

## Notes

### THE CORRECT AUTHORITY FOR *RUBUS MELANODERMIS* (ROSACEAE)

An old manuscript note of A. J. Wilmott's recently came to light in **BM** in which he had pointed out that the name given by Focke (1890) to the bramble ever since known as *R. melanodermis* was a provisional one only. Reference to the original place of publication confirms that that is indeed the case: Focke's words leave no room for doubt on this score at all, and the name as published there is clearly invalid under Article 34.1(b) of the current *International Code* (Greuter *et al.* 1994). Unfortunately this has been overlooked by all authors subsequently. Luckily, however, the name was validated soon afterwards by Rogers and it can accordingly still stand, with the authority citation merely amended to: Focke ex Rogers, 1892, *Journal of botany* **30**: 302.

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 GREUTER, W. *et al.* (1994). *International code of botanical nomenclature* (Tokyo Code), adopted at the Fifteenth International Botanical Congress, Yokohama, August–September 1993. *Regnum vegetabile* **131**.

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### THE ROLE OF FORESTRY PLANTINGS IN THE DISPERSAL OF BRAMBLE (*RUBUS* L.) SPECIES

#### INTRODUCTION

An ongoing study of the *Rubus* L. (Rosaceae) flora of East Anglia, and especially Norfolk, (v.cc. 27 & 28) was started in 1968. During 1972 and for several years subsequently, visits were made to Colney Hall Wood, near Norwich (v.c. 27), chiefly because it was discovered that at least five of the species present were new to the county, their normal range being largely to the south of the Thames (Bull 1985). The five species concerned were *Rubus surrejanus*, *R. armipotens*, *R. cissburiensis*, *R. moylei*, and *R. marshallii* in descending order of frequency. Colney Hall Wood, at that time, was young conifer plantation probably planted in the early 1950s on the site of a former wood. However, the estate has been sold several times since the war, so the origin of the plantings are not now traceable.

In 1977, the author took Mr A. Newton, Prof. H. E. Weber from Germany and Mr J. van Winkel from Holland to the wood, and these confirmed all the findings in the field and proffered the opinion that the seeds must have arrived in the gut of migrating thrushes, e.g. Fieldfares and Redwings. This was accepted at the time on the assumption that a large flock probably fed up on a Surrey common before bad weather forced them to return northwards to Norfolk, a distance of c. 150 km. Also in 1977, *Rubus surrejanus* was found in Thetford Forest (v.c. 28) in a plantation near Emily's Wood, Weeting, and was later discovered to dominate one compartment. Interestingly, a single clump of a Scottish bramble, *R. septentrionalis*, was also found near Emily's Wood in 1977, *R. armipotens* was discovered nearby in 1983 and *R. moylei* in 1994. As *R. septentrionalis* has now gone from that site, it is assumed that it may have been introduced from Shouldham Forest (v.c. 28) about 25 km to the north west, where it is the dominant bramble almost throughout that beat. As a second Scottish bramble, *R. leptothyrsos*, is one of the most frequent species of plantations on the Royal Estate at Sandringham (v.c. 28), it was thought that these two species might possibly be native, as relicts of the Ice Age.

## DISCUSSION

The theory of bird sown plantings from reverse migration has gone unchallenged since it was formulated. Bird sowings are undoubtedly the main source of arrival of isolated clumps or small colonies of bramble on coastal heathland, where the source of the seed is likely to be to the north west, north or north east of the colony. Tired Fieldfares and Redwings arriving at the top of Bard Hill, Salthouse, on the north Norfolk coast (v.c. 27), or near the cliff edge on Dunwich Common (v.c. 25) would have gone to roost on the ground amongst the heather, resulting in the appearance of small colonies of *R. incurvatus* in the first case and *R. errabundus* in the second.

Since work started on a new *Flora of Norfolk*, visits have been made to many woods and plantations within the county, with the result that one or two new county records have been made annually for the past several years. The southern *R. phaeocarpus* has been found in young woodland at Raynham and conifer plantations at Tittleshall (both v.c. 28). A strong colony of *R. rudis* was found in the centre of Shouldham Forest, and several others could be cited.

On 13 August 1996, a visit was paid to the Ken Hill Estate, Snettisham (v.c. 28). The area is not notably rich in bramble species, neither is bramble cover in the woods continuous. Species found over the majority of the estate in descending order of frequency were *R. ulmifolius*, an unnamed local representative of the group *Corylifolii* with abundant and excellent fruit, *R. polyanthemus*, *R. nemoralis*, *R. vestitus*, *R. lindleianus*, *R. pruinosis*, *R. boraeanus* and *R. amplificatus*. One plantation was filled with brambles, namely *R. surrejanus*, *R. phaeocarpus*, *R. moylei* (a second v.c. record), and with a small quantity of *R. adamsii*. All these species are of a southern distribution, and raise the question whether this could be the result of another large flock of birds.

The estate manager has only been at Ken Hill for eight years, but when approached to find out if he knew the history of the wood, he was able to consult a card index which provided the following information: "Cherry Breck Plantation. Very low grade arable land. Planted with conifers during the winter of 1945/46." Unfortunately the source of the nursery stock was not recorded.

The striking thing about Cherry Breck Plantation is the fact that the local bird population have not successfully seeded a single bush of the local dominants found in other woods within 100 m in the course of fifty years, so far as could be ascertained. Therefore the concept of a wood full of bramble seeds being transported from Surrey and prospering so abundantly would seem too incredible to be considered.

An approach was made to Mr E. V. Rogers, a retired forester living locally, and he was asked if he thought it possible that brambles could have been translocated with nursery stock in the years following the last war. His reply was in the affirmative, and the following passages are extracts from his letter.

"Plants in the nursery were undercut by spade or tractor and bundled up into hundreds by piecework. A seedling bramble would not have been removed and would have arrived in the bundle at the planting site. There, the bundle would have been 'heeled in' to keep the roots moist, at a number of points round the planting area. The bundles would have been cut open by the planter at the heeling in site, and weeds of any description would have been thrown to one side. Some of these would undoubtedly have taken root. [By inadvertently being stamped in by the planter, as the planting area would have been bare soil following trenching to plant the young trees. A.L.B.] Any ungerminated seed that might have come with the young trees would be scattered in the soil with the roots of the trees. During the 1950s and 1960s there were many forest nurseries all over the country, significantly, particularly on the lighter soils in the south east, and with a few on heavier soils. These included nurseries at Bramshill near Camberley [Surrey], Brightling near Battle [Sussex], Rogate [Sussex], Fleet [Hants.] and Bedgebury, as well as at Kennington near Oxford and the New Forest. In the East Conservancy, local nurseries were at Didlington, Roudham and Lynford in Norfolk, and Bardney and Willingham in north Lincs. There were undoubtedly even more, long forgotten, especially in the south east. There was considerable movement of plants from nursery to nursery, and from nursery to forest. If something special was required such as Sitka Spruce, this might travel from Delamere [Cheshire], the Lake District, or even Scotland by train or lorry.

After the initial planting, gaps through death were replanted for from 1 to 5 years, so stock for this could have come from a different nursery to that from which the original planting came. [This could

have been the case in Shouldham Forest, where the abundance of *R. septentrionalis* suggests Scottish origin, with replacements coming from Bardney to introduce *R. rudis*. A.L.B.]

Regarding *R. leptothyrsos* throughout Sandringham plantations. Many foresters on private, including Royal, estates were Scots, who were more likely to obtain their nursery stock for greenfield sites from Scottish nurseries.

Private estates undoubtedly got the majority of their plantings from outside the county.

It should also be remembered that no herbicides were used at that time."

#### CONCLUSION

The discovery of bramble species in forestry plantations far from their normal areas of distribution would seem to be directly linked to the methods used both in the forest nurseries, and at the time of planting out the young trees, during the years immediately after the last war, and very probably for some while earlier. The current use of herbicides makes it much less likely that brambles will be introduced into new areas in this way in future.

#### ACKNOWLEDGMENT

The author would like to express his gratitude to Mr Rogers for his very full and comprehensive response to the request for information on tree planting practice just after the war.

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#### RUBUS MERCICUS J. E. BAGNALL REFOUND

In *Brambles of the British Isles*, Edees & Newton (1988) described *Rubus mercicus* J. E. Bagnall as a local endemic which had not been seen recently and might be extinct.

J. E. Bagnall described *R. mercicus* as a new species in 1892, from material collected at Water Orton, Warks., v.c. 38 (Bagnall 1892). Extensive gatherings seem to have been made there and at neighbouring Minworth over the next few years, judging from the amount of material in **BM** and **NMW** herbaria comprising Set 31 of *British Rubi*. The given habitat on many of the sheets was simply "hedgerows", a notoriously unstable habitat at the best of times, and it is perhaps no great surprise that no one seems to have found *R. mercicus* at either of the above sites since the early years of the present century. Neither does it seem to have been found elsewhere in Warwickshire. W. C. R. Watson records the species in ten vice counties other than Warwickshire, but in all cases it is now known that a very similar species was wrongly equated with *R. mercicus*. For example, A.L.B. searched for the plant during the 1970s at Rougham in W. Suffolk, v.c. 26, having seen a specimen in **CGE** collected by W. H. Mills c. 1947. The only unnamed plant found in the area was later included in *Rubus boudicca* A. L. Bull & Edees (Bull & Edees 1980).

On 20 July 1965, E. S. Edees visited Bourne Wood in S. Lincs., v.c. 53, and collected a number of specimens which he did not name, and which are now in **NMW**. A.N. collected the same plant in 1975 as did A.L.B. in 1992, appending "*Rubus robiae*?" to the sheet (Yorkshire *mercicus* sensu Watson (1958)).

On 9 August 1995, the present authors met in Bourne Wood and, whilst examining bushes of this 'unknown' local, the conversation turned to *R. mercicus* and A.N. suggested that the plant might well be a candidate for the name. Perusing the description in Edees & Newton (1988), it was agreed that the plant tallied very closely on every given characteristic. However, when A.N. compared his gathering with some of Bagnall's sheets in his herbarium, the difference in the shape of the terminal leaflet gave some cause for concern, and the present panicles seemed much more robust.

On 25 September 1995, A.L.B. paid a return visit to Bourne Wood and made further stem piece gatherings which proved that the plant had a fairly wide range of terminal leaflet shape, and some of these matched Bagnall's gatherings well. Several sheets of Set 31 of *British Rubi*, and also of subsequent gatherings from Minworth, were borrowed by A.N. from **MANCH**, and by A.L.B. from **BM**. A.N. also borrowed one sheet of Set 31 of *British Rubi* and several of Edees' sheets from Bourne from **NMW**. When all were brought together and given a thorough examination, it was agreed that the Bourne plant is the same as Bagnall's original gatherings, notwithstanding the more robust panicles and, indeed, the general robustness of the Bourne plant as a whole. That this is due to environmental factors, there can be little doubt. The bushes at Bourne are along the sides of wide rides, and are growing on the S. Lincs. Jurassic limestone in company with a wide range of other *Rubus* species including *R. rudis* Weihe, *R. proietus* van der Beek, *R. murrayi* Sudre, *R. raduloides* (Rogers) Sudre, *R. pedemontanus* Pinkwart, *R. leyanus* Rogers (all **herb. A.L.B.**), *R. vestitus* Weihe and *R. echinatus* Lindley.

A.L.B. has also found *R. mercicus* growing at Gunboro Wood, Edenham (**herb. A.L.B.**), just north of Bourne Wood, both woods being within grid reference TF/0.2, and by the roadside beside Newell Wood, just within the Lincs. county boundary in TF/0.1.

#### ACKNOWLEDGMENT

The authors wish to thank the Curators of the Herbaria at **BM**, **MANCH** and **NMW** for their loans of specimens.

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#### THE 'J.D.' HERBARIUM AT NORTHAMPTON MUSEUM

There is a herbarium at Northampton Museum (NTN) which for many years has remained semi-anonymous. It was referred to by Druce (1930) as "Professor Henslow's" and more recently attributed by Kent & Allen (1984) to John Dorrington (fl. 1814–61, a member of the Botanical Society of London, who lived in Cambridgeshire). John Dorrington M.A. was born in Henham, Essex, in 1815. He was Principal of the Collegiate School at Linton, Cambridgeshire in 1851 (Census), and he died at Rickmansworth, Herts. ((Desmond (1994) and International Genealogical Index).

The herbarium consists of about 800 sheets contained in ten volumes. About 220 are from

Cambridgeshire (v.c. 29), and most of these bear the initials "J.D." but there are also 21 from J. S. Henslow, four from C. E. Broome, and two each from G. B. Jermyn and L. Jenyns. Another 400 or so are from Henslow from all over England, Wales and Scotland, and amongst others, there are 35 from C. C. Babington (collected from 1828–1832), and three from W. Wilson, including *Arbutus unedo* L. from Killarney.

The Cambridgeshire specimens were all collected by J. D. between 1829 and 1832, and it seemed that the bearer of those initials was most probably a student of Henslow's at Cambridge, and one with a strong connection with Northamptonshire.

A search of Henslow's botany class lists (University Archives O.XIV.261, Cambridge University Library) revealed that they included a John Downes in 1830, 1831 and 1832. Downes was admitted to Christ's College on 5 May 1829 (a little over a year after Charles Darwin) and graduated B.A. in 1833 (Peile 1913). From 1834 to 1863 he was Perpetual Curate at Horton with Piddington (where he gave an elaborate new font to the church) and from 1866 to 1890, Rector of Hannington, where he died aged 80 in 1890 and where the east window is dedicated to his memory. Since these parishes are both near Northampton and since after leaving Cambridge, Downes collected only a few specimens, all near Horton in 1837–40, these facts suggest that he lost interest in botany. It is very likely therefore that Downes was prevailed upon to add his herbarium to the founder collections of the new Museum at Northampton.

Downes was born in 1810 in Lambeth (Census 1881), the son of Arthur Downes of Sloane Street. He married in 1833 aged 23. His wife Lucy, died only seven months before Downes, in 1890, and there are references to their many children in Lucy's marriage settlement papers (ZB 531/1–135, Northamptonshire Record Office). Downes also seemed to be of independent means. His address at the time of entering Christ's College is listed as Whiteknights, Reading or 124 Sloane Street, and there are a few specimens collected at "White Knights" in the summers of 1830 and 1831 in his herbarium.

That Downes enjoyed the friendship of Henslow is well shown by the latter's numerous gifts to him, designed to provide him with at least one example of most British species; in addition there are 32 sheets from Cambridgeshire collected by "J. Downes" between 1829–1833 in Henslow's herbarium in CGE. The handwriting of Henslow and Downes is very similar, and Druce could easily have thought they were all in the same hand. He is known also to have been a friend of the Rev. George Bitten Jermyn, Curate of Swaffham Prior, and may have been too of the Rev. Leonard Jenyns, Vicar of Swaffham Bulbeck, since many of his specimens in NTN and CGE are from Bottisham, Swaffham Prior and Reche. His signature can be seen in the list of visitors to the Swaffham Prior Natural History Society (ADD.6460, Cambridge University Library). Indeed, it is possible that he was tutor to the Rev. Jermyn's children (who ran the Natural History Society) since Downes started collecting in that vicinity already in April 1829, the month before he came up to Christ's College and he continued collecting there most of that summer, on a total of 65 days between 7 April and 5 October. The following year he was only based there from 26 May until 20 June, and again on 1 and 2 July. All his other Cambridgeshire collections were made around Cambridge, or at Henslow's excursions' sites.

Downes' friendship with Darwin is illustrated by a number of letters in Darwin's correspondence (Burkhardt & Smith 1985). One of these shows that like so many botanists of that time, Downes was perhaps also an entomologist. Darwin, after leaving Cambridge in June, writes to Henslow from Shrewsbury on 11 July 1831, "Would you tell Jenyns, that his magnificent present of Diptera has not been wasted on me. Would you ask him how he manages Diptera when too small for a pin to go through? . . . Do you by any chance recollect the name of a fly that Mr Bird sent through Downes." Of course, he may just have been a messenger! On 25 October 1831 Henslow wrote to Darwin who was waiting at Devonport to start his voyage on the *Beagle*, "Downes is just returned from a short tour in Switzerland, but what is that to a Fuegian." Lastly, Henslow wrote to Darwin, then on board the *Beagle*, on 21 January 1833 "The Exam is over & no Xts man plucked- [no man from Christ's College failed] I don't know whether you were acquainted with the men of this yr (except Downs who is No. 26) . . . Downes & other friends have begged me to remember them to you most kindly & affectionately . . ."

The evidence for John Downes, though circumstantial, is extremely strong whereas no evidence has emerged to support the view that the herbarium is that of Dorrington, or that in either case the herbarium had belonged to Henslow.

## ACKNOWLEDGMENTS

I am greatly indebted to Mr Brian Webster of the Northampton Museum for all his kind help with examining the herbarium, and for information regarding Downes' involvement with his churches at Horton and Hannington.

I am grateful to Dr D. E. Coombe for drawing my attention to Peile (1913) and the Darwin Letters, and to Dr D. E. Allen for reminding me that there were supposedly 1700 specimens from Cambridgeshire in the herbarium at Northampton. In addition I am indebted to Dr Allen and to Mr C. D. Preston for their help and invaluable comments.

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THE CORRECT AUTHORITY FOR LESSER CHICKWEED, *STELLARIA PALLIDA*  
(CARYOPHYLLACEAE)

Mill (1996) correctly points out that the combination *Stellaria pallida* (Dumort.) Piré (1863) as adopted by Stace (1991), Kent (1992) and other modern authors is invalidly published. He further comments that the earliest valid publication of the epithet *pallida* under *Stellaria* that he has been able to trace is by Murbeck (1891). Murbeck's publication of the name *S. pallida* is predated by twenty-five years by Crépin (1866); a reference to the change of author from Piré to Crépin was given in Kent (1993). The citation of the species is accordingly:

***Stellaria pallida*** (Dumort.) Crépin, *Man. Fl. Belgique*, ed. 2, 19 (1866).

*Alsine pallida* Dumort., *Fl. Belg.* 109 (1827).

*Stellaria pallida* (Dumort.) Piré, *Bull. Soc. Roy. Bot. Belgique* 2: 49 (1863), nom. inval.

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## CONTRIBUTIONS TO A CYTOLOGICAL CATALOGUE OF THE BRITISH AND IRISH FLORA, 5

As part of our continuing cytological survey of vascular plants native to the British Isles (Dempsey *et al.* 1994), we present here chromosome counts from a total of 116 populations of 107 species. One plant from each population was studied, except where noted. Material sent to us from the seed bank at the Royal Botanic Gardens, Wakehurst Place, is referenced by its seed bank serial number. All counts were made on squashes of root-tips, except in the case of *Dactylorhiza fuchsii* where pollen mitosis was observed, *Gymnadenia conopsea* subsp. *conopsea* in which ovary wall tissue was used and *Listera ovata* where pollen mother cells were studied. Supernumerary chromosomes are designated by the suffix 'S'. Voucher specimens for the counts are at **LTR**, except for some that are at **K** or have not been made, as indicated.

- Acer campestre* L., 2n = 26: Leics., v.c. 55, Clipsham quarry, SK/98.15.  
*Aethusa cynapium* L., subsp. *cynapium*, 2n = 20: E. Suffolk, v.c. 25, Great Wenham, old rectory opposite church, TM/07.38.  
*Alisma plantago-aquatica* L., 2n = 14: S. Northumb., v.c. 67, Hadston Links, NU/2.0 (no voucher).  
*Alliaria petiolata*, 2n = 42: Caerns., v.c. 49, Nanhoron Valley, S. of Inkermann Bridge, SH/287.323.  
*Allium schoenoprasum* L., 2n = 16: Pems., v.c. 45, St David's Head, SM/7.2 (no voucher, Kew seed bank serial no. 0024549).  
*Alopecurus myosuroides* Hudson, 2n = 14: Oxon, v.c. 23, Little Bourton, farm near M40 motorway, SP/4.4.  
*Anisantha sterilis* (L.) Nevski, 2n = 14: Oxon, v.c. 23, Little Bourton, farm by M40 motorway, SP/4.4.  
*Anthriscus caucalis* M. Bieb., 2n = 14: N. Lincs., v.c. 54, Woodhall Spa, end of Sandy Lane, Sandy Acres gateway, TF/219.645.  
*Aphanes arvensis* L., 2n = 48: E. Suffolk, v.c. 25, Great Wenham, TM/077.383 (no voucher).  
*Aphanes inexpectata* Lippert, 2n = 16: Leics., v.c. 55, Clipsham, edge of Holywell Wood, SK/98.15.  
*Athyrium filix-femina* (L.) Roth, 2n = 80: W. Lancs., v.c. 60, Lord Lots Wood, near Kellet, SD/545.708 (no voucher).  
*Ballota nigra* L. subsp. *foetida* (Vis.) Hayek, 2n = 22: E. Suffolk, v.c. 25, Great Wenham, N. of church, TM/07.38.  
*Bromus hordeaceus* L. subsp. *hordeaceus*, 2n = 28: W. Sussex, v.c. 13, Wiggonholt Common, TQ/05.16 (three plants counted, **K**, Kew seed bank serial no. 0012603).  
*Callitriche stagnalis* Scop., 2n = 10: Caerns., v.c. 49, near Llangwnnagl, SH/21.34 (no voucher).  
*Capsella bursa-pastoris* (L.) Medikus, 2n = 32: E. Suffolk, v.c. 25, Great Wenham, old rectory opposite church, TM/07.38.  
*Centaurea nigra* L., 2n = 44: N. Hants., v.c. 12, near Petersfield, W. of Shoulder of Mutton, above Steep, SU/7.2.  
*Chaenorhinum minus* (L.) Lange, 2n = 14: W. Lancs., v.c. 60, Heysham Moss sidings, old railway yard, SD/422.605.  
*Conium maculatum* L., 2n = 22: Oxon, v.c. 23, Little Bourton, farm near M40 motorway, SP/4.4 (two plants counted).  
*Cornus sanguinea* L., 2n = 22: Leics., v.c. 55, Clipsham quarry, SK/98.15.  
*Crambe maritima* L., 2n = 60: S. Hants., v.c. 11, Lee-on-the-Solent, SU/56.00; W. Lancs., v.c. 60, near Abbey Lighthouse cottage, SD/431.543 (no voucher).  
*Cuscuta epithymum* (L.) L., 2n = 14: S. Somerset, v.c. 5, Exmoor, Selworthy, SS/9.4 (three plants counted, no voucher).  
*Cyperus fuscus* L., 2n = 36: S. Hants., v.c. 11, Breamore, SU/1.1 (two plants counted, Kew seed bank serial no. 0034975).  
*Dactylorhiza fuchsii* (Druce) Soó, n = 20: N.E. Yorks., v.c. 62, Bolton's Bog, SE/8.8.  
*Deschampsia flexuosa* (L.) Trin., 2n = 28: W. Sussex, v.c. 13, Balcombe, Upperstaff Wood, TQ/3.3 (Kew seed bank serial no. 0026406).  
*Eleogiton fluitans* (L.) Link, 2n = 60: Caerns., v.c. 49, N. of Castell Cilan, easternmost pool, SH/29.24.  
*Erigeron acer* L., 2n = 18: Leics., v.c. 55, Clipsham quarry, SK/98.15.

- Euphorbia exigua* L., 2n = 24: Dorset, v.c. 9, Milbourne St Andrew, SY/81.97.  
*Euphorbia helioscopia* L., 2n = 42: Leics., v.c. 55, Clipsham quarry, SK/98.15.  
*Euphorbia platyphyllos* L., 2n = 30: Dorset, v.c. 9, Sherbourne, ST/63.16 (three plants counted).  
*Festuca gigantea* (L.) Villars, 2n = 42: Berks., v.c. 22, near Hurley, SU/8.8 (two plants counted, no voucher, Kew seed bank serial no. 0035846).  
*Galium mollugo* L. subsp. *erectum* Syme, 2n = 44: W. Lancs., v.c. 60, above Saltmire bridge, SD/519.754.  
*Galium verum* L., 2n = 44: Caerns., v.c. 49, Pwllheli, SH/37.34 (no voucher).  
*Geranium sylvaticum* L., 2n = 28: W. Lancs., v.c. 60, near Nether Burrow, track off Woodmans Lane near Lindel Barn, SD/620.751.  
*Gnaphalium uliginosum* L., 2n = 14: Leics., v.c. 55, Clipsham quarry, edge of Holywell Wood, SK/98.15; W. Lancs., v.c. 60, near Lancaster, SD/465.625 (no voucher).  
*Gymnadenia conopsea* (L.) R.Br. subsp. *borealis* (Druce) F. Rose, 2n = 40: Derbys., v.c. 57, Hartington, SK/1.6.  
*Gymnadenia conopsea* (L.) R.Br. subsp. *conopsea*, 2n = 40: Derbys., v.c. 57, Hartington, SK/1.6.  
*Hordeum murinum* L., 2n = 28: v.c. 21, London, Highgate, N. of E. end of West Hill, TQ/2.8 (K, Kew seed bank serial no. 0057794).  
*Hyoisycyamus niger* L., 2n = 34: Dorset, v.c. 9, Ringstead, SY/75.81 (two plants counted).  
*Inula crithmoides* L., 2n = 18: Dorset, v.c. 9, Portland Bill, SY/6.6.  
*Isoetes histrix* Bory, 2n = 20: Channel Is., v.c. S. Alderney, Quesnard, WA/606.089 (no voucher).  
*Juncus bulbosus* L., 2n = 40: Caerns., v.c. 49, N. of Castell Cilan, SH/29.24.  
*Juncus gerardii* Lois., 2n = 84, Glam., v.c. 41, Whiteford, SS/445.943.  
*Juncus maritimus* Lam., 2n = 48: W. Lancs., v.c. 60, Potts Corner, SD/41.57.  
*Kickxia spuria* (L.) Dumort., 2n = 18: Dorset, v.c. 9, Bovington, SY/8.8.  
*Legousia hybrida* (L.) Delarbre, 2n = 20: Dorset, v.c. 9, Cheselbourne, SY/76.99.  
*Lepidium campestre* (L.) R.Br., 2n = 16: E. Sussex, v.c. 14, South Downs, near Lewes, below Blackcap Beacon, TQ/37.12 (Kew seed bank serial no. 0018580).  
*Lepidium latifolium* L., 2n = 24: E. Suffolk, v.c. 25, Felixstowe, Landguard Nature Reserve, 0.8 km from docks, TM/2.3 (K, Kew seed bank serial no. 0039316).  
*Leymus arenarius* (L.) Hochst., 2n = 56: W. Lancs., v.c. 60, Bank Houses, SD/432.531 (no voucher).  
*Linaria vulgaris* Miller, 2n = 12: Leics., v.c. 55, Shackerstone railway station embankment, SK/3.0.  
*Listera ovata* (L.) R.Br., n = 18 + 1S: N.E. Yorks., v.c. 62, Bolton's Bog, SE/8.8.  
*Lonicera periclymenum* L., 2n = 54: Westmorland, v.c. 69, Meathop Moss, c. 3 km N.E. of Lindale, SD/44.81 (no voucher).  
*Lotus corniculatus* L., 2n = 24: Dorset, v.c. 9, c. 1.5 km W. of Burton Bradstock, SY/47.89.  
*Lychnis flos-cuculi* L., 2n = 24: Dorset, v.c. 9, Bere Regis, SY/8.9 (no voucher); Warks., v.c. 38, Sutton Coldfield, Sutton Park, SP/10.97.  
*Lychnis viscaria* L., 2n = 24: Rads., v.c. 43, Stanner Rock, 4 km N.W. of Kington (via garden of Mrs Port), SO/26.58.  
*Lythrum salicaria* L., 2n = 60 + 1-2S: Cambs., v.c. 29, Wicken Fen, TL/5.7 (Kew seed bank serial no. 0024734).  
*Malva neglecta* Wallr., 2n = 42: E. Suffolk, v.c. 25, Great Wenham, old rectory opposite church, TM/07.38 (two plants counted).  
*Melica uniflora* Retz., 2n = 18: W. Lancs., v.c. 60, Silverdale, Gait Barrows N.N.R., SD/485.774 (no voucher).  
*Molinia caerulea* (L.) Moench, 2n = 36: Dorset, v.c. 9, Cranbourne Common, c. 10 km S.E. of Cranbourne, SU/10.11; W. Suffolk, v.c. 26, near Holywell Row, TL/723.767.  
*Myosotis secunda* A. Murray, 2n = 48: Caerns., v.c. 49, N. of Castell Cilan, SH/29.24 (no voucher).  
*Myrrhis odorata* (L.) Scop., 2n = 22: W. Lancs., v.c. 60, estuary, near Lythe Bridge (grid reference not supplied, no voucher).  
*Ononis reclinata* L., 2n = 60: Pembs., v.c. 45, Stackpole, Barafundle Bay, SR/9.9 (Kew seed bank serial no. 0021607).  
*Orchis morio* L., 2n = 36: Caerns., v.c. 49, Abersoch golf course, SH/3.2 (no voucher).  
*Persicaria bistorta* (L.) Samp., 2n = 48: W. Lancs., v.c. 60, Lancaster University grounds, SD/48.57 (no voucher).



- Phleum pratense* L., 2n = 42: W. Sussex, v.c. 13, Ardingly reservoir basin, TQ/3.2 (two plants counted, **K**, Kew seed bank serial no. 0051988); W. Lancs., v.c. 60, near Lancaster, SD/468.624.
- Poa compressa* L., 2n = 42: W. Lancs., v.c. 60, (no further details).
- Prunus avium* (L.) L., 2n = 16: Surrey, v.c. 17, Coulsdon, Old Lodge Lane, TQ/31.59.
- Ranunculus auricomus* L., 2n = 32: E. Suffolk, v.c. 25, Great Wenham, churchyard, TM/07.38.
- Rumex hydrolapathum* Hudson, 2n = 130: W. Lancs., v.c. 60, Leighton Moss R.S.P.B. reserve near Silverdale, SD/484.749.
- Rumex longifolius* DC., 2n = 60: Mid-W. Yorks., v.c. 64, Ingleton, SD/69.73 (no voucher).
- Rumex maritimus* L., 2n = 40: W. Norfolk, v.c. 28, East Wretham Heath, Ringmere, TL/90.87 (three plants counted, Kew seed bank serial no. 0003735).
- Rumex palustris* Smith, 2n = 60: Carms., v.c. 44, Cil-y-cwm, SN/753.397 (two plants counted, **K**, Kew seed bank serial no. 0033484).
- Rumex sanguineus* L. var *viridis* (Sibth.) Koch, 2n = 20: Oxon, v.c. 23, Little Bourton, farm near M40 motorway, SP/4.4 (two plants counted); W. Lancs., v.c. 60, Lancaster University grounds, SD/48.57.
- Sagina procumbens* L., 2n = 22: Middlesex, v.c. 21, London, W. Hampstead, behind Berridge House at S. side of theatre, TQ/2.8 (Kew seed bank serial no. 0062974); Caerns., v.c. 49, Llys Hyfryd, SH/28.33.
- Sagina subulata* (Sw.) C. Presl, 2n = 22: Caerns., v.c. 49, Mynyddy Gwyddel, Uwchmynydd, SH/14.25.
- Salix purpurea* L., 2n = 38: W. Lancs., v.c. 60, Silverdale, Gait Barrows N.N.R., Hawes Water, SD/478.764.
- Sanguisorba minor* Scop, subsp. *minor*, 2n = 28: Dorset, v.c. 9, Melbury hill, ST/87.19.
- Schoenoplectus tabernaemontani* (C. Gmelin) Palla, 2n = 42: Glam., v.c. 41, Whiteford, SS/445.943 (no voucher).
- Scleranthus perennis* L. subsp. *prostratus* Sell, 2n = 22: W. Suffolk, v.c. 26, Eriswell, Lordswell Field, TL/7.7 (**K**, Kew seed bank serial no. 0033912).
- Sedum anglicum* Hudson, 2n = 160: Caerns., v.c. 49, Pen Bodlas, Llaniestyn, SH/28.33 (no voucher).
- Silene noctiflora* L., 2n = 24: Cambs., v.c. 29, Fen Ditton, TL/513.597 (Kew seed bank serial no. 0012991).
- Silene otites* (L.) Wibel, 2n = 24 + 0 or 2S: W. Suffolk, v.c. 26, Eriswell, Lordswell Field, TL/7.7 (five plants counted, only one with supernumeraries, Kew seed bank serial no. 0035019).
- Stellaria graminea* L., 2n = 26: Dorset, v.c. 9, Winterbourne Kingston, SY/86.97; Middlesex, v.c. 21, Enfield, Hadley Wood, 100 m S. of covertway, E. of S.E. path, TQ/3.9 (**K**, Kew seed bank serial no. 0064462).
- Stellaria holostea* L., 2n = 26: Caerns., v.c. 49, near Llaniestyn, SH/26.33 (no voucher).
- Stellaria neglecta* Weihe, 2n = 22: Caerns., v.c. 49, near Bodegroes, SH/35.35.
- Symphytum tuberosum* L., 2n = 96: W. Lancs., v.c. 60, near Yealand Conyers, SD/509.746.
- Tamus communis* L., 2n = 48: Leics., v.c. 55, Clipsham quarry, SK/98.15.
- Thlaspi arvense* L., 2n = 14: E. Suffolk, v.c. 25, Great Wenham, TM/077.383.
- Thymus polytrichus* A. Kerner ex Borbás subsp. *britannicus* (Ronn.) Kerguélen, 2n = 56: Caerns., v.c. 49, Pwllheli, SH/37.34.
- Torilis arvensis* (Hudson) Link, 2n = 12: Warks., v.c. 38, Ingon Grange Farm, SP/214.590 (two plants counted).
- Torilis japonica* (Houtt.) DC., 2n = 16: Westmorland, v.c. 69, Sandscale Haws, SD/19.75 (two plants counted, no voucher).
- Trifolium pratense* L., 2n = 14 + 0 or 2S: S. Wilts., v.c. 8, Parsonage Down, N.C.C. Nature Reserve, SU/0.4 (three plants with supernumeraries and three without, Kew seed bank serial no. 0058481); 2n = 14: Caerns., v.c. 49, Pen Bodlas, Llaniestyn, SH/28.33.
- Trifolium suffocatum* L., 2n = 16: W. Sussex, v.c. 13, Pagham, E. of car park, SZ/8.9 (Kew seed bank serial no. 0007548).
- Triglochin maritimum* L., 2n = 48: W. Lancs., v.c. 60, near Carnforth, SD/482.702.
- Ulex gallii* Planchon, 2n = 96: Channel Is., v.c. S, Alderney, Essex Hill, WA/592.074.
- Ulmus glabra* Hudson, 2n = 28: Derbys., v.c. 57, Dovedale, SK/1.5 (no voucher).
- Urtica dioica* L., 2n = 48: W. Lancs., v.c. 60, Lancaster University, SD/48.57.

- Verbascum pulverulentum* Villars, 2n = 32: Cambs., v.c. 29, near Cottenham, TL/442.674 (K, Kew seed bank serial no. 0034997).
- Verberna officinalis* L., 2n = 14: N. Somerset, v.c. 6, Burrington Coombe, ST/4.5.
- Veronica agrestis* L., 2n = 28: Dorset, v.c. 9, Upton Park, SY/99.92.
- Veronica arvensis* L., 2n = 16: Caerns., v.c. 49, Bardsey Is., near abbey ruin, SH/12.22.
- Veronica chamaedrys* L., 2n = 32: Derbys., v.c. 57, Dovedale, SK/14.52.
- Veronica scutellata* L., 2n = 18: Caerns., v.c. 49, N. of Castell Cilan, easternmost pool, SH/29.24 (no voucher).
- Veronica verna* L., 2n = 16: W. Suffolk, v.c. 26, Icklingham, Triangle Pit, TL/7.7 (no voucher, Kew seed bank serial no. 0007102).
- Viburnum opulus* L., 2n = 18: Leics., v.c. 55, Clipsham quarry, SK/98.15.
- Vica bithynica* (L.) L., 2n = 14: Dorset, v.c. 9, Weymouth, landward shore of Fleet Lagoon, SY/66.76.
- Viola palustris* L. subsp. *palustris*, 2n = 48: W. Lancs., v.c. 60, Lord Lots Wood, SD/546.708.
- Viola reichenbachiana* Jordan ex Boreau, 2n = 20: Surrey, v.c. 17, Purley, TQ/31.59.
- Zannichellia palustris* L., 2n = 36: W. Lancs., v.c. 60, Leighton Moss outlet, near Silverdale, SD/476.738 (no voucher).

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## REFERENCE

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## CAREX HUMILIS LEYSSER IN DORSET (v.c. 9)

*Carex humilis* (Cyperaceae) is a widespread sedge throughout Europe and Asia with Britain nearly at its northerly limit. The ecology of the species is described in *Scarce plants in Britain* (Stewart *et al.* 1994) and this note reviews the conservation status and future of the remaining 56 sites for the species in Dorset. Although there are outliers on the limestone in Somerset (v.c. 6), Gloucestershire (v.c. 34) and Monmouth (v.c. 35), the vast majority of the British sites are on the chalk in Wiltshire (v.c.c. 7 & 8) and Dorset, with a very few in Hampshire (v.c. 11) – in fact 89 out of 124 tetrads recorded since 1970 are wholly or partly in Wiltshire (Stewart *et al.* 1994).

In Dorset the species currently occurs in 56 sites, (50 1-km squares (Fig. 1) and 33 tetrads (some of which it shares with Wiltshire)). Over the last five years, the writer, and colleagues, inspired especially by Dick David, have visited the site of every known colony in the county, including all the old sites where historical records exist.

The results of these visits are summarised in Tables 1 and 2.

It will be seen that only seven sites are covered by designation as Sites of Special Scientific Interest and that these seven sites form part of four S.S.S.I.s. The population at one of these, Handcocks Bottom, Site 18, is now very small after ploughing in the 1980s. Another of the sites, Site 20 at Blandford Camp, was partly destroyed before designation, and is now in the path of further proposed building, and is ungrazed and divided by a fence. This is the only *level* downland site remaining that I know, preserved in the 19th century by being part of the Blandford Racecourse, and since by being a military camp.

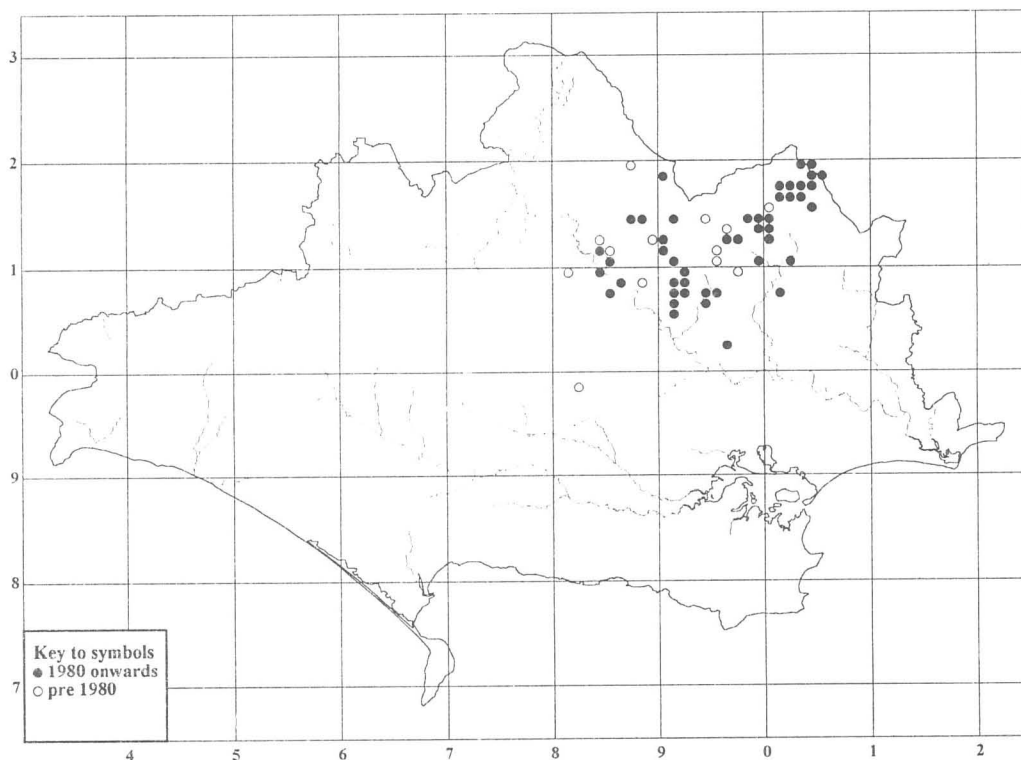


FIGURE 1. The distribution of *Carex humilis* in Dorset (v.c. 9)

All but four of the remaining sites are designated as Sites of Nature Conservation Interest (S.N.C.I.s). This is a completely non-statutory appellation, arising from a scheme run by the Dorset Wildlife Trust and Dorset Environmental Records Centre, to discover and notify sites that have habitats or species important in a Dorset context. These sites, being unimproved chalk downland and having *C. humilis* meet the criteria. Sites 3, 9, 12, 26, 32, 33, 34, 35, 36, 38, 39, 41, 42, 43 and 47 are not grazed, or to my knowledge, managed in any way. Only exposure and, possibly, rabbit grazing might stop coarser vegetation completing the destruction of what are already precarious colonies. Most are on ancient monuments, fenced and unploughed in a sea of arable. There seems no way of sensibly managing them.

Site 11 forms part of a golf course, and the current mowing regime suits the species. Site 36 was almost lost; a keen conservationist cleared the scrub and saved most of the site. Now (1996) it is ungrazed and returning to scrub. Sites 49–56 are all part of the earthwork forming the Dorset-Wiltshire boundary. The wardens of the Martin Down N.N.R. on the Wiltshire site have cleared scrub from the dyke, but since it is relatively ungrazed and quite rank, only the shorter patches at the south-east end around Blagdon Gap have a secure future.

That leaves somewhere between 25 and 30 sites where one can say with some confidence that given current management the future of the plant is secure, and thus roughly the same number where strong doubts must exist, including perhaps six where it will disappear under invading scrub within the next few years. On the other hand, at one site, Site 20, although the surrounding grass and scrub is now 40 cm high, the plants are still surviving, and would presumably respond to management.

There must be a caveat concerning the quality of the historical information, and thus the losses before, say, the last war. Both the Dorset county Floras list few sites with no indication of whether these constitute an exhaustive list. But, as only a few steep slopes or earthworks are likely to have

TABLE 1. DETAILS OF *CAREX HUMILIS* EXTANT SITES IN DORSET (V.C. 9)

Grid reference	Site name	Conservation status	Recorders	Date of last visit	Number of plants	Management	Threat
1 ST/842.090	Enford Bottom	SNCI	RWD, DP, RF	1992	1,000+	G	
2 ST/852.077	Websley Farm	SNCI	RWD, DP, RF	1991	100+	G	
3 ST/862.088	Durweston Bridge	SNCI	HJMB, DP	1992	20+	-	T
4 ST/847.121	Hambledon Hill	SSSI:NT	HJMB	1993	1,000+	G	
5 ST/847.115	Hambledon Hill	SSSI	HJMB	1993	100+	G	
6 ST/851.114	Hambledon Hill	SSSI	HJMB	1993	100+	G	
7 ST/855.105	Hod Hill	SSSI:NT	DP	1994	10,000+	G	
8 ST/880.143	Brookmans Valley	SNCI	RW	1989	<10	G	T
			BE, DP	1995	<10	G	
9 ST/879.144	Brookmans Valley	SNCI	BE, DP	1995	100+	G	
10 ST/919.059	Buzbury Rings - W of B3082	SNCI	RWD, RF, DP	1992	<30	-	T
11 ST/919.060	Buzbury Rings - E of B3082	SNCI	RWD, RF, DP	1992	<50	M	(T)
12 ST/915.067	Keynston Down Long Barrow	-	RWD, RF, DP	1992	<50	-	T
13 ST/947.071	Tarrant Rawston - The Cliff	SNCI	DP	1992	1,000+	G	
14 ST/952.076	Tarrant Rawston - The Cliff	SNCI	DP	1992	1,000+	G	
15 ST/942.065	Tarrant Rawston - The Cliff	SNCI	BE	1993	100+	G	
16 ST/964.028	Badbury Rings	SNCI	BE	1992	<100	G	
17 ST/963.033	Badbury Rings	SNCI	BE	1996	100+	G	
18 ST/900.120	Handcocks Bottom	SSSI	RWD	1990	100+	G	
19 ST/903.183	Boyne Bottom	SNCI	BE	1992	100+	G	
20 ST/920.075	Blandford Camp	SSSI	RWD, DP	1990	1,000+	-	T
21 ST/915.075	Blandford Camp	-	RWD, DP	1990	100+	M	
22 ST/918.083	Blandford Camp	-	RWD, DP	1990	100+	M	
23 ST/927.084	Blandford Camp	SSSI	RWD, DP	1990	1,000+	G	
24 ST/927.094	Blandford Camp	SNCI	DP, DS	1993	<10	-	T
25 ST/910.146	Stubhampton Bottom	SNCI	BE	1992	<50	G	
26 ST/917.103	Pimperne Long Barrow	SNCI	DP	1991	<100	-	T
27 ST/968.124	Thickthorn Down, N of road	SNCI	DP	1990	100+	G	
28 ST/970.123	Thickthorn Down, S of road	SNCI	DP	1990	3	-	T
29 ST/993.107	Sovell Down	SNCI:DWT	DP	1990	<1,000	(G)	
30 ST/988.144	Gussage Down	SNCI	RWD, DP	1990	1,000+	-	
31 ST/997.143	Gussage Down	SNCI	RWD, DP	1990	1,000+	-	
32 ST/995.135	Gussage Down	SNCI	DP	1990	<100	-	T

TABLE 1. (continued)

Grid reference	Site name	Conservation status	Recorders	Date of last visit	Number of plants	Management	Threat
33 SU/004.136	Harley Gap	SNCI	DP	1991	<20	-	T
34 SU/001.136	Harley Gap – tumulus	SNCI	GF	1991	<10	-	T
35 SU/005.140	Harley Gap	SNCI	DP	1991	<10	-	T
36 SU/008.123	Tenantry Down	SNCI	RWD, DP	1992	<1,000	-	(T)
			BE	1995	100+	-	
37 SU/011.166	Handley Hill Roundabout	SNCI	NS	1991	<10	-	T
38 SU/012.173	Handley Down – Longbarrow	SNCI	NS	1991	<10	-	T
39 SU/015.163	Ackling Dyke – 3 patches	SNCI	NS	1991	<100	-	T
			BE	1995	<1,000	-	
40 SU/019.174	Oakley Down – tumulus	SNCI	DP	1990	<100	G	
			BE	1995	<1,000	G	
41 SU/022.168	Oakley Down – bank to E	SNCI	NS	1991	100+	-	
42 SU/024.103	Knowlton Church	SNCI	DP	1990	<100	-	
			BE	1995	100+	-	
43 SU/039.164	Pentridge Down – bridleway	-	BE	1992	<10	-	T
44 SU/038.173	Pentridge Down	SNCI	DP	1994	10,000+	G	
45 SU/042.174	Pentridge Down	SNCI	DP	1994	10,000+	G	
46 SU/043.180	Pentridge Down	SNCI	DP, RW	1991	<100	G	
47 SU/040.158	Blackbush Down	SNCI	RWD	1987	<100	-	T
			GF	1991	<20	-	
48 SU/041.188	Bokerley Dyke – long barrow to S	SNCI	DP, RF, RW	1991	<100	G	
49 SU/037.196	Bokerley Dyke – main bank	SNCI	DP, RF, RW	1991	1,000+	-	
50 SU/041.195	Bokerley Dyke – main bank	SNCI	DP, RF, RW	1991	100+	-	
51 SU/042.190	Bokerley Dyke – main bank	SNCI	DP, RF, RW	1991	100+	-	
52 SU/045.189	Bokerley Dyke – main bank	SNCI	DP, RF, RW	1991	100+	-	
53 SU/049.188	Bokerley Dyke – main bank	SNCI	DP, RF, RW	1991	100+	-	
54 SU/051.187	Bokerley Dyke	SNCI	DP, RF, RW	1991	100+	-	
55 SU/053.181	Bokerley Dyke – Blagdon Gap	SNCI	DP, RF, RW	1991	1,000+	-	
56 SU/056.180	Bokerley Dyke – Blagdon Hill	SNCI	DP, RF, RW	1991	<100	-	(T)

Recorders: H. J. M. Bowen (HJMB); R. W. David (RWD); B. Edwards (BE); G. Field (GF); R. FitzGerald (RF); D. Pearman (DP); D. Stephens (DS); N. Stewart (NS); R. Walls (RW).

Conservation status: Dorset Wildlife Trust (DWT); National Trust (NT); Site of nature conservation interest (SNCI).

Management: Grazed (G); Mown (M).

Threat to site: T.

TABLE 2. DETAILS OF *CAREX HUMILIS* EXTINCT SITES IN DORSET (V.C. 9)

Grid reference	Site name	Last record (P = Published)	Present research Recorders**	Date	Fate of site
SY/823.989	Deverell Down	1971	RWD, DP, RF	1992	Ploughed/scrubbed over
ST/817.098	Okeford Hill	P 1905	RWD, DP, RF	1992	Ploughed/rank
ST/88.08	Nutford	P 1939	DP	1991	Arable
ST/879.192	Melbury Hill	*	RWD, DP	1990	The site is extant and grazed
			DP	1993	
ST/898.127	Handcocks Bottom	1978	RWD	1990	Ploughed
ST/958.109	Long Critchel	ex RWD card index <1920	RWD	1978	Ploughed
	Whitsbury Gallops	ex RWD card index <1920	RWD	1978	Ploughed
ST/96.05	Hemsworth Down	P 1919	DP	1991	Arable
ST/96.09	Long Critchel, Horse Down	P 1895	DP	1991	Arable
ST/901.115	Gunville Down	1978	RWD	1990	Ploughed
ST/954.118	Tarrant Hinton Down	1976	RWD	1992	Ploughed
ST/942.147	Chettle Down	P 1895	DP, RF	1991	Ploughed (in 1950s)
ST/96.13	Week St Down	P 1919	DP	1992	Ploughed (in 1970s)
ST/996.137	Gussage Down	1976	RWD	1992	Ploughed (in 1970s)
SU/00.15	Wick Down	P 1919	DP	1992	Ploughed

\* There have been several published records for Melbury Hill, from W. R. Linton in 1905 up to 1983, but none has ever been confirmed, and the site has been omitted from the total.

\*\* See Table 1.

been ploughed, I feel that if there are unrecorded historical losses, then these would have been on the more level sites.

Table 3 summarises the sites known in Dorset, and categorises them according to the size of the population in each site.

TABLE 3. INFORMATION OF THE KNOWN SITES OF *CAREX HUMILIS* IN DORSET

Status of sites	Number of sites	Number of plants at each site			
		<10	11–100	101–1000	1001+
Extant – not threatened	36		5	19	12
Extant – threatened	20	8	9	2	1
Extant – total	56	8	14	21	13
Extinct	15				

The species has been lost from 14 known sites as follows:

Last record before 1900	2 sites
1901–1920	6 sites
1921–1950	1 sites
1951–1970	0 sites
1971–1995	5 sites

Of the sites recorded before 1900, and between 1900 and 1920, some or most may well have survived until the 1950s or even the 1970s. Until Dick David started recording in 1971, there is little published information, but the above data suggest an increasing loss of sites.

There have been a few other recent detailed investigations of loss of sites relating to particular species. *Orchis ustulata* was shown to have disappeared from as many as 200 sites out of about 317 sites identified in southern England (Foley 1990). *Cardamine bulbifera* on the other hand was shown to be still present in about 155 sites out of a possible 200 sites in England (Showler & Rich 1993). The history of a woodland species, *Primula elatior*, has been documented for Cambridgeshire (Preston 1993, Preston & Yates 1995), showing little loss since 1950; plants have been found since 1991 at 68 out of 76 sites recorded since 1660! These studies seem to show that, despite the almost total neglect of British woodlands since the war, plants have survived better there than in grassland.

#### ACKNOWLEDGMENTS

I would like to thank all those who accompanied me for their help and perseverance, especially Bryan Edwards who can spot *C. humilis* at all times of the year. Of course I would particularly like to mention the help and encouragement I received from Dick David. Each spring another letter would arrive suggesting visiting some other “old” site. He would stay at a hotel in the middle of *C. humilis* territory, and would invariably visit other sites on the way down and back. One year we had walked all day, it was raining and we were a long way from the car. He asked if we could rest for a moment, explaining that he was going to be 80 in a few weeks time. I had always marked him as years younger! I was able to show him a few new sites and in 1993 he was actually to come and stay; a great honour. Two weeks before his intended arrival I opened *The Times* and found his obituary. Like many other members I am delighted to hold a whole stack of his meticulous letters, all of which impart encouragement and information in equal measure.

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THE TAXONOMIC STATUS OF *DACTYLORHIZA MAJALIS* (RCHB. FIL.) P. F. HUNT & SUMMERH. SUBSP. *TRAUNSTEINERI* (SAUT. EX RCHB. FIL.) H. SUND. VAR. *BOWMANII* M. N. JENK.

Jenkinson (1995) recently described a new variety, var. *bowmanii* of *Dactylorhiza traunsteineri* (Sauter ex Rchb.) Soó (= *D. majalis* subsp. *traunsteineri*) from S. Hants. (v.c. 11).

Jenkinson's conclusions were based upon a comparison of morphometric data from three populations in Hampshire (Exbury, Avon Forest Park and Mapledurwell Fen) with data from five populations of *D. traunsteineri* in widely separated localities in Berks., v.c. 22, Anglesey, v.c. 52 and Mid-West Yorks., v.c. 64. At all three Hampshire sites, the populations sampled by Jenkinson were accompanied by *D. praetermissa* (Druce) Soó and *D. fuchsii* (Druce) Soó, with *D. maculata* (L.) Soó in addition at Avon Forest Park and putative hybrids at the other two (Jenkinson 1995).

As a result of this study he concluded that "for the vast majority of character states the three Hampshire populations from which data have been obtained fall within the parameters of subsp. *traunsteineri* according to accepted morphological criteria". (For reasons given in his paper Jenkinson prefers to treat *D. traunsteineri* as a subspecies of *D. majalis* (Rchb.) P. Hunt & Summerh.).

The main diagnostic characters of *D. traunsteineri* are: its slender, usually flexuous stem; the reddish-purple colouration of the upper part of the stem and bracts; its few, narrow, linear-lanceolate leaves (usually 3–4 including 0–1 non-sheathing leaves); its lax, few-flowered (c. 7–12), usually sub-secund inflorescence, and its rather large flowers, with broad (c. 10 mm) labella, whose lateral lobes are semi-reflexed (Pugsley 1936; Heslop-Harrison 1953; Lacey & Roberts 1958; Roberts 1960; Tennant 1979; Bateman & Denholm 1983; Foley 1990).

Jenkinson's sample data for some of these characters are shown in our Table 1, in which we have included the "Total number of leaves" obtained by adding his means for the "No. of sheathing leaves" and "No. of non-sheathing leaves". The means in each row have been arranged in order of magnitude so that the range of values for the *D. traunsteineri* "control" samples and "var. *bowmanii*" can be read at a glance.

TABLE 1. POPULATION MEANS OF *DACTYLORHIZA* TAXA FROM JENKINSON (1995) (TABLE 3)

	<i>D. traunsteineri</i> (control samples)	"var. <i>bowmanii</i> "	Mapledurwell population
No. of sheathing lvs	2.2, 2.6, 2.6, 2.7, 2.8	3.0, 3.5	3.0
No. of non-sheathing lvs	0.4, 0.7, 0.7, 1.0, 1.0	1.4, 1.9	1.0
Total no. of lvs	3.1, 3.2, 3.3, 3.5, 3.6	4.4, 5.4	4.0
Length of longest leaf (cm)	6.50, 6.59, 7.55, 8.25, 10.02	10.51, 12.81	9.99
Width of widest leaf (cm)	0.93, 1.07, 1.09, 1.26, 1.36	2.03, 2.25	1.37
No. of fls/inflorescence	8.0, 8.7, 9.2, 9.4, 12.0	16.8, 19.1	9.6
Stem diameter (mm)	2.30, 2.40, 2.60, 2.65, 3.50	3.90, 4.45	2.60



Jenkinson's data from the Mapledurwell population agreed very closely with those from the "control" populations of *D. traunsteineri* and from this he concluded that it is indeed *D. traunsteineri*, in spite of the fact that the mean value for "Total no. of leaves" (a diagnostic character) lies outside the range of his "control" means.

The case of the Exbury and Avon Forest Park samples ("var. *bowmanii*") is rather different. All the mean values from these populations, shown in our Table 1, lie outside, in some cases well outside, the upper values of the *D. traunsteineri* "controls" as may be seen in our Fig. 1. Furthermore, most of these are diagnostic characters in the determination of this species and the claim that these two populations are sufficiently close to *D. traunsteineri* to warrant inclusion in that taxon clearly has no justification.

In addition, Jenkinson's drawings (Fig. 1, p. 267) of unpressed plants of his "var. *bowmanii*", which he subsequently preserved as the nomenclatural *type*, are inconsistent with our experience of living plants referred to *D. traunsteineri*. In particular, the former are depicted as being somewhat robust, straight-stemmed and distinctly leafy, the leaves themselves relatively broad and deeply channelled and in some cases cucullate, and the inflorescences dense-flowered. Similarly, drawings (Jenkinson (1995), Fig. 2, p. 270) of the labella of plants from two populations of "var. *bowmanii*", whilst consistent among themselves, are atypical of *D. traunsteineri* in their patterning and almost entirely in their shape, and in fact none of the above characters suggest that Jenkinson's plants are related to this taxon.

In the British Isles, *D. traunsteineri* invariably occurs in damp, calcareous fens and flushes of which it can sometimes be an abundant and typical component. In populations where the pH has been measured, values within the range 7.0–8.0 have been recorded (Heslop-Harrison 1954; Tennant 1979); on occasion some habitats are found to be especially base-rich with considerable deposits of tufa. Whilst the Exbury site is wet, it is clearly slightly acidic and is becoming overgrown

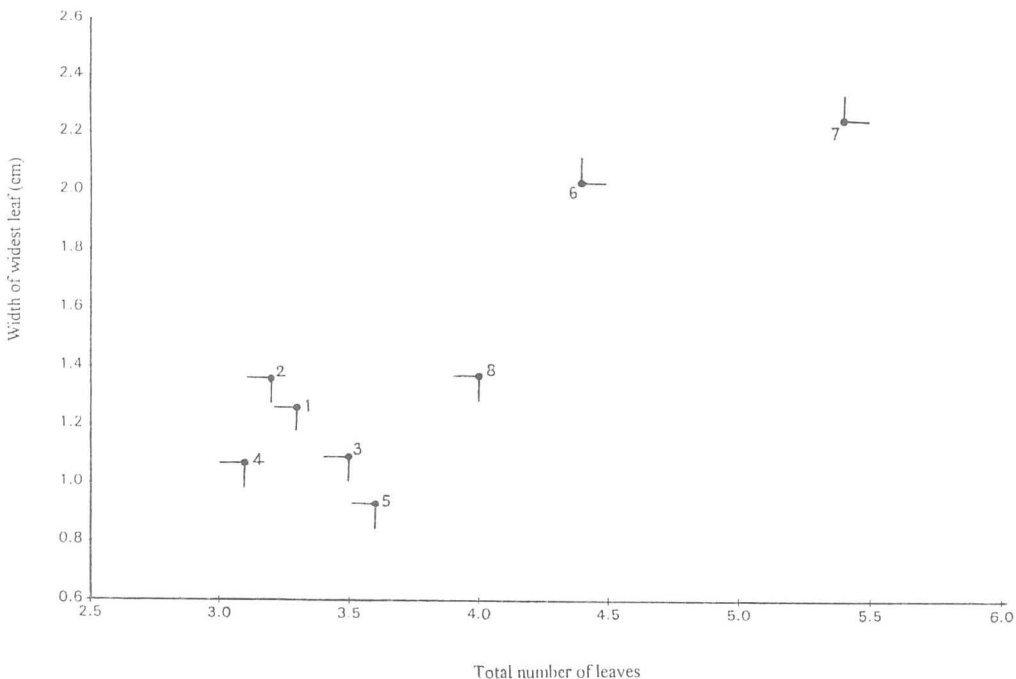


FIGURE 1. Eight populations of *Dactylorhiza* taxa (data taken from Jenkinson (1995)) showing variation in two diagnostic characters (width of widest leaf and total number of leaves). Two further characters are included: mean number of flowers per inflorescence (12 or less ♀; more than 12 ♂); and mean number of non-sheathing leaves (1.0 or less ●; more than 1.0 ◐). Populations 1–5: *D. traunsteineri*; 6: Exbury; 7: Avon Forest Park; 8: Mapledurwell.

with *Pteridium aquilinum* (L.) Kuhn. The other three localities given for “var. *bowmanii*” by Jenkinson (1995) are also in acidic habitats, but this time in dry grassland. Again they are in association with other acid-soil plants and their presence in such habitats is clearly at variance with those known for *D. traunsteineri*.

The evidence against including these populations in *D. traunsteineri* is thus overwhelming and their true identity must be looked for elsewhere. A similar error was made by Pugsley (1946) who reported *Orchis traunsteinerioides* from Greywell Fen near Odiham. Heslop-Harrison (1953) investigated this population and his description is worth quoting: “In the highly polymorphic *O. praetermissa* population of this fen there are individuals which approach the *O. Traunsteineri* range in sparsity and narrowness of leaves, and in the labellum shape and pattern, but nothing has been found in this locality comparable, for example, with the very distinctive Cothill Fen colony”. It will be recalled that the Cothill Fen population is one of those used by Jenkinson (1995) as a *D. traunsteineri* “control”. It thus seems highly probable that the plants described by Jenkinson as “var. *bowmanii*” are similar to the sparse- and narrow-leaved plants in Greywell Fen, and like them, too, are variants of the local *D. praetermissa* population.

It is also clear that the “morphological overlap” between two marsh-orchid taxa, assumed by Jenkinson (1995) in the introduction to his paper, and on which he bases his support for the subspecific status of *D. traunsteineri*, does not, in fact, exist.

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#### *ASPLENIUM VIRIDE* HUDSON (ASPLENIACEAE) IN GREATER LONDON

The Boreal-Montane *Asplenium viride* Hudson (syn. *A. trichomanes-ramosum* L. = *A. ramosum* L., Zimmer & Greuter 1994), is in terms of gross morphology i.e. size, frond dissection, etc. similar to another congeneric calcicole, *A. trichomanes* L. subsp. *quadri-valens* D. E. Meyer emend. Lovis but whereas the latter is a frequent colonist of walls, the former is notably absent from this habitat (Page 1982). It was therefore with some surprise that *A. viride* was detected growing on a trackside wall at Ravenscourt Park station, Middlesex, v.c. 21 (TQ/225.787) in April 1995. Two clumps were initially seen from the rear coach of a passing train, one c. 15 cm. in diameter and obviously present for many years, the other much smaller and giving the appearance of being recently established,

presumably as spores from the larger clump which is less than 1 m away. The site faces west to south-west but is somewhat shaded as it occurs in a small alcove housing signalling equipment, which acts to give additional shelter. Several small plants of *Asplenium scolopendrium* L. occur with the *A. viride* on an otherwise unremarkable, dry, mortared brick wall.

The very dry summer of 1995 proved highly damaging to many wall fern populations and it was with some trepidation that the fern was viewed en passant in late July, by a party of pteridologists following the Holttum conference at Kew. Both clumps were showing signs of drought stress, with browning of the distal portions of the majority of fronds. By December 1995 both appeared to have recovered but the larger clump was being overgrown by a plant of *A. scolopendrium*, which may ultimately cause its demise.

The closest extant natural populations of *A. viride* which could have acted as a spore source are c. 160 km away in a similar situation on a blue brick railway bridge near Loughborough, Leics., v.c. 55 (Primavesi & Evans 1988), although plants cultivated by enthusiasts and in botanic gardens occur closer. The nearest indisputably native populations exist on sheltered upland limestone in Glamorgan and Brecon and in the Derbyshire dales. Jermy *et al.* (1978) gave no records in the S.E. of England, however, last century the species occurred in at least two sites. Moore (1852) reported on the discovery of a single plant on "an old brick wall forming a parapet to a cellar window" at Danny House, c. 10 miles [16 km] from Brighton, W. Sussex, v.c. 13 (TQ/284.149). The plant's origin was the cause of some debate (Anon. 1853) with John Ray, who had stayed at the property for some months 184 years before, named as a possible source! The species did not persist for long, being reported as lost by 1860 (Wolley-Dod 1937). The species proved more tenacious in another Victorian site in S.E. England, a shaded brick wall, by riding stables, at Mickleham in Surrey, v.c. 17 (TQ/1.5), where it persisted from its discovery in 1854 until c. 1889 (Lousley 1976).

All of the species' occurrences at its extremes of distribution in lowland eastern and central England seem to have been on walls. For example, in addition to the records mentioned above, the species was also found in 1860 on the wall of Toynton St Peter church, Lincs., v.c. 54 (TF/403.634) (Gibbons 1975) and its discovery, apparent loss when whitewashed in 1827, reappearance by 1836 and ultimate loss in 1853 from a wall in Worcestershire, was documented by Amphlett & Rea (1909).

The lack of suitable rock substrates in lowland England means that colonization by spores is only possible on these man-made habitats. Most such colonizations are inevitably short lived as the species is only able to persist where it is cool and humid in summer (Page 1982), although there obviously exists considerable variation between individuals in respect to their tolerance to these important environmental variables. Other montane fern species have also produced occasional outliers on walls, e.g. *Asplenium septentrionale* on Romney Marsh, E. Kent, v.c. 15 (Philp 1982) and *Polystichum lonchitis* near Wellingborough, Northants., v.c. 32 (Jermy *et al.* 1978). Railways seem particularly associated with these disjunct fern colonizations. The congenial humid atmosphere associated with steam propulsion has been noted in the past as one reason for this correlation but this has clearly been an inadequate explanation over the last two decades!

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#### THE DISTRIBUTION OF BRAMBLES (*RUBUS* SPP.) IN NORTH-EAST SCOTLAND

Comprehensive knowledge about the occurrence of brambles (*Rubus* spp., Rosaceae) in Aberdeenshire and Kincardineshire has built up over the last ten years. Numerous species have been added to the vice-county lists given in Edees & Newton (1988), and many species have been found to have wider ranges than the maps in that work indicate. A full list of the species currently known in v.cc. 91–93 is given in Table 1, together with the number of hectads and part-hectads in which they occur in each vice-county.

*Rubus mucronulatus* Boreau is by far the commonest bramble in all three vice-counties, contributing 90–99% of the bramble occurrences in most hectads. *R. mucronulatus* extends higher in altitude than any other species, reaching 275 m in Crathie in S. Aberdeen (v.c. 92) and 215 m in Forgie in N. Aberdeen (v.c. 93). These quite low altitudinal limits mean that brambles are absent from roughly half the total area comprised by v.cc. 91–93, and along many upland roads raspberries are the sole *Rubus* species.

Other widespread brambles have altitudinal limits between 150 and 200 m, and many species are confined to the coastal plain, growing no higher than 100 m. Current altitudinal limits for the widespread species are, in ascending order: 155 m *R. polyanthemus* Lindeb., 165 m *R. furvicolor* Focke, 175 m *R. dasyphyllus* (Rogers) E. S. Marshall, 185 m *R. latifolius* Bab., and 200 m *R. echinatoides* (Rogers) Dallman and surprisingly *R. ulmifolius* Schott. However, this last is a disjunct occurrence at Kennethmont less than a kilometre from the Aberdeen – Inverness railway.

Three species are abundant over limited areas within north-east Scotland, *R. furvicolor* in the Turriff – Fraserburgh district of v.c. 93 (Welch 1993), *R. septentrionalis* W. C. R. Watson south of Fraserburgh, and *R. echinatoides* near Crimond (v.c. 93) and also in the lower Dee valley around Banchory (v.c. 91) in hectads NO/6.9 and NO/7.9. In all but the last of these areas *R. mucronulatus* is infrequent.

For Buchan (the north-eastern half of Aberdeenshire) Trail (1904) reported that *R. furvicolor* (= *melanoxydon*) was common, but he considered *R. mucronulatus* was scarce throughout the area in contrast to its abundance near Aberdeen. It would appear that *R. mucronulatus* has spread north in the last 90 years, but has gained surprisingly little ground, considering its vigour, where *R. furvicolor*, *R. septentrionalis* and *R. echinatoides* were already common. Other species now locally frequent in Buchan are *R. anisacanthos* G. Braun around Old Deer, and *R. dasyphyllus* around Cloa.

The richest habitats for brambles in north-east Scotland are railways, particularly their stations and goods yards. The Deeside line, abandoned in 1966, once carried frequent suburban services, and in its first 14 km west of Aberdeen there were eight stations. This line has been developed into a cycleway and the station areas are largely intact; eight species including unnamed taxa are currently known at Milltimber (Ballantyne 1996) and two others grow at Cults nearby. Across the region *R. elegantispinosus* (A. Schum.) H. E. Weber, *R. errabundus* W. C. R. Watson, *R. leptothyrsos* G. Braun and *R. ulmifolius* have more of their occurrences along railways than might be expected on chance, and very probably reached north-east Scotland either by being planted by railwaymen in their lineside allotments, or by passive carriage on trains. Similarly *R. plicatus* Weihe & Nees and *R. scissus* W. C. R. Watson have an undue number of occurrences on banks by old roads e.g. *R. scissus* on the old Aberdeen – Tarves road, and perhaps were spread by road traffic in the past. But these species are typical of moorland and may well be relicts, the narrow strips along roads containing the only surviving remnants of moorland in these places.

Five brambles are included in Table 1 which appear not to have been described or named (A. Newton, pers. comm., 1996). Three of these grow by railways and have as yet only one or two

TABLE 1. NUMBER OF HECTADS AND PART-HECTADS IN WHICH BRAMBLE SPECIES (*RUBUS* SPP.) OCCUR IN VICE COUNTIES 91-93

	91	92	93
SUBERECTI			
<i>R. fissus</i> Lindley	2	2	1
<i>R. plicatus</i> Weihe & Nees	1		3
<i>R. scissus</i> W. C. R. Watson	4	3	3*
SYLVATICI			
<i>R. errabundus</i> W. C. R. Watson			1
<i>R. leptothyrsos</i> G. Braun			5
RHAMNIFOLII			
<i>R. elegantispinosus</i> (A. Schum.) H. E. Weber	1	2*	1*
<i>R. lindebergii</i> Mueller			1
<i>R. nemoralis</i> Mueller		1*	1*
<i>R. polyanthemus</i> Lindeb.	3		2
<i>R. rhombifolius</i> Weihe ex Boenn.			1*
<i>R. septentrionalis</i> W. C. R. Watson		2*	12
DISCOLORES			
<i>R. procerus</i> Mueller ex Boulay	4	2*	2*
<i>R. ulmifolius</i> Schott	2		5*
VESTITI			
<i>R. vestitus</i> Weihe in Bluff & Fingerh.	1*		2*
MUCRONATI			
<i>R. furvicolor</i> Focke		2	23
<i>R. mucronulatus</i> Boreau	16	21	24
Unnamed <sup>1</sup>	1		
Unnamed <sup>2</sup>		1	
MICANTES			
<i>R. raduloides</i> (Rogers) Sudre in Gandoger			1*
ANISACANTHI			
<i>R. anisacanthos</i> G. Braun			5*
<i>R. infestus</i> Weihe ex Braun	1		2*
RADULI			
<i>R. echinatoides</i> (Rogers) Dallman	13	11	5
<i>R. radula</i> Weihe ex Boenn.	5*	1*	2
Unnamed <sup>3</sup>		1	
HYSTERICES			
<i>R. dasyphyllus</i> (Rogers) E. S. Marshall	4*		12*
CORYLIFOLII			
<i>R. latifolius</i> Bab.	12	10	14
<i>R. pictorum</i> Edees	3*	1*	
<i>R. tuberculatus</i> Bab.	2*	2*	1*
Unnamed <sup>4</sup>			2
Unnamed <sup>5</sup>	1		
Number of species (named)	16	13	24
Number of species (including unnamed)	18	15	25

\* Not recorded for vice-county in Edees & Newton (1988).

<sup>1</sup> Probably a hybrid of *R. mucronulatus* and *R. latifolius*.

<sup>2</sup> With large ternate leaves and white flowers.

<sup>3</sup> Similar to *R. largificus* but with very short stamens.

<sup>4</sup> With strong heterocanth prickles and pinkish flowers.

<sup>5</sup> With weak prickles and white flowers.

Based largely on records made by the author since 1982, but including also some records of Alan Newton published in Edees & Newton (1988) and a few recent records of George Ballantyne in v.c. 92.

localities, and a fourth is a single large patch, being apparently a hybrid of *R. mucronulatus* and *R. latifolius* (A. Newton, pers. comm., 1996), which fruits badly. Only the pink-flowered Corylifolian allied to *R. tuberculatus* Bab., that grows around Peterhead in eight separate 1-km squares (Welch 1993), is sufficiently widespread to be a candidate for naming.

Many of the extra species now added to the vice-county lists have probably been present for many years, unnoticed because searching was previously minimal. Most occur in neighbouring vice-counties although *R. vestitus* Weihe in Bluff & Fingerh. and *R. anisacanthos* are apparently far distant from other locations. The latter grows in large thickets in plantations on former heathland, and extends for 200 m along one roadside in Buchan, so having the appearance of being long resident.

The total list for north-east Scotland would seem to be virtually complete. Only four further species grow in vice-counties adjacent to the region; of these just *R. conjungens* (Bab.) Rogers, *R. laciniatus* Willd. and *R. nessensis* W. H. Hall are candidates for occurrence. The fourth species, *R. hebridensis* Edees, is known only from one roadside near Dufftown (v.c. 94) at the surprising altitude of 240 m, and is almost certainly a recent introduction which the mild winters of the 1990s have permitted to survive. However, some additions to the lists for v.cc. 91 and 92 are still likely; it is puzzling that *R. furvicolor* and *R. septentrionalis* can be so abundant in the far north yet are unknown in Kincardineshire in apparently similar situations.

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