Anaphalis margaritacea **Pearly Everlasting** Great Quarry beside Portway, *Avon Gorge, ST5674, **G**, PH. A single plant, photographed. There are records back to 1850 (Clevedon) but it has not often been recorded in the Bristol area, and there is only one record in *FBR*.

Erigeron philadelphicus **Robin's-plantain** A big clump on road verge near Portishead, ST4875, **S**, JPM. Four records in *FBR* and none in BB since.

Erigeron karvinskianus **Mexican Fleabane** RLB adds further records: Hotwells, ST5872, **G**; Castle Park, ST5973, **G**; Northville, ST6078, **G** Bower Ashton, ST5671, **S**.

Conyza sumatrensis **Guernsey Fleabane** Tyntesfield National Trust, ST5071, **S**, PM. Four records in *FBR* and a few in BB since.

Doronicum pardalianches **Leopard's-bane** Folly Farm, *ST6060, **S**, RLB. Bishop Sutton, verge of A368 by tennis club, ST5959, **S**, JPM.

Galinsoga parviflora **Gallant-soldier** New Cheltenham, Kingswood, Bristol, ST6574, **G**, RLB. Two 1985 sites in *FBR*, but several in BB since. Still near Portbury Church, ST5075, **S**, EN, where found in 2006, but lost from the extended area found in 2007 due to replanting with *Trifolium pratense*, **Red Clover**.

Cosmos bipinnatus Cav. **Mexican Aster** One plant on old tip, Avonmouth, ST5279, **G**, JPM, conf. CK & MARK. Not recorded in *FBR* but it has been known in v.c.34. A beautiful if ragged garden annual with large white to pink to purple daisy flowers and fennel-like leaves.

Elodea canadensis **Canadian Waterweed** Chew Valley Lake, ST5658, **S**, JPM. Frequent, at south end of the lake (observed from boat), whereas *Elodea nuttallii* **Nuttall's Waterweed** was rare.

Wolffia arrhiza **Rootless Duckweed** Ashton Court Estate, covering 30% of a pond, ST5571, **S**, AGS.

Cyperus longus **Galingale** Avonmouth, ST5279, **G**, JPM. Several clumps on top of tip. Named by CK & MARK, conf. E. J. Clement but with some reservation as the plant was ill grown, normally occurring in water.

Briza maxima **Great Quaking Grass** Nover's Common, ST5870, **S**, RLB. Three records in *FBR* and three others since in BB.

Polygona viridis **Water Bent** Hanham, ST6471, **G**, common on pavements along Abbot's Avenue and nearby alleys, **G**, CH; Kingswood, outside chapel, Granny's Lane, ST6572, **G**, CH Under fence beside footpath connecting two streets, Fishponds, ST6375, **G**, AGS. CH suggests a possible association with builders' sand. Not in *FBR* but regularly reported in BB subsequently.

Anisantha diandra **Great Brome** Dodington Ash, ST7578, **G**, CK & MARK. In field edge adjacent to road, Tyntesfield National Trust, ST5071, **S**, PM. Corner of wheat-field, Woodborough, *ST6956, **S**, CVWG.

Cortaderia selloana **Pampas-grass** Montpellier, Bristol, ST5974, ***G**, CK & MARK. A good clump on railway bank in December 2007.

Echinochloa crus-galli **Cockspur** M5 central reservation for about three km south of junction 14 (Falfield), northwards to *ST6892, G, JPM. This grass seems to be continuing the spread described in BB 2007.

Hyacinthoides x massartiana Geerinck (*H. non-scripta* x *H. hispanica*) **Hybrid Garden-bluebell** Falcondale Road., Westbury-on-Trym, ST5778, G, JPM. On same verge with other garden plants.

Hyacinthoides hispanica **Spanish Bluebell** In wood north of Tyntesfield Battleaxes field, ST4971, S, PM.

Chionodoxa forbesii Baker **Glory-of-the-snow** Falcondale Road., Westbury-on-Trym, ST5778, G, JPM. In flower on two verge lawns. There are several records for v.c.6 in the Somerset Atlas but it is **new to the Bristol Region**.

Muscari armeniacum **Garden Grape-hyacinth** Further additions to the evidently understated distribution of this garden plant in *FBR* have been provided as follows: Top of cliff at Sea Walls, *Avon Gorge, ST5674, G, JPM. Falcondale Road, Westbury-on-Trym, ST5778, G, JPM. Lower Hazel, ST6287, G, JPM. The following records are from RLB: St George, ST6372, G; Cycle track, Fishponds, ST6274, G; Redland, ST5875, G; Fishponds, ST6275, G; Lockleaze, ST6076, G; Chester Park, ST6374, G; Staple Hill, ST6575, G; Downend, ST6577, G, Easton in Gordano, ST5175, S; Failand Lane, ST5074, S; Hengrove, ST6069, S; Knowle, ST6169, S; Hengrove, ST6068, S.

Allium triquetrum **Three-cornered Garlic** Clifton, ST5673, G, RLB; Upper Easton, ST6073, G, RLB; Sneyd Park, ST5675, G, JPM; Stoke Bishop, ST5676, G, JPM; Kingsweston Stables, ST5578, G, JPM; The Mall, ST5981, G, RLB. JPM comments that the species seems suddenly to be more common, and he and RLB have found it flowering in December.

Leucojum aestivum **Summer Snowflake** Lower Hazel, ST6287, G, JPM. Several clumps on verge, persisting where recorded in 2000 for *FBR*.

Crocus speciosus M. Bieb. **Bieberstein's Crocus** Two plants beside disused canal north of Withy Mills, near Paulton, ST6657, S, HJC det. FR. No other garden escapes nearby. **New to Somerset and the Bristol Region**.

Acknowledgements

I would again like to thank all contributors for their interesting plant records, and particularly the BSBI recorders, Clare and Mark Kitchen (G) and Helena Crouch (S) for their records and comments, and assistance in determining the significance of the finds. To Pam Millman, receiving secretary for the records I am also very grateful. I should dedicate this work to my late father Max Ronald Lovatt (d. 2 January 2009), amongst whose effects proved to be a wartime sketchbook, with some plant drawings amidst scenes of camp life. He would not have been at all unhappy that the following day I used the order of service to wrap up *Vicia hirsuta*, **Hairy Tare**, flowering profusely and unseasonably under the Great Quarry in the Avon Gorge, as I departed once more for Africa.

Tyntesfield Arboretum

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Tyntesfield House is much more than an extraordinary display of mid Victorian gothic architecture. The Gibbs family were tree collectors from the start, and many of the specimen trees in the gardens date back to 1860 or earlier, and have been very carefully looked after. There was an earlier house and estate on the site, and many of the large Oaks in the estate fields, with magnificent browse lines, are at least two hundred years old. There are also extensive woodlands on the hill above the house, which combine native species with conifers, and provided the saw-mill on the estate with the raw material for all the timber and fuel that it needed. The estate included an extensive home farm, and was more or less completely self-sufficient, and the woodlands played a key role in that. The grounds of the house include several fine avenues, and an area known as Paradise which was created as an arboretum by the family over successive generations. On the South Drive there is also an avenue of huge **Oriental Planes**, *Platanus orientalis*, and coming down from the North an avenue of clipped **Irish Yews**, *Taxus baccata fastigiata*. These had become seriously overgrown, and were cut right back by the National Trust, but are again getting to the size and shape where they can be trimmed. The same tree is also used on a terrace avenue below the house. 36 of them were planted in 1851 by William Gibbs, and another 21 by his son Anthony. They are naturally slow growing, and all are derived from a Yew found in Ireland in 1780. Around the grounds there are dozens of large native Yews, and they are also common in the woodland above the house, and these may well be old, and even predate the earliest house. There is an avenue of variegated **Hollies**, *Ilex aquifolium*, trimmed to a mushroom shape, leading up to the west side of the house, and a number of specimen Holly trees of many varieties, some rather straggly, in the gardens. Clipped Hollies are also used on the main garden terrace to surround urns, and act as the background to massed annuals.

The gardens include no less than eight National Champion trees, that is to say the largest or tallest of their kind yet discovered by TROBI, the Tree Register of the British Isles. They are listed in a well-produced pamphlet available at the house based on the careful work of Tony Titchen some five years ago. The National Champions each have their own well designed plaque. Unsurprisingly three of them are rather obscure Holly varieties, and are a little disappointing, and one is *Colletia hystrix*, more usually catalogued as a shrub. **The Keaki**, *Zelkova serrata*, at the gate to the field, is magnificent, and despite the fact that it is next to the haha, it is immensely broad. It appears to be older than the fine tree in Victoria Park, Bath. Zelkova's are close relatives of the Elm. The rare **Rough-bark Maple**, *Acer triflorum* is a small multi-stemmed tree, looking very like the common **Paper Bark Maple**, *Acer griseum*, and closely related to it, but apparently quite magnificent in autumn. It comes from Korea, and was only introduced into the country in 1923. I do not think they have it at Westonbirt.

There is a **Balearic Box**, *Buxus balearica*, which is similar to the common **Box**, *Buxus sempervirens*, of which there are many rather straggly specimens, but broader leaved, which has grown as a fine pyramid. It was only introduced to Britain in 1780, and may well date from 1840. The last is a huge **Hornbeam**, which is registered as a **Cut-leaf Hornbeam**, but which is actually a chaemera, a tree with both ordinary and cut-leaf hornbeam tissue, so that some branches are cut leaf, but the dominant majority are normal. There is another example in Victoria Square Clifton, and creating such hybrids was something of a Victorian obsession.

Other noteworthy trees include an interesting oak, called the **Keble Oak** because it was planted in 1872 to commemorate the agreement that Mr Gibbs should fund Keble College Chapel. It is a hybrid between a **Canary Oak** *Quercus canariensis*, which is a magnificent broad leaved tree in its own right, and the Common Oak. In some ways the hybrid is less vigorous than the Canary Oak original, and interestingly its acorns are being affected by the Oak Knopper Gall, destroying all the acorns. A fine **Tree of Heaven**, *Ailanthus altissima*, is suckering near the lake, as is a **Cappadocian Maple**, *Acer cappadocicum*, the only Maple that does sucker, and was not planted in the right place. There is also a fine **Bay-leaved Willow** there, *Salix pentandra*, which is quite unusual. A huge **Large-leaved Lime** *Tilia platyphyllos* is nearby, presumably planted, which was unusual at the time when limes were normally the Common Lime. Also to be found are exceptional specimens of **Manna Ash**, *Fraxinus ornus*, **Tulip Tree**, *Liriodendron tulipifera*, and **Sweet Gum**, *Liquidamber styraciflua*.

There are many conifers. A vast and magnificent **Cedar of Lebanon** *Cedrus libani*, by the house, much damaged by recent storms, was apparently brought back as a seed by JL Gibbs in 1858. Superb **Blue Atlantic Cedars**, *Cedrus atlantica*, abound, as do both **Redwoods**, *Sequoia sempervirens* and **Wellingtonias**, *Sequoiadendron giganteum*. More unusual is the **Pond Cypress**, *Taxodium ascendans*, near the front of the house, a superb tall **Incense Cedar**, *Calocedrus decurrens*, on the main drive, and a **Western Red Cedar**, *Thuja plicata*, with maze of huge branches spreading from its base near the lake. A **Morinda Spruce**, *Picea smithiana*, from Nepal, with wonderful drooping foliage is near the entrance to the kitchen gardens. The most surprising find was a **Cow's Tail Pine**, *Cephalotaxus harringtonia*, which was first imported to Britain from China in 1821, and which I have not seen elsewhere.

A huge **Monkey Puzzle**, *Araucaria araucana*, on the main Drive may be older than the Gibbs, as it looks to be the largest in the region. The species was famously first introduced to Britain in 1795 by Archibald Menzies. There is a long avenue of younger Monkey Puzzles, which is rarely seen, on the north edge of the woods above the house. There are a few juvenile trees here, which probably derive from viable seed. Monkey Puzzle are dioecious, with separate male and female trees, and they are usually planted so far apart from each other that the vast female seeds, the size of footballs are never pollinated.

There are certainly other treasures, and many actual or potential veteran trees; it would be good to have knowledge of every tree with a girth of over five metres, which must be over 200 years old. It is also a pity that every tree is not identified with a tag, though the problems of attempting this are well known. The National Trust has produced a fine cheap pamphlet with a useful map, which is carefully balanced to suit the needs of both the ordinary public and the more expert tree enthusiast. I have never visited Tynesfield in the autumn, but it ought to be a superb spectacle, even if it lacks the massed ranks of **Japanese Maples** that are the glory of Westonbirt, and it is perhaps missing an opportunity here.

Obituary

Margaret Rogers

Margaret Rogers, died in 2008 after a long and fruitful life as a teacher of botany and natural history at both Clifton High School and Redland High School. She was closely associated for many years with the work of the teacher training college at St Matthias. She was a life member of the Bristol Naturalists' Society, and for many years the only one. She became a Vice-President from 1954-1956 and then President of the Society from 1958-1960, becoming the second lady President. The first had been Miss Ida Roper, President from 1913-1917. In that position she was closely associated with the planning of the Society's centenary in 1962. She was subsequently closely involved with a wide variety of society activities, especially botanical expeditions.

She left two valuable legacies to the Society; first there was a collection of forty of the early New Naturalist books, all first editions, some signed by the authors, that she had bought or been given as they appeared from the 1940s. Council decided that, as we had all but two of them already, we should sell them and put the money into the Society's Library fund. They raised £2000.

Secondly she kept a plant diary from 1948 to 1995, recording especially her first sightings of spring plants. As she lived right through the period of declining temperatures associated with the second half of the twentieth century these records are an extremely valuable series, which began just as national recording of plant phenology was abandoned by Metereological Office in 1947. Her records are being put on a database, a slow job as yet half-completed, but which should extend our understanding of the subtle interplay between weather conditions and plant activity.

R.L.Bland

Dr Muriel Patricia Hill-Cottingham, PhD., BSc., 1930 – 2008, a memoir.

By Tony Smith

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Pat Hill-Cottingham died unexpectedly on 26th November 2008. She had a huge number of friends and close working colleagues and the Parish Church at Shapwick, Somerset was full to overflowing for her funeral in December as was the subsequent Memorial Celebration of her life at Cheddon Fitzpaine Village Hall in 2009.

She was a long-term, active member of Bristol Naturalists' Society, taking the role of vice-President for a time. She was passionate about teaching, about understanding wildlife and about trying to get official promises to commitment in conservation carried through. She joined in the National Trust Project Neptune in the 1960s by getting her biology classes at Brandon School, Clevedon to do seashore studies within the Project. She was recognised as an exceptional teacher as Head of Biology at Backwell Comprehensive School in the 1970s and eighties, where she developed all the years' curricula but especially a very successful A-level Biology course for the Sixth-form, that started with two students but rose to be over-subscribed within a few years. In 1981 she took a Further Professional Studies course in 'Teaching Field Biology', which the course tutor thought Pat could have run just as well!

She started her teaching career after her children had left school. She and her husband were very active during the children's formative years in running the local Guide and Scout companies, where practical skills of camping and otherwise enjoying the outdoor life were much to the fore, and also when the family removed to New Zealand for a year. Pat's skills were evident in organising week-long camps with equipment and food supplies running smoothly, so essential to children's comfort. Later, she organised residential field courses that were an essential part of the third-, fifth- and sixth-form courses at secondary school, studying the River Barle on Exmoor, the seashore and dunes at Studland, Dorset and, more comprehensively, Braunton Burrows, Devon. In all these she included transects across vegetation zones on rocky shore and dune systems, especially the mapping in three dimensions using metre rules and water-filled plastic tubing, and identification of the animal residents. There was not just a dry list of names but participants had a comprehensive understanding of the major divisions of the animal kingdom and a sense of the amazing diversity that exists in a habitat.

She sat aside, claiming that she was being lazy and that everyone else had to do the work. But she had prepared, for example for the Exmoor studies, the food needed by four adults and forty pupils for four nights, the work-sheets for projects on which groups would be working on different days, letters to parents with clothing lists, and equipment from the suppliers. And, daily, she would assemble the groups

of young people, ensuring that everyone knew what to do in a very upbeat manner, engendering a sense of responsibility and excitement, then as they got on with the work she would move from group to group, enjoying everyone's company, quietly supporting every task. In the classroom teaching situation there would be a lively exchange of ideas and pupils might feel that they were dragging her off the point but by this time she had ensured that her teaching objective was in place and so she could afford to be indulgent. No wonder that her biology A-level became much sort after and her former pupils gained an impressive list of examination successes leading to many good university degrees and important careers in biology and medicine. After teaching at the secondary level for many years she semi-retired in 1984 and taught part-time at several different colleges, developing sixth-form biology courses.

She and her husband Dennis became managers of Catcott North Nature Reserve in 1982 under the Somerset Wildlife Trust, taking their responsibilities seriously as ecologists to restore the rich turf moors flora and fauna despite the difficulties of bunding a high water table in a recently well-drained farmland that was abandoning traditional practices. Pat developed plans and field data sheets to coordinate monitoring of reserves generally so that management practices could be judged to be working or not. With a little help from her friends she had by far the greatest list of flora and fauna (including minibeasts) of any of the Somerset Nature Reserves. What Pat did was to work with others, bringing to the partnership a wealth of ideas and a sense of purpose so that a whole new perspective was achieved. She acted in this way in the Somerset Invertebrates Group, working with others to develop ecological and taxonomic workshops covering habitats and the identification of fauna. There is now an impressive shelf full of excellent teaching material awaiting exploitation. As Chairman of the Somerset Archaeological and Natural History Society her skills in working with others rejuvenated the organisation and she led a publications team of geological and wildlife specialists to produce 'The Somerset Wetlands, an ever changing environment' that has had widespread critical and public acclaim, for the quality of its words and illustrations and high standard of printing, and now has a second print run.

There are many people who turned to her when they were experiencing difficulties, whether at work, in personal life or even some practicality. They turned to her and her advice, diplomatic skills and kindly voice made a great difference in their lives. She spoke with an authority that may not have been justified in every case but, for example if I heard her speak on a subject that was familiar to me I might, silently, disagree with what she said at first and then hear how she made out a much more complete statement of what I might have said, all the time communicating with her audience by expression, gesture and tone of voice.

She also taught pottery to Advanced level at evening classes and much of her inspiration for design came from nature in the forms of fungi and lichens or the powerful internal curves of an eroded surface of timber on the strandline of the beach. In later years she developed a series of interesting talks to wildlife groups, including BNS, WIs and gardening clubs, covering such topics as Creating a Wildlife Garden, Managing a Wildlife Reserve, Somerset Ferns, The Galapagos Archipelago, Climate Disruption, Garden Mini-beasts, Water Divining, The Body Talks, The Sexual Connection and Wildlife in New Zealand and many more.

Pat had the Yorkshire trait of being very careful with money and this meant that she would, for instance, cut her own woodblocks and linocuts for a selection of different Christmas cards, and we all benefited by having original works of art. She kept a list of who she had sent which design to the previous year. I have a microscope cover, made from cloth that bore a design of different species of water snail among aquatic vegetation in a pond, that she had created in batik. She collected cake tins, tea-pots, coffee-pots and other enamelware, even old milk churns and, covering them first in black enamel paint she painted in bold strokes, roses and other flowers in 'barge ware'. So, in these ways she spent less but gave so much more.

She agreed to help a student with a project on wetland management and got her to sort a batch of aquatic snails into separate heaps in petri dishes. The student was not naming them, just separating the different ones and suddenly Pat saw Shining Ram's-horn snails in a pile of two in one dish. She could hardly believe her eyes. The only currently recorded British sites for this species are in the east and south east of England, e.g. in marshes near Lewes. Historically, the species was widespread but comparing her shells with Somerset fossil shells showed that these were not transported from East Sussex or East Anglia as might be supposed but were a relict local population. The snails were living in a ditch on the Catcott North Nature Reserve. Further investigation revealed thousands present. It is a long story but Pat gained her PhD studying the life of these snails.

From a life so full of hearts left empty, our deepest sympathies go to Dennis and the family.

Lessons from the past

RL Bland

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As we approach our 150th anniversary it seems appropriate to look back. “The past is another country, they do things differently there” said LP Hartley, a profound historical truth, but it is not merely nostalgia that dwells there. I have tried to pick out from the Proceedings of fifty and one hundred years ago differences and similarities that intrigue, and comments that resonate.

1958

The President was Miss Margaret Rogers, whose obituary is in this volume, the Librarian Dr Hugh Davie, who taught Biology at Clifton College, where Adolph Leipner also taught, and the publicity secretary was Brian Frost, still a member of Council, as is Mike Taylor, then secretary of the Ornithological Section. There were 630 members, and the Report of Council was six lines long. Total income was £900, of which £200 went to produce the proceedings.

From the Botany report by Cecil Sandwith “The weather of 1958 is best forgotten. A backward spring with the coldest Easter of this century was followed by a wretchedly wet summer with no unbroken spell of summery days. There was a drought in the autumn with much fog and the Christmas season was mild and damp with strong winds. It was not a bad year for botanists as nothing was burnt up and plants grew luxuriantly and had a long flowering period.” In fact it was the coldest spring since 1941, and the summer temperature was virtually the same as that in 2008. The autumn drought is an odd comment, as September 1958 had 139mm of rain, was almost twice the September average. Among the records was “*Daphne Laureola* Spurge Laurel. Two strong plants on Clifton Down” They are not there now.

From the Bird Report

Highlights of the year were the discovery of a dead Bridled Tern at Sand Bay, the fourth for Britain and the first for the Bristol area. Two Dotterel were seen at Sand Point in September, and a Woodchat Shrike at Dursley, the first record for 70 years. Forty pairs of Tufted Duck bred at Chew, and both Gadwall and Pochard bred there for the first time. The reservoir had only been flooded up three years before, and there was a record of three Reed Warblers there, progenitors of the 600 pairs there now. Curlew bred on Walton Moor, the first breeding record since 1925. There were just 22 Herons nests in the region (120 today). There was no evidence of either Peregrine or Buzzard breeding, but Lesser Black-backed Gulls attempted to breed on Denny Island (Chew Lake) but eggs were removed by BWW staff. A Hoopoe was shot “by accident” on Nailsea Moor on Nov 12th. Wheatear bred on Wavering Down and fifty pairs of Sand Martin at Somerdale.

There were two long articles; No 19 in a series on the Biology of the Bristol Channel examined the inter-tidal fauna of muddy beaches; (all this data seems to have been forgotten; I wonder how much the fauna have changed) and a detailed article by AJ Willis, yet to be a professor, on the plant ecology of the Gordano Valley.

1908

The Proceedings were edited by the Society Secretary, and the President was JW White, busy with his flora presumably. There were only three sections, Geology, Entomology and Botany, which had been newly created by a meeting on Feb 15th. There were seven geology section meetings and nine general meetings. At a general meeting on April 2nd a resolution was passed unanimously stating that "the Society cordially supports the movement for the establishment of a University in Bristol and is of the opinion that a local university will be of the highest value in furthering the development of those branches of education and research in which this society has for 46 years shown a deep interest." There were 15 Honorary Members, and 143 paying members and a grand total of 22 meetings. Total income was £67 and the Proceedings cost £16.

The Librarian reported that 15 members had borrowed 75 books. One book had been purchased.

Compared with 2008 January and April were cold, the rest of the summer was identical, and the months from October to December were warmer. The annual average was almost identical. Rainfall was average throughout the year except for June which was very dry.

There were two major papers- the first by C Lloyd Morgan (past president, and first Vice Chancellor to be) giving an outline geological history of the Bristol Coalfield, a brilliant 25 page summary of the past 600million years, and, in effect, of his life's work. The second the result of a five year study of Abbots Pool, complete with microphotographs, and beautiful graphs showing the complex cycles in the numbers of different algal species during the year.

A brief summary of the Mammals of the Bristol District by HJ Charbonnier included reports of a Bottle-nosed Whale at Aust in 1840 and at Weston in 1857; a Killer Whale in 1639, and a 66 ft Rorqual that beached at Littleton Pill in 1885. Porpoises were frequent in the Severn Estuary, and Polecat almost extinct. This article was part of the effort to describe the whole natural history of the region, "*Rerum cognoscere causas*" as our motto has it, "To understand the causes of all things," that had been laid down as our aim by Adolph Leiper in 1865. There was a note on Bristol plants, the second such annual note on Botany, and the precursor therefore of the annual Botany Report that has continued almost without a break from that day to this, a record that must be almost unique.

Dakosaurus carpenteri –a new species of fossil crocodile from

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Simon Carpenter, a keen amateur palaeontologist and former President of the Bristol Naturalists Society, discovered a fossil crocodile in a clay pit in Wiltshire (National Grid Reference ST 8817 5267) during the summer of 2005. It was identified as a new species and named in his honour - *Dakosaurus carpenteri*. The new crocodile is represented by approximately 40 per cent of the post cranial skeleton. Elements of the mandible including fragments of the dentary are also preserved. In 2007, it was donated to Bristol City Museum.

Simon has been collecting fossils since he was a child, but over the last 17 years has concentrated his attention on the Kimmeridge Clay (Upper Jurassic age) exposed in the La Farge (formerly Blue Circle Industries) clay pit at Westbury, Wiltshire. The Kimmeridge Clay at this site is particularly fossiliferous having produced a number of exciting fossil marine reptile fossils including the skull of a large pliosaur, found by Danish geology students in 1980. This is displayed in the public galleries of Bristol City Museum.

In 1994, Simon discovered a more complete pliosaur which was excavated by a team of geologists from Bristol University and Bristol City Museum. This fossil was donated to Bristol City Museum and is still undergoing preparation and conservation. Since this discovery, he has found further material including the remains of a turtle, two plesiosaurs and an ichthyosaur.

In March 2009, French owned company La Farge, owners of the Westbury clay pit, announced the closure of its Westbury Works. This will see the loss of the clay pit the site of so many interesting fossil discoveries, as the quarry fills with water. It will also see the disappearance of one of the few inland exposures of the Upper Jurassic, Kimmeridge Clay in the south west. For a full description of *Dakosaurus carpenteri* see;-Wilkinson, L.E., Young , M.T., and Benton, M.J. 2008. A new Metriorhynchid crocodylian (Mesoeucrocodylia: Thalattosuchia) from the Kimmeridgian (Upper Jurassic) of Wiltshire, UK. *Palaeontology*, Vol 51, Part 6, pp. 1307-1333

Bristol Mammal Report 2008

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Introduction

The intention of this mammal report is to be a wide-ranging review of the records and studies of mammals in and around the Bristol area and to report on significant issues and events affecting British mammals in 2008. The former county of Avon covers an area of approximately 1300 square kilometres, and so the number of one-km squares for which records have been received gives an indication of the abundance of each species. The more common species are likely to be under-recorded. Where given, all grid references are for the 100 km grid square ST. The differences between the years are likely to be due to changes in numbers and locations of recorders rather than changes in mammal abundance or distribution. Provided the submitter of a record gives permission, all records are submitted annually to the Bristol Regional Environment Records Centre (BRERC).

The sequence of Orders, Families Genera and Species now follows current thoughts on evolution and phylogeny. Some familiar names have also changed, the bank vole *Clethrionomys* is now *Myodes*, the Common dormouse is now the Hazel Dormouse and the Roe Deer is now the European Roe Deer.

Reports on mammals

Rodents: Order Rodentia

Grey Squirrel *Sciurus carolinensis*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km Sq	77	50	37	59	62	83	60	68	53

Records from RLB, JB, PC, KG, JMo, EN, S&JP, JR, DT, MT.

Up to five seen feeding on developing Scots pine flowers at Sheep Wood, Westbury-on-Trym (5778).

Figure 1 shows the average numbers recorded annually by RLB on a standard weekly walk that takes an hour across the Downs in ST5673. It is in effect an hourly rate, and suggests a fairly stable population.

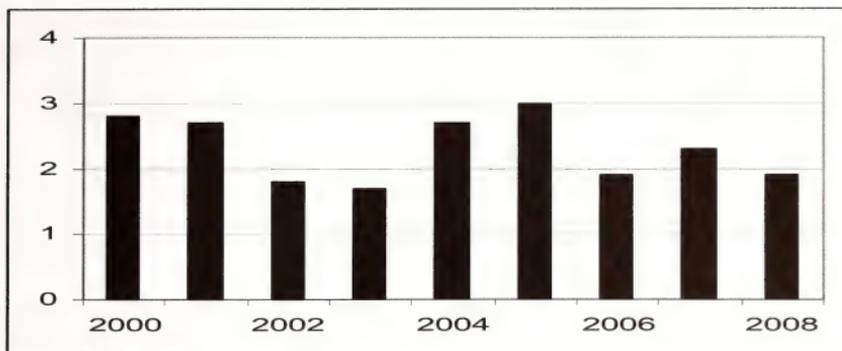


Figure 1 Annual average numbers seen on a standard walk in ST5673, on the Downs, 2000-2008.

‘Squirrel’s picnic in the park’ (*Bristol Evening Post* 13 August 2008). Castle Park in Bristol is a popular spot for lunch on a summer’s day – and not just with people. Squirrels have now become a common sight in Bristol’s green heartland.

Hazel Dormouse *Muscardinus avellanarius*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	?	0	1	1	0	0	5+	2	1

Records from HB/MB/UD.

Hannah Broughton reported on a dormouse nest box project at Leigh Woods. Twenty dormouse boxes were erected in Leigh Woods (5574) in May and by November 50% had been used by dormice.

25 June 2008	2 adult females and 1 adult (unknown sex) seen
20 July 2008	2 adults (sex unknown) seen. 1 unoccupied nest.
20 July 2008	1 unoccupied nest
17 Aug 2008	1 female adult, 1 adult (sex unknown) and ‘pink’ babies seen. 4 unoccupied nests.
21 Sept 2008	1 adult male, 2 adult females, 5 babies with eyes open (grey colour) and ‘pink’ babies seen. 4 unoccupied nests
15 Nov 2008	10 unoccupied nests found

No dormice seen in any of the dormouse boxes at Tickenham Ridge Nature Reserve (4472) this year (KG pers com).

Bank Vole *Myodes glareolus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	4	1	6	5	1	3	3	5	2

Records from JR, DT.

Records were from gardens in Pilning (5585) and West End Nailsea (4569) (under sheds and bird feeders).

Field Vole *Microtus agrestis*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	2	2	7	5	1	3	4	1	2

Records from JB, JR.

Regular sightings in a garden in Pilning (5585) and one seen caught by a Kestrel in the salt marsh at Clevedon Pill (3970).

Water Vole *Arvicola terrestris*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	0	2	2	2	1	2	4	0	1

Record from JMo.

Single record of one seen swimming in Kings Weston Rhyne (5378) in May.

'Ratty makes a comeback' (*Bristol Evening Post* 12 June 2008). Endangered water voles are making a comeback in Cheddar Gorge. Water voles, immortalised as Ratty in *Wind in the Willows* are now regularly seen along the water courses in the gorge from Dag Hole at the bottom to the mill ponds at the top. A mink-trapping project co-ordinated by the British Association for Shooting and Conservation (BASC) has resulted in several areas of the Somerset Levels becoming mink-free allowing the voles to thrive once again.

Wood Mouse *Apodemus sylvaticus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	6	7	5	9	3	7	5	9	4

Records from HB/MB, EN, S&JP, DT, DW

Between 28 January and 10 March an amazing 28 Wood Mice were caught in traps in a basement of a house in Portishead 4777) and released away from the area. Whether any returned is not known. (EN pers com).

Wood mice have been reported regularly from dormice boxes at Tickenham Ridge (4472) Nature Reserve in the past but none were seen this year (KG pers com).

Yellow-necked Mouse *Apodemus flavicollis*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	0	0	1	0	0	0	0	0	0

No records for the year.

House Mouse *Mus domesticus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	3	4	1	3	1	3	2	1	1

Record from JR.

Two seen in the garage of a house in Pilning (5585).

Common Rat *Rattus norvegicus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sqs	17	6+	13	9	9	7	6	8	5

Records from JR, DT, DW.

Sightings from West End Nailsea, Bath, Bishop Sutton and Pilning.

Rabbits and Hares: Order Lagomorpha**Rabbit *Oryctolagus cuniculus***

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	105	19	36	52	68	76	48	23	36

Records from RLB, RB, JB, KG, JMo, EN, S&JP, JR, DT, MT.

Two black rabbits were seen on road verge close to the Hand Stadium at Clevedon (4269) in June.

Brown Hare *Lepus europaeus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	34	11	10	24	6	10	12	10	2

Records from RLB, DW.

Smallest ever number of records with individuals seen at Villice parkland (5660) and Clevedon (4375).

Insectivores: Orders Erinaceomorpha and Soricomorpha

Hedgehog *Erinaceus europaeus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	97	38	45	26	26	39	14	24	17

Recorded by JR, DT, DW, LW.

Only two records of live animals – one seen running across the road in Horfield (6977) in May and one seen in a garden in Bishop Sutton (5859) in July (the first seen for several years).

Data collected by BNS members again shows a decline in the number of hedgehog road casualties. There were only 16 road casualty records in 2008, the lowest since records were first collected in 1996. The implication is a steep fall in hedgehog numbers.

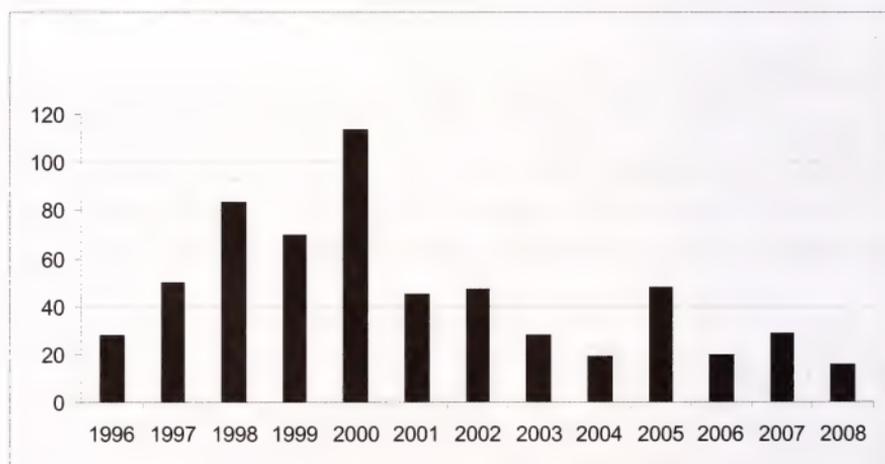


Figure 2. Number of Hedgehog Road Casualty Records 1996-2008.

The monthly pattern of road casualties since 1996 is shown in figure 3, and illustrates the vulnerability of juveniles.

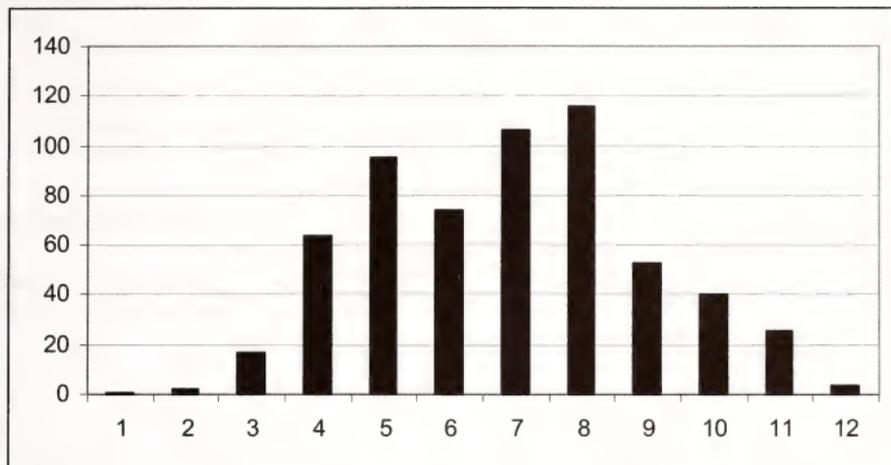


Figure 3 Monthly distribution of road casualties, 1996-2008

Hugh Warwick reported on the mysterious case of the disappearing hedgehog ‘A Prickly Problem’ (*BBC Wildlife* 26 (3) March 2008). In 2007, the Peoples Trust for Endangered Species and the British Hedgehog Preservation Society launched HogWatch to investigate the apparent declines in reported hedgehog road casualty deaths – nationally there was a 20% decline in reported hedgehog deaths between 2001 and 2005. Reasons for this decline are complex but in rural situations could include a link between an increase in the numbers of badgers and a continued decline in the numbers of hedges through neglect and poor management resulting in habitat fragmentation. In the urban situation, loss of habitat is likely to have been the main reason for the decline with more and more gardens being built on and those that remain losing their lawns and shrub borders to decking and patios.

Mole *Talpa europea*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	151	69	63	56	63	90	71	81	80

Records from RLB, RB, PC, KG, EN, JR.

The vast majority of records were of mole hills, generally the only evidence that moles are present in a particular area.

Common Shrew *Sorex araneus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sqs	1	3	4	5	2	6	6	3	2

Records from JR.

Both records were from Pilning (5585) with one shrew found upstairs in a house!

Bats: Order Chiroptera**Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus* and Pipistrelle sp. *Pipistrellus* sp.**

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One km sq	3	4+	12	5	6	9	4	5	4

Records from KG, JR, DT/TM.

The only records were of bats heard on a detector and droppings found in a outbuilding at the Avon Wildlife Trust's Folly Farm (6060), regular sightings of up to three bats in a Pilning garden (5585) from 5 April to 25 August and two found in a dormouse nest box at Tickenham Ridge Nature Reserve (4472).

Brown Long-Eared Bat *Plecotus auritus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	0	0	1	1	0	0	0	2	1

Records from KG.

Summer roost in loft of house at Tickenham Ridge (4472).

Bats in the press

'Bats moved for sawmill revamp' (Mercury 29 May 2009). A colony of rare bats (pipistrelles, brown long-eared and lesser horseshoe bats) living in the roof space of the Engine House, part of the sawmill buildings at the National Trust's Tyntesfield estate have been moved to a specially constructed roost above the Woodstore Barn so that the Engine Room can be converted for teaching purposes. The Wraxall estate is home to nine of the sixteen species of bats in Britain and the National Trust is working closely with ecological consultants and Natural England to ensure that the redevelopment and restoration works are undertaken sympathetically.

Carnivores: Order Carnivora

Red Fox *Vulpes vulpes*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	71	35	39	48	38	47	43	27	24

Records from RLB, RB, JB, PC, KG, JR, JMo, EN, S&JP, DT, ET, MT, DW.

Foxes found within the 'City and County of Bristol' boundaries in the following One-km squares:- Crooks Marsh (5281), Avonmouth (5378), Sneyd Park (5575), Ashton Vale (5670), Clifton (5673), Clifton Downs (5674), Brentry (5778), Henleaze (5876) – fox seen with blue collar. All were from the north and west of the city. An interesting record from Tickenham Ridge Nature Reserve (4472) of a fox being chased away by a roe doe and her fawn KG pers com).

Badger *Meles meles*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	77	42	50	31	37	48	29	56	51

Records from the following RLB, RB, JB, D&JM, EN, S&JP, JR, DT, MT, E&MT, LW.

Thirteen years of Badger road casualty figures with 476 records to date show a large peak around March/April (peak breeding season) with perhaps an indication of a smaller peak in August (dispersal of young) (Fig 2). There are few records between November and January. This is the time of year when Badgers are at their least active with the pregnant females underground in their setts prior to giving birth to cubs between January and March.

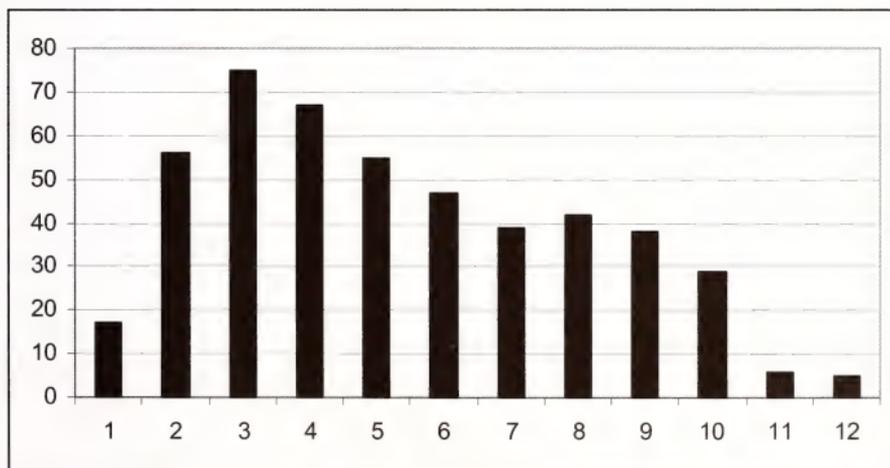


Figure 2. Number of Badger Road Casualty Records per month 1996-2008.

The road casualty data presented in a different way shows wide fluctuations in numbers with a possible upward trend from the 1990s to the present.

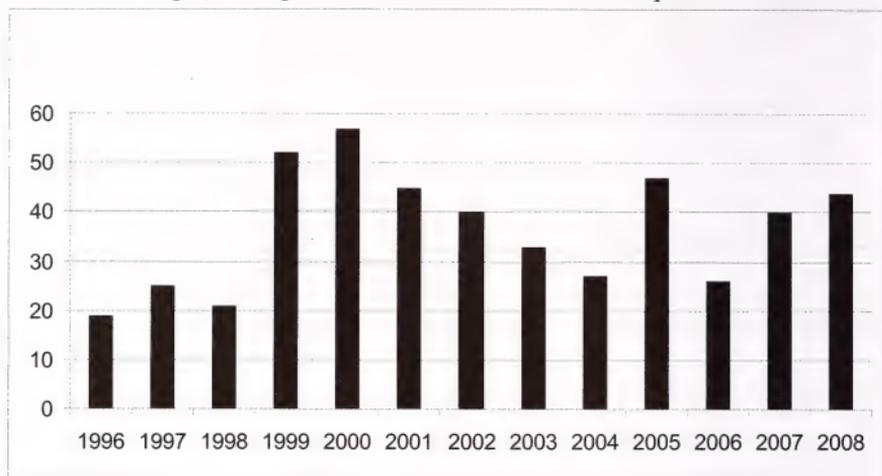


Figure 3 Road casualty badgers 1996-2008.

Since records of road casualty Badgers were collected on a regular basis (from 1996), a number of 'hot-spots' are apparent:

1-km square	Number of road casualty Badgers	Location/Notes
3761	4	M5 immediately south of junction 21 (Weston-super-Mare)
4169	7	M5 near Clevedon (the overbridge at ST414699 appears to be particularly hazardous)
4170	4	M5 junction 20 (Clevedon)
4271	10	M5 near Clevedon Court
4369	4	Minor road across Kenn/Nailsea Moor
4469	4	West End Nailsea
4673	4	M5 near Clapton Court
4971	5	B3130 Wraxall
4972	6	B3128 Wraxall
5070	5	B3130 Belmont
5072	6	B3128 Wraxall
5269	14	A370 Cambridge Batch (Long Ashton Bypass)
5369	11	A370 Barrow Wood (Long Ashton Bypass)
5471	5	B3128 at Ashton Court
5472	4	B3129 Ashton Court/Beggar Bush Lane
5484	7	A403/M49 Severn Beach
5570	4	A370 Long Ashton (bypass)

5571	4	A370/B3128 Long Ashton (bypass)/Bower Ashton
5585	4	Pilning
6469	6	A4 Keynsham Bypass
7476	4	A46 Dyrham Park
7757	4	B3110 Hinton Charterhouse

A further 16 1-km squares had 3 road casualty badgers, 56 1-km squares had 2 road casualty badgers and 145 1-km squares had 1 road casualty badger.

Table 1. Numbers of road casualty badgers per 1-km square (1996-2008)

The results give an indication of the most hazardous places for Badgers (and for road users) but are likely to be biased towards the routes driven by the regular Badger road casualty recorders. This is particularly true of the roads around Nailsea, the M5 and the A370 where your county mammal recorder lives.

Which were the most dangerous roads for badgers in 2008?

<i>Road Name/ Number</i>	<i>Location (in 'Avon')</i>	<i>2004- 7</i>	<i>2008</i>	<i>Total</i>
M4	Tormarton to Second Severn Crossing	1	2	3
M49	Severn Beach to Avonmouth	0	1	1
M5	Falfield to Loxton	6	2	8
M48	M4 Awkley to Aust	1	2	3
A4	Avonmouth to Batheaston	4	0	4
A36	Bath to Hinton Charterhouse	2	0	2
A37	Temple Meads to Farrington Gurney	4	0	4
A38	Falfield to Churchill	6	1	7
A39	Corston to Hallatrow	1	0	1
A362	Farrington Gurney to Radstock	4	0	4
A368	Banwell to Marksbury	5	0	5
A369	Bower Ashton to Portishead	1	1	2
A370	Ashton Gate to East Brent	17	12	29
A46	Starveall to Bathampton	2	0	2
Old A46	Lambridge (Bath)	1	0	1
A403	Avonmouth to Aust	10	2	12
A420	Bristol to Marshfield	1	1	2
B3110	Bath to Hinton Charterhouse	2	0	1
B3114	Chew Magna to Chewton Mendip	3	2	5
B3124	Clevedon to Portishead	1	1	2

B3128	Bower Ashton to Stone-edge-batch	7	2	9
B3129	Abbots Leigh to Flax Bourton	2	0	2
B3130	Pensford to Clevedon	8	6	14
B3133	Clevedon to Lower Langford	1	0	1
B4055	Shirehampton to Pilning	5	0	5
B4058	Eastville to Charfield	1	0	1
B4461	Aust to Alveston	0	1	1
Unspecified	Chew Valley area	9	0	9
Minor roads	Various locations	36	8	44

Table 2. Numbers of road casualty badgers on roads in the former county of Avon in 2004-08.

The most hazardous road continues to be the A370 (Ashton Gate to East Brent) with 12 road casualty badgers reported in 2008 (Table 2). 29 badgers have now been run over on the A370 in the five years 2004-8.

Badger records of note in 2008.

Two adults and three juveniles were seen at the observation sett at Folly Farm (6160) at 21.00hrs on 30 May. An adult Badger was seen running along Engine Lane in Nailsea (4569) at 13.00hrs on 3 June. An 'orange-tinged' Badger was seen dead on the M48 (5887) on 10 April – likely to be one of the erythristic colour variations. The numbers of Badgers visiting Jeff Rawlinson's garden in Pilning (5585) has again declined following long-term railway embankment re-profiling works in 2006. A maximum of two Badgers were seen in October.

Badgers in the press

'Bridge crosses Badger tunnels' (*Bristol Evening Post* 2 January 2008). A bridge has been installed on a popular coastal walk in Clevedon after Badgers burrowed underneath the path causing it to collapse. North Somerset Council spent £900 on a wooden bridge over the Badger sett to enable people to continue to walk along Poet's Walk to St Andrews Church and enjoy the views across the Bristol Channel to the Welsh hills beyond.

Do we have to cull Badgers? (*BBC Wildlife* 26 (1) January 2008). The debate about badgers and their role in the transmission of Bovine Tuberculosis continued apace. The role of oral vaccines in eradicating TB in wildlife is being studied in detail in the UK, Ireland and New Zealand together with better and stricter testing regimes for cattle and improving biosecurity (for example using electric fencing to keep cattle and Badgers apart. Oral vaccines are however still several years away from reality.

Environment Secretary Hilary Benn announced that no licences would be issued to farmers to cull Badgers in England for TB control (Defra News Release 7 July 2008) and that there will be additional money put towards the development of a badger vaccine with field trials starting in 2010 (Defra News Release 19 March 2009).

Otter *Lutra lutra*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	24	2+	25	19+	28+	36+	28+	25+	1+

Record from SR/BAOG.

Otter footprints, scrapes and spraints seen on the River Chew at Denny Lane (5761).

Stoat *Mustela erminea*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	10	4	3	1	0	4	4	2	3

Records from TB, KG.

Weasel *Mustela nivalis*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	10	3	7	6	4	7	6	3	4

Records from TB, RB, DW.

All Stoat and Weasel records were of individuals running across roads or hunting Rabbits.

European Polecat *Mustela putorius*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	?	2	2	0	0	1	1	2	1

Record from AB/DT.

A Polecat was found dead on the hard shoulder of the exit slip road of the northbound M5 at Junction 18 in Avonmouth (5378) on 28 August. The Vincent Wildlife Trust's Polecat Survey of Britain 2004-6 was published in 2008 (*Mammal News* 152 – Autumn 2008). The Polecat is now widely re-established in Wales and central England with outlying populations in Northern England and Scotland probably derived from re-introductions. The 'Avon' area is on the southern edge of the Polecat's range and no doubt the numbers of records of sightings/road casualties will increase over time.

The Polecat is now a UK Biodiversity Action Plan priority species and there are ten recommendations for conservation action:-

- i) Maintaining and enhancing habitat quality
- ii) Reducing the secondary effects of rat poisons
- iii) Reducing mortality in spring traps
- iv) Reducing road traffic casualties
- v) Reducing interbreeding with feral Ferrets
- vi) Improving confidence and rigour in polecat recording
- vii) Promote tolerance and understanding of the Polecat
- viii) Distribution-mapping at ten year intervals
- ix) Confirming the status of populations outside the main expansion range
- x) Monitoring abundance.

Ungulates: Orders Perissodactyla and Artiodactyla

European Roe Deer *Capreolus capreolus*

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
One-km sq	51	20+	27	33	26	33	36	35	31

Records from RLB, KG, EN, TM, HP, S&JP, DT, MT, DW.

Groups of three or more seen at the following locations:- Blagdon Lake (5159) six seen in a field on the south shore of the lake on 30 March; Chew Valley Lake (CVL) (5559) two adults and two young seen on 24 May; Heron's Green CVL (5760) three seen on 6 February; Widcombe CVL (5758) three seen on 2 March; Wick Green CVL four seen on 3 April and six on 4 April; Folly Farm (6060) five seen on 11 June; Wraxall (4971) three seen on 16 February. The Roe Deer population of Tickenham Ridge Nature Reserve was estimated at eight with two bucks, three does and three fawns seen in May (KG pers com).

Deer in the press

'Rescue effort fails for trapped deer' (*Bristol Evening Post* 24 July 2008). A roe deer had been spotted roaming around the allotments in Knowle Road Totterdown when it became trapped in the railings. Despite the efforts of the RSPCA and local police the deer's injuries were too severe and it had to be put down.

'UK roadkill blackspots listed' (*Bristol Evening Post* 20 November 2008). As many as 74,000 deer are hit by cars every year in the UK resulting in up to 30 fatalities and 700 injuries to car drivers and their passengers. In the West Country, the 'Deer Vehicle Collision Project' organised by the Deer Initiative identified the Forest of Dean, the Mendip Hills and Halden Hill in Devon as amongst the worst 'accident black spots'. The project also aims to identify measures that will reduce deer collisions such as the use of fencing, under passes, signs and roadside deterrents.

Britain's favourite mammal

In June BBC Wildlife Magazine asked readers to vote for their favourite British Mammal. Over 2000 votes were received and the winner with 265 votes was the Otter. Hedgehogs were a close second with 238 votes followed by, in equal third place, Badger and Fox with 225 votes. The rest of the top ten were 'Squirrel', 'Deer', 'Mouse', 'Dolphin', Stoat/Weasel and in 10th place 'Bat' with 91 votes. This follows a similar survey in 2000 in which the winner was the Dolphin and otters were not in the top ten. (*BBC Wildlife* **26** (10) September 2008).

Exotics/beasts/former native species

Big Cats

Reports of large beast/cats/panthers/leopards/pumas etc roaming the countryside attacking livestock continue to circulate in the press but as yet there have been no confirmed sightings.

Wild Boar *Sus scrofa*

'Hogging the limelight' (BBC Wildlife December 2008 **26** (13)). Official signs around some of the most popular parts of the Forest of Dean warn of the presence of wild boar and give advice on what to do if confronted. However a 2005 Defra report was unable to find any evidence of unprovoked attacks by Wild Boar, despite a number of alarmist articles in the media.

A Code of Conduct on what to do in the presence of Wild Boar states the following:-

Remember that if a Wild Boar detects your presence, it will usually run away.

Be extra careful during the rut, in autumn and early winter. If you encounter a dominant male with females, he may see you as a challenge and not back off. If this happens, retreat calmly.

Keep dogs on leads in areas where Boar are known to live, particularly in spring when sows have piglets in tow. Boar do not tolerate dogs.

If the worst does happen and you encounter an angry boar, the general advice is to climb the nearest tree.

The current population of Boar in the Forest of Dean is thought to be in the region of 100 individuals (CW pers com).

New publications

2008 finally saw the publication of *Mammals of the British Isles: Handbook, 4th Edition* (Harris and Yalden eds. 2008) which replaces the long out-of-print 1991 3rd edition. The new 'handbook' weighs in at over 3 kg and has been completely revised and updated with a stunning range of colour plates and photographs.

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Obituary; Mike Curtis 1950 - 2008

Simon Carpenter

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Mike Curtis was an accomplished and dedicated amateur geologist. His painstaking and thorough research of mainly Upper Triassic microfossils has led to some breathtaking discoveries. Mike joined the Bristol Naturalist's Society in 1972 and remained a member until his death. He was a Gloucestershire man, born and educated in Dursley. Following work as a quarry manager and bus driver he eventually took on two pubs which he ran with his wife Sharon.

Sharon joined Mike on his fossil collecting trips and between them they began to gather together a fascinating array of fossils from Chipping Sodbury in South Gloucestershire. Their main interest was in the remains of fossil fish preserved in Rhaetian sediments (Upper Triassic age - approximately 208 million years old). These sediments contain abundant disassociated scales and teeth of fish - many very small in size. Their collecting techniques were meticulous, with sediment collected in the field, later sieved for fossils, which were then carefully examined under a microscope and recorded. They began to realise that some fossils were only found in certain layers and that a progression of species could be identified. This work has changed the way we view the fossil fish succession (and in particular fossil sharks) in the Upper Triassic and will continue to inform research for many years.

It was during a collecting trip that Mike found a small ammonite in the Triassic sediments. Ammonites are known in the European Triassic, but this was the first to be found from the British Triassic, and is thus recorded as the oldest recorded British ammonite. The importance of this discovery was marked by a paper in *Palaeontology* (Vol.32, 1989). This was a collaborative publication between Professor Desmond Donovan and Mike and Sharon. Mike had already produced several published papers on his discoveries in the *Proceedings of the Bristol Naturalists and the Mercian Geologist*. At the time of his death, both Mike and Sharon were working in collaboration with Bristol University researchers to publish new material on Upper Triassic fossils.

Back in 1975, Mike Curtis made another exciting discovery (with Tom Ralph, another dedicated amateur geologist) in an active quarry in north Bristol. In a fissure (a void occurring in the Carboniferous Limestone which was later filled with younger Triassic sediment), he found the disassociated remains of an early plant-eating dinosaur called *Thecodontosaurus*. This material, which was acquired by Bristol University, has been the main focus of the ongoing Bristol Dinosaur Project. The couple's collection of fossils was donated to Bristol City Museum and Art Gallery and a collection was later bequeathed to Bristol University, where Mike had made contacts with a number of academics and advised on postgraduate research projects.

Part of Mike's legacy is his fossil collection. There is little doubt that this important and carefully curated collection will inspire new research for many years to come. It is also likely that new species will be identified as the collections are scrutinised and studied by specialist workers. A new genus of fossil shark based on Mike's teeth is currently being described as a collaboration between the University of Bristol and the Natural History Museum of Denmark in Copenhagen.

Amateur geologists with Mike's enthusiasm and knowledge are rare indeed. Mike's passing has deprived South West geology of one of its most dedicated field workers. His passion for geology and his readiness to share his interest with others will be missed by many.

Where will all the animals go mummy?

One small community in a David and Goliath fight to protect their green and pleasant land. Sharon Dallin, Ashton Vale Heritage Group.

www.ashtonvaleheritage.co.uk

Ashton Vale is a small community on the edge of South Bristol, nestled in the valley with Long Ashton and Failand on one side and Dundry and Bedminster Down on the other. Tucked into the bottom of the valley, the remnants of Ashton Marsh are an active natural flood plain, one of the very last in the city, and declared by the city to be a Site of Nature Conservation Interest. The area is a key part of the Green Belt, and contains a range of wildlife now rare within the City. It is also a key wildlife corridor. Ashton Vale is biodiversity rich, and host to an abundant range of visiting birds and wildlife, including, Peregrine Falcons, Buzzards, Snipe, Reed Bunting, owls, bats, deer, Badgers, Newts, Dragon and Damsel Flies, together with habitats including reed beds, grasses, sedge, hedges, waterways and streams. Set away from main roads, and co-existing with the community, wildlife has flourished here.

Ashton Vale, in South Bristol, is a traditional community, with many third and fourth generation families living where they were born, schooled and then met and married their partners. It's a traditional community, a rarity these days, but in Ashton Vale family still matters and many grandparents are fully involved in caring for their grandchildren and grandparents take their grandchildren to play freely in the fields as they and their own children have for more than sixty years. Children still make dens, go fishing in Colliters Brook, pick berries, go bird watching or have picnics at The Waterfall after a walk to Hanging Hill Wood. The community have seen bonfire nights, community picnics and value and appreciate where they live. The local primary school celebrates its 60th birthday this year and many people remain at Ashton Vale. Many more have chosen a final resting place in the cemetery overlooking Ashton Vale. It's a place people rarely want to leave.

But everything changed in September 2008 when ancient hedgerows were grubbed out by new landowners and what had taken more than 60 years to develop was wiped out in twenty four hours. Local residents were devastated and sought to prevent the destruction of the hedges where birds nested and that other wildlife relied on. It is unlikely to be a co-incidence that there is also major development planned for Ashton Vale, as abundant and rare wildlife could be a hindrance to the four major planning applications planned here.

This small community now finds itself fighting a David and Goliath fight, with the will and heart of generations of families competing against developers with abundant funds. The community is fighting back as hard as it can. This is the last area of natural green space left in South Bristol. It is Green Belt land which the Government seems happy to sacrifice to developers and speculators with little will to build on brown field sites. Ashton Vale it seems is to be sacrificed to the Greater Bristol Urban Sprawl. As if a planning application from Bristol City Football Club for a 40,000 seat stadium was not enough, hot on its back is an application for a Rapid Bus Route, a South Bristol Linkroad, and then just a few houses -10,000 at the last count. So whilst Councils talk of protecting green space, of an aspiration to be the Green Capital of Britain, of enhancing and enriching biodiversity and protecting wildlife, behind the scenes, plans are developing to create a greater Bristol where we might be lucky to have a green corridor where once we had open fields and air to breath and green space just a stone's throw from Bristol. Many people visiting Bristol have said that one of the things that attracted them to Bristol is that you can find natural green space just ten minutes from the city centre. Ashton Vale residents hoped that their children would be able to enjoy the same green fields in their future, but without help from people who also care about the area, it may soon be sacrificed to yet another retail park, football club car parks, coach parks, and more fast food restaurants. So Mummy where will all the animals go?

Ashton Vale Heritage is a Community Group trying to protect Ashton Vale Fields from development and to ensure that wildlife which has been protected continues to thrive here.

The bird community of Downs' scrub

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(This paper is a brief summary of a very detailed thesis prepared for a Bristol University Certificate in Wildlife Biology. The summary concentrates on the interpretation of the results, which are a significant contribution to the discussion of the management of the Downs. The original is available from Emma Davis. Editor.)

Aim

The aims of this study were to explore how the bird community changes with increasing scrub density on the Downs and whether the distribution of the birds is affected by the spatial arrangement of the scrub plots. A secondary aim was to relate the results to the existing scrubland management on the Downs, and identify some management practices that might benefit the local birdlife.

Method

The method used for this study was adapted from the long-running Common Bird Census technique used by the British Trust for Ornithology. This involves a series of thorough visits being made to all parts of a defined plot and birds detected by sight or sound recorded on to maps. The study area was located between Ladies Mile and Belgrave Road. Within this main area, eight 50m² plots, split between two types, one a single clump surrounded by grass, and the other an area of scattered scrub, were selected. There were two plots each of increasing total scrub cover, roughly 10%, 30% 50% and 75%. These were visited seven times during March to May 2008 between 6.0 and 9.0am, and all bird sightings mapped.

Results

Both mean species diversity and numbers increased with increasing scrub density in both main plot types, but there was a slight decrease between the two plots with 50% and the two with 75% cover. There was however considerable variation around the mean, and the overall numbers are small. There was no significant difference between the plots where there was a single clump and plots where the scrub was scattered. Thirteen species were seen regularly, and eleven were present in every plot. Eight species, Goldfinch, Bullfinch, Long-tailed Tit, Goldcrest, Collared Dove, Jay and Carrion Crow, were seen occasionally, and were using the scrub either for foraging or for nesting. Table 1 shows the frequency, out of seven visits, with which each species was seen in each of the four scrub cover types of plot. There were two plots, one clumped, one scattered, for each degree of scrub cover, and the figures average the totals.

Species	Scrub	Scrub	Scrub	Scrub	Avg
	Cover	Cover	Cover	Cover	
	10%	30%	50%	75%	
Blackbird	3	5.5	5	3.5	4.25
Blue Tit	4	3	3.5	5.5	4.00
Robin	3.5	3.5	4.5	4	3.88
Magpie	2	3.5	4	4	3.38
Greenfinch	0.5	5	4.5	2.5	3.13
Wren	1	1.5	2.5	4.5	2.38
Chaffinch	0.5	1	5	2	2.13
Dunnock	1.5	2	1	2.5	1.75
Wood Pigeon	1.5	2	1	2	1.63
Blackcap	1	0	2.5	2.5	1.50
Song Thrush	1	0.5	3.5	0.5	1.38
Great Tit	0.5	0.5	2.5	1.5	1.25
Chiffchaff	0	0	1	2	0.75
Average	1.4	1.9	3.0	2.8	

Table 1 Visit frequency (max 7) for each species in each plot type

Interpretation.

In general there is little information in the literature on spatial arrangements of scrub and its influence on birdlife. Invertebrates are a key food resource for breeding birds and the most important aspect for invertebrates is said to be the sheltered, warmer (sunnier) edge of scrub where it joins grassland (Kirby 1992). It seems logical to propose therefore that scattered patches with more edges would potentially be of more value to preserve as they would provide a greater food resource for birds. However some authorities suggest that scattered scrub may in fact provide less shelter for birds (Sutherland & Hill 1995) because of an increased predation risk (Groom et al 2006) which would presumably be more likely at lower densities where the effect of the edge is greater. It is likely that a bird's selection of habitat is a combination of balancing the need to forage with the need to avoid predators (Mortimer et al 2000). The results of this study appear to suggest that scrub at around 50% scrub cover is slightly better for bird diversity and density but as this is unlikely to be a significant result, it is unclear without further study whether this is actually the case. For each species the requirement for habitat that balances the need for adequate access to resources with the need for cover might be different and depend upon the size of the scrub patch in question and the resources available there, as well as the distance a bird may have to travel to other patches as dictated by optimal foraging theory (Begon et al 2006). Again complexities abound.

Bias

There are many variables that might affect the results some of which were not specifically addressed in this study, for example scrub characteristics like vertical canopy structure, canopy openness, height of vegetation at each layer, foliage density, invertebrate numbers and distribution. Also differences in bird species characteristics and activity will influence their detectability. Error might be introduced where species that are noisy (like Wren and Chiffchaff) might be detected more readily than those that are more cryptic, like Long-tailed Tit. Song period can also make a difference, with different birds singing at different times for different periods in a season making some more detectable than others. The sample size and number of visits made would need to be improved to increase the confidence that can be placed in these results (with small sample sizes and lack of repeatability decreasing that confidence). Other issues involve observer bias and effort. Observer bias would be consistent throughout this study with only one observer. Observer effort was hopefully addressed by walking at a similar pace and for the same amount of time through each plot consistently. There were occasions however when a survey would be interrupted by a member of the public which would then also disturb the birds in a plot (especially a dog-walker), hence introducing another potential source of error. Time of day was also kept similar throughout, but as the season progressed the birds became active at an earlier time. This season the weather was generally poor, but reasonable on the days observed, although temperatures were colder at the start of the season which might have affected bird activity as well.

Scrub Management

The maintenance of a well structured transition from grassland to scrub to woodland is an important element to consider as this will depend on regular management. The management of scrub poses considerable challenges for those involved and will depend on the local resources and priorities for any area in question.

The biodiversity value of different scrub stands will differ depending on the type of vegetation and the structural complexity (Mortimer et al 2000). Individual species appear to respond differently to habitat however and have different requirements and balancing all the different needs may not be achievable. The literature suggests though that preserving a variety of scrub densities and successional stages and spatial arrangements which incorporate structural diversity (Kirby 1992, Fuller *et al* 1999) would be beneficial. Birds and invertebrates respond on different spatial scales. Even isolated bushes, or scattered, young scrub, may support a rich variety of invertebrates (Kirby 1992) and provide song posts for birds.

The way that management is carried out is also important in order not to lose valuable species during operational disturbance (Kirby 1992). The best way appears to be for sites to be managed on a rotational, periodic basis, with only a fraction of a site managed in any one operation. This, he says, allows for vegetation of differing ages and structures to exist on the same site, facilitating re-colonisation by associated organisms when suitable conditions are reached,

preferably with adjacent plots managed before and after to aid those with limited dispersal power.

At present, practicalities in the area studied have presumably dictated the management of the grassland scrub interface by the use of machinery. Cutting, it seems, can be less than ideal in producing a variation in edge structure. The literature supports the use of grazing as the best option in creating a mix of short and tall vegetation (Kirby 1992).

Recommendations for scrub management on the Downs

1. Managers need ideally to maintain and promote a variety of growth stages of plants, which are hopefully able to support the fullest range of invertebrates and associated species. In particular, scrub plots which contain a combination of diverse vertical structure as well as dense low vegetation seem especially important in preserving the local birdlife.
2. Scrub management would be best carried out on a rotational, periodic basis, with only a fraction of a site managed in any one operation.
3. The subdivision of the site, with the subjection of differing areas to different experimental management with the re-introduction of animal grazing to some areas, where possible, may be a valuable exercise in promoting diversity for many species on the Downs.
4. As the margins of scrub are important for invertebrates (Kirby 1992), it is proposed that a patchwork of small, uncut areas of tall grasses and herbs around stands of scrub might also aid their value to invertebrates, and by association, birds.
5. Where an area of dense scrub has been established for a long time, the soil underneath will have become altered by nutrient enrichment from fallen leaves making it hard to redeem and it is advised that ideally scrub be managed before this stage is reached (Hopkins 1996).

Areas for further research

The following points provide a summary of issues that came to light during the course of this study which are worthy of further consideration.

The value of scrub for invertebrates on the Downs. The difference a rich herb layer in or around a scrub plot would make to the invertebrate and associated bird life. The microhabitat requirements of different bird and invertebrate species. Ongoing research into the web of interactions which might be encouraged between organisms found in different successional stages of scrub with increasing structural complexity. The best spatial structure of scrub, especially from an invertebrate point of view, and how far apart patches of scrub need to be to stop species from thriving or hinder dispersal. The affect climate change might have in potentially altering the plant communities and associated animals (hence changing the resource value of stands).

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Only those works mentioned in the text above are included.

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Review

***The Farmer and the Goose with the Golden Eyes* by Martin Davis.**

RL Bland

Howard Davis was the most eminent ornithologist in the Bristol area from the 1930s to the 1960s. He farmed Little Stoke Farm, and this charming book is his son's tribute to him and to an area that has vanished beneath creeping suburbs, and to a way of life that has disappeared almost beyond recall. Its 150 pages contain numerous evocative photos of this vanished past, elucidating the history of the farm from Domesday onwards, and describing in loving details the farm, its crops, and its stock, and how the whole was managed in its latter years. It is also a family history, and a history of the impact of the war on rural life.

It also shows how Howard's detailed knowledge of the natural world led to the dramatic day of December 16th 1945 when, having invited Peter Scott to stay at the farm and visit the Dumbles at Slimbridge, six species of Geese were seen, including the second record ever of a Lesser White-fronted Goose, the goose with the golden eyes, which Howard himself was the first to spot. This led to the creation of the Wildfowl Trust (now WWT), of which Howard was a founder member, and hence to all that has flowed from that in the past sixty years.

What the book does not mention is that Howard Davis began writing regular Bird Reports in the Bristol Naturalists Society proceedings in 1936 and edited them annually until 1972, and produced the first, and last, full account of the avifauna of the Bristol region in 1947, modestly entitled "A revised list of the Birds of the Bristol District". Howard reviewed all the previous lists and records, applied a critical eye to them, and produced a masterly brief account that was published in the Society's journal. The responsibility for regular bird reports was handed on to others, grew steadily in scope, and became the Avon Bird Report which won the national award for bird reports twice in the 1990s.

This book is the remarkable record of a pioneer who would be astonished, but proud, to see where his simple initiatives have led. I would recommend it to anyone with any interest in local, economic, social or agricultural history, or the history of ornithology. It has been sponsored by the local councils of Stoke Gifford, Patchway and Bradley Stoke, as well as by Rolls-Royce plc, who acquired part of the farm. All proceeds go to three local conservation charities and to the Wildfowl and Wetland Trust.

BRISTOL NATURALISTS' SOCIETY
Annual report 2008

Organisation

At the AGM on Saturday, 19th January 2008 the following elections were made:

Morris, Mr. H.G.	Society President
Muston, Mr. R.	Honorary Secretary
Fay, Mr. S.L.	Honorary Treasurer
Wookey, Mrs. A.M.	Membership Secretary
Frost, Mr. D.W.B.	Circulation Secretary
Bland, Mr. R.L.	Editor of "Proceedings"
Davies, Mr. D.B.	Bulletin Editor
Leivers, Ms. M.	Publicity
Symes, Mr. R.G.	Ex President (<i>ex officio</i>)
Corner, Mr. T.	Liaison
Johnson, Mr. M.S.	Liaison
Taylor, Mr. S.M.	Archivist
Strawford, Mr. D.W.R	Editor of Society website
Wray, Mr. N.J.	Vice-president
Barnett, Mr. R.J.	President, Invertebrate Section (<i>ex officio</i>)
Cooper Ms. R.	Mammal Section (<i>ex officio</i>)
Drewitt, Mr. E.	Ornithology Section (<i>ex officio</i>)
Steer, Mr. R.	Geology Section (<i>ex officio</i>)
Hilton, Mr. P.B.	Botanical Section (<i>ex officio</i>)
Smith, Mr. A.G.	President Botanical Section Invertebrate Section (<i>ex officio</i>)
Belcher, Mr. P.	Council Member
Morss, Miss. A.	Council Member
Trump, Mr. D.P.C.	President, Mammal Section
Pocock Dr. M.	Council Member
Hollowell, Mrs. A.F.	Ex President (<i>ex officio</i>)
Hill, Dr. M.	Ornithology Section (<i>ex officio</i>)

Society membership stands at 541 and the Treasurer, Mr Steve Fay, reported a surplus of £1390 on our activities over the past year.

Grants

The Hector Hockey Fund and the Society's Conservation fund are used every year to support local conservation and natural history activity. This year we made grants as follows:

£1000 to Terry Smith towards the cost of setting up a charity to purchase land at Moorend Spout, Nailsea.

£1000 to the Bristol Regional Environmental Records Centre (BRERC) towards the cost of printing "Moths in Bristol".

£700 to BRERC for the purchase of a Bisley cabinet for ornithological record keeping.

Abigail Pedlow of BRERC has sent in this brief note.

BNS have recently contributed to the costs of Bisley cabinet - a filing cabinet to house 36,000 record cards from the Bristol Ornithological Club (BOC) at BRERC. It sounds a prosaic item, but it is important to the records centre as we store records cards for the BOC; arriving in their thousands in envelopes, plastic bags and cardboard boxes of varying ages, dimensions and robustness, and go back to the 1960s. We could just label and store these, but as a records centre we exist to manage and disseminate the data we hold. Now that we have another cabinet of exactly the right dimensions to store the record cards efficiently; Hazel (one of our volunteers) can continue for another six months or so (one day a week) tidily filing the cards by species, by year, and by whether or not they have been entered onto our computer database. We are now able to quickly access records of individual bird species we have filed. It is these computerised records that are used on a daily basis to help biodiversity action planning, land management decisions, development control, students doing projects, and for many other reasons. And even once records are computerised we are always mindful that adequate storage of the original paperwork is vital.

Library

At the July meeting, the post of Hon. Librarian was filled by Mr Jim Webster. The library was opened regularly on Wednesday lunch hours and Saturday mornings, and 28 members, 13 of whom were new members, borrowed 180 books and journals in the course of the year. 13 new books were purchased.

Meetings

31 talks and 55 field meetings were organised

Section Reports

Botany:

The botanical section held a sequence of six talks on a monthly basis over the winter period 2007-2008. In October 2007 Penny Fletcher gave an illustrated talk about Arable Wildflowers. In November Rob Randal introduced us to Brambles by arranging a hands-on meeting with herbarium specimens to aid classification and identification. Tony Smith, our President, talked about another of his special interests- Herbals and Herbalists. Mary Wood talked about plants seen whilst on holiday in the Azores and Romania. David Hill, who has now joined our committee, talked about his special expertise- Lichens. Finally, Mark and Clare Kitchen (Gloucestershire Recorders) presented a Miscellany of the Flora of their County.

27 Field Meetings were arranged in 2008. At least four meetings were jointly held with Bath Naturalists and one also with the Gloucestershire Naturalists Society. Several meetings were held jointly with other sections of BNS. All meetings were led by members of the BNS and held at a wide variety of locations in Bristol, South Gloucestershire and North Somerset. Most meetings were of general interest but some were of special interest- Mosses, Lichens, Fungi, Roses, Brambles, Grasses and Alien Plants.

Geology:

At the AGM, Dr Tim Ewin was re-elected as President. The indoor meetings included a full range of interesting talks including bravura performances by Dr Marcello Ruta, on placoderm cranial mechanics (MUCH more interesting than it sounds), and Dr Howard Falcon-Lang on 'Sex, lies and fossil plants" (Every bit as interesting as it sounds!). At this talk, Tim announced that he was leaving us to take up a post at the Natural History Museum. Dr Howard Falcon-Lang bravely stepped into the breach and agreed to take over as President. Sadly (for us, anyway), he soon gained a post outside Bristol, and had to take his leave. Since then Roger Steer has acted as President and Talks Secretary. He will do so until the AGM in January, when (we hope) a suitable new candidate will be accepted. Our field meetings included a walk on the Downs, a fossil hunt in the Little Avon Valley and a hands-on geology day at the Bristol to Bath cycle path.

Invertebrates:

During 2008, 5 indoor and 4 field meetings were held. Topics covered at indoor meetings included arachnids and natural history photography as well as orthopteran and molluscan identification. Field meetings defied the wet and dull summer and visited Weston, Dundry, Clevedon and Oldbury. As always, the Society is very grateful to all who led meetings.

Mammals:

The Mammal Group organised a range of field meetings during 2008, including, in May, two successful (in that badgers were actually seen, even if only briefly) evening badger watches at the Avon Wildlife Trust's Folly Farm; a Dormouse day in August with Sally Pattinson of the Dormice on Your Doorstep project; a riparian mammals training day in September with James Field of the North Somerset Moors and Levels Project looking at Water Shrews and Water Voles followed by a morning searching for Otter signs with Simon Reece; a day in October at Dyrham Park in the company of the National Trust deer warden.

Regular contact was made with a range of organisations including the Mammal Society and the Avon Bat Group. Mammal records submitted to the group form part of the annual Mammal Report published in the BNS Proceedings. All records submitted are deposited at BRERC.

Ornithology:

At the 2008 AGM Mr E Drewitt was re-elected president. During the year there were five lecture meetings, one members' evening and 19 field meetings (three of these were held jointly with the Botany Section); all were reasonably well attended. A further field meeting was rained off. Members continued to be active in a variety of field work including the national Breeding Bird Survey (BBS) which covered 178 local squares this year, Wetland Bird Survey (WeBS) counts of waterfowl and waders, the Nest Record Card Scheme, the British Trust for Ornithology (BTO) Garden Birdwatch, Bristol Birdwatch, and the work on the new BTO National Atlas.

Publications The Proceedings for 2007, Vol 67, were published in October, and included an important study of Adder's-tongue Spearwort. The Bird report for 2007 was published in December, and included a reprint of the 1935 pamphlet "The Birds of Clifton Down" by Averil Morley, which was based on a talk given by her to the society. The Monthly Bulletin included an extensive summary of the findings of the Sustainable development Commission's report into tidal power on the Severn Estuary, and a series of essays on past Bristol Botanists. The Website played an increasingly important role in membership recruitment; it is much appreciated by members and non-members.

Publicity

As always, particular emphasis was placed on the encouragement of new members. The Society publicised its meetings with its monthly bulletin. Posters announcing forthcoming meetings were produced on a regular basis and those and membership leaflets were displayed, particularly in libraries. Press releases were also issued to promote the events run by the Society.

In order to promote the Society's activities and to attract new members, stands were taken at various events including: the Bristol Regional Environmental Records Centre recorders meeting in March, the launch of the new education centre at Folly Farm in May, the Bristol Festival of Nature in June, the University Botanic Garden open day in July, the Blagdon Visitors' Centre open day also in July, the Rock and Fossil event in August, the Sneyd Park Nature Reserve open day in September and the Avon Biodiversity Partnership Wild Waters Family Fun Day in October.

Records and Monitoring

The Downs Phenology Trail was monitored on a weekly basis, and, for some species, has now accumulated twelve years of comparative data. This has enabled a detailed analysis of the impact of weather on plant activity at this site. In general it has demonstrated that a degree change in average temperature leads to around a five day change in plant activity. It has also shown the huge range of variation in plant activity, which in some species can differ by as much as three months from year to year. In 2008 an exceptionally warm January and February led on to a very cold wet summer, and cool autumn, and in consequence the longest average flowering season yet recorded.

A separate study of Frog-spawning dates, supported by 50 observers, is now in its fifth year. The average date for spawning in recent winters has been during the third week of February, 18th-25th, but in 2006, a cold spring, it was ten days later.

Death

During the course of the year, Miss Margaret Rogers, former President died.

Thanks

The society is grateful for the help and support received from the Earth Sciences Department of the University of Bristol, and to Mr Mark Moore, Headmaster of Clifton College for the use of their premises for meetings. Thanks are also due to Ms Kate Brindley for her continued support of the society library situated within the City Museum and Art Gallery. The society must also extend its thanks to those members who give so willingly of their time and energy to support the aims of the society.

Statement of Financial Activities for the year ended 31 December 2008

	<u>2008</u>	<u>2007</u>
INCOME (Incoming resources)		
Membership Subscriptions	7,257.50	7,431.50
Gift Aid	1,152.22	1,128.67
Bequests & Donations	1,515.53	5,737.58
Trading	113.88	198.54
Interest Received	2,037.66	1,898.89
Miscellaneous	53.50	0.00
Total	12,130.29	16,395.18
 EXPENDITURE		
 (A) Direct Charitable		
Meetings	911.94	922.83
Books & Periodicals (Library)	658.95	715.98
Proceedings Production	1,780.00	1,745.00
Avon Bird Report	1,440.00	1,440.00
Bulletin Production	1,450.65	1,527.67
White Sheet Production	96.00	96.00
Distribution Costs	1,126.06	1,117.03
Subscriptions	53.00	86.00
Publicity	133.83	50.00
Grants Awarded	1,935.00	2,820.00
Total	9,585.43	10,520.51
 (B). Administration		
Print & Stationery	160.76	278.14
Postage & telephone	147.43	177.64
Library Equipment	406.55	0.00
Insurance	155.63	155.62
Audit	0.00	0.00
Miscellaneous	45.54	130.65
Total	915.91	742.05
 <u>Operating Surplus (Deficit)</u>	 <u>1,628.95</u>	 <u>5,132.62</u>

BRISTOL NATURALISTS' SOCIETY

BALANCE SHEET AS AT 31 DECEMBER 2008

	Notes	2008	2007
ASSETS			
Current Assets			
Prepayments	1	629.95	515.85
National Savings	2	12,109.96	11,603.09
Bank (Lloyds)		961.14	2,238.06
Bank (CAF)	3	33,698.48	31,167.69
Bank & Cash (Sections)	4	182.92	291.81
		47,582.45	45,816.50
LIABILITIES			
Creditors			
Subscriptions Received in Advance		299.50	162.50
		299.50	162.50
Total Assets less Total Liabilities		47,282.95	45,654.00
CAPITAL			
General Fund	5	11,549.73	12,646.28
Designated Funds			
Milton		6,375.44	6,103.07
Memorial		17,096.73	17,224.28
Conservation		2,631.91	467.06
Library		2,632.80	2,510.98
Ornithological Special Fund		1,261.82	1,202.31
Restricted Funds			
Hector Hockey		5,734.52	5,500.02
		47,282.95	45,654.00

NOTES

1 Prepayments

Meeting Rooms	330.00
Insurance	64.85
Periodicals	235.10

2 National Savings

	Hector Hockey Fund (Restricted)	Milton Fund
Opening Balance	5,500.02	6,103.07
Interest Received	234.50	272.37
Closing Balance	5,734.52	6,375.44

3 CAF

	General Fund	Memorial Fund	Conservation Fund
Opening Balance	9,763.06	17,224.28	467.06
Interest Received	494.73	807.45	47.28
Bequest		1,000.00	
Transfer (Accum Interest)	-2,117.57		2,117.57
Transfers (Grants)	1,935.00	-1,935.00	
Closing Balance	10,075.22	17,096.73	2,631.91

	Library Fund	Ornithological Special Fund
Opening Balance	2,510.98	1,202.31
Interest Received	121.82	59.51
Closing Balance	2,632.80	1,261.82

4 Sections

	Ornithology
Opening Balance	291.81
Grant from General Fund	150.00
Net Expenditure	-258.89
Closing Balance	182.92

5 General Fund

Opening Balance

Bank (Lloyds)	2,238.06
Bank (CAF)	9,763.06
Sections	291.81
Prepayments	515.85

Represented by:

Paid from Lloyds A/c	11,663.55
Transfer to section	150.00
Paid into Lloyds A/c	10,386.63
Net section expenditure	-258.89

Creditors	-162.50
	12,646.28

CAF Transfer to Funds	-2,117.57
CAF Interest received	494.73
CAF Transfer from Funds	1,935.00

Closing Balance

Bank (Lloyds)	961.14
Bank (CAF)	10,075.22
Sections	182.92
Prepayments	629.95

Debtors movement	114.10
Creditors movement	-137.00

Creditors	-299.50
	11,549.73

Movement	-1,096.55
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-1,096.55

S Fay Treasurer

INSTRUCTIONS FOR AUTHORS

The editor welcomes original papers or short notes on the natural history of the greater Bristol region for consideration for publication in the Proceedings. All papers for consideration should reach the editor by the end of November for publication in the following year. All Society Reports and Biota should reach the editor by the end of February in the year of publication.

Whenever possible, text should be submitted electronically in Word. The data for graphs should be sent in Excel, and any other illustrations should be submitted electronically.

The Editor welcomes digital photos of any natural history subject taken in the region, whether relevant to an article or not. They should be of the largest pixel size possible.

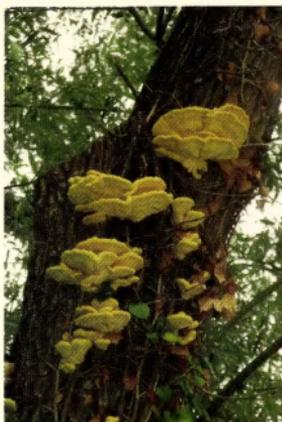
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Rerum cognoscere causas - Virgil

