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Pinguicula lusitanica

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COMMITTEE FOR IRELAND, 2004-2005
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In line with the Rules, two new committee members were elected at the Annual General Meeting held in Derrygonnelly Field Studies Centre, Co. Fermanagh on 28 August 2004. Office Bearers were subsequently elected at the first Committee Meeting. The Committee is now:

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Mr P. Hackney, Hon. Secretary and BSBI Council Representative
(retiring Irish AGM 2005)
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The cover illustration shows *Pinguicula lusitanica* (Pale Butterwort) (taken from Fitch, W.H. and Smith, W.G. (1908). *Illustrations of the British flora*. Lovell Reeve and Co., Ltd., London, p. 161) one of the earliest plants collected by Robert Brown in Ireland in 1795 (see the article by Moore and Nelson, this issue).

All species and common names in *Irish Botanical News* follow those in the database on the BSBI web site <http://rbg-web2.rbge.org.uk/BSBI/> and Stace, C.A. (1997). *New Flora of the British Isles*, 2nd ed. Cambridge University Press, Cambridge, except where otherwise stated.

CONTENTS

Editorial	4
Articles	
<i>Carex divulsa</i> Stokes subsp. <i>divulsa</i> (Grey Sedge) × <i>C. remota</i> L. (Remote Sedge) (= <i>C. × emmae</i> L. Gross) (Cyperaceae) in the European flora T. O'Mahony	5
Notes on Robert Brown's herbarium specimens in the Natural History Museum, London (BM): Irish specimens D.T. Moore and E.C. Nelson.....	17
<i>Sorbus latifolia</i> (Lam.) Pers. and <i>S. croceocarpa</i> P.D. Sell in Ireland T.C.G. Rich.....	21
The highest plant species in Co. Waterford (v.c. H6) P.R. Green.....	23
The spread of <i>Veronica crista-galli</i> Steven (Crested Field-speedwell) in Co. Waterford (v.c. H6) P.R. Green.....	25
<i>Pinguicula grandiflora</i> Lam. (Large-flowered Butterwort) in Co. Clare (v.c. H9) – a new twist Fiona Devery	26
Colonisers of clearfell M. O'Sullivan	27
Vice-county reports for 2004	
A report on the flora of Cork (v.cc. H3-H5) 2004 T. O'Mahony	29
A report on fieldwork in Co. Limerick (v.c. H8), 2004 S.C.P. Reynolds ...	38
New records for Co. Monaghan (v.c. H32) A. Hill	44
Field meetings, 2004	
Report on the BSBI field meeting based near Carrickmacross, Co. Monaghan (v.c. H32), 12 June 2004 A. Hill	46
Annual General Meeting, 2004	
Minutes of the Annual General Meeting of the BSBI Irish Region 2004 held in Derrygonnelly Field Studies Centre, Co. Fermanagh on 28 August 2004 (Unapproved)	47

EDITORIAL

One of the most time-consuming jobs associated with putting together *Irish Botanical News* is that of checking species and common names. I have every faith in the contributors to the newsletter (well, most of them anyway!) but mistakes do creep in and names do change and the only way to proceed is to check every single one. In recent years, I've used the second edition of *Stace* and laboriously looked up each entry in the index and then turned up the appropriate page. (The first edition was a real nightmare as it only listed genera in the index and so it was a matter of page flicking to find the actual species – *Carex* was a real challenge.) But this year, I thought I would use the BSBI website to see if I could speed up the process. And, believe me, it really does save a substantial amount of time if you have huge species lists to check.

The search facilities, if you haven't used them, can be customised. All that I required was the Latin name and common English name. Entering (usually) the first two letters of the genus followed by a] and the first two letters of the species followed by a] brought up the species I wanted so that checking could be done rapidly. It was still useful to have *Stace* to hand for queries, though these were very few.

This got me thinking about the huge impact that computers have had on our work as botanists – think of the new *Atlas* if you want a striking example. I remember my first 'brush' with a computer – it was in 1969 and it was a Wang. Although it read cards, these had to be input singly and, extraordinarily as it seems today, the cards had to be hand punched. Laborious is not a strong enough word. And then there were the analyses of (what would nowadays be regarded as) small data sets that would take a mainframe computer all night to run. Those, I can now do on my desk-top in a few nano-seconds. How things have changed. It's difficult to envisage what botanical field work will be like in the next 50 years – automatic identification in the field using image analysis (after all, if we can use iris characteristics for humans ...), transmission of data whilst in the field directly back to our home computer by mobile phone (we can probably do that now!), automatic writing of Floras (that would certainly help some of those currently in gestation!), and so forth.

We live in interesting times ...

Have a good field season, Brian S. Rushton, *Irish Botanical News*

CAREX DIVULSA STOKES SUBSP. DIVULSA (GREY SEDGE) × C.
REMOTA L. (REMOTE SEDGE) (= C. × EMMAE L. GROSS)
(CYPERACEAE) IN THE EUROPEAN FLORA

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ABSTRACT

Carex × emmae L. Gross (= *Carex divulsa* Stokes subsp. *divulsa* (Grey Sedge) × *C. remota* L. (Remote Sedge)) is an endemic European interspecific hybrid, of apparently extremely rare occurrence, and reliably recorded to-date from just six widely scattered sites. The present paper reviews the two, authentic, pre-1930 literature records for *Carex × emmae* from Germany and England and provides a comprehensive account of the four extant European sites (all located in Ireland) that were individually found by the author in the years 1982, 1990, 2003 and 2004. Detailed data are also provided on the comparative morphology and biology of the Irish material of *C. × emmae* and its parents, including leaf-ligule drawings for all three taxa.

INTRODUCTION

Prior to 1930, the endemic European sedge hybrid, *Carex × emmae* L. Gross (= *C. divulsa* Stokes subsp. *divulsa* (Grey Sedge) × *C. remota* L. (Remote Sedge)) was reliably reported from just two locations: one in Germany, and one in England. The 1905 German find by L. Gross, was from a woodland path beside Lake Bodenburg, Konstanz, and the determination was confirmed by the renowned caricologist, Georg Kükenthal (Kükenthal and Gross, 1905). The German hybrid material displayed slender stems, while the proximal spikes were compound (Salmon, 1925), and bore the male florets at their base, as in its *Carex remota* parent (Salmon, 1931).

The 1924 English find of *C. × emmae* was from a roadside habitat at Waldron, near Mayfield, East Sussex, v.c. 14, where the hybrid occurred as a single, massive tussock in the midst of a sward of *C. remota*, with *C. divulsa* in small quantity nearby. *C. × emmae* persisted here until at least 1935, when it was in imminent danger of being built upon (Wolley-Dod, 1937). *C. × emmae* was discovered here by C.E. Salmon, while accompanied by A.H. Wolley-Dod.

Salmon (1925) subsequently provided a satisfactory descriptive account of this hybrid, noting that it had the general appearance, leaf-ligule shape, long, leaflike lower bract, and simple spikes of its *C. remota* parent. However, he also observed that the stems were scabrid apically, and that the lower spikes had the male florets positioned distally (the *upper* spikes being almost wholly male, as in both parent species) – and correctly adduced that this latter suite of characters were attributable to the influence of its *C. divulsa* parent. Salmon also tellingly commented: “While the supposed parents were forming healthy fruit ... no good nuts seemed to be on their way in the plant described, and the conclusion seemed warranted that it was barren.” [Note: This is a surprising remark/observation, given the early date of the hybrid discovery (11 June) at which time one would only expect *flowering* material to be available for examination. Moreover, there seems to have been no microscopic examination of the putative hybrid stamens, to confirm that the anthers were predominantly indehiscent and bore abortive, sterile pollen grains.]

Notwithstanding these oversights by the finders, the caricologist, Arthur Bennett (Bennett, Salmon and Wolley-Dod, 1925) felt that the East Sussex hybrid determination was probably correct – a view subsequently confirmed by G. Kükenthal (Salmon, 1931) following on his examination of the E. Sussex vouchers supplied by C.E. Salmon, regarding which he commented: “A very fine discovery: my specimens [of *C. × emmae*] from the Bodensee (Lake Constance) have the spikelets *male* at the base, and therefore approach rather *C. remota*; yours have spikelets male at the *apex* (= *divulsa*).” Nevertheless, in the first edition of the major work, *British sedges* (Jermy and Tutin, 1968), *C. × emmae* is *not* reported as occurring in Europe. While this omission was corrected in the revised second edition of this monograph (Jermy, Chater and David, 1982), the authors still expressed grave doubts regarding the occurrence of *C. × emmae* in Britain. Indeed, in communication with me on this matter, R.W. David (*in litt.* October/November, 1982) stated that both he and A.O. Chater had great difficulty accepting that *Carex × emmae* even existed in Nature!

CAREX × EMMAE IN THE IRISH FLORA

On 22 May 1982, while botanizing in Shippool Wood (H4, W56.54) on the left bank of the River Bandon below Inishannon Village, Mid Cork, intermixed woodland populations of *Carex remota* and *C. divulsa* subsp. *divulsa* were routinely examined, on the off-chance that their interspecific hybrid, *C. × emmae*, might be present. To my great surprise, two tussocks of

what seemed to be this hybrid were eventually located. Later that evening, a detailed microscopic examination of both vegetative and flowering material (which revealed intermediacy in a range of morphological characters, and confirmed that the included, indehiscent anthers bore sterile, abortive pollen grains) left little doubt but that this taxon was indeed *C. × emmae*. A week later, a return visit was made to Shippool Wood, in order to collect voucher specimens, and on this occasion a rooted portion of ramet was also taken, for cultivation at home. This visit allowed a more leisurely comparison of all three taxa, and a third clump of putative *C. × emmae* was discovered. The three presumed hybrid tussocks were scattered along a 100 m stretch of woodland path, and all were identical morphologically, suggesting that these three disjunct plants were dispersed ramets of a single, original, sterile hybrid clone. Fruiting material of the putative hybrid collected here on 30 July 1982, bore wholly sterile utricles, their nuts totally devoid of contents.

In November 1982, vouchers of the Cork putative *C. × emmae* hybrid were examined by the BSBI *Carex* Referees, A.C. Jermy, A.O. Chater and R.W. David, who initially expressed the view that the Cork taxon, like that collected in East Sussex in 1924, might be no more than an aberrant state of *C. remota*. The Referees conceded, however, that the trained caricologist in the field has a far better chance of arriving at a correct determination than does the herbarium expert, who labours under the considerable disadvantage of having only pressed specimens to examine. (This pragmatic assertion is based on the fact that, in the field, the *behaviour* (i.e. the floral biology) of the putative hybrid and its parents can be critically compared over the flowering period of all three taxa. Additionally, fresh, living material is available for pollen analysis, and for the examination of often highly diagnostic criteria, such as leaf ligule characters, which latter (being very delicate-textured) are often distorted or damaged in even the best of voucher specimens.) The Referees were, accordingly, provided with detailed data on the floral biology of the Shippool Wood putative hybrid and its parents, together with comparative leaf ligule drawings of all three taxa. Impressed by such evidence, and by the fact that the Cork taxon was genuinely pollen-/utricle-sterile, my determination of the Shippool Wood taxon as *Carex × emmae* was confirmed by all three referees in December 1982, and the Cork vouchers were deposited in **BM** and **CGE**, under that name. A brief note on the Cork find was published in *Watsonia* (O'Mahony, 1983), where it was suggested that the East Sussex taxon was most likely *C. × emmae* also, as the detailed description of that taxon provided by Salmon (1925) showed it to agree in some essential diagnostic characters

with the Cork hybrid. This viewpoint was also accepted by R.W. David, after he had critically re-examined the E. Sussex vouchers of *C. × emmae* at **K**, and compared these with the Cork material. Thus, *Carex × emmae* was reinstated to the British flora.

On 9 July 1990, *Carex × emmae* was found in a second Mid Cork locality, in the grounds of Bessboro Convent, Blackrock (H4, W71.70), Cork City, some 32 km east of the Shippool Wood site (O'Mahony, 1991). Two clumps of the hybrid were initially found here, being scattered along a 24 m stretch of woodland path, and occurring in the midst of an abundance of its parent species, *C. remota* and *C. divulsa* subsp. *divulsa*. Given this situation, the hybrid plants were very difficult to detect. Nevertheless, a second visit to this site a few weeks later, increased the number of hybrid tussocks within this small area to four – all being totally pollen-/utricle-sterile, and identical in appearance and gross morphology to the Shippool Wood hybrid. In May 1996, five clumps of *C. × emmae* were refound at the Blackrock site (O'Mahony, 1997), while in July 2003, six plants of the hybrid were located here after a one-hour search (O'Mahony, 2004) and further voucher specimens were collected.

On 24 May 2003, a single, robust tussock of *C. × emmae* was added to the Waterford flora from a hedgebank habitat close to the North Bride River, a short distance below Tallowbridge (H6, X00.94). A single tussock of both *C. remota* and *C. divulsa* subsp. *divulsa* occurred close to the hybrid plant. At the time of finding, vouchers were collected for microscopic examination and pressing, while a small vegetative portion of *C. × emmae* was brought into cultivation. The Waterford material of *C. × emmae* (which is wholly pollen-/utricle-sterile) is identical in appearance and morphology to the Cork hybrid plants, though this single tussock is somewhat more vigorous, and the individual stems more robust, than the comparative Cork material.

On 10 April 2004, two tussocks of *C. × emmae* were located on the grassy verge of a steep, coastal cul-de-sac, downhill of East Grove House entrance, at East Ferry (H5, W85.68), Cork Harbour, the hybrid being new to East Cork. Given the early time of year, the initial tentative identification was based on the remains of fruiting culms from the Autumn 2003 period, supplemented with fresh vegetative shoots from the current season. This identification was confirmed on 30 May, when flowering material was available for pollen analysis, while fruiting material (bearing *sterile* utricles) was collected here on

29 August (O'Mahony, 2005). The visual appearance and morphology of the East Cork *C. × emmae* material (two plants, some 4 m apart), was identical to that of all previous Irish collections of the hybrid.

THE DIAGNOSTIC CHARACTERS OF *CAREX × EMMAE*

1. *Carex × emmae* differs from both its parents, in that *all pollen grains are totally devoid of contents*, while most are misshapen. Moreover, the majority of stamens bear indehiscent anthers, and remain enclosed within their glumes, though a small proportion exert and dehisce – a phenomenon I have also seen in other sterile interspecific hybrids within subgenus *Vignea* (P. Beauv. ex F. Lestib.) Kük., such as *Carex × boeninghausiana* Weihe and *C. × pseudoaxillaris* K. Richt. While the *C. × emmae* utricles are shaped and *curvi-veined* dorsally as in *C. remota*, they are *wholly sterile*, being totally devoid of contents. In Irish material, such utricles are strongly serrated along the margins of the beak, the serrations continuing down onto the shoulder of the utricle-body – a feature also observed on the sterile utricles of the E. Sussex hybrid, by Salmon (1925).

2. Within the genus *Carex* subgenus *Vignea*, many interspecific hybrids exhibit marked robustness or 'hybrid vigour', which is termed positive heterosis. In stark contrast to this trend however, the Cork populations of *C. × emmae* display very slender stems, combined with delicate, depauperate-looking inflorescences/infructescences! This may represent an example of the opposite extreme – negative heterosis. As such delicate morphological characteristics are maintained in cultivation, it seems reasonable to conclude that this phenomenon is not attributable to adverse environmental conditions, but rather represents an expression of the genetic inheritance of the Cork hybrid populations.

3. Both in the wild and in cultivation, the infructescences of the Irish *C. × emmae* populations frequently exhibit *compound* lower spikes (a *C. divulsa* feature) consisting of 2(-5) small, sessile lateral spikes, and a larger, *shortly pedunculate*, central spike. In this respect, the German hybrid material was similar, whereas the English hybrid was stated to bear simple, sessile spikes (Salmon, 1925, 1931). [Note: In my experience of Irish material of *C. × emmae* (wild and cultivated plants) simple spikes *and* compound spikes frequently occur on different culms *from the same tussock*, and I suspect that this phenomenon might well have been exhibited by the English and German hybrid tussocks also, although overlooked.]

In *C. × emmae*, anomalies are also encountered with regard to the positioning of the male florets in the lower spikes. In *C. divulsa* subsp. *divulsa* such spikes always have the male florets positioned distally, in contrast to *C. remota*, in which they are always positioned basally. However, this floral trait is inconstant and very fluid in their interspecific hybrid, *C. × emmae*, and consequently can, on occasions, prove a very useful diagnostic aid. For example, in the Irish material of *C. × emmae*, the lower spikes frequently bear a few male florets either *at the base, at the apex, or at both their base and apex* – the included, indehiscent, yellow anthers being plainly visible to the naked eye through the hyaline glumes. This floral feature is clearly inherited from both parents! As mentioned earlier, the English material of *C. × emmae* was reported to have the male florets positioned distally on the lower spikes (a *C. divulsa* character), whilst the German material had the male florets positioned basally (a *C. remota* character).

4. Both visually and morphologically, *C. × emmae* is variably intermediate in *floral* features between both parent species, and thus can easily be confused with these. For example, when the hybrid inflorescences display a combination of simple, sessile spikes, *and* long, leaflike lower bracts, then it will most likely be overlooked as a form of *C. remota*. At the opposite extreme however, *C. × emmae* inflorescences exhibiting *compound* lower spikes, which have lost their bracts, could easily be mistaken for a depauperate state of *C. divulsa* subsp. *divulsa*. [Note: In my experience of the hybrids, *Carex × emmae* and *C. × pseudoaxillaris*, the long, leaflike lower bracts inherited from their *C. remota* parent, are characteristically *transversely crimped* at their base, and *readily disarticulate* at this point!] In contrast to *C. × emmae*'s intermediacy in floral features, my research has clearly demonstrated that the hybrid is *bipolar* in other features, its *stem*-morphology being identical to that of its *C. divulsa* subsp. *divulsa* parent, while its *vegetative* characteristics are much closer to those of its *C. remota* parent.

5. For the initial separation of *C. × emmae* and *C. remota* in the field, I have found the following criteria very useful: *C. × emmae*: inflorescence/infructescence commonly less than 10 cm long, with the proximal 1(-2) bracts very long and leaflike, *frequently bearing two, conspicuous, white, apically-directed auricles at their base*, such bracts frequently transversely crimped above the base, and often disarticulating at this point; lowest spikes often compound, bearing a pedunculate central spike;

stems often very slender distally, the faces *flat, sharply trigonous, matt, dark-green*, the *angles finely serrulate throughout* (*C. divulsa* subsp. *divulsa* characters). By contrast, in *C. remota* the inflorescences/infructescences may range up to 20(-30) cm in length, and are *often curved*, while at least the lowest three bracts are very long and leaflike, *totally lack auricles*, and do *not* disarticulate; all spikes simple, sessile; stems rather stout, *obtusely trigonous*, often *laterally pinched* at the junction with the inflorescence, and thus appearing *subfistular*; stem-faces *convex, light-green and glossy*, the angles *smooth*, or *weakly and irregularly serrulate*.

The following microscopic characters can then be used to confirm the determination. *C. × emmae*: lower spikes often with male florets at both base and apex; leaf ligules of both vegetative and flowering shoots *short-tubular*, the apex of the hyaline inner leaf-sheath face (truncate to deeply concave) *set c. 0.4-1 mm* above the union of the leaf-blade/leaf-sheath; and the free ligule tissue *c. 0.5-0.7mm wide* (Fig. 1b). By contrast, in *C. remota* the male florets are *always at the base* of the lower spikes; the leaf ligules of both vegetative and flowering shoots are *long-tubular*, as the apex of the hyaline inner leaf-sheath face (deeply concave to V-shaped) is *set c. 1-1.8 mm* above the union of the leaf-blade/leaf-sheath, and the free tissue of the ligule is *c. 0.6-1(-1.25) mm wide* (Fig. 1a).

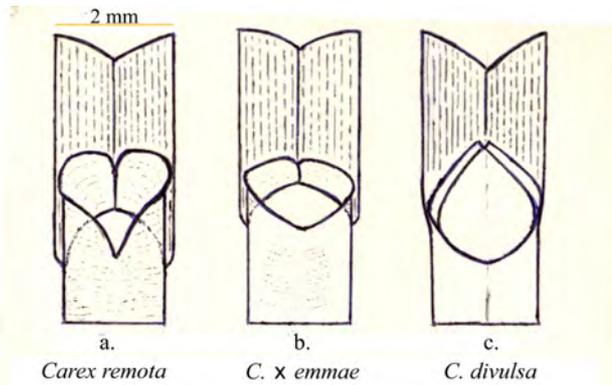


Figure 1. Ligule characteristics of *Carex remota*, *C. × emmae* and *C. divulsa*.

[Note: The illustrations of the leaf ligule and apex of the hyaline inner leaf-sheath face of *Carex remota* in *British sedges* (Jermy and Tutin, 1968) and

Sedges of the British Isles (Jermy, Chater and David, 1982) are totally erroneous.]

6. Vegetatively, *C. × emmae* can be distinguished with absolute confidence in the field from *all* forms of its very variable *C. divulsa* subsp. *divulsa* parent, in which latter, the leaf ligules are *non-tubular*, triangular-ovate and subacute, with *only a narrow rim* of free ligule tissue, *c. 0.25-0.35 mm wide*, while the apex of the hyaline inner leaf-sheath face is *predominantly truncate*, and *set at virtually the same level* as the leaf-blade/leaf-sheath union (Fig. 1) Furthermore, in *C. × emmae* the subfoliar veins are few (9-15), thick, wide-spaced, and inconspicuous, as they do not contrast with the ground colour – agreeing with *C. remota* in these characters. In *C. divulsa* subsp. *divulsa* however, the subfoliar vein number ranges from 17-21, the veins being thin, close-packed, and conspicuously dark-green against the light-green ground colour.

The infructescence characters of both taxa are also very distinctive. In *C. × emmae* (as mentioned previously) the infructescences are delicate, straight, *contracted* (only 7-10 cm in length) and generally overtopped by the long, leaflike lowest bract. Furthermore, well-developed fruit spikes of the hybrid are *characteristically oblong-cylindrical*, and bear 17-30 utricles (*C. remota* characters). In *C. divulsa* subsp. *divulsa* however, the infructescences are commonly stout, *pendulous*, and elongate (up to 20 cm long) with wide-spaced lower spikes and/or branches, while the fruit spikes are *short-ovoid* (hardly longer than broad) and bear only 4-10 utricles. Moreover, the bracts are *never* leaflike, though the lowest bract is occasionally moderately long and *setaceous*.

C. × EMMAE: POSSIBLE CONFUSION WITH OTHER *C. REMOTA* HYBRIDS

Carex remota is involved in the parentage of at least *nine* interspecific hybrids (Wallace, 1975). Of these hybrids, the two most widespread and frequent are *C. otrubae* Podp. (False Fox-sedge) × *C. remota* (= *C. × pseudoaxillaris* K. Richt.) and *C. paniculata* L. (Greater Tussock-sedge) × *C. remota* (= *C. × boeninghausiana* Weihe), which share the following suite of *C. remota* characters with *C. × emmae*: 1. leaf ligules *short-tubular*, the free ligule tissue *at least 0.5 mm wide*; 2. fruit spikes bearing numerous, sterile, utricles (*commonly 14-30*); 3. lowest infructescence-bract generally *very long and leaflike* (though cross-puckered and readily disarticulating above its base in *C.*

× *emmae* and *C. × pseudoaxillaris*); 4. lower spikes *compound*, with the male florets at their *base*, at their *apex*, or at *both base and apex*. Additionally, while all three hybrids bear predominantly indehiscent stamens, which remain hidden beneath their glumes, random florets frequently display exerted stamens with dehiscent anthers.

Vegetatively, *C. × boeninghausiana* is easily distinguished from both *C. × pseudoaxillaris* and *C. × emmae* by its very robust tussocks of *stiff, dark-green, sharply serrated* leaves, which are commonly *subcylindrical* in cross-section, the subfoliar face with *c. 17-23* thick, close-packed, dark-green veins. Additionally, the lateral faces of the leaf-sheaths are herbaceous, and often overlap the margins of the hyaline inner face, *which latter is then reduced to a narrow central strip* – a *C. paniculata* character. In contrast, *C. × pseudoaxillaris* and *C. × emmae* bear *flaccid, bright-green* leaves with *feeble* marginal teeth and usually *less than 17* subfoliar veins, while the hyaline inner leaf-sheath face is *broad*. In *C. × pseudoaxillaris* however, the leaves are *commonly up to 5 mm wide*, and display *numerous conspicuous transverse septa* when held to the light, while the ligules are acute or subacute. In *C. × emmae* the leaves are *2-3 mm wide* and bear *inconspicuous* transverse septa, while the ligule is *rounded and split* at the apex.

CAREX × EMMAE AND THE DYNAMICS OF THE HYBRID ENVIRONMENT

Disturbance of the habitat (on a major or minor scale) is a well-known catalyst for interspecific hybridization, and botanical literature abounds with examples of this phenomenon. In particular, it seems that such disturbance provides the necessary environmental conditions and biological dynamics for the establishment of certain *Carex* F₁ interspecific hybrids. Indeed, ongoing disturbance of the hybrid site may help to disperse vegetative ramets of a single, original, F₁ hybrid clone.

The Irish sites for the pollen-/utricle-sterile F₁ hybrid, *Carex × emmae*, fall into this category. For example, the Shippool Wood site on the River Bandon is a mixed coniferous/deciduous woodland, which has been managed by the Irish Republic Forestry Service since the early 1970s at least. Doubtless ongoing disturbance of the more species-rich marginal habitats here, provided the ecological niche essential for the establishment of the single, original, sterile F₁ hybrid clone of *C. × emmae*, and its subsequent dissemination (as scattered ramets) along a 100 m stretch of pathway margin. Unfortunately, such ongoing

disturbance of the habitat also led to the extirpation of two of the three known hybrid tussocks by July 1984 (the hybrid being originally found here in May 1982), though a single hybrid plant still remained in November 2003, some twenty-one years after its original discovery (O'Mahony, 2004).

The Bessboro Convent, Cork City site for *C. × emmae* has also witnessed considerable environmental disturbance since the 1980s, following on the 'development' of this marginal woodland strip as an Amenity Walk. Moreover, ongoing disturbance of this woodland habitat up to the mid-1990s, doubtless provided ideal conditions for the establishment of *C. × emmae* here, and the subsequent dispersal of fragments of the original, fruit-sterile, hybrid clone along the woodland corridor. At the present time (2005) this strip of woodland is out of bounds to the general public, and access to the site is difficult. Indeed it seems likely that lack of access to this site will be the norm in future years, and this will inadvertently help to protect the current-known population of *C. × emmae*, which consists of just six, disjunct tussocks, growing amidst an abundance of its parents, *C. remota* and *C. divulsa* subsp. *divulsa*.

The Waterford site for *C. × emmae* is a south-facing hedgebank, in a grazing meadow beside the North Bride river, shortly below Tallowbridge. Until recently, this hedgebank was accessible to a large herd of dairy cattle, which browsed it en route to the nearby farm buildings. It seems likely that foraging of the hedgebank, and the attendant rutting and poaching of its base, provided the ecological niche essential for the establishment of the single hybrid plant here. Today, an electric fence keeps the hedgebank out of bounds to cattle, and the *C. × emmae* tussock is thriving.

The East Ferry (H5) site for *C. × emmae* is also prone to periodic disturbance, for on my discovery of the hybrid here on 11 April 2004, I observed that its grass-verge habitat had been 'trimmed', resulting in the decapitation of most of the overwintering fruiting culms from the 2003 season.

Both the British and German sites for *C. × emmae* were also marginal habitats: the former a hedgebank abutting a road (Salmon, 1925); the latter a woodland path bordering a lake (Kükenthal and Gross, 1905; Kükenthal, 1909). Doubtless both of these habitats were subject to considerable disturbance also – a major factor in the establishment of the *C. × emmae* populations.

FLORAL BIOLOGY OF *C. × EMMAE* AND ITS PARENTS

Carex divulsa subsp. *divulsa* is distinctly (if rather weakly) *protandrous* (David and Kelcey, 1985; O'Mahony, 1989), whereas my observations of flowering in *Carex remota* suggests that it is *essentially homogamous* – although different populations (or even the same population in different years) may display very weak protandry or protogyny! In stark contrast, *C. × emmae* (and other male-sterile *C. remota* hybrids, such as *C. × pseudoaxillaris* and *C. × boeninghausiana*) appear *strongly protogynous*, as the plump styles exert normally, whereas the majority of stamens do *not* exert, but rather remain enclosed beneath their glumes. The deposition of presumed parental pollen onto the stigmas of the *C. × emmae* florets has been observed at Inishannon, and in my garden, but nut-set did not thereafter take place, strongly suggesting that this hybrid is wholly female-sterile as well as male-sterile. Therefore, there is no possibility of hybrid swarms developing in the *C. × emmae* sites, as a consequence of pollen transfer from the parents to the hybrid.

SUMMARY

In Europe, *C. remota* and *C. divulsa* subsp. *divulsa* occupy a wide geographical area (cf. Chater, 1980), within which they are of locally common occurrence, and frequently cohabit. Given this situation, the apparent extreme rarity of their interspecific hybrid, *C. × emmae*, is puzzling, and it is a moot point as to whether this rarity is an actual biological reality, or merely appears so, the hybrid simply being overlooked. In this regard, the dearth of European records for *C. × emmae* points to rarity status, as does the fact that intensive searches for this hybrid in southern Ireland over a twenty-two year period (1982-2004), have only produced four localities for it. Furthermore, all four Irish *C. × emmae* populations are very small, with only three plants at the 1982 Inishannon site; six at the 1990 Blackrock site; one at the 2003 Tallowbridge (Waterford) site; and two plants at the 2004 East Cork locality.

C. × emmae should be sought for in *disturbed* habitats, where both parents are present. Yet, even when such conditions are realized, the eye may still be dulled to the occasional aberrant (hybrid?) plant by the sheer abundance of the parent species.

ACKNOWLEDGEMENTS

This paper has had a very long gestation – twenty-three years (1982-2005)! I am very grateful to the BSBI Referees, A.C. Jermy, A.O. Chater and the late R.W. David for their December 1982 confirmation of my original *C. × emmae*

material from the River Bandon, near Inishannon, Mid Cork (H4). I have also to thank R.W. David for re-examining the East Sussex vouchers of putative *C. × emmae*, on the basis of my conviction that these represented the *genuine* hybrid, and for his confirmation of this belief! Lastly, my sincere thanks also go to the late E.C. (Ted) Wallace, who went to considerable efforts on my behalf, to try and track down the reference for a Slovakian (then Czechoslovakian) putative *Carex × emmae* record.

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NOTES ON ROBERT BROWN'S HERBARIUM SPECIMENS IN THE
NATURAL HISTORY MUSEUM, LONDON (BM): IRISH
SPECIMENS

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As a young man, at least, Robert Brown (1773-1858) was active in the botanical exploration of parts of Great Britain and Ireland (see Mabberley, 1985 and Nelson, 2003; for a comparable list of Brown's Scottish specimens, see Moore and Nelson, in prep.). This is evident not from contemporary publications – Brown himself did not publish any botanical reports relating to native British or Irish plants during his lifetime – but from manuscripts in The Botany Library, The Natural History Museum, London (Moore and Beasley, 1997; Nelson, 2003). Those manuscripts indicate clearly that in the 1790s Brown was assembling a herbarium of native plants (see e.g., Mabberley, 1985: 19), yet there are rather few records of extant specimens (see e.g., Britten, 1888; Hackney, 1992; Nelson, 2003) in sharp contrast to the thousands of specimens surviving from his work during the voyage of HMS *Investigator* (see Vallance, Moore and Groves, 2001; for those preserved in the National Botanic Gardens, Glasnevin (DBN), see Powell and Morley, 1976). Kent and Allen (1984) reported only one instance of Irish specimens collected by Robert Brown: the specimens are marine algae included in L.W. Dillwyn's "Herb. Brit. Confervae" in the Welsh National Herbarium (NMW; see Harrison, 1985).

In an attempt to gauge how many of Brown's Irish specimens have survived, DTM undertook to search the herbarium of The Natural History Museum, London (BM), into which Brown's personal herbarium was incorporated after

his death (see Mabberley, 1985). Some of the Irish specimens were reported by Nelson (2003). In this note we account for all those traced to date.

The inescapable conclusion is that although Brown clearly collected and preserved specimens during the years 1795-1800 when he was based in Ireland, very few of these specimens have survived. However, it should also be stated clearly that DTM's search was highly selective, directed only to those species that Brown recorded in his diary for 1800 and in his copious manuscript descriptions (for details see Nelson, 2003). There is every possibility that more specimens exist in **BM**, but searching for them will be as rewarding as looking for the proverbial needle in a haystack.

In the following listing the information on the original labels, in Brown's handwriting, is transcribed – note that he usually wrote his initials 'RB' and name 'Rbrown' without any space between the capital letters.

PTERIDOPHYTES

Aspleniaceae

Asplenium marinum L.

H39, 1797: "Asplenium marinum Lin: Limestone Caves at Bally-Castle N Coast of Antrim 1797 RB". [Two other Irish gatherings by nineteenth century collectors are on this sheet.]

H34, 1800: "Near Dunrea May 1800 RB".

There is also an Irish locality mentioned on a label accompanying Scottish specimens [ex herb. Withering]:

[H40, —: "Asplenium marinum Lin In great abundance about Weems especially in the Coves & in several other places in Fife. On the Angus coast between Montrose & Arbroath & on Rocks near Down Hill {the seat of the Bishop of Derry} Ireland".]

Phyllitis scolopendrium L.

H40, 1797: "Scolopendrium vulgare Asplenium scolopendrium Lin Neighbourhood of Carrick-fergus 1797 RB". [Labelled in pencil "Sheet I (of II)".]

Thelypteridaceae

Phegopteris connectilis (Michx.) Watt

H31, 1800: "Polypodium Phegopteris Lin Top of Carlingford Mountain July 1800". ["Robert Brown" added in a different hand.]

DICOTYLEDONS

Apiaceae

Apium nodiflorum (L.) Lag.

H40, 1795: "Sium, nodiflorum ? repens ? At the Giants Causeway, Ireland Aug^t 1795 R Brown Desc in Mss". [Nelson, 2003: 124.]

Caryophyllaceae

Sagina maritima Don

—, 1796: without an original label [see Britten, 1888: 285]: pencil annotation "Ireland 1796 – Mr R. Brown"; sheet stamped "Herbarium Banksianum" and watermarked "Whatman 1796".

Droseraceae

Drosera anglica Huds.

H40, 1795: "~~Drosera longifolia~~ Lin *anglica* Huds In Bogs between Newton-Limavady & Coleraine, Ireland Aug^t 1795 In flower & Seed Rob^t Brown". [See Britten, 1888: 285; Nelson, 2003: 124.]

Lentibulariaceae

Pinguicula lusitanica L.

H40, 1795: "Pinguicula lusitanica Lin 1) — villosa Lightf: D^r Smith's description not accurate in every point: His figure too {Eng Bot 145} represents the leaves larger than I have ever seen them, & makes the scapi by far too smooth — In a bog about half way between Newton Limavady & London Derry by the road side Aug^t 1795 RB". [Mabberley, 1985: 31; Hackney, 1992; Nelson, 2003: 124.]

Saxifragaceae

Saxifraga tridactylites L.

H34, 1800: "Saxifraga tridactylites Links of Buncrannagh June 1800 RB".

MONOCOTYLEDONES

Cyperaceae

Carex vesicaria L.

H38/39, 1796: "Carex vesicaria Lin — inflata Huds & Lightft Banks of the River between Blaris Camp & Lisburn, Ireland Aug^t 1796 Rob^t Brown".

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SORBUS LATIFOLIA (LAM.) PERS. AND *S. CROCEOCARPA* P.D. SELL
IN IRELAND

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The *Sorbus latifolia* group is comprised of taxa which have probably arisen through hybridisation and polyploidy from *S. torminalis* (L.) Crantz and members of the *S. aria* (L.) Crantz group, and are characterised by having long petioles, sharply but shallowly lobed leaves which are greenish underneath, and large orange or brownish fruits. Sell (1989) revised the group in the British Isles, and cited only material of the native *S. devoniensis* E.F. Warb. for Ireland.

As part of an on-going revision of *Sorbus* in the British Isles, some Irish specimens of the *Sorbus latifolia* group have recently been re-examined by T.C.G. Rich. Two new species were found which are additional to the alien plants catalogue of Reynolds (2002). The records are as follows:

Sorbus latifolia (Lam.) Pers. sensu stricto

H17, NE Galway. Graigue Abbey, Athenry, “near the house and looking planted” August 1936, Mrs Gough (**DBN**). H21, Dublin. Dalkey Hill, by wall near the castle, O264.260, 10 May 2004, S.C.P. Reynolds (**DBN, NMW**); *S. aria*, *S. hibernica*, *S. intermedia* and another *Sorbus* probably of the *S. arranensis* group (at O263.260) are also present in this area (Doogue *et al.*, 1998).

Records for *S. latifolia* in Phillips (1924), and specimens distributed by him with labels entitled “Trees of Great Britain and Ireland” are *S. devoniensis*. I have not seen any voucher material for the H8.6 and J4.4 records in the *New atlas* (Preston, Pearman and Dines, 2002).

Sorbus croceocarpa P.D. Sell

H6, Waterford. Carrignore, Knockhouse Upper, Waterford (S558.120), single self-sown tree in hedge, 26 August 1997, 20 July 2002, P.R. Green (**NMW**; Green, 2004); October 2003, D. Berridge (**NMW**). H12, Wexford. Arthurstown, planted at entrance to drive on R733 (S727.106), 1 October 1998, T.C.G. Rich (**NMW**); 17 September 2003, L. Houston (**NMW**). H36,

Tyrone. Killycolpy, c. 1939, R.Ll. Praeger (**DBN**); *S. aria* is also present in this area.

The occurrence of both these species, presumably as either planted trees or as escapes from cultivation in at least some sites, means that material of this group will now need to be examined in more detail in Ireland; *S. devoniensis* remains the most widespread and frequent taxon. Given that both have been reasonably widely cultivated in Britain it is perhaps unsurprising that they have also been grown in Ireland.

The species may be identified using the leaf silhouettes in the *Plant crib* (Rich and Jermy, 1998), and T.C.G. Rich will be happy to determine specimens, which should preferably consist of the broad leaves from the vegetative short lateral shoots, and fruit if present.

ACKNOWLEDGEMENTS

I would like to thank Sylvia Reynolds for her help, and Paul Hackney, Matthew Jebb and John Parnell for access to **BEL**, **DBN** and **TCD** respectively.

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THE HIGHEST PLANT SPECIES IN CO. WATERFORD (V.C. H6)

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On the 18 July 2004, I set myself the tasks of seeing which plant species was at the highest elevation in Co. Waterford (v.c. H6) and visiting the two remaining part tetrads I had still to survey on the Knockmealdown Mountain range. My luck was in as the bar across a forest ride was pulled back allowing me to drive 2 km to the end of the ride saving a good amount of steep walking. Starting off at 350 m at Glennafallia I headed for the summit of Knocknafallia rising to 668 m. The first surprise of the morning was a small patch of *Carex bigelowii* (Stiff Sedge); like many of the species I was to see that day, I had only seen it in the other mountain range in the county in the Comeragh Mountains.

Arriving at the top was disappointing, just a few scattered rocks and, like the side, covered in heather. Dropping down the west side I came across a small damp area with a patch of *Empetrum nigrum* subsp. *nigrum* (Crowberry) about 15 m × 15 m and even though I searched I did not see any more that day. I then headed for my next summit of Knocknagnauv at 655 m and into my first new tetrad of the day, S0.0Z, the majority of which falls within S. Tipperary (v.c. 7). I found only 24 species but a single bright yellow flowering spike of *Solidago virgaurea* (Goldenrod) broke the monotony of the heather.

I then descended the west side into my next new tetrad S0.0U, where again only a small portion of the southern side of the tetrad is in Co. Waterford. There are the remains of a boundary wall so making it easy to define the county border. This tetrad descends from 640 m on the east side dipping to 460 m in the valley bottom and then with a steep climb to 740 m on the west side of the tetrad. There were many patches of boulders and rocky outcrops. I hunted very hard and eventually found the odd patch of *Hymenophyllum wilsonii* (Wilson's Filmy-fern) and amongst the heather was a scattering of *Festuca vivipara* (Viviparous Sheep's-fescue), two more species I had not noticed on this range of mountains before. Even though S0.0U seemed a far more interesting tetrad I only managed to amass 22 species.

I then crossed the line on the map into the next tetrad S0.0P; this is where the GPS comes in handy, as there is often no real way otherwise of knowing exactly where a border of a tetrad should be. My goal was now only a 54 m climb to the summit of Knockmealdown standing at 794 m. I took a well-earned rest sitting by the trig. point eating my lunch, enjoying the sun and the views into Cos Cork, Limerick, Tipperary and Kilkenny.

The crunch had now come: what was the highest plant in Co. Waterford? The answer was *Agrostis canina* (Velvet Bent), not a stunning revelation. Then, just a cm lower, came *Poa annua* (Annual Meadow-grass), the only plant of this species I saw all day. What struck me most was that when I visited the summit of Knockmealdown in April 2000 *Saxifraga spathularis* (St Patrick's-cabbage) was widespread, but this time it was not to be seen anywhere. This was the species I had pictured was going to be the county's highest plant. Why had it disappeared? I walked for another half hour westward but, on seeing rain heading my way and having at least 5 km to walk on my return journey, I chose to turn around. Luckily for me every time the rain almost reached Knockmealdown it took a sudden turn and headed to the north or south. I walked down the south slope of Knockmealdown until I dipped into the northeast corner of S0.0N just so I could record some of the higher altitude species. An area of damp well-grazed grass next to a stream yielded *Alchemilla filicaulis* subsp. *vestita* (Lady's-mantle) another species that I had over looked from this area previously. I took another break on the bank of Rough Glen River to eat my now squashed banana and listened to the splashing of water over the rocks and watched the yellow heads of *Crepis paludosa* (Marsh Hawk's-beard) daintily nod about in the breeze. From here the heather became much taller making the last kilometre or so very hard work. I did encounter a super boggy area full of *Pinguicula lusitanica* (Pale Butterwort) and the last new species of the day to this mountain range *Carex dioica* (Dioecious Sedge).

A very tiring day but well worth the effort with six tetrads having records added to and a good list of species that I had not seen on the Knockmealdown Mountains before – an area I had always taken to be very boring and dull.

THE SPREAD OF *VERONICA CRISTA-GALLI* STEVEN (CRESTED
FIELD-SPEEDWELL) IN CO. WATERFORD (V.C. H6)

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Veronica crista-galli Steven (Crested Field-speedwell) has been known in Co. Cork, a neighboring county of Co. Waterford (v.c. H6), since 1904 (Reynolds, 2002) where it was found in a graveyard near Cork City. It is now reasonably common in some parts of Co. Cork partially in the east. As my brother described to me, you could drive along some roads and kilometer after kilometer there would be *Veronica crista-galli* growing amongst the vegetation of the verge.

I first noticed *Veronica crista-galli* in Co. Waterford on 13 April 2001 while driving up a steep road out of Carrickbeg (S39.21). Here there were large solid carpets of it on either side of the road. My brother Ian found it on two more occasions in 2001; the first being at Gibbethill (S58.13) on the 21 October, to the west of Waterford City and the following day on the west side of Dungarvan (S24.92). These three sites are very scattered over the county.

Veronica crista-galli has very tiny deep blue flowers similar in size to those of *Veronica arvensis* (Wall Speedwell). The foliage is like that of *Veronica persica* (Common Field-speedwell) but slightly larger and much hairier; the stems are often half a metre long or so. It grows much larger than any of the small *Veronica* spp., sprawled over the ground with many side branches of similar length. As an over-wintering annual the seeds germinate very early, seedlings appearing in July. They then tend to grow to about 2-3 cm and just 'sit there' until they start flowering, which normally takes place from mid-February depending on the mildness of the winter. In wet years I have seen it flowering as late as early June. Once flowering begins the growth of the plant 'takes off'. It may be thought of as a small harmless alien but on the contrary it seems to have the ability to suppress other more vigorous species. One site in Waterford City, where three paths meet, there is a large triangle that was solid with *V. crista-galli* like a green lawn, when seen in March 2002. The strange thing was that even though many dog walkers seemed to use these paths there was no sign that a dog or person had ever wandered into it.

Why has *Veronica crista-galli* suddenly started to spread about the county? One theory I have is that the species grows where the road contractors get their material for repairing roads and the lorries bring out the seeds. The lorries then inadvertently distribute the seeds around the county. At several of the sites it grows on the chippings along the side of the road beneath the crash barriers such as the N25 at Coolroe (X22.86) and east of Carroll's Cross Rds (S45.08). All of the 23 sites are on roadsides, sometimes on very narrow country lanes with the exception of several sites around the east end of Waterford City where it grows along the sides of foot paths including the path along the banks of the River Suir (S63.11).

It looks as though this speedwell is here to stay and will continue to spread.

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PINGUICULA GRANDIFLORA LAM. (LARGE-FLOWERED BUTTERWORT) IN CO. CLARE (V.C. H9) – A NEW TWIST

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During a visit to Co. Clare (v.c. H9) at the end of May 2004, I stopped at Lough Bunny. On the eastern shore of the lake, I was surprised to see *Pinguicula grandiflora* (Large-flowered Butterwort) as I was not aware of its presence in that area. However, while photographing the plant I noticed it was not actually growing in the ground but in a plug of soil sitting in a small hollow. The plant looked healthy and was heavily in seed and the plug of soil looked as if it had been taken from the wild.

The history of *P. grandiflora* in Co. Clare has always been controversial. *P. grandiflora* was first recorded (with a caution as to its status) from Co. Clare by R.Ll. Praeger in 1903 from a specimen sent to him, by Professor A. Birmingham, from Lisdoonvarna (Nelson, 1991). The subsequent recordings from Cappanawalla in 1949 by J. Heslop-Harrison (Webb and Scannell, 1983) and from Moneen Mountain in 1983 by Dr Cilian Roden (Nelson, 1991)

dispelled some of the suspicions. However, the *New atlas of the British and Irish flora* (Preston, Pearman and Dines, 2002) gives *P. grandiflora* as an alien in Co. Clare.

This find raises two issues. Was the plant removed from the wild and perhaps jettisoned on second thoughts? Or was it placed there with the hope of establishing a new colony?

In light of the above and the fact that the plant was in seed, it was decided that the best course of action was to remove the plant.

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COLONISERS OF CLEARFELL

M. O'Sullivan

Knockavota, Milltown, Co. Kerry

Kilderry Wood is situated on a hilly area west of Milltown on the main road to Killorglin (North Kerry, v.c. 2) (Q80.99). It is about 200 years old, almost 25 ha in size and is encircled by farmland. It was in private ownership up until the mid-1950s but was sold to the Forestry Department who planted conifers on the site in 1957. These consisted of *Picea sitchensis* (Sitka Spruce), *Pinus sylvestris* (Scots Pine) and *Larix × marschlinsii* (Hybrid Larch). They grew among scattered stands of mature *Quercus petraea* (Sessile Oak), *Fagus sylvatica* (Beech) and *Ilex aquifolium* (Holly) that were all that remained from extensive logging activities in the 1930-40s.

I have recorded all the species growing at this site prior to harvesting. They included typical woodland species such as *Anemone nemorosa* (Wood

Anemone), *Oxalis acetosella* (Wood-sorrel), *Hyacinthoides non-scripta* (Bluebell) and *Luzula sylvatica* (Great Woodrush). Less common species recorded were *Carex pendula* (Pendulous Sedge), *Cotoneaster simonsii* (Himalayan Cotoneaster), *Alchemilla filicaulis* (Hairy Lady's-mantle), *Melampyrum pratense* (Common Cow-wheat) and *Epilobium brunnescens* (New Zealand Willowherb). The vast majority of plants were found growing on the roadside verges along the roads that dissect the wood and around the woodland edge, particularly on the southern aspect.

Prior to re-planting in 2002, the upper soil layer was disturbed by machinery and piled into neat rows about 10 m apart; the conifers and broadleaved species were planted between the rows. Colonisation of the site took place from 2003 onwards. Initial colonisation was on the open ground between the small trees and this was extensive. The richness and diversity of the new invaders was most surprising and welcome. However, only a few could be described as woodland species.

The most numerous and colourful of these were the conspicuous stands of *Chamerion angustifolium* (Rosebay Willowherb). Three specimens of *Buddleja davidii* (Butterfly-bush) attracted a wide range of migrant butterflies namely *Vanessa cardui* (Painted Lady), *V. atalanta* (Red Admiral) and *Colias croceus* (Clouded Yellow). The wetter areas had invaders too. They were represented by *Berula erecta* (Lesser Water-parsnip), *Eriophorum angustifolium* (Common Cottongrass) and *Eriophorum vaginatum* (Hare's-tail Cottongrass) and in waterlogged machine tracks *Typha latifolia* (Bulrush). On drier parts single plants of *Vicia sativa* (Common Vetch) and *Solanum nigrum* (Black Nightshade) were noted.

The puzzle is: where did this diverse range of species come from in such a short time period? Were some unintentionally introduced through debris from the much travelled timber trucks? Or, maybe seed dormancy. One species that was introduced came from a garden somewhere and is flourishing on the verge along the road that cuts through the wood. It is a single clump of *Libertia* sp. probably a variant of either Chilean or New Zealand Iris.

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2004 has proved a very busy and productive year botanically, with positive, ongoing research on a wide range of long-term projects, including intensive work on the genus *Carex* (Sedges) in general, and on the genus *Rosa* (Wild Roses) in Co. Cork and in the adjoining counties of Waterford (H6) and Limerick (H8). The more notable events of the year included confirmation of the occurrence of the predominantly Macaronesian fern, *Cystopteris diaphana* (Bory) Blasdell (Diaphanous Bladder-fern) as a naturalized species in West Cork and Mid Cork (H3, H4) – an addition to the Irish flora. Moreover, *Rosa caesia* subsp. *vosagiaca* (Glaucous Dog-rose) was reinstated to the Cork flora, while the extremely rare European sedge hybrid, *Carex divulsa* (Grey Sedge) × *C. remota* (Remote Sedge) (*C.* × *emmae*) was added to the East Cork (H5) flora. Equally eventful, was the discovery that the source of the River Lee Reservoir populations of *Myosotis* × *suzae* (Hybrid Water Forget-me-not), is its western tributary, the Toon River, where the hybrid is of locally abundant occurrence.

On 5 February, my July 2000 Tivoli Docks (H5, W71.72) site for naturalized *Mentha pulegium* (Pennyroyal) was rechecked. This c. 15 m long population was refound without difficulty, and proved to bear stout rhizomes and stolons – in stark contrast to the few other apparently transient populations of this species that I have recently reported from Cork City (See: O'Mahony, T. *Irish Botanical News* **11**: 16-20; 2001). On 27 February, four small bushes of established *Daphne laureola* (Spurge-laurel) were found along the pathway of Healy's Bridge Woods, Kerry Pike (H4, W60.73), Cork City, an addition to this hectad.

In early-April, Dr Fred Rumsey (of the Natural History Museum, London) queried me about my recently published records for naturalized populations of putative *Cystopteris fragilis* (Brittle Bladder-fern) from both banks of the River Bandon at Inishannon (H3, H4, W5.5) (see: O'Mahony, T. *Irish Botanical News* **14**: 16-24; 2004). Dr Rumsey suggested that this taxon might, in fact, be the predominantly Macaronesian *Cystopteris diaphana* (Diaphanous Bladder-fern), which has recently been added to the British flora (see: Murphy, R. *BSBI News* **93**: 13; 2003). [Note: I collected spring material of the

enigmatic River Bandon *Cystopteris* taxon on 31 October 2004, and this was subsequently confirmed as *C. diaphana* by Dr Rumsey – an addition to the Irish flora. A detailed note on this fern discovery will be published at a later date.]

On 10 April, work in the NE section of Great Island, Cork Harbour, turned up some small, flowering, hedgebank populations of *Geranium rotundifolium* (Round-leaved Crane's-bill) in the Ballyvellane area (H5, W84.69). The nearby coastal cul-de-sac at East Grove House, East Ferry (H5, W85.68) produced an abundance of *Carex divulsa* (Grey Sedge), *Polypodium cambricum* (Southern Polypody) and naturalized *Viola odorata* (Sweet Violet), associated with *Carex remota* (Remote Sedge) and small, cohabiting populations of *Arum maculatum* (Lords-and-Ladies) and *A. italicum* subsp. *italicum* (Italian Lords-and-Ladies). A particularly exciting find here was two clumps of *Carex divulsa* × *C. remota* (= *C. × emmae*), the tentative identification at this early date being based on remnant fruiting material from the 2003 season, augmented with fresh vegetative shoots from the current season. [Note: Identification of *C. × emmae* was confirmed on 30 May, when flowering material was available for pollen analysis, while fruiting stems were collected on 29 August for utricle examination and for vouchers. *C. × emmae* is new to the East Cork flora.] The coastal fringe of the woodland at East Ferry held scattered naturalized clumps of *Poa nemoralis* (Wood Meadow-grass), a very rare Cork grass, while a beet field yielded a few plants of *Fumaria officinalis* subsp. *wirtgenii* (Common Fumitory), which is new to H5.

On 13 April, initial recording was undertaken on sections of the beautiful Owenanare River-valley (H4, R3.0 and R3.1) to the NW of Kanturk. This valley was first accessed from a narrow byroad (H4, R35.06) and displayed spectacular snow-white drifts of flowering *Anemone nemorosa* (Wood Anemone) on both riverbanks. *Euphorbia hyberna* (Irish Spurge) was already starting to flower here, its stunning, golden-green, circular clumps providing a showy contrast to the dense stands of *Hyacinthoides non-scripta* (Bluebell). Scattered flowering clumps of a naturalized Daffodil clone (*Narcissus* genus) were also seen along the Owenanare River. A second byroad (away from the river-valley, but in the same 1-km square) produced occasional bushes of *Rosa micrantha* (Small-flowered Sweet-briar) and a naturalized stand of *Ribes rubrum* (Red Currant), while populations of *Ranunculus ficaria* subsp. *bulbilifer* (Bulbiliferous Lesser Celandine) were found at the main road/byroad junction. The two latter taxa are additions to hectad R3.0.

The uppermost section of Stanner Glen (H4, R34.10) in the Owenanare River-valley, yielded a similar valley flora, with the addition of *Equisetum sylvaticum* (Wood Horsetail) and *Carex laevigata* (Smooth-stalked Sedge). The extensive stand of deciduous woodland on the sloping left bank of the river looked magnificent and, with its contrasting range of microhabitats, must be explored more thoroughly on another occasion.

A Sunday spin on 18 April, was ruined by the discovery that major road works to the N22 (the Cork-Macroom Road) at Ovens Bridge (H4, W54.69) had *totally obliterated* my site for *Carex divulsa* × *C. muricata* (Prickly Sedge) which I first recorded here in 1992, and rechecked in 2003. Thankfully, this extremely rare European sedge hybrid still occurs in a few other sites in hectad W5.6.

On 28 April, fieldwork was undertaken about Glencorra Bridge (H5, R81.03), adjacent to Glenwood Demense, near Fermoy. Here, the southernmost section of the Glencorra Stream discharges into the River Blackwater. The valley produced small naturalized populations of *Ribes uva-crispa* (Gooseberry) and *Cornus sericea* (Red-osier Dogwood), which latter was also found on a nearby section of the River Blackwater. Flowering stands of *Carex pendula* (Pendulous Sedge) occurred in abundance on the woodland fringe, overlooking a bordering stream. A remnant fragment of paludal pasture held a bed of *Lysimachia nummularia* (Creeping-Jenny), while a *Primula vulgaris* (Primrose) population on the riverbank, included two pink-flowered plants.

On 2 May, a visit was made to Killathy limestone wood (H5, W75.98) on the left bank of the River Blackwater below Ballyhooly Bridge. The limestone boulders and outcrops in Killathy Wood are festooned with an abundance of *Polypodium cambricum* (Southern Polypody), a calcicole fern which is such a characteristic and common feature of the Cork limestones. Here in 1992, I had found *Allium scorodoprasum* (Sand Leek) scattered over some 400 m of woodland pathway, cohabiting with subdominant *Allium ursinum* (Ramsons) and with such associated taxa as: *Ranunculus auricomus* (Goldilocks Buttercup), *Viola reichenbachiana* (Early Dog-violet), *Carex pendula* (Pendulous Sedge), *Carex sylvatica* (Wood-sedge) and a few plants of *Carex strigosa* (Thin-spiked Wood-sedge). All were still present here, while the humid ditch habitat beside the river still held scattered clumps of *Lysichiton americanus* (American Skunk-cabbage) and *Symphytum officinale* (Common

Comfrey), which I first recorded here in 1997, together with an abundance of *Lysimachia nummularia* (Creeping-Jenny), *Ranunculus ficaria* subsp. *bulbilifer* (Bulbiliferous Lesser Celandine), and vast quantities of *Impatiens glandulifera* (Indian Balsam).

On 16 May, further fieldwork in the River Blackwater valley between Killathy Wood and Cregg Castle (H5, W76.98) yielded a new site for *Allium scorodoprasum* (Sand Leek), while equally exciting was the discovery of two riverside populations of vegetative *Butomus umbellatus* (Flowering-rush), a species first added to the Cork flora in c. 1815 by James Drummond, from the River Blackwater about Fermoy Town (H5, W81.98). My new site for *Butomus umbellatus* is roughly 4 km upriver of all previously reported River Blackwater locations for this species.

In mid-June, I received a letter from Dr Anne Ronse, of the Belgium National Botanic Garden at Meise, requesting information on Cork sites for *Apium inundatum* (Lesser Marshwort), *A. nodiflorum* (Fool's-watercress) and their interspecific hybrid, *A. × moorei* (Hybrid Marshwort), the objective being to collect living material of these three taxa for molecular analysis and comparison with their ally, *Apium repens* (Creeping Marshwort). Therefore, a West Cork field outing with this aim in mind, was arranged for 3 August 2004.

On 15 June, a half-hour spent on the right bank of the River Bandon shortly above Bandon Town weir and Pedestrian Bridge (H3, W48.54) turned up flowering populations of *Myosotis × suzae* (Hybrid Water Forget-me-not). Previously, this hybrid was only recorded on a stretch of the R. Bandon from Dunmanway town (H3, W24.52) downriver to Murragh Bridge (H3, W38.54), a distance of roughly 15 km. However, this Bandon Town find extends the known range a further 11 km downriver. Populations of *Nuphar lutea* (Yellow Water-lily) occurred in the river, adjacent to the riverbank stands of *Myosotis × suzae*.

On 17 June, I made a 'pilgrimage' to the Glengarriff-Bantry region of West Cork, to try and re-find *Rosa caesia* subsp. *vosagiaca* (Glaucous Dog-rose) which was added to the Cork flora from here (as '*R. glauca*') by R.A. Phillips in August 1905, and further reported from this area in July 1988 by D.A. Webb and F.H. Perring. In the event, fortune smiled on me, and a single, putative flowering bush of this long-sought-for rose, was found in a hedgebank close to the Coomhola River in 1-km square H3, W03.59, and thus reinstated

to the Cork flora! [Note: Fruiting material was collected from this bush for vouchers on 4 September 2004, and this confirmed its identity as *Rosa caesia* subsp. *vosagiaca*.]

On 20 June, *Rosa* work was undertaken in the Kildorrery area (H5, R7.1) from Marshallstown Bridge on the River Funshion westwards to the confluence with its tributary the R. Sheep, near O'Briens Bridge (H5, R73.11) and thence northwards along a narrow byroad. This 2-hour visit produced: *Rosa canina* (Dog-rose), *R. tomentosa* (Harsh Downy-rose), the cross, *R. canina* × *R. tomentosa* (*R. × scabriuscula*), *R. corymbifera* (Hairy Dog-rose), two disjunct populations of the cross, *R. sherardii* (Sherard's Downy-rose) × *R. rubiginosa* (Sweet-briar), and one bush of the rare hybrid cross, *R. tomentosa* × *R. rubiginosa* – the latter two *Rosa* hybrids being new to hectad R7.1.

On 26 June, a brief examination of the right bank of the River Lee within the grounds of Fitzgerald Park (H4, W65.71) Cork City, showed *Soleirolia soleirolia* (Mind-your-own-business) to be well naturalised here, together with *Mimulus guttatus* (Monkeyflower) and a colony of *Butomus umbellatus* (Flowering-rush), which latter had doubtless become established here from vegetative material washed into the R. Lee from the nearby ornamental pond, in which it has been cultivated for decades. Also found here, was a single clump of the pollen-/fruit-fertile F₂ hybrid, *Veronica × lackschewitzii* (Hybrid Water-Speedwell). However, neither the pollen-/fruit-sterile F₁ hybrid, or its parents, *V. catenata* (Pink Water-Speedwell) and *V. anagallis-aquatica* (Blue Water-Speedwell) were observed.

On 30 June, hedgebanks on the road between Copsetown Crossroads and Kilmaclenine Crossroads (H4, R51.04) produced populations of *Rosa micrantha* (Small-flowered Sweet-briar) and the two rose hybrid crosses, *R. sherardii* (Sherard's Downy-rose) × *R. rubiginosa* (Sweet-briar) and *Rosa stylosa* (Short-styled Field-rose) × *R. canina* (Common Dog-rose) (= *R. × andegavensis*), which latter is proving of locally common occurrence on the Cork-Limerick border, in the apparent virtual absence of its *Rosa stylosa* parent. The byroad close to Lisgriffin church (H4, R48.08) yielded some bushes of *Rosa sherardii* (Sherard's Downy-rose), while a few plants of the very local *Cirsium dissectum* (Meadow Thistle) occurred in a remnant bit of marshy ground beside the byroad junction (H4, R47.08).

On 15 July, a walk about Mallow Town (H5, W55.98) produced limestone wall populations of *Aubrieta deltoidea* (Aubretia), while the little blue-/white-flowered annual, *Lobelia erinus* (Garden Lobelia) was established on footpath margins and pavement cracks, under hanging baskets. A putative adventive population of *Geranium rotundifolium* (Round-leaved Crane's-bill) was seen on the walls of Mallow Castle, some 32 km inland of its indigenous Cork City sites on limestone walls and outcrops. The riverbank flora at Mallow includes *Rorippa amphibia* (Great Yellow-cress), an attractive species of locally common occurrence along the River Blackwater from Mallow downriver to below Cappoquin (H6, W09.93) in Co. Waterford. Naturalised taxa at Mallow include abundant *Impatiens glandulifera* (Indian Balsam) and cohabiting plants of *Symphytum officinale* (Common Comfrey) and *S. × uplandicum* (Russian Comfrey). [Note: Plans are afoot for the deep-dredging of the R. Blackwater at Mallow, in an effort to alleviate flood-spates. This operation will likely severely impact on both its aquatic and riverbank flora.]

July 20 was a pre-arranged outing with Graham Day (Botanical Recorder for Co. Down, H38) to familiarize him with some components of the rose-flora of Co. Cork. Despite poor weather, our itinerary made for a busy, very interesting, and enjoyable day, and Graham saw many rose taxa that were new to him. On 25 July, morning work on the River Bandon below Ballineen Bridge (H3, W34.53) was primarily directed at refinding populations of *Apium × moorei* (Hybrid Marshwort), first recorded from between here and Murragh Bridge (H3, W38.54) by Maura Scannell and me in June 1975. Frustratingly, this fascinating hybrid was not seen, though both of its parent species were still of common occurrence on the R. Bandon. Nevertheless, the large, beautiful flowering stands of *Mentha × gracilis* (Bushy Mint) and *Myosotis × suzae* (Hybrid Water Forget-me-not) compensated somewhat for this disappointment. Also present here were localized populations of *Lysimachia vulgaris* (Yellow Loosestrife), *Nuphar lutea* (Yellow Water-lily), *Lycopus europaeus* (Gypsywort), *Achillea ptarmica* (Sneezewort), *Claytonia sibirica* (Pink Purslane) and *Mimulus guttatus* (Monkeyflower), this latter species apparently confined to a ditch habitat, rather than on the main river itself. Hedgebanks close to the right riverbank below Ballineen Bridge, held a few fruiting clumps of *Carex muricata* subsp. *lamprocarpa* (Small-fruited Prickly-sedge), last recorded in hectad W3.5 in 1986, and some long-established thickets of a *Spirea* taxon (Bridewort), whose identity has yet to be determined.

On 29 July, the Toon River (a western feeder-stream of the River Lee Reservoir) was examined from Toon Bridge (H3, W29.70) upriver for a distance of c. 800 m. Once again, the catalyst for this trip was the hope of finding *Apium* × *moorei* (Hybrid Marshwort) populations here. The treeless, sunlit left bank of the Toon River proved beautifully floriferous, and held masses of *Lythrum salicaria* (Purple-loosestrife), *Senecio aquaticus* (Marsh Ragwort), *Filipendula ulmaria* (Meadowsweet), *Stachys palustris* (Marsh Woundwort), *Epilobium hirsutum* (Great Willowherb) and *Impatiens glandulifera* (Indian Balsam), together with very localised populations of *Eupatorium cannabinum* (Hemp-agrimony) and *Lysimachia vulgaris* (Yellow Loosestrife). The shallow, firm-of-foot riverbed was also a patchwork quilt of colour, its mosaic of plant communities including an abundance of *Myosotis* × *suzae* (Hybrid Water Forget-me-not) – undoubtedly the source of the River Lee Reservoir populations – and *M. laxa* (Tufted Forget-me-not), both to the virtual exclusion of *M. scorpioides* (Water Forget-me-not) which was only seen (in flower and fruit) about the base of Toon Bridge itself. The Toon riverbed also held dense populations of cohabiting *Apium nodiflorum* (Fool's-water-cress) and *A. inundatum* (Lesser Marshwort), but once again there was no sign of their interspecific hybrid, *A.* × *moorei* (Hybrid Marshwort), despite the habitat looking ideal for it. Downriver of Toon Bridge, populations of *Nuphar lutea* (Yellow Water-lily), *Carex rostrata* (Bottle Sedge) and *Carex vesicaria* (Bladder-sedge) were of locally common occurrence, while an old meadow on the left bank (H3, W30.70) held small populations of fruiting *Carex pallescens* (Pale Sedge), an attractive sedge, apparently only of very sporadic occurrence in Co. Cork, but doubtless somewhat under-recorded.

On 1 August, fieldwork was undertaken over a c. 4 km section of the right bank of the River Blackwater below Fermoy, from the defunct Carrickabrick railway viaduct (H5, W82.99) to below the confluence of the River Funshion (H5, R83.00 and R84.00). This revealed a range of new sites for *Butomus umbellatus* (Flowering-rush), and at least one remnant field-pond site for this species originally found in c. 1815 by James Drummond, curator of the then-existing Cork Botanic Garden. The right bank of the R. Blackwater also held populations of *Nuphar lutea* (Yellow Water-lily), *Rorippa amphibia* (Great Yellow-cress) and an abundance of *Impatiens glandulifera* (Indian Balsam), together with marginal colonies of *Stachys* × *ambigua* (Hybrid Woundwort). On this occasion however, I failed to relocate the habitat containing populations of *Rumex maritimus* (Golden Dock), *Veronica catenata* (Pink

Water-Speedwell) and *Chenopodium rubrum* (Red Goosefoot), etc., recorded by Ro FitzGerald in 1993.

On 3 August I met Dr Anne Ronse at the Gearagh Carpark (H3, W32.71) on the R. Lee Reservoir near Macroom. Unfortunately the *Apium* × *moorei* (Hybrid Marshwort) populations here were now under water (as a consequence of high-water retention in this upper dam), but I was able to present her with cultivated material of the hybrid originally obtained from this area in August 2000. She subsequently collected material of both its parents from the nearby Toon River, and from the R. Bandon at Ballineen.

On 15 August, fieldwork was undertaken in hectad R4.2, which straddles the Mid Cork/Limerick border (H4/H8). This outing had a dual aim: general recording in an underworked hectad, and preliminary work on its rose-flora. In common with most of the adjoining hectads in this region, the roadside hedgebanks are frequently bordered on one or both sides by deep ditches, containing a remnant paludal flora, with such basicolous species as *Equisetum telmateia* (Great Horsetail), *Juncus inflexus* (Hard Rush) and *Pulicaria dysenterica* (Common Fleabane). A wider assemblage of paludal taxa are often present also in the poor-draining pastures here. The hedgebank flora itself is circum-neutral in composition, the calcicolous *Pimpinella major* (Greater Burnet-saxifrage) being specially characteristic, locally common, and a beautiful adornment, and accompanied by frequent *Bromopsis ramosa* (Hairy-brome) and occasional stands of *Agrimonia eupatoria* (Agrimony), while the arboreal element embraces both moisture-loving species such as *Viburnum opulus* (Guelder-rose) and the base-demanding *Euonymus europaeus* (Spindle). The initial *Rosa* work suggests that this fascinating genus is not as well represented as might be expected (e.g. no member of the *R. rubiginosa* group (Sweet-briars) was encountered), the dominant species being: *Rosa canina* (Dog-rose), *R. corymbifera* (Hairy Dog-rose) and *R. arvensis* (Field-rose), with occasional bushes of *R. tomentosa* (Harsh Downy-rose) and the locally frequent hybrid cross, *Rosa stylosa* (Short-styled Field-rose) × *R. canina* (= *R. × andegavensis*). Indeed (as briefly mentioned earlier) work over the past few years on the Cork/Limerick border, has shown *R. × andegavensis* to be locally frequent or dominant over a wide area, in which its *R. stylosa* parent is either absent or of very rare occurrence.

On 30 August, a visit to Weir Island (H5, W80.71), to the south of Slatty Bridge, Cork Harbour, confirmed the occurrence of a single flowering clump

of naturalised *Cyclamen hederifolium* (Sowbread) from the hedgebank of the sand-quarry breen, as reported to me by Ger. Morgan. This beautiful species is new to East Cork. This coastal area also produced flowering populations of *Solidago virgaurea* (Goldenrod) and *Linaria vulgaris* (Common Toadflax), and scattered bushes of *Rosa micrantha* (Small-flowered Sweet-briar).

On 1 September, examination of the gravelly right bank of the River Lee Reservoir below Roove's Bridge (H4, W45.71 and W46.71) added the annual, *Chenopodium rubrum* (Red Goosefoot) to both hectads and to the flora of the Lee Reservoir. As a semi-natural habitat, this water-body harbours a wide range of Cork (and Irish) plant rarities, including the annuals: *Anagallis minima* (Chaffweed), *Elatine hexandra* (Six-stamened Waterwort), *Juncus tenuis* (Slender Rush), *Kickxia elatine* (Sharp-leaved Fluellen), *Linum usitatissimum* (Flax), *Limosella aquatica* (Mudwort), *Parentucellia viscosa* (Yellow Bartsia), *Persicaria minor* (Small Water-pepper) and *Spergularia rubra* (Sand Spurrey). Perennial species of note here include *Chamaemelum nobile* (Chamomile), *Lysimachia nummularia* (Creeping-Jenny) and naturalised *Cyperus eragrostis* (Pale Galingale).

On 13 September, cohabiting flowering/fruitlet populations of *Geranium pusillum* (Small-flowered Crane's-bill) and *Geranium molle* (Dove's-foot Crane's-bill) were found on the margins of a green in 'Woodlands' housing estate (H5, W70.72), Middle Glanmire Road, Cork City. [Note: Further cohabiting populations of both species were recorded from the margins of Deanrock Park (H4, W65.69 and W66.69), Togher, Cork City, on 12 October, while a single flowering plant of *G. pusillum* was found in Fitzgerald Park (H4, W65.71) on 9 December.] *Geranium pusillum* is an extremely rare Cork species (for which most records are only of casual plants), my only previous site for it (and a likely native habitat at that) being from a limestone outcrop at Carrickshean (H5, W89.73), Middleton, in June 1992, where *G. pusillum* cohabited with *Erodium moschatum* (Musk Stork's-bill), *E. cicutarium* s. st. (Common Stork's-bill) and *Torilis nodosa* (Knotted Hedge-parsley) – a rare floral assemblage I have never previously encountered in Co. Cork or elsewhere in Ireland.

On 25 October, I rechecked the late Toby Hodd's October 1997 East Cork site for *Cystopteris fragilis* (Brittle Bladder-fern) from a bridge-wall (H5, R87.08) c. 300 m from Mountain Barrack Crossroads, near Mitchelstown (See: Hodd, T. *Irish Botanical News* 8: 21-23; 1998). At present, this is the only known H5

site for *Cystopteris fragilis* (this population doubtless derived from wind-borne spores from its Galtee Mountain sites in South Tipperary, H7) but there are many similar valley-bridge habitats suitable for it within hectad R8.0, as future research should confirm.

Finally, on 28 November, Shanbally Limestone Outcrop (H4, W75.64) in Cork Harbour was visited, to hopefully re-find my May/September 1994 site for the sedge hybrid, *Carex divulsa* (Grey Sedge) × *C. muricata* (Large-fruited Prickly Sedge). On the present visit, access to the summit proved very difficult, as the base of the outcrop was now encircled by a virtually impenetrable thicket of scrub! Nevertheless, this obstacle was eventually overcome with the help of trusty secateurs, and my reward was the re-finding of three, contiguous fruiting clumps of *C. divulsa* × *C. muricata* on the tiny, flat, grassy plateaux, which also provided a panoramic view of this section of Cork Harbour. The base of the outcrop held a number of fruiting bushes of naturalized *Leycesteria formosa* (Himalayan Honeysuckle).

On my first visit to this site in July 1971, the southern face of the outcrop held an abundance of native *Geranium columbinum* (Long-stalked Crane's-bill), *Geranium rotundifolium* (Round-leaved Crane's-bill), *G. lucidum* (Shining Crane's-bill), *Trifolium campestre* (Hop Trefoil) and *Sedum acre* (Biting Stonecrop), together with frequent *Clinopodium ascendens* subsp. *ascendens* (Common Calamint), *Linum bienne* (Pale Flax) and local *Orobanchae hederaceae* (Ivy Broomrape). Naturalised taxa included an abundance of *Sedum album* (White Stonecrop) and *Centranthus ruber* (Red Valerian) in shades of white, pink and vermillion, while the handsome *Malva moschata* (Musk-mallow) proved locally frequent. Given the vigorous spread of scrub here in the interim 30-year period, the interesting annual species may well have declined in abundance.

A REPORT ON FIELDWORK IN CO. LIMERICK (V.C. H8), 2004

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My objective for botanical work in Co. Limerick in 2004 was to visit new sites and to try to verify old plant records that had not been done, due to lack of

time, during fieldwork for the *New atlas of the British and Irish flora* (Preston, Pearman and Dines, 2002). The following is a selection of places visited and plants seen after more than 20 days spent in the field at over 35 sites in the county.

Early in the year I was asked by some local people to check an area of woodland at Ballyclogh south-east of Barrigone (R3.4) which was in danger of being bulldozed. The wood, with limestone outcrop in places, contained *Corylus avellana* (Hazel) (some coppiced), *Fraxinus excelsior* (Ash), *Ilex aquifolium* (Holly), *Crataegus monogyna* (Hawthorn) and *Prunus spinosa* (Blackthorn) as well as some *Prunus avium* (Wild Cherry) and *Malus sylvestris* (Crab Apple), and a characteristic ground flora including *Anemone nemorosa* (Wood Anemone), *Ajuga reptans* (Bugle), *Hyacinthoides non-scripta* (Bluebell), *Orchis mascula* (Early-purple Orchid) and *Listera ovata* (Common Twayblade). On 25 April, there were many patches of parasitic *Lathraea squamaria* (Toothwort) in flower on Hazel. Violets with hairy leaves turned out to be *Viola odorata* (Sweet Violet) rather than the protected species *V. hirta* (Hairy Violet) that is quite frequent in Limerick limestone grassland. *Viola odorata* had possibly been introduced into the wood a long time ago by the owners of the nearby, now ruined, 'big' house. This species was also under trees at Mullagh Mills near Creeves Cross (13 June, R2.4).

Turloughs, best known in Ireland in Cos Clare and Galway, also occur in Limerick, and we (Julian Reynolds botanized with me at most sites in 2004) visited two on 12 June. Graigues Lough, south-east of Askeaton (R3.4) had shallow open water with *Menyanthes trifoliata* (Bogbean), *Nuphar lutea* (Yellow Water-lily), *Apium inundatum* (Lesser Marshwort), *Sparganium natans* (Least Bur-reed), *Baldellia ranunculoides* (Lesser Water-plantain), etc., and stands of *Schoenoplectus lacustris* (Common Club-rush) and *Carex rostrata* (Bottle Sedge). The surrounding vegetation of damp and limestone grassland was also species-rich, with a few plants of *Thalictrum flavum* (Common Meadow-rue) in one rocky place. We were very pleased to find the little fern *Ophioglossum vulgatum* (Adder's-tongue) growing in grass between Bracken and shrubs at about the highest level water would reach.

The second turlough, south-east of Barrigone (R2.4) near the Ballyclogh woodland, was completely dry by 12 June. At this time of year, *Potentilla anserina* (Silverweed) was the most conspicuous plant, with *Eleocharis palustris* (Common Spike-rush), *Mentha aquatica* (Water Mint), *Ranunculus*

repens (Creeping Buttercup) and *Galium palustre* (Marsh-bedstraw). *Ranunculus trichophyllus* (Thread-leaved Water-crowfoot) grew near the sink-hole. The flora at this turlough was less diverse than at Graigues Lough. *Ophioglossum vulgatum* (Adder's-tongue) leaves were again found, in greater numbers, among *Hydrocotyle vulgaris* (Marsh Pennywort) and *Potentilla anserina* (Silverweed). There were many well-grown shrubs of *Rhamnus cathartica* (Buckthorn) along one side of the turlough, with *Cornus sanguinea* (Dogwood) and *Salix cinerea* (Grey Willow). The adjacent Hazel wood on a rocky slope was beautiful with much *Melica uniflora* (Wood Melick) and fruiting *Ranunculus auricomus* (Goldilocks Buttercup). *Thalictrum flavum* (Common Meadow-rue) was here too, and there was a patch of *Rubus saxatilis* (Stone Bramble) between the turlough and the wood.

Askeaton Castle (R3.5) was last visited in the early 1980s, and access to it had been impossible for many years. *Salvia verbenaca* (Wild Clary), first reported from here in the late 19th century, still survives on a grassy slope beside the castle. There were several flowering spikes on 3 July, but the slope had been cut by 20 July leaving only rosettes of leaves. *Petroselinum crispum* (Garden Parsley), no doubt a relict of ancient cultivation, was also still on the old walls around the castle and on the bridge over the R. Deel. Another ancient introduction growing not far away in a field in Askeaton is *Sambucus ebulus* (Dwarf Elder), while *Verbena officinalis* (Vervain) grows beside Askeaton Friary and *Foeniculum vulgare* (Fennel) is abundant on outcrops between the castle and the friary. *Pastinaca sativa* (Wild Parsnip) was known at Askeaton Castle in the 1890s, but was not refound.

Some other searches for old records were unsuccessful too, e.g. *Asplenium marinum* (Sea Spleenwort) by the Shannon estuary; *Cystopteris fragilis* (Brittle Bladder-fern) at Ferry Bridge; and *Carex strigosa* (Thin-spiked Wood-sedge), *Festuca altissima* (Wood Fescue) and *Milium effusum* (Wood Millet) in woods at Mount Trenchard west of Foynes, although *Hieracium* (Hawkweed) still grew on a wall there. The search (unsuccessful) for *Salix repens* (Creeping Willow) west of Kiltteery Pier (R1.4) on 26 July led to estuary-edge unimproved grassland being examined in detail. It contained many acid grassland species including *Nardus stricta* (Mat-grass), *Festuca ovina* (Sheep's-fescue), *F. rubra* (Red Fescue), *Danthonia decumbens* (Heath-grass), *Molinia caerulea* (Purple Moor-grass), *Calluna vulgaris* (Heather), *Erica cinerea* (Bell Heather), *Carex binervis* (Green-ribbed Sedge), *Pedicularis sylvatica* (Lousewort) and a little bit of *Juncus squarrosus* (Heath

Rush).

Further to the east along the estuary near Barrigone (R2.4), a nice piece of ungrazed saltmarsh was visited on 19 July, with somewhat differing vegetation in the lower and upper parts. In the lower part procumbent stoloniferous *Puccinellia maritima* (Common Saltmarsh-grass) was prominent, with *Parapholis strigosa* (Hard-grass), *Armeria maritima* (Thrift), *Glaux maritima* (Sea-milkwort), *Spergularia media* and *S. maritima* (Greater and Lesser Sea-spurreys), *Plantago maritima* (Sea Plantain), etc. Not very common in Ireland, but common enough in the Shannon estuary between Foynes and Barrigone, *Seriphidium maritimum* (Sea Wormwood) grew nearby, and clumps of *Spartina anglica* (Common Cord-grass) covered the mud flats.

The upper part of the same saltmarsh contained much *Juncus gerardii* (Saltmarsh Rush) and other species there included *J. maritimus* (Sea Rush), *Carex distans* (Distant Sedge), *C. extensa* (Long-bracted Sedge), *C. otrubae* (False Fox-sedge), *Oenanthe lachenalii* (Parsley Water-dropwort), *Samolus valerandi* (Brookweed) and less *Puccinellia maritima* (Common Saltmarsh-grass) than lower down. At one edge of the saltmarsh *Apium graveolens* (Wild Celery) grew by the Ahacronane R., and another side merged into damp grassland with species such as *Festuca arundinacea* (Tall Fescue), *Anagallis tenella* (Bog Pimpernel), *Cirsium dissectum* (Meadow Thistle) and *Senecio aquaticus* (Marsh Ragwort). Beside the Holy Well at Barrigone, washed over by the highest spring tides, short plants of *Parapholis strigosa* (Hard-grass) covered the stony floor of an old quarry.

Several fens seen from the main road between Limerick city and Foynes are particularly noticeable because of the russet-coloured inflorescences of *Cladium mariscus* (Great Fen-sedge). One such area south-east of Pallaskenry (R4.5) was explored on 23 July. Where *C. mariscus* was dominant, there were relatively few accompanying species – scattered *Phragmites australis* (Common Reed), some *Menyanthes trifoliata* (Bogbean), *Galium palustre* (Marsh-bedstraw, verging towards *G. palustre* subsp. *elongatum*) and *Carex elata* (Tufted-sedge). A drainage ditch bordered the fen and near it were *Schoenus nigricans* (Black Bog-rush), *Juncus subnodulosus* (Blunt-flowered Rush) and *Epipactis palustris* (Marsh Helleborine). Fen vegetation on poached ground graded into limestone grassland, and a small lake containing *Chara* (Stoneworts) had much *Littorella uniflora* (Shoreweed) along its margin.

A similarly rich area for plants, explored for the first time on 10 and 11 August, was at the north end of the Kilbreedy Loughs (R4.5), part of the Celtic Park and Gardens that are open to the public. There is a very attractive damp meadow which grades into fen vegetation. The variety of sedges in the fen included *Carex diandra* (Lesser Tussock-sedge), *C. viridula* subsp. *brachyrrhyncha* (Long-stalked Yellow-sedge), *C. pulicaris* (Flea Sedge) and *Eriophorum angustifolium* (Common Cottongrass); and *C. paniculata* (Greater Tussock-sedge) grew in a ditch. *Lysimachia vulgaris* (Yellow Loosestrife) was in full flower and *Parnassia palustris* (Grass-of-Parnassus) was just coming into flower. *Epipactis palustris* (Marsh Helleborine), mostly gone over, was widespread here, and *Ophioglossum vulgatum* (Adder's-tongue) with fertile spikes was found nearer the lake. *Linum bienne* (Pale Flax) was frequent along paths in a more managed area, and a few plants of *Mentha arvensis* (Corn Mint), uncommon in Limerick, were seen at a field edge.

The Limerick Canal (R5.5) was another place I had wanted to revisit, and did so on 2 August. The city end of the canal had been dredged recently, but the canal becomes increasingly well vegetated towards the Shannon, including *Glyceria maxima* (Reed Sweet-grass), *Alisma plantago-aquatica* (Water-plantain) and *Sagittaria sagittifolia* (Arrowhead). Two rare species, *Ranunculus circinatus* (Fan-leaved Water-crowfoot) and *Eleocharis acicularis* (Needle Spike-rush), formerly recorded here were not refound. Instead, there was a new Limerick record. From where the railway bridge crosses the canal to the Shannon, most of the water surface was carpeted with alien *Azolla filiculoides* (Water Fern). Swans were trying to swim through it and moorhens were walking over it! Some of the fern was collected and kept in a dish on the kitchen windowsill for three weeks. When examined microscopically, many megasporocarps and microsporocarps were seen. *A. filiculoides* is firmly established in the Limerick Canal as it is in some other water bodies in Ireland.

To the east of the Limerick Canal, on the inland side of the path to the university, the lake at Reboge (R6.5) has species-rich emergent vegetation and bordering marshland, with *Sium latifolium* (Greater Water-parsnip), *Rumex hydrolapathum* (Water Dock), *Butomus umbellatus* (Flowering-rush), *Oenanthe fistulosa* (Tubular Water-dropwort), *Bidens cernua* (Nodding Bur-marigold), etc. Of particular interest were the occasional plants of *Persicaria mitis* (Tasteless Water-pepper) near the lake. Dense patches of this species were also growing beside dense patches of *P. hydropiper* (Water-pepper) in a shallow ditch in the field between the lake and the Groody R. (R6.5). *P. mitis*

has been known in the Limerick city area for about a hundred years, and is otherwise much more common in the north of Ireland. Suspecting *P. mitis*, I chewed its leaves before checking those of *P. hydropiper*, and they were *not* peppery! Compared to *P. hydropiper*, the plants of *P. mitis* had paler green leaves (not reddish), erect pale pink inflorescences (not drooping and greenish-red) and there were fewer glands on the perianth. Perhaps this species should be looked for in suitable ground elsewhere upriver along the Shannon.

The last organized expedition of the year, ably led by Pascal Sweeney, was to the Limerick end of the Galty Mountains on 21 August. I had a list of desiderata, mainly plants found by A.W. Stelfox some 60 years ago. We spent the morning exploring along the Pigeonrock R. (R8.2) and found the first two plants on my list, *Hymenophyllum wilsonii* (Wilson's Filmy-fern) and *Huperzia selago* (Fir Clubmoss) on rocky bluffs above the river. In the afternoon, we followed a track on the west side of the Blackrock R., where the inflorescences of *Festuca vivipara* (Viviparous Sheep's-fescue) stood out in the grassland. Pascal led us up and along a shoulder of Carrignabinnia; no doubt botanizing eases an ascent!

I had thought that all I needed to do was to reach the top of Carrignabinnia (R8.2) and then all the remaining species would be waiting there. Sure, we had seen abundant *Festuca vivipara* (Viviparous Sheep's-fescue) and *Empetrum nigrum* (Crowberry) on the way up and there were scattered plants of *Carex bigelowii* (Stiff Sedge) on the peat, *but* I should have read Stelfox's description more carefully – the rocks and other desired plants were *below* the ridge between Carrignabinnia and Lyracappul, and below that there was a steep 600 m drop. Pascal edged his way along the cliffs and found *Huperzia selago* (Fir Clubmoss) again. One of the most wanted plants was *Sedum rosea* (Roseroot) and, to my amazement, there were two little pieces, barely wilted, lying at our feet on the peaty mountain top – they must have been blown off nearby inaccessible rocks! After making a quick list of plants on the boggy ridge between the two summits, we had to retreat as it was getting late and the clouds were moving in. A remarkable feature was the long stretches of a still intact famine wall at that height.

The day in the Galtys was definitely a highlight and another visit is needed to find the remaining species on my list, but there was one final and accidental treat. On 18 September, I was walking with my father in Curragh Chase (R4.4) near the tree-covered rocky knoll topped with a memorial cross. I was telling

him about a plant found there over a hundred years earlier that I had never been able to refind. As I finished talking, I glanced to my side and saw gone-over plants of *Monotropa hypopitys* (Yellow Bird's-nest), the very plant, at the base of a large Beech tree. Maybe I had been sensitized by seeing that species for the first time in Fermanagh only a couple of weeks before on the BSBI weekend!

Alien plants were not entirely neglected. An old record for *Narcissus* × *medioluteus* (Primrose-peerless) on Morena Point (R3.5) was confirmed in April. Elsewhere, *Teucrium chamaedrys* (Wall Germander) was still to be found on the roadside bank at the east end of Ballycarney Bridge, north of Enniscorthy in Co. Wexford (11 July, H12, S9.4). *Conyza bilbaoana* (Hispid Fleabane) had spread from near the river in New Ross to St Mary's Church (15 November, S7.2) where it was well established on boundary walls and high up on the ruined part of the church. Like the wind-borne seeds of *C. bilbaoana*, those of *Lactuca serriola* (Prickly Lettuce) are continuing to be dispersed in the Dublin area. There were thousands of plants, mostly gone over, by the M50 motorway between the turn-offs to Ballyboden and Tallaght (August and September, O1.2), by the N3 east of the turn-off to Clonee (28 August, O0.4) and even several plants in an unoccupied weedy enclosure at Dublin Zoo (24 August, O1.3).

NEW RECORDS FOR CO. MONAGHAN (V.C. H32)

A. Hill

2 Woodgrange, Holywood, Co. Down, BT18 0PO

New vice-county records since the publication of the *New atlas of the British and Irish flora* (Preston, Pearman and Dines, 2002):

Allium vineale (Wild Onion). Mokeeran, south of Carrickmacross. 12 June 2004.

Avena strigosa (Bristle Oat). Drumlane, south-east of Ballybay. 11 September 2002.

Coronopus didymus (Lesser Swine-cress). Near Corduff, north-west of Carrickmacross. 15 September 2004.

Cotoneaster salicifolius (Willow-leaved Cotoneaster). Old railway station, Monaghan. 3 January 2002.

Hordeum vulgare (Six-rowed Barley). Drumlane, south-east of Ballybay. 11 September 2002.

Hypericum × *inodorum* (*H. androsaemum* × *H. hircinum*) (Tall Tutsan). Dartry, south-west of Rockcorry. 8 May 2003.

Lemna minuta (Least Duckweed). Shankill Lough, west of Smithborough. 5 April 2003.

Phleum bertolonii (Smaller Cat's-tail). Near Corvaghan townland west of Clones. 23 July 2004.

Rhamnus cathartica (Buckthorn). Killygally, south of Carrickmacross. 12 June 2004.

Salix reichardtii (*S. caprea* × *S. cinerea*). Killygally, south of Carrickmacross. 12 June 2004.

Saxifraga tridactylites (Rue-leaved Saxifrage). Mokeeran, south of Carrickmacross. 12 June 2004.

Stellaria palustris (Marsh Stichwort). Rahans Lake, south of Carrickmacross. 12 June 2004.

The following are second, third and fourth vice-county records since the fieldwork for the *Atlas*:

Agrimonia procera (Fragrant Agrimony). Second v.c. record.

Carex acuta (Slender Tufted-sedge). Second v.c. record.

Carex divulsa subsp. *divulsa* (Grey Sedge). Second v.c. record.

Carex otrubae (False Fox-sedge). Second v.c. record.

Carex pendula (Pendulous Sedge). Third v.c. record.

Elantine hexandra (Six-stamened Waterwort). Second v.c. record.

Elymus caninus (Bearded Couch). Third v.c. record.

Empetrum nigrum (Crowberry). Second v.c. record.

Hypericum elodes (Marsh St John's-wort). Third v.c. record.

Hypericum maculatum (Imperforate St John's-wort). Fourth v.c. record.

Mimulus guttatus (Monkeyflower). Third v.c. record.

Myosotis sylvatica (Wood Forget-me-not). Second v.c. record.

Ophioglossum vulgatum (Adder's-tongue). Second v.c. record.

Oxalis stricta (Upright Yellow-sorrel). Second v.c. record.

Parietaria judaica (Pellitory-of-the-wall). Second v.c. record.

Pinus contorta (Lodgepole Pine). Second v.c. record.

Pilosella aurantiaca (Fox-and-cubs). Second v.c. record.

Quercus cerris (Turkey Oak). Third v.c. record.
Rhynchospora alba (White Beak-sedge). Third v.c. record.
Saxifraga × *urbium* (*S. umbrosa* × *S. spathularis*) (Londonpride). Third v.c. record.
Triticum aestivum (Bread Wheat). Second v.c. record.
Utricularia australis (Bladderwort). Second v.c. record.
Vaccinium oxycoccus (Cranberry). Second v.c. record.

ACKNOWLEDGEMENTS

Many thanks to all the botanists who have contributed to the records for Co. Monaghan, in particular Ian McNeill.

REFERENCE

Preston, C.D., Pearman, D.A. and Dines, T.D. (2002). *New atlas of the British and Irish flora*. Oxford University Press, Oxford.

REPORT ON THE BSBI FIELD MEETING BASED NEAR CARRICKMACROSS, CO. MONAGHAN (V.C. H32), 12 JUNE 2004

A. Hill

2 Woodgrange, Holywood, Co. Down, BT18 0PQ

Nine members met in Carrickmacross for a field meeting in grid reference square N8.9 which was concentrated on various habitats including roadsides, fields with limestone outcrops, a disused limestone quarry and two lakes. The roadsides and limestone outcrops were in the townland of Mokeeran, the quarry at Killygally and the lakes were Rahans and Descart Loughs.

With fine weather a full day's botanising was possible and five new v.c. records were noted. These were: *Rhamnus cathartica* (Buckthorn), *Allium vineale* (Wild Onion), *Salix caprea* × *cinerea* (= *S. × reichardtii*), *Saxifraga tridactylites* (Rue-leaved Saxifrage) and *Stellaria palustris* (Marsh Stitchwort).

Two species were recorded as second v.c. records; these were *Clinopodium acinos* (Basil Thyme) and *Ophioglossum vulgatum* (Adder's tongue), both in the disused quarry with the Adder's tongue in some profusion in a damp area.

In addition we added 22 new species to the total for the square giving an impressive total of 502 species, subspecies and hybrids.

I would like to thank all the participants, especially Ian McNeill and Graham Day for their identification skills and Dr Julia Nunn for keeping the record cards.

MINUTES OF THE ANNUAL GENERAL MEETING OF THE BSBI IRISH REGION 2004 HELD IN DERRYGONNELLY FIELD STUDIES CENTRE, CO. FERMANAGH ON 28 AUGUST 2004 (Unapproved)

ATTENDANCE

Twenty three members of the Irish Region were present, Dr Caroline Mhic Daeid in the Chair. Members were pleased to welcome the BSBI President, Mr Richard Pryce, to the meeting.

APOLOGIES

There were no apologies.

MINUTES OF THE 2003 AGM HELD AT GLASNEVIN ON 4 OCTOBER 2003 were read, approved and signed by the Chair.

MATTERS ARISING FROM THE MINUTES

There were no matters arising.

CHAIR'S BUSINESS

Caroline Mhic Daeid reported on a number of topics discussed by Committee since the last AGM.

BSBI and Irish records

There appears to be not as much in the way of Irish botanical records at Monks Wood as previously thought. If RoI recorders write to Chris Preston he will supply photocopies of data held centrally by BSBI. All electronic data are contained in the verification lists already sent out to recorders.

Declan Doogue – honorary membership

The Chair had attended the BSBI 2004 AGM at Kew where Declan Doogue had been made an honorary member.

REPORT FROM THE SECRETARY, COMMITTEE FOR IRELAND

This is appended to these minutes.

REPORT OF THE FIELD MEETINGS SECRETARY

Mr Graham Day reported that eight meetings had taken place and he thanked all the organisers and leaders for their work, and all the members who had attended the meetings.

REPORT FROM REPRESENTATIVES ON THE BSBI RECORDS COMMITTEE

Alan Hill (Northern Ireland representative) and Caroline Mhic Daeid (Republic of Ireland representative) reported on a number of items including: *Guidelines for vice-county recorders*; these should be circulated to all Irish Recorders.

Heritage Council's October 2003 *Policy Paper* on a Biological Records Centre for the Republic of Ireland: Caroline wrote to Mr Martin Cullen, the minister responsible, in June 2004, setting out the concerns of Irish BSBI members, namely that the abolition of An Foras Forbatha some years ago had led to the loss or inaccessibility of much important information, and that any new centre should not again be vulnerable to any political vicissitude that might befall its host institution. Ideally, BSBI preferred to see a new centre set up on a statutory basis, independent of other bodies and with its own separate budget and personnel. The Minister had replied that he welcomed the Heritage Council's initiative and he awaited more detailed proposals from them. Caroline reported that proposals had been made that the centre be set up under the auspices of Waterford Institute of Higher Education. While the HC's proposals were under discussion, little progress can be made on BSBI's own requirements for botanical records.

ELECTION OF NEW COMMITTEE MEMBERS

The retirement of Sharon Parr and Fiona Devery left two vacancies on Committee. Mr Michael Archer and Mr Paul Green were proposed and seconded and elected unopposed.

REPORTS FROM VICE-COUNTY RECORDERS

Verbal reports were received from Caroline Mhic Daeid (H1), Sylvia Reynolds (H8), Alan Hill (H32), Graham Day (H38), Gerry Sharkey (H27) and Don Cotton (H29).

LAUNCH OF *CO. DOWN RARE PLANTS REGISTER*

The meeting was followed by the launch of this new register prepared by Graham Day and Paul Hackney, and edited by Julia Nunn, and produced under the auspices of CEDaR at the Ulster Museum, Belfast.

Paul Hackney, Hon. Secretary, BSBI CFI, 2 November 2004

BSBI (CFI) APPENDIX TO MINUTES OF AGM 2004: SECRETARY'S REPORT 2003-4

Committee for Ireland, BSBI as elected at AGM 2003 for the year 2003-2004 (with year of election)

Dr E.C. Mhic Daeid	2003	Chair and RoI representative on Records Committee
Mr Paul Hackney	2002	Secretary and representative on BSBI Council
Mr G. Sharkey	2003	
Mr W. Semple	2003	
Mrs F. Devery	2001	
Dr S.L. Parr	2001	

Co-opted

Dr B.S. Rushton	Hon. Editor BSBI <i>Irish Botanical News</i>
Mr G.V. Day	Field Meetings Secretary
Mr M. Wright	Environment and Heritage Service (NI) representative
Dr M.B. Wyse Jackson	National Parks and Wildlife Service, Republic of Ireland
Mr A.G. Hill	N. Ireland representative on Records Committee

CFI has met formally three times since the last AGM (October 2003), and once informally and unminuted.

The principal items of business discussed or transacted were:

Proposed *Epipactis palustris* survey: deferred for the present.

Organisation of Members' Weekend at Derrygonnelly. Funding for this has been obtained from BSBI itself, National Parks and Wildlife (Dublin) and the Environment and Heritage Service (Belfast).

BSBI Web Site: there was insufficient use being made of this. In particular, the Irish Region has submitted no material for inclusion.

Republic of Ireland plant records and proposals for new Records Centre
County Recorders can write to Michael Wyse Jackson at NPWS for access to some data from surveys which have not been circulated to BSBI recorders. The Committee felt that the details of the proposed new records centre for the Republic were unsatisfactory. The Committee had discussed various other options for handling Irish plant records within BSBI itself.

Guidance notes for new Vice-county Recorders

A set of *Guidance notes* produced for GB Vice-county Recorders should be made available to Irish Recorders.

Declan Doogue – Honorary Membership

Declan was made an honorary member at the BSBI's AGM in Kew in May 2004.

Paul Hackney, Hon. Secretary and Representative on BSBI Council
24 August 2004

PLANT RECORDS

Remember, interesting plant records can be submitted for inclusion in the Plant Records section of the *Irish Naturalists' Journal*. Contact Sylvia Reynolds, 115 Weirview Drive, Stillorgan, Co. Dublin for details.