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PAT M'KEE. *Eryngium maritimum*

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COMMITTEE FOR IRELAND, 2000-2001
BOTANICAL SOCIETY OF THE BRITISH ISLES

In line with the Rules, three new committee members were elected at the Annual General Meeting held in University College Dublin on 25 November 2000. The Committee is now:

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The cover illustration shows *Eryngium maritimum* (Sea-holly) drawn by Mrs Pat McKee.

All species and common names in *Irish Botanical News* follow those in Stace, C.A. (1991). *New Flora of the British Isles*. Cambridge University Press, Cambridge.

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EDITORIAL

In this issue we have to say goodbye to Toby Hodd. Toby first came to my attention a few years ago when he submitted an article to *Irish Botanical News* and since then he could always be relied upon to send in copy for publication. I always felt that Toby was a man in the same mould as Robert Lloyd Praeger himself – a careful fieldworker with an eye for detail and a love of the natural world around him. It came as a complete surprise when I received a letter from him last summer (as it turned out just before his death) explaining his illness and the effects that it was having on his life. I for one, along with many others I'm sure, will miss his contribution to Irish botany; my personal condolences go out to his family. An obituary appears later in this volume.

If you notice more errors than usual in this edition of *Irish Botanical News*, blame it on a computer virus. Everything had been edited and brought into house style by the middle of January and I was awaiting a small number of late articles. Whilst in the process of transferring a file to another user, I realised I had a computer virus – caught, I think, from our Human Resources Department! It had somehow got through my virus shield, but a few minutes with a leading piece of virus software eliminated it from the infected files. At the same time, I located the back-up files and proceeded to clean those as well – so far so good. However, what the software had done was not only clean the files but it had also wiped them! So my beautiful handiwork on *News* was lost and I had to start all over again scanning in articles, editing, checking species names, bringing the material into the house style, etc. Needless-to-say I was not pleased. The moral is do not clean back-up copies of your files until you are sure that the originals have been cleaned successfully and are still in this world! (And to make matters worse, once I had the final copy ready to send off I found that my printer in the south of England had gone bust. All part of life's rich pattern ...)

Have a good field season,

Brian S. Rushton, *Irish Botanical News*

INTERDISCIPLINARY STUDIES OF PAST IRISH LANDSCAPES

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Thirty years ago, two palaeobotanists stood on the lowland raised bog at Fallahogy in Co. Londonderry and considered if tephra or volcanic glass, produced by Icelandic eruptions over the last 10,000 years, had travelled the 1000 km south to be incorporated into Irish peats. In Iceland, research was being performed by the great volcanologist Thorarinsson to determine the unique geochemistry of the post-glacial Icelandic eruptions and to form a chronological framework of eruption dates. This work was to lay the foundation for the palaeoenvironmental science of tephrochronology.

When compared to the 10,000 year period since the end of the last glaciation, a volcanic eruption spanning days or months is almost instantaneous; therefore if a thin layer of chemically-identical tephra is found in peats or lake deposits over a wide area, the ash layer marks a time-plane in the deposit. The date of the eruption is then determined by radiocarbon dating the peat in which the layer of tephra is present. This is the means whereby the science of tephrochronology works.

New impetus was given to tephrochronological studies just over a decade ago when, in the late 1980s, scientists from the Department of Geography in the University of Edinburgh discovered that peats in Caithness contained microscopic layers of volcanic glass. Meticulous and exacting analysis of individual minute glass shards showed that the first tephra layer to be detected in Scottish peat came from a prehistoric eruption of the Icelandic volcano Hekla. In this layer, the tephra shards were all microscopic and in abundance, but unlike the tephra layers in Iceland, those in the Scottish peats were restricted to a horizontal layer too thin to be seen with the naked eye. The layer could only be seen using a microscope.

At the same time as the first findings of Icelandic tephra in Scottish peats were being published, scientists at Queen's University, Belfast were investigating growth patterns in the rings of fossil Irish bog oaks. In the Belfast laboratory were samples of ancient oaks that had grown in Ireland over the last 7,000 years. Many bog oaks had been exposed when river flood plains were drained and also during excavations for the major road improvements throughout N. Ireland during the 1970s and 1980s. The south Lough Neagh flood plain and the drained areas of Garry Bog in Co. Antrim were rich sources of fossil bog

oaks for the dendrochronologists at the Queen's Palaeoecology Centre. The oaks had been collected over a period of some 20 years and formed the basis of much palaeoenvironmental research, including the provision of samples for high-precision radiocarbon dating and for tracing past climate change through varying thicknesses of the trees' annual rings.

At the Centre were many samples of bog oaks that had grown all at the same time at sites throughout the country. These ancient timbers provided the raw material for studies of past climate change through the variation in ring width observed within each fossil oak sample. Careful scrutiny of the ring patterns demonstrated that, from time-to-time throughout the country, trees had grown under adverse conditions, resulting in zones of extremely narrow annual rings. Similar work on the American bristle-cone pines showed that these also had zones of narrow rings and that the dates of the narrow ring zones in the American conifer species and the Irish bog oaks were virtually identical. That such events recorded in ancient trees growing thousands of kms apart should be dated almost to the same year hinted at swift climate change that may have affected the entire northern hemisphere. In addition, work on the ice newly cored from the Greenland Ice Cap had provided evidence for occasional massive volcanism over the last 10,000 years, through traces of sulphurous acids left in the ice layers. Like the tree-rings, the layers in the ice from the Greenland Ice Cap can be counted and dated but, it must be said, with less precision than the tree-rings in the fossilised timbers.

Nevertheless, the dates of the narrow ring events recorded in the ancient trees were close to the dates of the volcanic acid spikes in the ice, thus providing circumstantial evidence for a link. Had the trees responded to climatic deterioration after ancient volcanism by barely growing and recording this period of stress as occasional strips of very narrow annual rings? The periods of poor growth in the bog oaks were precisely dendrochronologically dated but there was no direct method whereby the narrow ring events could be irrefutably linked to deteriorating climate following volcanism. To test this hypothesis, links to ancient volcanism were needed. If volcanic glass, now known to be present in Scottish peats, could also be found in Irish peats and these then peats precisely radiocarbon dated, the dates for ancient Icelandic volcanism derived from Irish peats could be compared with the dates of the extremely narrow ring events in the Irish bog oaks. If any of the dates matched then this might provide further evidence for a volcanic cause for the narrow rings.

The task of finding and analysing the peats fell to the Palaeoecology Centre's pollen analysts. Sites to be searched for tephra were chosen and the first investigated was Fallahogy – the same bog on which the conversation regarding a volcanic component in Irish peats had taken place. At Fallahogy and nearby sites such as Sluggan Bog in Co. Antrim, peats were often over 10 m deep. These deep bogs were cored vertically and, in the laboratory, each core was further sampled at 5 cm intervals. Microscope slides were made from the ash that remained after burning these small samples. Microscopic analysis of the cleaned ash samples showed that, from time-to-time, some samples contained the small, bubbly glass shards which are the product of Icelandic volcanoes. Many samples had few shards but occasionally some were seen that contained huge quantities of minute glass particles. For example, three tephra layers from peats that accumulated between approximately 6,000 and 4,000 years ago were especially rich in volcanic glass. It must be emphasised, however, that there is no direct link between the amount of glass which lands on an Irish bog and any possible detrimental effect on past Irish climate.

The peats that contained the largest amounts of volcanic glass were radiocarbon dated while the glass chemistry of the shards was used to determine the source of the eruption. When the radiocarbon dates of the peats containing the tephra were compared with the dates of the extremely narrow tree-ring events, occasionally a match would be found. For example, the narrow ring event in 2,345 BC overlaps with the date of the eruption of the volcano Hekla at about 2,340 BC. This match does not provide direct evidence that bog oaks were affected by climatic downturn following a volcanic eruption. Indeed, such circumstantial evidence must always be treated with caution, especially as there are dated Icelandic eruptions that do not correspond with the dates of extremely narrow ring events in the oaks. Further research on the links between volcanism and climate change is being carried out in laboratories throughout the world. Many volcanologists argue that it is the eruptions of the low latitudes that most affect climate and not those from high latitude centres such as Iceland. At scientific conferences, interdisciplinary past climate studies are often the subjects of fierce debate, especially when linked to the history of global warming.

Tephrochronological studies using microscopic tephra have been pioneered in Ireland and techniques developed by local scientists are now used in laboratories throughout the world. At national level, pollen analytical studies of Irish peats containing the products of the prehistoric eruptions of Hekla and other volcanoes such as Oraefajokull have contributed to a deepening

understanding of the nature of past vegetation systems over the last 10,000 years.

Tephra-linked pollen analytical studies of peats which accumulated about 4,000 years ago have contributed to the body of evidence for the virtual extinction in the lowlands of the native Irish population of *Pinus sylvestris* (Scots Pine). These studies have been twinned with similar research on the vegetational history of the southern Norwegian uplands. Studies on peats which accumulated over the last two millennia are detailing the complex vegetational history of the historic period in Ireland and shedding new light on deforestation and the development of Irish agriculture. These new findings have contributed to high-resolution studies of the landscapes of the early monastic settlements and to tracing the effects of the Black Death in the 14th century. New work with colleagues in the southern hemisphere, which includes the use of well-dated microscopic tephra in lake sediments in New Zealand to form a time-frame for past environmental studies, are underway.

The following references may be found useful for those wanting more information. They are suitable for the non-specialist.

Hall, V.A. (1998). Conservation and landscape management: a tephra-dated palynological investigation, in Boyd, W.E. and Hall, V.A., eds, *New frontiers and applications in palynology - IX IPC. Review of Palaeobotany and Palynology* **103**: 59-68.

Holmes, J., Hall, V.A. and Wilson, P. (1999). Volcanoes and peat bogs. *Geology Today* **15**: 60-63.

IRISH COLLECTIONS IN THE LINNEAN SOCIETY'S SMITH HERBARIUM

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INTRODUCTION

A project to document the Linnean Society's J.E. Smith herbarium on computer has recently been completed at Liverpool Museum, with the aid of a grant from the Linnean Society of London. It has revealed a wealth of information about the composition of the herbarium, whose previous catalogue

by Spencer Savage was not fully indexed. The aim of the project is to make the information available on the world-wide web, so that researchers interested in particular records can download detailed information and images of the specimens themselves. This phase of the project cannot be completed until the collections have been fully cleaned and conserved.

COLLECTORS AND DONORS

The following collectors are known to be represented in the J.E. Smith herbarium: Robert Brown, James L. and Thomas Drummond, Ellen Hutchins, James T. and John Mackay, Robert Scott, Dr Whitley Stokes, Dr John Templeton and Walter Wade. In most cases specimens were sent directly to Sir James Edward Smith, but in a few instances they came to him via an intermediary. The great majority of collectors were resident in Ireland; a few, such as Robert Brown, were there only for a limited period. One of the aims of the documentation project has been to record the 'collection history', and we hope that further information on how specimens came to be in the Smith Herbarium will be added to the database in the future. Almost half the Irish specimens have no recorded collector's name, but in most cases the identity of the collector can be inferred either from donor information or from the specimen's geographical location. Collection donors, other than the actual collector, whose names are recorded are as follows (original collector's name in brackets): James Dickson, Rev. Thomas Hincks (J.L. Drummond), Sir William J. Hooker (liverworts from E. Hutchins), Aylmer Bourke Lambert, the Mackay brothers (Walter Wade), "Mr Sabine" (assumed to be Sir Edward Sabine, but could have been Joseph Sabine), James Sowerby (T. Drummond), Dawson Turner (one moss from E. Hutchins, R. Scott, Dr W. Stokes) and John Underwood.

LOCALITY INFORMATION

The J.E. Smith collections comprise 43 sheets localised only as 'Ireland' and a further 55 that have more or less detailed locality information recorded on the sheet. Of these, the following vice-counties are represented:

H1, South Kerry	H21, Co. Dublin
H2, North Kerry	H26, East Mayo
H3, West Cork	H27, West Mayo
H7, South Tipperary	H28, Co. Sligo
H9, Co. Clare	H38, Co. Down
H20, Co. Wicklow	H39, Co. Antrim

In many cases, detailed localities and even habitat notes are provided, but in others only a knowledge of the collector's itineraries would enable the record

to be placed accurately as the locality information is rather vague. In some cases this may be because the specimen was sourced from Ireland but grown in an English nursery or garden (for example, a specimen of *Daboecia cantabrica* (St Dabeoc's Heath) from "Ireland" and *Arbutus unedo* (Strawberry-tree) from "West Ireland", both supplied by the London nurseryman James Dickson).

DATES OF COLLECTION AND ACQUISITION

In most instances no collection date is recorded, though Sir James Smith was in the habit of recording the date when he acquired the specimen; this indicates that the specimen is older than a certain date. The first two Irish specimens acquired by Smith were both sent to him in 1790 from Co. Mayo by Aylmer Bourke Lambert, vice-president of the Linnean Society. The oldest recorded actual collection date is 1799 for a specimen of *Puccinellia maritima* (Common Saltmarsh-grass) collected "at the north wall, near Dublin" and supplied to Smith by John Underwood. It is not clear whether this refers to a city wall or a harbour wall.

Other dated specimens include a specimen of *Saxifraga hirsuta* (Kidney Saxifrage) from the Gap of Dunloe, Killarney collected in 1804 by James Townsend Mackay and several specimens collected the following year from Co. Kerry by the same botanist. Also of interest is a specimen of *Arenaria ciliata* subsp. *hibernica* (Mossy Sandwort) from Ben Bulbin, Co. Sligo that was collected by Mackay in September 1806. The last material to be received from Ireland was a set of liverworts that was sent to Smith in 1820 by Sir William Hooker, but their collection localities and dates are not recorded.

CONCLUSION

Though this is only a small fragment of Irish herbarium material from the Georgian period, it is of some historic interest in view of the relationships it reveals between resident Irish botanists and a Norwich-based botanical author. The collectors were, in the main, professional men (and one woman, Ellen Hutchins) who appear to have been particularly concerned with the rare plants of Ireland and whose publications would have been a source of information for Smith's own books such as Sowerby and Smith's *English Botany* (1792-1814) and Smith's *Flora Britannica* (1800-1804). A closer scrutiny of papers such as James T. Mackay's "A [systematic] catalogue of [rare] plants found in Ireland", published in 1825, [1806 in the *Transactions of the Royal Irish Academy*] would no doubt reveal further information about some of the species represented in the Smith Herbarium. This note is intended merely to draw attention to the fact that information is now more readily accessible through

the computerised database, and to invite Irish botanists to make use of the material for their own research.

Further information on the Smith Herbarium documentation project can be found at: www.linnean.org.

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LEPIDIUM LATIFOLIUM L. (DITTANDER) IN THE CORK FLORA

T. O'Mahony

6 Glenthorn Way, Dublin Hill, Cork City

INTRODUCTION

The Crucifer, *Lepidium latifolium* L. (Dittander) is a tall, imposing species, its stems with a removable, waxy, milky-white bloom (i.e. pruinose); the oblong-elliptic leaves are coriaceous and Horseradish-like, while the long-ranging stoloniferous rhizomes enable the plant to form large clonal populations over time. *L. latifolium* is a native species over most of Europe, and naturalized in other parts of the world, such as North America and Australasia, in which latter regions it is often a serious weed.

As an indigenous species in Britain – mainly East Anglia, the Severn Estuary and north east England (Rich, 1991), *L. latifolium* is confined to coastal brackish habitats, particularly creek sides, ditches and marshland in the upper reaches of estuaries, occurring less frequently on seawalls, in salt marshes and on damp sand (Rumsey, 1994). Nowadays, it is also a widespread and increasingly frequent and persistent weed of *inland* waste sites in Britain, especially in gravel-pits, by canals and on railway banks. However, some inland British populations are relicts of former cultivation, when *L. latifolium* was in demand both for its culinary and medicinal properties. In this regard, Sturt (1991) and Palmer (1994) have recently drawn attention to the occurrence of *L. latifolium* populations in the vicinity of old hospital sites,

where the buildings themselves are now in ruins or have disappeared, while the Dittander populations are still thriving.

L. LATIFOLIUM IN THE IRISH FLORA

I have recently reviewed the present status of *L. latifolium* in Ireland (O'Mahony, 2000), which indicates that the species is now critically rare nationally and thus deserving of legal protection as an endangered species, the only known extant sites being apparently confined to Co. Cork. Indeed, Co. Cork has always been the Irish headquarters for *L. latifolium*, with records of established populations in all three vice-counties (H3-H5) dating from 1750 right up to the present day.

This current paper provides historical data for five Co. Cork sites (at least one of which is now extinct), together with detailed notes for the extant populations, which occupy a single locality each in West Cork, Mid Cork and East Cork. All of the Irish populations of *L. latifolium* are garden-relicts, while a relatively recent report of well-established *adventive* weed populations of this species in the Dublin area (Wyse Jackson and Sheehy Skeffington, 1984) is erroneous. [Note added in web-version: *L. latifolium* was erroneously omitted from the *Flora of County Dublin* (1998) which led the author to think that the *Flora of Inner Dublin* (1984) records were wrong; see amendment in *Irish Naturalists' Journal* **26**(11): 432.]

THE CORK RECORDS FOR *L. LATIFOLIUM*

West Cork (H3, W/64.49). "Near the same locality [i.e. the 'Old Fort', opposite Kinsale Town] grows *Lepidium latifolium* by the water..." – Rev. T. Allin (Allin, 1873).

However, Allin (1883) subsequently credited R.L. Allman with the original (but undated) discovery of *L. latifolium* at this site. The 'Old Fort' refers to James Fort, which lies close to the small, sandy beach at Jarley's Cove, Castlepark. Jarley's Cove was visited in May 1976 (O'Mahony and Scannell, 1977) and *L. latifolium* was seen to be well established in sand at the upper, western end of the beach, while it also occurred on the adjacent, shaley, coastal rock outcrops and on their low, backing, boulder-clay cliffs. This population covers a linear strip of ground, for a distance of c. 85 m. A subsequent visit to this site in 1984 found the situation exactly the same. Two very brief visits in April and December 2000, showed this large clonal population to be flourishing, and a small, new population had established itself at the eastern extremity of the beach, beside the pathway which leads to James Fort. This is the only present-known West Cork site for Dittander.

Mid Cork (H4, W/80.64). Spike Island, near Cobh, Cork Harbour – J. Drummond (Power, 1845).

Some doubt must attach to this record, as it is not corroborated by Drummond himself, whose own List-entry reads: “Corkabeg, near Cobh”, (Drummond, 1818: 221). Indeed, Drummond’s terse entry is more confusing than enlightening, as it is *Spike Island* which lies close to Cobh (c. 1.5 km distant) whereas Corkbeg Islet adjoins Whitegate Village across the Harbour, some 2.5-3 km to the south east of Cobh! Interestingly, a slight adjustment to Drummond’s wording would accommodate *both* sites, i.e. ‘Corkbeg, and Spike Island near Cobh’. In any event, I hope to undertake a botanical survey of Spike Island in 2001 and, in the process, to check out this putative Mid Cork site for Dittander. Two other nationally rare plant species have been recorded from Spike Island in the past, namely *Ranunculus parviflorus* (Small-flowered Buttercup) and *Chenopodium rubrum* (Red Goosefoot).

(Note: This station was placed in East Cork by Praeger (1901), but, as Spike Island lies to the *west* of the line of deep water within Cork Harbour – the H4/H5 boundary line as redefined by Webb (1980) – it is, in fact, in Mid Cork.)

Mid Cork (H4, W/64.49). World’s-end, Kinsale (Allin, 1883). Kinsale, 1892 – R.A. Phillips (Praeger, 1901).

Phillips’ record probably refers to Allin’s site which, as far as I can ascertain, is now occupied by the Trident Hotel, and thus destroyed. Nevertheless, other Mid Cork Kinsale sites for *L. latifolium* may well have existed in the past, as both Prof. E. Murphy (in Moore and More, 1866) and Phillips (1894) describe this species as “abundant” and “plentiful” respectively, near Kinsale, though I am not aware of any post-1900 H4 records for *L. latifolium* from the Kinsale area.

(The World’s-end site shares the same 1-km square with the Jarley’s Cove population of *L. latifolium*, both being separated by the River Bandon estuary, which demarcates the H3/H4 boundary at Kinsale.)

Mid Cork (H4, W/79.63). Lough More Strand, between Ringaskiddy and Lough Beg Inlet, Cork Harbour – July/September, 1972, T. O’Mahony. The small beach here is backed by a consolidated, calcareous, sand/gravel mound (the site of a prehistoric kitchen-midden), the mound supporting a heterogeneous flora – a mix of obligate maritime species, cohabiting with naturalized garden escapes and localized native species which like a porous, calcareous, gravelly habitat.

Maritime species include: *Glaucium flavum* (Yellow Horned-poppy), *Atriplex laciniata* (Frosted Orache), *Honckenya peploides* (Sea Sandwort), *Crithmum maritimum* (Rock Samphire) and *Silene uniflora* (Sea Campion), while species associated with calcareous, porous, gravelly soils include: *Dipsacus fullonum* (Wild Teasel), *Verbascum thapsus* (Great Mullein), *Linum bienne* (Pale Flax), *Anthyllis vulneraria* (Kidney Vetch), *Sedum acre* (Biting Stonecrop), *Vicia hirsuta* (Hairy Tare) and naturalized *Crepis vesicaria* (Beaked Hawk's-beard).

Of naturalized garden-escapes here, the following were all formerly cultivated for their culinary/medicinal properties: *Artemisia vulgaris* (Mugwort), *Foeniculum vulgare* (Fennel), *Smyrniolus olusatrum* (Alexanders) and *Lepidium latifolium*.

At the time of the 1972 find, a few plants of *L. latifolium* were seen on a hedgebank near the beach (probably in the immediate area of a former cottage-garden), while two, small, discrete populations (some 60 m apart) were established on the gravel-mound backing the beach. This site was revisited in May 1994 (O'Mahony, 1995) and the largest population was noted to cover an area of c. 18 m x 7 m, while on 31 December 2000 it measured c. 22 m x 7 m, and the smaller population measured c. 6 m x 6 m. The incremental growth of these two clonal stands of Dittander since 1972, seems very slow indeed, bearing in mind that personal observation of the plant in cultivation shows that the stoloniferous rhizomes run rampant and can cover many square metres of ground in a single year! This suggests that rhizome-spread is severely curtailed in its maritime site at Lough More, as seems to be the case also with regard to the Jarley's Cove population of Dittander.

East Cork (H5, W/82.63). "It grows in great plenty at Corkbeg [Whitegate] on the east side of the Harbour of Cork, and is there called 'Quick-Delivery'..." (Smith, 1750: 353).

Some 70 years later, Drummond (1818: 221) referred, without comment, to the presence of *L. latifolium* on Corkbeg, which rather suggests that he had not actually visited the site himself. Subsequently however, R.A. Phillips (1894) stated that *L. latifolium* was still plentiful on Corkbeg, and he further commented (in Colgan and Scully, 1898) that he had observed the species to be spreading along the linking causeway between Corkbeg and the mainland, in 1895. *L. latifolium* was apparently last recorded from Corkbeg in 1900, by Phillips (Praeger, 1901).

During the period 1957-1959, the Whitegate Oil Refinery was set up on the adjacent mainland, while Corkbeg became a holding area for oil tanks, the islet

from this time onwards being out of bounds to the general public. Yet, in September 2000, a window of opportunity presented itself and, in a whirlwind 10-minute survey of Corkbeg, I refound *L. latifolium* here. Dittander was in flower, and occupied what is now waste ground beside the shoreline, close to the oil tanks. Many plants were present here, but the precise extent of the *L. latifolium* populations on Corkbeg remains to be ascertained.

(Note: Smith's reference to the nick-name 'Quick-Delivery' for *L. latifolium*, points clearly to its former gynaecological use in the Whitegate area (and further afield?) in hastening childbirth, and thus reducing the time spent in labour.)

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PUTATIVE ADVENTIVE POPULATIONS OF *MENTHA PULEGIUM* L. (PENNYROYAL) IN BRITAIN AND IRELAND

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INTRODUCTION

As a native species, the beautiful *Mentha pulegium* L. (Pennyroyal) was once of widespread and locally frequent occurrence throughout England, Wales and Ireland (with outposts in Scotland, the Isle of Man and the Channel Isles), but has drastically declined in all three countries since the 1930s. Today, the headquarters for the species in Britain is the New Forest National Park in Hampshire, while in Ireland the largest concentration of populations occur about Lough Neagh and its northern satellite, Lough Beg. As a consequence, *M. pulegium* is now a *Red Data Book* species in these islands, being protected in Britain under Schedule 8 of the Wildlife and Countryside Act, 1981; in Northern Ireland under the Wildlife (NI) Order, 1985; and in the Irish Republic under the Flora (Protection) Order, 1999.

Ironically, in tandem with the massive decline of the native populations of *M. pulegium* in these islands, come recent reports of the increasing occurrence of transient, apparently adventive, populations of this species! For example, Kay (1996), Leach (1996) and Briggs (1997) have reported such non-native *M. pulegium* populations from a number of English vice-counties, where American and Canadian wildflower/grass-seed mixes have been sown in newly-created amenity habitats, such as coastal embankments and the margins of reservoirs. In such instances, the introduced *M. pulegium* was associated

with other adventives, such as *Downingia elegans* (Californian Lobelia) and *Hordeum jubatum* (Foxtail Barley). Additionally, other suspect populations of *M. pulegium* have been recorded from waste ground and newly-seeded lawns. All of these adventive plants have a much more erect growth-habit than is normally encountered in native populations of *M. pulegium*.

ADVENTIVE POPULATIONS OF *M. PULEGIUM* IN THE IRISH FLORA

The present paper reports putative adventive populations of *Mentha pulegium* from five Irish sites, four in Co. Cork (H3-H5) and one in North Kerry (H2), all being recorded during the period 1995-2000. Furthermore, data are provided on the floral biology, nutlet-set and probable life histories of three of these populations, which occur about Cork City.

West Cork (H3, W/39.41). “50+ plants in a tiny area of amenity grassland bordering the western side of Clonakilty Harbour, near the Model Railway Village; 9 August 1999” – P. Green. Apparently only a transient population, as I could not refind it on a visit to this site on 30 July 2000.

Mid Cork (H4, W/69.71). Thirty flowering plants scattered over c. 430 m of the southern embankment of a brackish stream, adjacent to Pairc Ui Chaoimh Hurling and Football Pitch, Ballintemple, Cork City: September 1995 – T. O’Mahony (O’Mahony, 1996). During the subsequent time-period, 1996-2000, an annual census of population size at this site, showed it to consist of 36, 8, 25, 0 and 2 plants respectively. Clearly, this is an inherently mobile population, which exhibits considerable variation in numbers of individual plants from year-to-year. Interestingly, the majority of Pennyroyal plants at this site have occurred on the higher, more well-drained sections of the embankment, well above the level of the brackish stream. Moreover, the few plants that actually grew beside the stream showed neither more vigour nor robustness than those that occurred in bone-dry ground.

East Cork (H5, W/71.72). Many flowering plants spread along a 15 m marginal strip of ground by the quayside at Tivoli Docks, Cork City: 11 July 2000 – T. O’Mahony (O’Mahony, 2001). Interestingly, this population occurs only some 1,200 m downriver of the Ballintemple site for *M. pulegium*, but on the opposite (i.e. northern) tidal bank of the River Lee. Although the microhabitat occupied by *M. pulegium* was very arid, and dry weather had been the norm for weeks, all plants looked remarkably fresh and healthy!

East Cork (H5, W/74.71). Two, tiny and discrete flowering populations (consisting of four and two plants) on a disturbed, weed-infested grassy

roadside verge in Little Island Industrial Estate: July 2000 – M. Troy and A. Hill (O'Mahony, 2001). M. Troy showed me this population on 2 August 2000. I subsequently made a late-August visit to this site, to examine plants at the fruiting stage, and thus establish their level of seed production.

North Kerry (H2, V/94. 88). Many flowering plants in a newly-sown lawn at Ross Castle, Killarney: August, 1999 – T. Hodd. The late T. Hodd (pers. comm., 1999) provided me with the details of this population, and also informed me that these Pennyroyal plants were frequently trampled-on by tourists visiting Ross Castle.

CHARACTERISTICS OF THE ADVENTIVE, IRISH *M. PULEGIUM* POPULATIONS

1. Growth-habit: flowering stems rather stiffly erect, with usually short, strict, inflorescence-branches. This feature contrasts with the procumbent growth-habit and arcuate-ascending inflorescences of most native plants.

2. All populations occur in untypical (for the native species) *edaphic* conditions, such as bone-dry, disturbed, grassy roadside verges, newly-sown lawns and quaysides, etc., which is quite at variance with the inundation-type habitats frequented by the native populations of Pennyroyal.

3. All or most plants lack (or have very poorly developed) the characteristic, *Mentha* rhizomatous and/or stoloniferous rootstock, which ensures long-term survival for members of this genus. As a consequence, they effectively behave as *annuals*, relying purely on seed output for the continuance of the race. This is especially true of diminutive, single-stemmed plants (which give every indication of being annuals), but also applies to the majority of the robust, multi-stemmed plants. This annual life-cycle was clearly evident at the Ballintemple site, where observations during the period 1995-2000, revealed that no individual plants survived into a second year – a fact confirmed by the mapping of such populations in consecutive years. Moreover, plants were often found to occur in discrete clusters of 2-3, suggesting that such tiny populations were the products of seed shed from a single fruiting calyx.

FLORAL BIOLOGY AND NUTLET-SET

Within the genus *Mentha*, gynodioecy is the norm, the inflorescences generally being either hermaphrodite or functionally female. In the former case, the exerted stamens are pollen-fertile, such plants being self-compatible, and usually producing an abundance of fruit. In the latter case, the stamens are

included and sterile, therefore nutlet-set only takes place when a compatible pollen-source is present in the immediate area.

All three Cork populations of *M. pulegium* were observed to bear hermaphrodite inflorescences and, while the Ballintemple plants were found to be fully nutlet-fertile, it came as a total surprise to note that the main inflorescences of the Little Island and Tivoli Docks plants were wholly nutlet-sterile, although the lateral branches were variably nutlet-fertile. While the explanation for this phenomenon seems far from obvious, the resultant effect must be a massive reduction in seed output which, when coupled with the apparently *annual* life-cycle of these plants (see above), strongly indicates that such populations will always be inherently variable in size and transient in nature.

(Note: Within the genus *Mentha*, Section *Mentha* – which includes most of our mint taxa – nutlet development is easily observed in the field, as one can look directly into the fruiting calyces, the internal, appressed-strigose hairs proving no impediment to observation of the nutlets. However, in Section *Pulegium* (which incorporates *M. pulegium*), the long, stiff, internal calyx-hairs are erecto-patent and connivent, forming a central ‘cone’ which closes the throat of the calyx and thus totally obscures a view of the nutlets at the base of the calyx. Consequently, nutlet development in Pennyroyal is most conveniently ascertained in the field by observation of other calyx characters, viz: calyces swollen and firm to the touch in nutlet-fertile material; calyces funnel-shaped and completely flattening when laterally squeezed, in nutlet-sterile material.)

SUMMARY

The present paper draws attention to the occurrence of presumed non-native populations of *Mentha pulegium* in Ireland at the present time – a phenomenon also reported from England in recent years. In Ireland, this adventive race of Pennyroyal is characterised by its erect growth-habit, by its very poorly developed rhizome system (correlated with a predominantly *annual* life-cycle), and by its presence and ability to flourish in newly-sown lawns/amenity grasslands, or in arid, waste sites – habitats with edaphic features which would normally be inimical to the indigenous populations of Pennyroyal.

In England, some adventive Pennyroyal populations have been shown to be derived from sowings of foreign wildflower/grass-seed mixes. Yet the Irish non-native strains of Pennyroyal (as recorded to date, and whatever their source of origin), are *not* associated with other adventive species. Finally,

there seems every likelihood that such non-native populations of Pennyroyal will be recorded with increasing frequency throughout Ireland in future years.

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RECORDING FOR *ATLAS 2000* ON THE ISLANDS OF THE IVERAGH PENINSULA, SOUTH KERRY (V.C. H1), JUNE 1999

T. Hodd

Coolies, Muckross, Killarney, Co. Kerry

(Edited by M. Hodd of the same address)

[Note on the text. Owing to the untimely death of my father on 15 July 2000 (see elsewhere in this newsletter for an obituary), this article may not be precisely as my father would have intended it. Nonetheless I have tried to keep to his flowing detailed style as much as possible, so any errors that are included in this article are probably my own.

M. Hodd, 7 December 2000]

INTRODUCTION

This is an account of three days of touring and island hopping, starting on 13 June 1999. The purpose of this was mainly to survey the plants, butterflies and any other fauna that might occur in areas, which were very inaccessible. To do this Caroline Mhic Daeid hired a fishing boat along with a small landing craft. The plan was to start off on Sunday with the most remote island while the weather was quite good. We thus started with the Skelligs and then went on to Beginish Island off Valentia Island later on Sunday. The next day the plan was to go to Deenish and Scariff first and then go up the Kenmare River towards Sneem and survey some of the islands round there. On the first day, three cars headed for Portmagee, Caroline in one, Andrew and Tricia Marsh in another

and myself, Tricia, Matt, Dylan and Rory in another. On the way we were amazed to see smouldering tyres at Caherciveen, which were all that was left of a massive bonfire to celebrate the European election victories.

At Portmagee we did a brief bit of botanising and added some wall plants to the plant list for the 10-km square for Valentia West. Then it was off on to the boat, no mean feat for us 'thirty something's' as it involved climbing over two other boats to get to ours. I managed to leave my boots and stick on one of the other boats but they caught up with us on the Skelligs and I was reunited with them. It was an amazingly calm crossing, much to our surprise, as Force 5 to 6 winds had been forecast with rain. But it was dry and we saw two Shags and seven Black Guillemots in the channel and later Tricia spotted two Manx Shearwaters and of course as we approached the Skelligs the sky became filled with masses of Gannets flying around close to the boat.

THE LITTLE SKELLIG ROCK

First of all, we did a very quick survey of the Little Skelligs, home to 40,000 Gannets. The only plants we could see were *Armeria maritima* (Thrift) and a combination of white flowered *Cochlearia officinalis* (Common Scurvygrass) and *Silene uniflora* (Sea Campion). But very few plants were there; less than 1% of the land surface was vegetated and we could see no sign of grasses at all. There were a lot of green and orange patches on the rocks and I think they were mainly lichens and green algae, encouraged by the run off from the Gannet droppings. The record of *Lavatera arborea* (Tree-mallow) on Little Skellig dates back to 1887, at a time when there were far fewer Gannets and I am sure it has now long gone. Only three plant species were recorded on Little Skellig Rock.

SKELLIG MICHÍL

Once we had landed on the island, we left Caroline mainly concentrating on the lower flatter area between the landing stage and the lighthouse and there she found about a dozen species of wild flowers. We climbed up and up and on the way noted *Asplenium marinum* (Sea Spleenwort) sparingly in crevices. The dominant plants were broad leaved species rather than grasses. The most common plants as we went up were *Silene uniflora* (Sea Campion), *Armeria maritima* (Thrift) and *Spergularia rupicola* (Rock Sea -spurrey). Much less common were *Cochlearia officinalis* (Common Scurvygrass) and *Tripleurospermum maritimum* (Sea Mayweed) and *Plantago coronopus* (Buck's-horn Plantain). We were on the lookout for weed species that might have been brought on to the Skelligs by visitors' feet. We think that *Senecio jacobaea* (Common Ragwort) and *Sonchus oleraceus* (Smooth Sow-thistle)

may have reached the island, assisted by man. There was also *Atriplex laciniata* (Frosted Orache) and *Sedum anglicum* (English Stonecrop) on the pathway.

Another weed species may have been *Anagallis arvensis* (Scarlet Pimpernel) found growing by the beehive buildings. Grasses found were *Festuca rubra* (Red Fescue) (an herbarium specimen will be sent to Glasnevin) and *Holcus lanatus* (Yorkshire-fog) right on the summit. Actually on the rock face just below the summit we could clearly see great mats of *Festuca ovina* (Sheep's-fescue). Interestingly coming up through the Fescue mats on the cliff summit were flowering plants of *Jasione montana* (Sheep's-bit). On the flattish top were patches of *Rumex* spp. (Dock) and *Beta vulgaris* (Beet). More than 20 plant species were found on Skellig Michíl.

BEGINISH ISLAND

When we arrived back at Portmagee we decided to take a boat from Knightstown to Beginish Island, a 2 km long island, although very narrow, being from 200 m to 1,000 m wide. It lies in the channel between Doulus Head and Valentia. We went on a very simple craft, just an open rowing boat with a small outboard motor. By now the wind had got up but we decided we'd go anyway! The key plant we had to look for was *Arabis hirsuta* (Hairy Rock-cress), which had been recorded by Scully (1916), and so we headed for the sand dune system.

On the flat sandy central portion of the island, both Caroline and myself simultaneously found masses of *Ranunculus bulbosus* (Bulbous Buttercup), which was a new 10-km square record for Valentia East. But no great rarities were found, just a very good variety of plants of which at least 20 of the 100 found were new to the Valentia East 10-km square. For example *Scutellaria minor* (Lesser Skullcap) and *Dactylorhiza maculata* (Heath Spotted-orchid) were new to the square. The yellow patches of *Anthyllis vulneraria* (Kidney Vetch) on the cliffs were beautiful. Five species of sedge were found, including *Carex pulicaris* (Flea Sedge) and *Carex ovalis* (Oval Sedge), which were both new to the Valentia East square.

This island was a big contrast to the Skelligs and here, where there is grazing, grass species rather than broadleaved species predominate. Where it is rocky or boggy there was some *Pteridium aquilinum* (Bracken) and *Erica* spp. (Heaths); on the walls there was a good variety of ferns and grasses like *Aira caryophyllea* (Silver Hair-grass), *A. praecox* (Early Hair-grass) and *Catapodium maritimum* (Sea Fern-grass). It was a really delightful island, which

one needs a whole day to survey rather than just an hour and a half. We only just scratched the surface of it and I'd say they'd be a lot of very interesting plants to be found there.

We returned to stay the night in the Silver Sands bed and breakfast in Waterville and ate well in the Lobster Bar, our appetites being excellent after all the sea air. More than 95 species of plants were found on Beginish Island.

DEENISH ISLAND

We had to take a fishing boat from Castle Cove and there it was low tide, which posed problems for our getting on to the boat. The boat was about 3 m below the quay side and we were expected to climb down a very old rusty iron ladder, but I said "No way!", and so the skipper of the fishing boat had to use a rowing boat to pick us all up (although Rory fearlessly went down the ladder). After some trouble clearing the seaweed off the pathway we got on to the rowing boat and it was only a two-minute row around to the bigger craft. Then it was off on to the Kenmare River and into what were very 'hairy' seas with the boat ducking up and down in 4 m or more high waves. Because the waves were so big we had to abandon all intentions of landing on Scarrif Island and concentrate on Deenish. We already had an up-to-date BSBI list by Rich and Taylor, dated from 6 July 1988. From this list we saw two rare plants mentioned that we were keen to see, namely *Radiola linoides* (Allseed) and *Cicendia filiformis* (Yellow Centaury). Rich and Taylor had seen them on a small spring and had even given us a sketch map to show exactly where they were.

As we arrived on the beach we were surprised to see masses of *Equisetum arvense* (Field Horsetail) growing on the sloping margins of the wet, shady cliffs. Then we headed up the hill past the renovated cottage. As we moved through the Bracken (*Pteridium aquilinum*) on the south east side of the hill we were thrilled to find many, many plants of *Ophioglossum vulgatum* (Adder's-tongue) growing in the shade of the Bracken. I collected enough material to make an herbarium sheet for Glasnevin as this is a new record for Adder's-tongue in this square, although it has been recently found in the Caherdaniel square. There were masses of it and it is a quite large variety not like the stunted form found on the cliffs at Ballydavid.

There was no sign of *Empetrum nigrum* (Crowberry) on the hill, in fact there were few heathland plants at all, just a little bit of *Calluna vulgaris* (Heather). The presence of heavy grazing and possibly fires may favour grasses over heathland plants. Near the summit were large numbers of *Salix aurita* (Eared

Willow), which were quite large bushes up to 1.5 m tall. Then we went down again in the thick mist and got lost and headed south east instead of south and we ended up on the wrong headland, just above Tricia and Andrew Marsh. But then we saw Caroline beside the restored cottage and headed for her. There we found the path that we hoped would lead us past the spring that Rich and Taylor had found in 1988. We soon reached the plateau where we found an attractive north facing cliff which, though not particularly wet, was covered with a good variety of plants including *Silene uniflora* (Sea Campion), *Armeria maritimum* (Thrift), *Anthyllis vulneraria* (Kidney Vetch) and *Primula vulgaris* (Primrose) all in one great clump. Everywhere there was a profusion of flowers wherever the plants could grow slightly out of reach of the sheep.

On the way back Caroline showed us the wetland area that Rich and Taylor had described about 200 m north of the old ruin. It was a tiny wet area with a spring welling out of it and here was the white flowered *Samolus valerandi* (Brookweed). However, *Cicendia filiformis* (Yellow Centaury) and *Radiola linoides* (Allseed) were not to be seen; perhaps we were too early in the season for them to be visible. We also saw numerous seedlings of what I believe were *Parentucellia viscosa* (Yellow Bartsia), but only a late July visit will confirm this. It is really a delightful island for plants and wildlife. More than 100 species of plants were found on Deenish Island.

ILLAUNANADAN ISLAND

At Castlecove, the weather had improved a little and we decided to dump the little landing craft and go full steam (c. 30 km an hour) to Illaunanadan Island. Michael Fenton's son rowed us ashore and we had an hour to look around the island, which was in fact only tiny, about 200 m long by 200 m wide. It is a little overgrazed but there were no sheep on it when we were there.

There were some delightful plants. In particular Rory found *Ranunculus bulbosus* (Bulbous Buttercup), which is a new 10-km square record. *Drosera rotundifolia* (Round-leaved Sundew) and *Salix repens* (Creeping Willow) were two quite unusual plants that we found on the island. We only recorded about 40 species here compared with the 100+ species found on Deenish Island. Of course it is much smaller and there is not the diversity of habitat. Grasses and sedges dominated with a few bog plants in the centre. The few colourful flowers were mainly on the cliff edges out of reach of the sheep. More than 50 plant species were found on Illaunanadan Island.

Then it was back to Castlecove at high speed after dropping off the rowing boat at the pier opposite Garnish Island. Here at Cove Bay we did a quick wild

flower survey and we found masses of huge, 60 cm tall plants of *Dactylorhiza incarnata* (Early Marsh-orchid) and *D. majalis* (Western Marsh-orchid). There were a couple of interesting sedges, *Carex divulsa* (Grey Sedge) and *Carex otrubae* (False Fox-sedge) or *C. disticha* (Brown Sedge) but as we are not quite sure, I have pressed specimens to send to Glasnevin. Then we drove back to Waterville to recover from the day's exertions and excitement.

INNY STRAND, WATERVILLE

The next day saw us doing a survey of the Inny strand by Waterville. We walked north west to the tip of the dunes by the River Inny and there we saw signs telling people to keep out of an environmentally sensitive area, namely the sand dunes where they abut the banks of the River Inny. About 100 m further on from the north west tip of Inny Strand we saw masses of *Dactylorhiza majalis* (Western Marsh-orchid)! We also noted an abundance of *Valerianella locusta* (Common Cornsalad) and *Viola tricolor* subsp. *curtisii* (Wild Pansy). It was quite a nice sand dune system but the golf course has been allowed to encroach too far into the native flora area of the dunes.

FILLING IN A FEW GAPS IN THE PLANT LISTS FOR THE WATERVILLE, CAHERDANIEL, SNEEM AND KENMARE 10- KM SQUARES

As it was too windy for boating we set off for a tour of the South Kerry coast and first we stopped just above Beenarourk from where Rory photographed the islands of Deenish and Scariff. Apparently the *Simethis planifolia* (Kerry Lily) was recently found just near this viewpoint car park but although we could not find it we did find three new plants for the Waterville 10-km square list, *Pinguicula vulgaris* (Common Butterwort), *Pinguicula lusitanica* (Pale Butterwort) and *Dactylorhiza maculata* (Heath Spotted-orchid). Then it was on to the square just east of Sneem where we filled in the gaps in the plant lists for the square by finding such common plants as *Equisetum palustre* (Marsh Horsetail) and *Sanicula europaea* (Sanicle).

We called into Kenmare for a cup of tea with Andrew and Patricia Marsh. Next we went to the town park where Andrew showed us specimens of *Arenaria balearica* (Mossy Sandwort) growing wild on a calcareous wall, just near the Kenmare River. This is the only record of this very rare naturalised plant in Kerry. Also on the old wall there was *Clinopodium ascendens* (Common Calamint) and many nice ferns.

ACKNOWLEDGEMENTS

I, Matt Hodd, would like to acknowledge the following on behalf of my late father Toby Hodd, without whom none of this survey work would have been possible: Rory and Patricia Hodd, Caroline Mhic Daeid, Andrew and Patricia Marsh, Michael Fenton, Mike O'Sullivan, Michael Hand, Frank O'Sullivan, T.C.G Rich, N. Taylor and anyone else whom I neglected to mention.

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RECORDING FOR *ATLAS 2000* ON THE LIMESTONE ISLANDS OF THE IVERAGH PENINSULA, SOUTH KERRY (V.C. H1), JULY 1999

T. Hodd

Coolies, Muckcross, Killarney, Co. Kerry

(Edited by M. Hodd of same address)

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M. Hodd, 7 December 2000]

INTRODUCTION

This was a survey to find out what plants occur on the two groups of limestone islands known as Dunkerron and Greenane which are about 4 km to the west of Kenmare in the sea inlet known as the Kenmare River. It took a couple of weeks to organise this survey, as first of all we had to get permission from the owners of the islands to visit them. Then to reach the islands we had to organise a boatman who knew how to land on the islands.

These islands are in the 10-km square that includes Templenoe, Blackwater, Inchiquin, Uragh Wood, Cloonee lakes, Dromcunna, Greenane Islands and Dunkerron Islands. It is thus a very rich 10-km square which includes a great diversity of habitats including sand dunes, salt marshes, lakes, pastures,

mountain tops and so on. In consequence the area has already yielded many interesting plant records amounting to nearly 300 species.

On 16 July 1999 Rory Hodd, Cathryn Freeman and myself took a service bus from Killarney via Molls Gap to Kenmare. There we met Andrew and Patricia Marsh and they took us by car to Dromcunna Hotel. The boatman, Frank O'Sullivan who lives at Templenoe, met us by the hotel at 12.00 noon. We soon spotted him, as he was clothed from top to bottom in bright yellow oilskins and, with his head of very thick black hair and his ruddy complexion, he looked a very fit man! His boat was a substantial wooden rowing boat with an outboard motor and was freshly painted bright red. Because it was low tide we had to use the pontoon pier to get on to the boat as the quayside was too far above the level of the water.

DUNKERRON ISLAND EAST

The Dunkerron Islands lie about 700 m from Dromcunna and they are uninhabited apart from sheep and feral goats. The strong wind made the journey quite choppy but at least it remained dry all day with temperatures of about 20°C. In no time at all we reached the north east end of Dunkerron Island East. It is a long, narrow island, about 400 m long by 200 m wide. We had been worried about the low tide making the islands inaccessible because of extensive 'sinky' mud flats but in fact the problem was rocks rather than mud and we were lucky to have such an experienced boatman to get us ashore successfully.

The plan was to walk across Dunkerron Island East and then across Dunkerron Island West and to meet Frank at the far end of Dunkerron Island West opposite a tiny island called Fox Island.

When we arrived we found the *Pteridium aquilinum* (Bracken) was very tall with thick undergrowth. This surprised us as we had heard that the owner, Patricia Hand, keeps about 60 sheep on the island. It was very hard going and we had to force our way through tall Bracken but after a time we found some bare limestone outcrops near the middle of the island and there we were very excited to find *Clinopodium ascendens* (Common Calamint) in great quantity. Rory identified four different species of *Geranium* including *G. robertianum* (Herb-Robert) and *G. lucidum* (Shining Crane's-bill). At the Western end of the Dunkerron Island East we found *Dactylorhiza maculata* (Heath Spotted-orchid) in the tall Bracken. But otherwise there was not much on this island.

DUNKERRON ISLAND WEST

It was easy to cross on to Dunkerron Island West because there was a rocky causeway linking the islands. Dunkerron Island West is about 1 km long and up to 200 metres wide. There was a mixture of large planted trees and large native trees on this island including *Pinus nigra* (Austrian Pine) and *P. sylvestris* (Scots Pine) as well as very large native coppiced *Fraxinus excelsior* (Ash) trees, which must be at least 200 years old. There were also many large coppiced *Corylus avellana* (Hazel) and a few *Ilex aquifolium* (Holly) all mixed in with the planted Pine trees. There were many *Acer pseudoplatanus* (Sycamore) trees on the island. After a little while we reached a ruined house. It was heavy going, as apart from the tall Bracken, the ground was thickly clothed with *Urtica dioica* (Nettles), indicating heavy fertilisation by livestock.

We walked a further 100 m from the ruin in a westerly direction under some large *Fraxinus excelsior* (Ash) when, thrill of thrills, Rory Hodd spotted *Orobanche hederæ* (Ivy Broomrape) under the shade of an Ash tree. There were just two small clumps and the flowers were purple in colour.

While we were looking at and photographing the Broomrape, the son of the owner of the Dunkerron Islands suddenly appeared, standing behind us. It was Michael Hand and he had come across to look at his sheep and perhaps to see what we were getting up to. He said they were very anxious not to allow people to go on to the islands. We explained what we were doing and he seemed quite interested and he told us that there were many ancient ash and hazel trees on the island. He said there was an unusual shrub perched on a rock on the highest point of the island. So we went on for another couple hundred metres until we reached an open, limestone rocky area surrounded by large *Pinus nigra* (Austrian Pine) trees. This was the highest point on the island and there was a large limestone rock, about 2 m high, with the shrub on it. It was a Cotoneaster, probably *Cotoneaster horizontalis* (Wall Cotoneaster). Also in this area we found *Polygala vulgaris* (Common Milkwort). Up there on this high point we had lunch and from there we could see the anchored red rowing boat between the island and Fox Island but there was no sign of our boatman.

Down by the sea there was a headland, which was covered with *Prunus spinosa* (Blackthorn) and *Ulex gallii* (Western Gorse). In a little depression in this headland, where the fresh water can collect, were four or five plants of *Ophioglossum vulgatum* (Adder's-tongue). These Adder's-tongue ferns were much smaller and less robust than the ones we found on Deenish Island the previous month in June. Here there were other interesting plants such as *Cymbalaria muralis* (Ivy-leaved Toadflax), *Oenanthe aquatica* (Fine-leaved

Water-dropwort) and *Rubia peregrina* (Wild Madder). The Wild Madder was very heavily grazed and this may be why it was so scarce on Dunkerron Island West. The most interesting plants on Dunkerron were actually on headlands, which we did not explore properly, so it would be worth looking on the headlands the next time we visit.

We found the boatman, who had been taking a fairly deep rest in the Bracken, and he pulled in the boat from the inlet with the anchor rope. We all piled on but our weight made the boat jam fast on to the rocks. Some of us had to get off again so that the boat could lift off. Then we jumped on again and Frank took the boat across the 1 km gap separating us from the Greenane Islands. One hundred and twenty nine species of plants were found on the Dunkerron Islands.

GREENANE ISLANDS

The Greenane Islands consist of one small island and four much smaller ones about 200 m from the mainland. All the islands are uninhabited apart from sheep, which we did not see. When we reached the Greenane Islands we went straight to the largest, which is known as Cappanacush Island, where we had to try and land on the south side but it was difficult because the tide was out. On the second attempt we managed to do so.

The island is about 400 m long by 150 m wide and is covered by quite dense woodland with deeply fissured limestone rocks underfoot which makes the going very tough and hazardous. The centre of the Island has relatively tall *Fraxinus excelsior* (Ash) trees, up to 10 m high. We went up on to the centre and found an old ruined house right on top of the low hill. Here Cathryn Freeman found *Vinca major* (Greater Periwinkle). There were *Prunus spinosa* (Blackthorn), *Crataegus monogyna* (Hawthorn) and even some *Euonymus europaeus* (Spindle) trees mixed in through the wood. The only common planted trees were *Acer pseudoplatanus* (Sycamore).

We veered to the right, heading due east and came towards a headland, which was almost treeless and white with limestone rock. It reminded me of the limestone pavement on the Burren. There were masses of flowers on these rocks, particularly different white and yellow flowers including *Hieracium* spp. (Hawkweeds), and pink-flowered *Clinopodium ascendens* (Common Calamint) was common too. The most unusual plant was *Orobancha hederaceae* (Ivy Broomrape), which occurred in large numbers over a large area. We photographed an unusual pale yellow variety of this species. At first we could

not see its host but then we saw *Hedera helix* (Ivy) in the crevices between the limestone rocks.

All around the island there were many species of limestone-loving flowers, such as pink-red flowered *Thymus polytrichus* (Wild Thyme) and blue flowered *Polygala vulgaris* (Common Milkwort). Just beyond the limestone headland on the northwest side of the island was a very interesting salt marsh and Andrew Marsh found *Carex vulpina* (True Fox-sedge) there and later we found *C. distans* (Distant Sedge) and *C. extensa* (Long-bracted Sedge) as well. So there was a good variety of sedges on this island.

To the north of Cappanacush there was a nice limestone island known as Illaunakilla, connected by a stone causeway and here we saw great banks of *Thymus polytrichus* (Wild Thyme) and *Sedum album* (White Stonecrop). Plants like *Rubia perigrina* (Wild Madder) were much commoner here than they were on the Dunkerron Islands and this may indicate that there is less grazing pressure on the Greenane Islands. We gradually worked our way right around the edge of the Cappanacush Island following the salt marsh dominated west side of the island. After a time we came back to where the red boat was moored having got a good snapshot of the plants found on the Greenane Islands.

But there is no doubt that a much more detailed survey of these islands would produce a much greater variety of species. For example Scully (1916) mentions that in 1904 he found *Rubus saxatilis* (Stone Bramble) growing sparingly on one of the Greenane Islands and I suspect it is still there just waiting to be rediscovered. But we were very pleased with the results of this plant survey, which had added over 30 species to the list for this particular 10-km square. One hundred and forty species of plants were found in total on the Greenane Islands.

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I, Matt Hodd, would like to acknowledge the following on behalf of my late father Toby Hodd, without whom none of this survey work would have been possible: Rory and Patricia Hodd, Caroline Mhic Daeid, Andrew and Patricia Marsh, Cathryn Freeman, Patricia and Michael Hand, Frank O'Sullivan, and anyone else whom I neglected to mention.

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A *GERANIUM SANGUINEUM* (BLOODY CRANE'S-BILL) VARIANT

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On a visit to the Burren, Co. Clare (v.c. H9) in August 1986 I came across what turned out to be an unusual specimen of *Geranium sanguineum* (Bloody Crane's-bill).

The petals were pale-veined giving the plant a striking resemblance to the smaller member of the genus, *Geranium robertianum* (Herb-Robert). As time was running out I had no opportunity to search for similar specimens. However, a year later, out of curiosity, I made a return visit to this famous botanical paradise where I discovered two or three plants of this rather unique variant, though in a different location. According to Dr P. Yeo (pers. comm.) it was interesting to note that this form of *Geranium sanguineum* occurs in the Burren as the only known record of a similar type came from Wigtownshire in Scotland. It was named 'Glenluce' – after the area where it was found.

It would involve many hours' of observation and much walking to establish the true incidence of this variant in the wild though it could prove informative for anyone with a particular interest in the morphological variation of this species.

A REPORT ON THE FLORA OF CORK (H3-H5), 2000

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Work this year on *Atlas 2000* (April-October), has proved every bit as time-consuming and onerous as in 1999, yet I firmly believe that the end result – the published *Atlas 2000* – will more than repay the efforts expended by all contributors. In future years, I hope to work on at least part of the large residue

of Cork hectads which have never been surveyed, or for which only minimal data are currently available. In this regard, it is chastening to note that the flora of the remote, scenically spectacular peninsulas of south-west Cork (e.g. Beara/Sheep's Head Peninsulas) is as poorly known today as it was in the 1870s/1880s, when fleetingly visited by such excellent botanists as A.G. More, H.C. Hart, R.W. Townsend, Rev. T. Allin and others.

In the year 2000, useful work was undertaken on a wide range of neglected/under-recorded Cork species, such as: *Vulpia myuros* (Rat's-tail Fescue), *Agrostis vinealis* (Brown Bent), *Catapodium marinum* (Sea Fern-grass), *Asplenium marinum* (Sea Spleenwort), *Armoracia rusticana* (Horse-radish), *Papaver dubium* subsp. *lecoqii* (Long-headed Poppy), *Valerianella carinata* (Keeled-fruited Cornsalad) and the genus *Potamogeton* (Pondweeds).

Moreover, a preliminary survey of the genus *Fumaria* (Fumitories) in the Cork flora (the first systematic survey in 100 years) showed *F. muralis* (Common Ramping-fumitory) to be widespread and common, *F. bastardii* (Tall Ramping-fumitory) to be widespread but rather scarce, and *F. officinalis* (Common Fumitory) to be most frequent about Cork City, where it generally occurs in small quantity at any one site. By contrast, *F. capreolata* (White Ramping-fumitory) seems to have drastically declined in frequency throughout Co. Cork, and at the present time only a handful of up-to-date records are available for it. I intend to continue this fascinating survey in future years, giving attention also to the distributions of the subspecies of *F. officinalis* and *F. bastardii*. A priority will be the rechecking of the only known Co. Cork sites for *F. purpurea* (Purple Ramping-fumitory), recorded in recent years from Long Island and Horse Island in Roaringwater Bay, West Cork, by N. Rowe and J.R. Akeroyd, respectively (Akeroyd, 1996).

On Monday 20 March, P. Selby (recorder for v.c. 11, S. Hants) arrived on my doorstep with the triumphant announcement that he had found *Poa infirma* (Early Meadow-grass) by the seawall at Castlepark (H3, W/64.49), opposite Kinsale Town, on the previous day! This is the first *native* Irish site for *P. infirma*, although it was reported as a garden weed at Castlerock, Londonderry (H40) during the period 1987-1992 (see Hackney (1992)).

On 30 March, work about the picturesque coastal village of Timoleague (H3, W/4.4) produced naturalized populations of *Valerianella carinata* (Keeled-fruited Cornsalad) and *Veronica crista-galli* (Crested Field-speedwell), both species having been recorded from this area in 1999 by the brothers Ian and Paul Green and their friend, Mike Stephens.

On 2 April, accompanied by Michael Troy, I refound *Poa infirma* at Castlepark, Kinsale, and brought a vegetative tuft home for cultivation. This subsequently produced nine flowering/fruiting stems, thus allowing an absolutely positive determination to be made. During this visit, a freshwater well within the precincts of James Fort, produced a population of *Glyceria declinata* (Small Sweet-grass), while *Agrostis vinealis* (Brown Bent) was added to this hectad from shaley outcrops at the eastern end of the fort, and *Valerianella carinata* (Keeled-fruited Cornsalad) was found established on the western boundary wall of the fort. *Senecio sylvaticus* (Heath Groundsel), a scarce Cork plant, occurred on a nearby stone-and-earth embankment. Regrettably, there was no sign of either *Asplenium obovatum* (Lanceolate Spleenwort) or *Salvia verbenaca* (Wild Clary), both of which were found in the vicinity of James Fort by the Rev. Thomas Allin in 1872.

On 20 April, naturalized populations of the beautiful *Hieracium maculatum* (Spotted Hawkweed) were re-seen on four wall-sites about the junction of the Western Road/Gaol Walk (H4, W/6.7) in Cork City, where I had originally found the species in 1966. On 26 April, 20 luxuriant flowering plants of *Geranium purpureum* (Little-Robin) were found on a somewhat acidic, stone-and-earth hedgebank, in Nash's Boreen (H4, W/65.73) on the north side of Cork City – a most unexpected locality and habitat for this extremely rare native species, and a new 1-km square record.

On 6 May, *Veronica crista-galli* (Crested Field-speedwell) was found well established in the wooded grounds of the famous dining venue, Ballymaloe House (H5, W/94.68) near Cloyne – a new hectad record. On 8 May, an unsuccessful search with Michael Troy for *Neotinea maculata* (Dense-flowered Orchid) at Little Island Golf Course (H5, W/76.71) turned up a total surprise – putative populations of *Poa angustifolia* (Narrow-leaved Meadow-grass), new to East Cork. Vouchers were collected and pressed. On 31 May, a small, naturalized population of *Sedum dasyphyllum* (Thick-leaved Stonecrop) was found on a high wall on Buxton Hill, Sunday's Well (H4, W/66.71). This is the fifth small population of *S. dasyphyllum* from the Sunday's Well area of Cork City since 1993, from which area James Drummond first reported it prior to 1820.

On 22 June, a wall-survey of the Lower Glanmire Road area of Cork City (H5, W/6.7) produced some nice finds. A particularly gratifying discovery was the long-sought-for *Poa compressa* (Flattened Meadow-grass), which occurred over a c. 5 m stretch of wall-top near the junction of Grattan's

Hill/O'Mahony's Avenue (W/68.72). The only previous Co. Cork record for *P. compressa* (Carrignavar, H5, W/6.8) was made by Maura Scannell in 1987, during work for the BSBI Monitoring Scheme. (I have not seen the Carrignavar site for *P. compressa*.) The small cul-de-sac of Rockvale East (W/69.72) produced an insular wall-top population of *Catapodium marinum* (Sea Fern-grass), whereas *C. rigidum* (Fern-grass) is the dominant member of the genus in this hectad.

Also in 1-km square W/69.72, the railway boundary-wall opposite the Ferryboat Inn Pub, held a single, stunted, clump of *Cyrtomium falcatum* (House Holly-fern), new to East Cork. *C. falcatum* (also as a single clump) was recorded from the western side of Schull Harbour (H3, V/9.3) in 1983. Lastly, *Senecio viscosus* (Sticky Groundsel) occurs as a ruderal along the Lower Glanmire Road, the species having been established at nearby Kent Railway Station for many years.

On 5 July, Bantry House Demesne (H3, V/98.48) was visited and *Selaginella kraussiana* (Krauss's Clubmoss) was seen to be well established along one margin of the internal roadway, which links into the main Bantry Road. Disappointingly, time did not allow for a check of the naturalized woodland populations of *Allium scorodoprasum* (Sand Leek) found here by R.A. Phillips in 1893. (Some days later, *S. kraussiana* was re-seen in small quantity on the lawns of Fota House Demesne (H5, W/79.71) where I first recorded it in June 1986.)

On 11 July, Tivoli Docks (H5, W/7.7) was visited. This area was the base for the Cork-Swansea Car Ferry in the 1970s, and species commonly naturalized here at that time, such as *Epilobium tetragonum* (Square-stalked Willowherb), *Melilotus albus* (White Melilot) and *M. altissimus* (Tall Melilot) were found to be still locally common here. A particularly interesting find was an adventive, flowering population of *Mentha pulegium* (Pennyroyal). On 17 July, the *Irish Red Data Book* species *Filago minima* (Small Cudweed) was found in some abundance in Ballyvolane sand-quarry (H5, W/68.73), Cork City – the first Co. Cork record in 100 years. This site is earmarked for a housing development in the near future, and it remains to be seen how the developers will deal with the conservation issues relating to *F. minima* and an associated large colony of House Martins.

On 26 July, a working sand-quarry near Slatty's Bridge (H5, W/81.71), Carrigtwohill, produced naturalized populations of *Oenothera glazioviana* (Large-flowered Evening-primrose), *Epilobium tetragonum* (Square-stalked

Willowherb), *Orobanche minor* (Common Broomrape) and *Verbena officinalis* (Vervain), associated with native *Dipsacus fullonum* (Wild Teasel), *Centaurea scabiosa* (Greater Knapweed) and *Carex muricata* subsp. *lamprocarpa* (Prickly Sedge).

On 2 August, Little Island Industrial Estate (H5, W/74.71) was visited with Michael Troy, to see a small, adventive population of *Mentha pulegium* (Pennyroyal), which he and Alan Hill had fortuitously discovered here a short time earlier. Two tiny populations (of four plants and two plants) occurred in waste ground (a disturbed grassy verge) associated with a weed-flora. On 3 August, *Mentha pulegium* was rechecked at its Ballintemple (H4, W/69.71), Cork City site, where the species was first found in September 1995, the population then consisting of 30 flowering plants. On this occasion, only two, isolated flowering plants were seen.

On 31 August, a survey was undertaken of the northern shore of the Lee Reservoir, from the Gearagh Causeway Carpark (H3, W/32.71) westwards towards Toon Bridge. Following on months of dry weather, the water-level here was now inordinately low, allowing easy access to the large area of exposed mud which is backed by a species-poor inundation community, with such co-dominants as *Phalaris arundinacea* (Reed Canary-grass), *Carex vesicaria* (Bladder-sedge) and *Eleocharis palustris* (Common Spike-rush). The ecotone between the mud community and the inundation community holds an abundance of *Lysimachia nummularia* (Creeping-Jenny), *Persicaria minor* (Small Water-pepper), *Alisma plantago-aquatica* (Water-plantain) and *Apium inundatum* (Lesser Marshwort), with a little *Baldellia ranunculoides* (Lesser Water-plantain).

The mud-flora itself is dominated by huge quantities of *Elatine hexandra* (Six-stamened Waterwort), which extends westwards from the Causeway for some 1,000 m, while its associate, *Limosella aquatica* (Mudwort), is common westwards over a distance of at least 1,600 m, both in the mud community and on the gravelly bed of the Toon River (H3, W/31.71). *Apium inundatum* (Lesser Marshwort) x *A. nodiflorum* (Fool's Water-cress) (= *A. x moorei*) has its Cork headquarters along the Toon River (accompanied by both parents) from Toon Bridge (W/29.70) eastwards for at least 1,500 m, while it also occurs in one of the Gearagh Woodland streams. *Impatiens glandulifera* (Indian Balsam) is long-established in this area (even in the Gearagh Woodland) from Toon Bridge eastwards to Lee Bridge (H3, W/34.71), a distance of c. 4,500 m.

On 2 September, examination of part of the new Amenity Walkway east of Carrigaline (H4, W/76.61) (the former Cork-Crosshaven Railway Line) produced a 90 m long stand of *Picris echioides* (Bristly Oxtongue). This species was last recorded in hectad W/7.6 in 1903, when R.W. Scully found it apparently well established near Currabinny Pier (H4, W/79.61). (However, *P. echioides* was not seen at Currabinny Pier when I visited the site on 19 October 2000.)

On 21 September, a fleeting visit to Whitegate Oil Refinery on the east side of Cork Harbour, confirmed that *Lepidium latifolium* (Dittander) still occurs on Corkbeg Islet (H5, W/82.63), where it was first recorded by Charles Smith in c. 1750 – 250 years ago! On the journey home, examination of an old sand-quarry at Rostellan Causeway (H5, W/86.65) turned up thriving populations of *Chamaemelum nobile* (Chamomile), apparently the first East Cork station in 100 years.

On 5 October, a special botanical outing was undertaken, with two main objectives in mind: 1. to check on the current status of *Carex depauperata* (Starved Wood-sedge) in its River Blackwater site near Killavullen (H5, W/6.9); and 2. to revisit a cluster of East Cork pond sites for *Rumex maritimus* (Golden Dock) about Glanworth Village (H5, R/7.0) which were originally found by Ro FitzGerald and Wildlife Rangers Pat Smiddy and Cyril Saich in 1992/1993. At the *C. depauperata* site, only two, small, vegetative tussocks of the sedge were observed on this occasion (three having died out since my last visit in September 1998!), strongly indicating that the present population of this *Irish Red Data Book* species is on the verge of extinction in its sole Irish locality, where I originally found it in June 1973. On the positive side however, I have good reason to believe that a moderately large bank of *C. depauperata* utricles are scattered throughout its woodland site, with the potential for germination in future years, given the appropriate ecological conditions.

With regard to the search for *Rumex maritimus* in the Glanworth area, some 150 vegetative plants were recorded from the southern margin of Lough Pole (H5, R/74.04), the Golden Dock growing in shallow open water, on a moderately firm, muddy substrate. Very few other suitable microhabitats occur for it about Lough Pole, where a dense, floating, vegetative mat of intermixed *Menyanthes trifoliata* (Bogbean), *Carex rostrata* (Bottle Sedge), *Typha latifolia* (Bulrush), *Sparganium erectum* (Branched Bur-reed), etc. occurs. (A marginal, fruiting population of *Chenopodium rubrum* (Red Goosefoot) was

also found at Lough Pole in damp, bare, rutted ground beside the peripheral wire-fence boundary.)

A further impressive fruiting population of *Rumex maritimus* was subsequently refound on the margins of a second pond-site, which lies to the north east of Togher Crossroads (H5, R/72.05). I hope to check out other existing (or potential) pond habitats for *R. maritimus* in this hectad in 2001. While East Cork is an intensively farmed vice-county, and its freshwater ponds are very sparsely distributed and small in size, it is fascinating to note that they hold the main Irish populations of *Rumex maritimus* and some of the very few recorded Irish populations of *Alopecurus aequalis* (Orange Foxtail), while the nationally scarce *Chenopodium rubrum* (Red Goosefoot) is locally frequent about these pond sites.

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RECORDING IN CO. WATERFORD (V.C. H6) IN 2000

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Since 1997 I have spent many hours in Ireland, mainly Co. Waterford, recording for *Atlas 2000*. I thought this would be the ideal time to put my records into a Flora of the county, especially as one has never been written before. After adding my records to my computer database, I could see that more work was really needed. February and March I spent going through any literature I could trace on the flora of Co. Waterford. A list eight pages long was made of plants I thought I might be able to find on my visits. This included common species that needed 'gap filling' and species that were thought to be extinct in the county.

We arrived on Saturday 15 April to a glorious warm, sunny day. The best part of the afternoon was spent at Cheekpoint (S/6.1) where we were rewarded with a splendid show of *Malus sylvestris* (Crab Apple). Large patches of *Delairea odorata* (German-ivy) hung over the cliffs with a little *Sedum confusum* (Lesser Mexican-stonecrop).

Most of Monday was spent on the coast. *Carpobrotus edulis* (Hottentot-fig) was a shock to find growing on the cliffs at Garrarus (X/5.9). The last stop of the day was (square not given) in search of *Trichomanes speciosum* (Killarney Fern) where A. Ball last reported it in 1837. The information I was given was some 30 km away to the south west, but as the name on the map was the same I took my chances that this would be the correct place. *Dryopteris aemula* (Hay-scented Buckler-fern) was plentiful as I started to follow the river. At a fork in the river grew *Hymenophyllum tunbrigense* (Tunbridge Filmy-fern). The sides of the river became steeper and steeper and more overgrown with *Prunus laurocerasus* (Cherry Laurel). I thought I had better stop as it had got to the stage where it was almost impossible to walk along the almost vertical sides of the very overgrown coombe. But there it was, the Killarney Fern at my feet, six patches. I don't think I have ever worked so hard before for two hours to find a single plant species.

I wanted to search for *Lathraea squamaria* (Toothwort), which had not been reported in the county since 1896. After hearing that the gardens of Tourin House were open to the public we made our way there on Wednesday 19 April. It wasn't long before I found Toothwort under the Cherry Laurels and at the base of the Hazel (*Corylus avellana*) bushes. *Selaginella kraussiana* (Kraus's Clubmoss) was almost the dominant species of the lawns.

Thursday 20 April was *Leucojum aestivum* subsp. *aestivum* (Summer Snowflake) day. The striking white flowers of the Snowflake are easily found in the reed beds and willow carrs along the banks of the River Suir, where it grows by the thousands from Carrick-on-Suir (S/4.2) to a few km west of the city of Waterford (S/5.1). It can also be found along the Clodiagh River (S/4.1) from Portlaw to where the river meets the R. Suir. *Caltha palustris* (Marsh-marigold) is also very plentiful along both rivers.

It was warm and sunny on Thursday 27 April. Sgilloge Loughs (S/2.1) was our destination to see if we could track down the only record for Co. Waterford of *Vaccinium vitis-idaea* (Cowberry), last reported above the Loughs in 1882. As the clouds were still hugging the mountains, while everywhere else was in full sun, it was out of the question to go climbing.

Sorbus hibernica (Irish Whitebeam) and *Melampyrum pratense* (Common Cow-wheat) were found on Raven's Rock (S/2.2), a small knoll at the north end of the Comeragh Mountains. As there were no clouds clinging to the mountains above Lough Mohra (S/2.1), we drove along the rides of a conifer plantation to save a long climb to the summits of Knocksheegowna and Knockanaffrin in the hunt for *Empetrum nigrum* (Crowberry), which was in small quantity in the damp areas along the mountain ridge. *Huperzia selago* (Fir Clubmoss) for some reason only grew on one of the many rock outcrops, where it was plentiful. Dropping down around the side of this large rock, to my joy I spotted Crowberry on one of the ledges.

We headed to Ardmore (X/1.7) in the far south of the county for our last whole day, to look for *Salvia verbenaca* (Wild Clary) which was thought to be extinct in H6 since the mid-1970s when last seen in Ardmore Bay. I found a single specimen here and also at Whiting Bay, where the plant was first reported by T. Wright in 1850.

Our last day, Saturday 29 April, was another very sunny warm day. A set aside field at Dunmore East (X/6.9) was ablaze with the yellow of *Chrysanthemum segetum* (Corn Marigold). Other weeds in the field included *Spergula arvensis* (Corn Spurrey), *Lamium hybridum* (Cut-leaved Dead-nettle) and, surprisingly, *Cochlearia danica* (Danish Scurvygrass).

Later in the year I crossed the Irish Sea again. Our four-day trip started on Saturday 16 September at Logloss (S/5.1) on the west side of Waterford city where two fine specimens of *Consolida ajacis* (Larkspur) were found growing on waste ground.

Our first visit of the day on Sunday was to Bunmahon (X/4.9) where we had plenty of *Mentha x piperita* (Peppermint) on the banks of a stream. *Calystegia sepium* subsp. *roseata* (Hedge Bindweed) was climbing over all the vegetation along the stream, one of three sites in the county. A disturbed corner of a field was covered in *Silybum marianum* (Milk Thistle) and a single specimen of *Reseda alba* (White Mignonette) grew on the roadside. Ballyshonock reservoir (S/4.0), the second stop of the day, had *Alopecurus aequalis* (Orange Foxtail) and *Mentha x gracilis* (Bushy Mint) growing in the vegetation just above high water mark. Dr R.M. Harley confirmed the Bushy Mint and has placed the specimen in Kew (K). *Elatine hexandra* (Six-stamened Waterwort) and *Sparganium emersum* (Unbranched Bur-reed) were exposed on the drying mud where the water level had dropped. Before the tide had chance to come in we visited the Back Strand at Tramore in search of *Zostera* (Eelgrass) (Ferguson

and Scannell, 1969). *Z. angustifolia* (Narrow-leaved Eelgrass) was found – just the odd plant at the west end (S/5.0). There were large stands of *Z. noltii* (Dwarf Eelgrass) along the north side (S/6.0). On and behind the sea-wall were *Sagina nodosa* (Knotted Pearlwort), *Trifolium fragiferum* (Strawberry Clover), *Parapholis strigosa* (Hard-grass) and *Puccinellia distans* (Reflexed Saltmarsh-grass). We then moved on to Carrickavrantry reservoir (S/5.0) in search of *Baldellia ranunculoides* (Lesser Water-plantain), which we found. Growing with both parents at the north end of the reservoir was *Rumex hydrolapathum* x *R. obtusifolius* (Water x Broad-leaved Dock). In the nearby Ballyscanlan Lough (S/5.0) was a little *Sparganium natans* (Least Bur-reed) and in the adjoining grassland *Rumex crispus* x *R. obtusifolius* (Curled x Broad-leaved Dock). Our last stop of the day was to Knockaderry reservoir (S/4.0) where we found more *Alopecurus aequalis*, a species new to the county.

On Monday we started our day in a damp field on the north side of the R675 at Duckpool (X3.9) on the east side of Dungarvan. Here we had *Rumex crispus* x *R. conglomeratus* (Curled x Clustered Dock) scattered about the field with both its parents. On the ditch bank of the field was *Juncus maritimus* (Sea Rush), *Triglochin maritimum* (Sea Arrowgrass), *Puccinellia distans* (Reflexed Saltmarsh-grass) and *Carex distans* (Distant Sedge). Next we headed south to Monaneea Lake (X/2.8). *Sparganium angustifolium* (Floating Bur-reed) was the dominant species. A single patch of *Schoenoplectus tabernaemontani* (Grey Club-rush) towered above a small area of *Sparganium erectum* subsp. *neglectum* (Branched Bur-reed). Spotting *Centaurea scabiosa* (Greater Knapweed) from the car window made us pull over at Ballyquin (X/2.8) to walk along the R673, where we had a single specimen of *Torilis nodosa* (Knotted Hedge-parsley). Crossing over into X/1.8 there was also *Trisetum flavescens* (Yellow Oat-grass), *Fumaria bastardii* (Tall Ramping-fumitory) and *Euphorbia lathyris* (Caper Spurge) on the road verge. A single bush each of *Berberis darwinii* (Darwin's Barberry) and *Philadelphus coronarius* (Mock-orange) grew next to the path in the valley leading to the River Blackwater next to Glencairn Abbey (W/9.9). The wooded path along the river gave us *Melica uniflora* (Wood Melick), *Vinca minor* (Lesser Periwinkle) and nine clumps of *Festuca altissima* (Wood Fescue). Praeger last saw this *Festuca* in Co. Waterford in 1899 (Praeger, 1934). This is probably the same site.

Our last day, Tuesday, was hot and sunny. We started the day by spotting *Equisetum sylvaticum* (Wood Horsetail) along the verge of the R676 below Kilclooney (S/3.0). Although it was hot we climbed up to Crotty's Lough (S/3.0). Not a single species of plant could be found growing in the water, the

level of which had dropped over 2m, exposing the boulders and areas of gravel. There were small patches of *Littorella uniflora* (Shoreweed) and scattered plants of *Gnaphalium uliginosum* (Marsh Cudweed) and *Persicaria minor* (Small Water-pepper), the latter confirmed by Dr J.R. Akeroyd. Moving on to the Clodiagh River (S/4.1) at Portlaw we had *Mimulus guttatus* (Monkeyflower) on the riverbank while *Rumex crispus* subsp. *uliginosus* (Curled Dock) grew in the estuarine mud. Our last stop of the day was at Belle Lake (S/6.0) where we found *Isoetes lacustris* (Quillwort) floating along the water's edge. Several very large stands of *Typha angustifolia* (Lesser Bulrush) were interspersed with *Schoenoplectus lacustris* (Common Club-rush).

On the whole my two trips in 2000 were very successful. My thanks go to Ian Green and Mike Stephens for all their help on these visits.

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A REPORT FOR CO. DOWN (V.C. H38), 2000

G. Day

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I would like to thank Paul Hackney, from whom I have taken over as county recorder for Co. Down (H38), for his unstinting help and encouragement over several seasons.

With the completion of recording for the new *Atlas 2000*, I wondered how I could most usefully spend my field time. Fiona Maitland at CEDaR (Centre for Environmental Data and Recording, Northern Ireland) kindly supplied a print-out of Co. Down records by date class. Looking through these, it became obvious that many species previously recorded were absent from the most recent date class (1987). I decided to see if any of these could be re-found. As the season progressed, a few absences were relatively easily rectified, but at the end of the season, the vast majority of 'missing' species remain unfound. After all, if experienced eyes have failed to find such species in the past 14 or so years, one season's searching is unlikely to turn them up. What is very disturbing, is the number of species now missing from most 10-km squares.

No doubt the new *Atlas* will provide a wider picture of this reduction in diversity.

The season provided the following interesting records.

Echinochloa colona (Shama Millet)

A single plant was found in Newtownards town centre. This is the first record of this casual for Co. Down.

Echinochloa colona and several other unusual species, including *Silene conica* (Sand Catchfly), *Amaranthus retroflexus* (Common Amaranth), *Thlaspi arvense* (Field Penny-cress), *Camelina sativa* (Gold-of-pleasure) and *Setaria viridis* (Green Bristle-grass) have appeared this year in my own garden from wild bird food.

Equisetum variegatum (Variegated Horsetail)

Richard Weyl found this at Portavogie, J/65.59. This is the third Co. Down site for this local species.

Eryngium maritimum (Sea-holly)

Two new sites were found for this species, which is rare in Co. Down. The first was a single plant by Wesley Semple in Belfast Lough (square J/41.81), at some considerable distance from previously known sites. The other was by myself with Wesley Semple and Paul Hackney, at Portavogie, J/65.59, where there were two plants. This site also contained *Ophrys apifera* (Bee Orchid) and *Thalictrum minus* (Lesser Meadow-rue).

Polygonum oxyspermum (Ray's Knotgrass)

This species was formerly frequent, but is now rare. It was recorded at three sites, two of them being the same sites as the Sea-holly (*Eryngium maritimum*), J/41.81 and J/65.59, and the third was in J/63.66, which is south of Ballywalter.

Senecio inaequidens (Narrow-leaved Ragwort)

This alien, increased to three plants, was still at the only site in Co. Down, in Newtownards.

Solanum nigrum (Black Nightshade)

This casual species is very rarely recorded, but was abundant in a field of maize at Gransha, J/59.60.

Crambe maritima (Sea-kale), *Limonium binervosum* (Rock Sea-lavender), *Sanguisorba officinalis* (Great Burnet) and *Seriphidium maritimum* (Sea Wormwood)

These species were still at their sole known sites in Co. Down.

NOTES FROM CO. ANTRIM (V.C. H39)

S. Beesley

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Trifolium striatum (Knotted Clover)

According to Hackney (1992) the last record of this species in Co. Antrim was from near Whitehead in 1935. The location has been searched many times since without success. Whilst recording for the *Urban Flora of Belfast* in 1994 (Beesley and Wilde, 1997) John Wilde and myself found the plant growing on waste ground near the sea and adjacent to the sewage works at Greencastle c. 5 km from the city centre. We revisited the site on 23 May 2000 and found more than ten plants.

Melilotus spp.

Melilotus spp. are not common in Co. Antrim and almost all records have been from the Greater Belfast area except for a long established site by the sea at Whitehead for *M. altissimus* (Tall Melilot). There has been some confusion between *M. officinalis* (Ribbed Melilot) and *M. altissimus* but it would appear that both species have been found in the Greater Belfast area on waste ground usually not far from the sea.

Melilotus alba (White Melilot) is much rarer and also found in waste areas. There are records from the Greater Belfast area from Jagoe and Pate (1950) (Hackney, 1992: 173) and Beesley and Wilde (1997).

Melilotus indicus (Small Melilot) is another waste ground plant with records from Sans Souci Park, Belfast (field record, Piper 1984, in Hackney (1992: 173)), Duncrue St landfill site (field record, Beesley 1986), Carrickfergus

(field record, Beesley 1990) and near Brook Park, Belfast (Beesley and Wilde, 1997).

John Wilde and I have recently been botanizing on sites of disused quarries being used as landfill sites and on 7 and 12 September we visited a quarry site on Carnmoney Hill some 9 km north of Belfast city centre. One hundred and forty two species were recorded amongst which we found *Melilotus officinalis*, *M. alba* and *M. indicus* all plentiful and growing within 100 m of each other. We find it truly remarkable that these uncommon casuals should be found growing together and well away from previous recorded sites. Landfill areas provide excellent sites for casuals to become established without undue competition and as such are valuable for studying changes in the flora.

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REPORT ON THE BSBI FIELD MEETING IN CO. MONAGHAN (V.C. H32), 26-27 AUGUST 2000

The field meeting was centred around lakes in the southern part of the county with the meeting point at Lake Muckno, Castleblaney. The meeting was poorly attended, no doubt due to post-*Atlas* syndrome, with only two participants plus the leader on the first day and the leader on his own on the second. A reconnaissance was carried out two days before, in excellent weather by myself and Ian McNeill, an adjoining vice-county recorder and the plants listed include those recorded on that occasion as well.

Lake Muckno is an extensive sheet of water with varied activities including fishing, water sports and other leisure facilities which would restrict, to some extent, botanical recording. The area is acid and therefore wooded areas occur right down to the lake edge in places with open grassland, reed beds, etc. in others. Plants found were *Viola palustris* (Marsh Violet), *Carex vesicaria* (Bladder-sedge) and *C. acutiformis* (Lesser Pond-sedge). In a damp wooded area *Festuca gigantea* (Giant Fescue), *Mentha x verticillata* (Whorled Mint) and close to the lough shore *Rorippa palustris* (Marsh Yellow-cress) and a fine stand of *Lysimachia vulgaris* (Yellow Loosestrife) were found. On the walls of

the Victorian Castle Hope were several plants of *Mycelis muralis* (Wall Lettuce). Some plants of *Plantago major* (Greater Plantain) tended towards the sub-species *intermedia*. At Wallaces Bridge on the north east side of the lake we found a large stand of *Echinops* (Globe-thistle) identified later by staff at the Ulster Museum as *E. bannaticus* (Blue Globe-thistle), obviously an escape from a nearby farm.

At Muckno Mill Lough, about 3 km to the north, were among other plants three pondweeds, *Potamogeton natans*, *P. perfoliatus* and *P. alpinus* (Broad-leaved, Perfoliate and Red Pondweeds respectively), *Callitriche hamulata* (Intermediate Water-starwort), *Apium inundatum* (Lesser Marshwort), *Mentha arvensis* (Corn Mint) and *Ranunculus peltatus* (Pond Water-crowfoot). Two surprise plants at this lake were *Elodea canadensis* (Canadian Waterweed) in flower, a sight rarely seen and *Bidens cernua* var. *radiata* (Nodding Bur-marigold), three plants showing very large and distinct ray florets.

On 27 August the area around Carrickmacross was visited but heavy thunderstorms and torrential rain cut short the day's activities, but between the showers some botanizing was possible.

At Lough Naglack, again a lake with wooded and 'reeded' shores, the water was crowded with rafts of *Ceratophyllum demersum* (Rigid Hornwort) and some *Spirodela polyrhiza* (Greater Duckweed). In the woodland we found *Mercurialis perennis* (Dog's Mercury) and *Festuca gigantea* (Giant Fescue) and on the bank of a nearby roadside, a plant of *Silene vulgaris* subsp. *vulgaris* (Bladder Campion) – an unusual sight this far north for the inland version of this plant.

About 4 km south of Carrickmacross there is a large disused limestone quarry that produced 100+ plants of *Gentianella amarella* (Autumn Gentian) and a few plants of *Sanguisorba minor* (Salad Burnet). Also present were *Pimpinella saxifraga* (Burnet-saxifrage), *Origanum vulgare* (Wild Marjoram) and *Silene latifolia* (White Campion). Nearby was *Pseudofumaria lutea* (Yellow Corydalis).

Further south on the border with Co. Meath (v.c. H22) is Rahans Lough, a fine limestone lake with very clear water and, using numerous fishing stands, a number of water plants were noted including *Oenanthe aquatica* (Fine-leaved Water-dropwort), *Baldellia ranunculoides* (Lesser Water-plantain), *Samolus valerandi* (Brookweed), *Lamium hybridum* (Cut-leaved Dead-nettle), *Zannichellia palustris* (Horned Pondweed) and *Myriophyllum spicatum*

(Spiked Water-milfoil). The last visit of the day was to nearby Descart Lough where the only plant of interest was *Ranunculus lingua* (Greater Spearwort) growing alongside *Ranunculus flammula* (Lesser Spearwort).

Many thanks again to the two stalwarts who turned up on day one.

LETTERS

Arbutus unedo L. (Strawberry-tree)

In January 1999 I sighted what seemed to be a colony of *Arbutus unedo* L. (Strawberry-tree) shrubs growing in ledges on a cliff face in the Gap of Dunloe, V/871.859.

On consulting Scully (1916), I could not find a reference to this station for *A. unedo*. There is, however, a record of a single specimen in the Black Valley which lies at the southern extremity of the Gap of Dunloe: "one old tree by the stream running from Lough Googh into the Black Valley, Reeks: Hart 1882. An old tree on the Derrynacarna stream a little east of the previous station, 1904: RW. – the only *Arbutus* seen on the Reeks" (Scully, 1916: 180). It is most probable that both these records refer to the same single specimen. The recently discovered station is about 5 km north of the old Hart-Scully station and about 2 km from Lough Leane.

Definite identification was difficult on account of the height, 17 m to 25 m, at which the *Arbutus unedo* shrubs were observed. Conclusive proof of identity was obtained when I found the bell-shaped flowers on the ground at the base of the cliff face in October 1999. There is, at least, a total of twelve bushes scattered along the cliff. The population is safe from sheep grazing but some strongly established *Rhododendron ponticum* (*Rhododendron*) specimens rooted in the crevices and ledges, where the *A. unedo* bushes are found, could pose a threat.

Dr Michael Wyse Jackson, v.c. recorder for North Kerry (H2), subsequently confirmed, on behalf of Dúchas, that this site was not known to R.W. Scully, and, also, that Dúchas had no record for the location. Dr Wyse Jackson kindly forwarded a copy of a survey that was carried out by L.M. Garvey (School of Botany, Trinity College, Dublin) and D.P. Flynn (Botany Department, University College, Dublin) *Distribution of the strawberry tree at its lesser*

stations in south west Ireland. The findings of their survey were subsequently published as Garvey and Flynn (1995). Garvey and Flynn did not find this new station in their survey of the lesser stations within a 40 km radius of the Killarney Lakes and Glengarriff Woods. They noted at certain sites a marked decline in the number of individuals, with populations at other sites severely threatened by *Rhododendron* (Garvey and Flynn, 1995: 98). In view of the restricted distribution of *Arbutus unedo* and of a noted decline in the lesser stations this new site must be regarded as of some significance.

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J. O'Malley

Cullina, Beaufort, Killarney, Co. Kerry

Irish Biological Records Centre

I am glad to see that a biological records centre for Ireland was on the agenda of the AGM of the Irish Branch of the BSBI.

This is something that is long overdue. There must be a vast amount of data out there held by both professional and amateur naturalists embracing almost every facet of Irish wildlife that could be compiled and stored in one such centre.

An outstanding example of what might be required to establish and operate such a centre is covered in the source book for biological recording issued by an equivalent organisation in Scotland (Smout, A.-M. and Mellor, D. (1999). *Biological recording in Scotland*. BRISC, Anstruther, Fife).

Hopefully, the Government will be supportive of this most desirable facility.

M. O'Sullivan

Knockavota, Milltown, Co. Kerry

BOOK REVIEW

An annotated topographical checklist of the flowering plants, conifers, ferns and fern allies of the Burren region. Compiled and edited by E.C. Nelson. Outwell, Norfolk. 2000. £7.50 plus p&p in UK £2.00, elsewhere £3.00. ISBN 0 9524847 1 4. (Available from the author: E.C. Nelson, Tippetiwitchet Cottage, Hall Road, Outwell, Wisbech, Cambs, PE14 8PE.)

This checklist of the Burren flora was sorely needed. For years any professional botanist or earnest amateur wishing to seriously botanise in the Burren would have wanted to consult Webb and Scannell (1983), now long out of print. So, by re-presenting and updating the records first collated in Webb and Scannell, Dr Nelson has performed a valuable service. He broadly retains the topographical regions of the Burren delineated in Webb and Scannell (1983) (though, as he explains, there are some changes due to the remit of the organisation that commissioned his publication) and hence maintains continuity with the older book. The checklist is thoroughly up-to-date; recent records including those available to him during 1999 are included.

There are some surprises, for example the record of *Erica tetralix* (Cross-leaved Heath) on the limestone at the Carran polje. This is partly astonishing but confirms an intuitive prediction that the author and this reviewer have held for some years, that this strict acidophile ought to be somewhere on the more leached and organic soil substrates upon the limestone. A single occurrence of *Allium schoenoprasum* (Chives) is also a surprise; the entry places it in district 3 (that is the east of the Burren region, including the largely bare limestone to the east of the Burren hills that extends into Co. Galway) but it is not clear whether or not this is the station now within The Burren National Park that was mentioned in evidence by Dr Jane Smart of Plantlife during the 1999 planning enquiry into the proposed Mullaghmore development. It is also pleasing to find that the exquisite *Cephalanthera longifolia* (Narrow-leaved Helleborine) is not confined to the one station near Mullaghmore mentioned in Webb and Scannell (1983) as a post-1958 record; one always thought 'it must be somewhere else as well' and Nelson presents a very recent record from district 2 where it was also found in 1912.

Perhaps just these three examples give a flavour of the great interest that this checklist will have for existing students of the Burren flora and obviously those visiting for the first time could not have a better companion.

Users are invited to contribute new records to the author as there is a stated intention to produce new editions.

Dr Nelson's checklist was compiled to fulfil the objectives of the Burren Tourism and Environment Initiative (BTEI), notably to provide information relating to special interest features of the Burren incorporating an environmental message. This European supported initiative is to be commended. Perhaps something else remains to be done; Webb and Scannell (1983) provided authoritative introductory notes covering the geology and soils, climate, character of the flora, the vegetational history, etc. The Burren-relevant information therein is essential material for anyone wishing to have a basic general understanding of this fascinating region as well as its flora. This background is not, to my mind, available with such clarity and authority in any current publication. Perhaps the BTEI or its successor might consider commissioning a small publication that fills this gap.

REFERENCE

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P.M. Carter

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NORTHERN IRELAND WEB SITE

Over the last six months I have been working on developing a web site of the flora of Northern Ireland. The site has now gone on-line with just over 300 species represented with a species account, a 10-km distribution map and, in most cases, images of the plant. (We hope to gain more funding to complete the site to include c. 1,000 species and to make it searchable by keywords.)

Please have a look and if you have any suggestions or comments please let me know. The address is: <http://www.ulstermuseum.org.uk/flora>

Fiona Maitland

Flora of Northern Ireland Web Site Co-ordinator, Botany Department, Ulster Museum, Botanic Gardens, Belfast, BT9 5AB. E-mail: fiona.maitland.um@nics.gov.uk

OBITUARY

Toby Hodd (1945 - 2000)

Toby Hodd was born in Hoddeston, Hertfordshire. During his childhood his family moved to different towns due to his father's work as an optician until they settled in Whitstable, Kent, where Toby's mother still resides. Inspired by his father's interest in ornithology, Toby soon developed an interest and a love of nature that rooted deeply within him. At the age of eleven he spotted Savi's Warbler, a species that no ornithologist had seen in the area for over 100 years. This youthful love of nature was to be the bedrock of his life.

He studied science in Hatfield Polytechnic and received his primary degree from the University of London, B.Sc. (Hons) in Zoology and Psychology. He studied in the University of Aberdeen from 1967 to 1972 when he was received an M.Sc. in Ecology. In 1972 he began research for a Ph.D., studying the lions of the Gir Forest in north-western India. While there he wrote a book on the grasses of Western India.

During his time in Aberdeen he was elected a member of the Aberdeen Corporation and was very involved with local conservation groups. He also helped to monitor and campaigned actively against oil spillages in the North Sea. Later he taught for three years in Newsligo.

In 1979 he moved with his wife, Patricia, and his young family to Wales and set up home in Llangeitho, Dysed. While in Wales he ran a consultancy service for farmers and also managed a plant nursery. In 1985 he received a Living Landscape Award from the Council for the Protection of Rural Wales for a nature trail he designed and constructed near Aberystwyth. He was also responsible for planting thousands of broad-leaved trees and in addition produced the first guide to recycling in Wales.

In 1989 the Hodd family moved to Killarney. Toby believed that the Killarney area contained the finest and most unspoilt environment in these isles. It was this belief and commitment that motivated his conservation work in Killarney for the next eleven years. He was instrumental in setting up a Kerry branch of Earthwatch and was also very involved with The Killarney Nature Conservation Group in two campaigns to prevent golf courses from being developed within the National Park.

His interest in botany soon blossomed. He joined the BSBI in 1995 and from that point he made outstanding progress in his knowledge and discovery of plants in the Killarney National Park and also in the surrounding areas. Accompanied by his sons, especially Rory, he ranged in his forays from the lowlands to the mountain tops. Accounts of some of these botanical trips were included in issues of *Irish Botanical News* from 1994-1999. It is worth referring to his 1997 report "In search of alpine plants on the northern slopes of Mangerton Mountain, South Kerry (v.c. 1)" (Hodd, 1997). In this account Toby described in vivid detail his effort to refind R.W. Scully's stations for *Salix herbacea* (Dwarf Willow) and *Lycopodium clavatum* (Stag's-horn Clubmoss) on Mangerton Mountain, species that had not been seen for over a hundred years in this area. His description of the summit scene is especially worth recalling: "Until now there had been little wind, but then as I reached the summit, the wind hit me with such force that it seemed to suck my breath away. Head down I began to search for Scully's 100 year old records of Stag's-horn Clubmoss and Dwarf Willow. Dark clouds raced towards me from the Reeks and a thick curtain of rain began to threaten ... I looked for a summit cairn but there was none, only a 1 m wide and 0.5 m high pile of medium sized stones, marking the highest point. Now on my hands and knees I searched through the stones. 'Eureka', I exclaimed 'the Dwarf Willow'." This dramatic account was typical of the excitement and delight that Toby experienced in his search for rarer plants.

In April 1995 he accompanied Lady Rosemary FitzGerald on her survey of red data species. One objective of her survey was to find the aquatic fern *Pilularia globulifera* (Pillwort) but high water levels during the summer made it extremely difficult. The weather changed for the better in September and water levels on the Upper Lake quickly fell. Toby availed of the opportunity and within a week had found several stations. He undertook a thorough search and mapped the overall distribution of this threatened species in the area.

In 1998 he refound Scully's long lost station for *Cephalanthera longifolia* (Narrow-leaved Heleborine) in the Glencar area. He later described this as the find of his life. The site contains three discrete colonies on land owned by the state forestry agency, Coillte, who have now arranged to conserve this area. Without Toby's perseverance and keen eye this site could have been destroyed as felling of coniferous species commenced nearby the following year.

He participated in a number of work schemes within the confines of The Killarney National Park. Up to this time there was no systematic plant list for the National Park. Toby set out with considerable determination to rectify this

omission. Within two years he had listed c. 800 species and mapped the distribution of the rarer taxa. He also began an herbarium of the plants within the Park. Every nook and corner of the National Park was searched and researched in pursuit of plants, many of which had not been seen for several years. Such was the case with *Frangula alnus* (Alder Buckthorn): it took him almost two years to refind the site near Doo Lough. His tenacity kept him going.

In cooperation with Caroline Mhic Daeid, BSBI v.c. recorder for South Kerry (H1), he was heavily involved in the *Atlas 2000* project.

Over the years Toby guided many groups on botanical walks and was most generous with his time and information. He took part in a number of local radio programmes and was an excellent interpreter of the local flora and fauna. Perhaps the most enduring monuments to his commitment will be the Kilcummin Bog Walk, which he developed for the local development group and a nature guide to Reenagross Park in Kenmare. These facilities will allow both young and old to immerse themselves in the beauties of the Kerry flora that Toby came to love and cherish.

He bore his illness with stoical resignation and wished that all of us would be at peace with the planet Earth. Time ran out and he left a proposed book on the flora of The Killarney National Park unfinished; however, his sons, Matt and Rory, intend to complete this work. We extend our deepest sympathy to his wife Patricia and to his sons, Matt, Stephen, Dylan and Rory, to his mother, Barbara and to his three brothers, Malcolm, Nigel and Stephen.

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J.L. O'Malley

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MINUTES OF THE BSBI - IRISH REGION ANNUAL GENERAL
MEETING HELD IN PORTORA ROYAL SCHOOL,
ENNISKILLEN ON 6 NOVEMBER 1999

The chair, Caroline Mhic Daeid, thanked Portora Royal School, Robert Northridge and those who had helped in arranging the AGM and welcomed the 25 members attending.

Attendance was as per the attached sheet [see file copy].

Apologies were received from Aideen Austin, Stan Beesley, Anne Carter, Joan Crichton, Katharine Duff, Grace O'Donovan, Paddy Reilly, Maura Scannell, Daniel Kelly, Toby Hodd, Wesley Semple and Trevor Dines (who was once again defeated by the Irish Sea).

Minutes of the 1998 Irish Region AGM were read, approved and accepted.

Chair's Report

Caroline Mhic Daeid apologised for the fact that she had not been able to attend all of the field meetings held during the year as all her free time was committed to finishing recording for *Atlas 2000* in Kerry. She thanked all those who had given her support during her term as Chair and was hoping to spend more time on issues of conservation and the problems of land access now that she was retiring from the post.

Secretary's Report

The Secretary's Report is on record. It included a comment on the need to consider the future focus of the Irish Regional Branch and drew attention to the BSBI AGM to be held in Belfast during May 2000.

Report of the Representative to Council

David Nash had attended two meetings during the year most of which dealt with routine matters later reported in *BSBI News*. He advised that there were excess copies of some BSBI literature that were to be shredded but were available to anyone who wanted them in the meantime.

Report of the Field Meetings Secretary

Alan Hill said that eight field meetings had been held during the course of the year and reported on some of the more interesting findings. He thanked the leaders, botanists and their friends who had attended the meetings. After four

years in the role Alan formally handed the duties on to Declan Doogue so that he would be able to spend the next four years of meetings 'relaxing'.

Atlas 2000

Declan Doogue stepped into the gap left by Trevor Dines whose ability to raise storms in the Irish Sea has become renowned. He said that the number of mastercards now in was most impressive and he expected the total coverage in Ireland to fall short by only approximately 40 hectads. He pointed out that it was now time for us to "go back to botany" and reiterated the need to get some expertise over to help with some of the more difficult taxonomic groups.

Fiona McKee said that CEDaR now had in excess of 300,000 records with additional recording cards still coming in. They were hoping to submit all the data in January.

Vice-county Recorders' Reports

Paul Hackney told the gathered members of his retirement as v.c. recorder for Co. Down (v.c. H38) and his intention to hand over to Graeme Day. Don Cotton (Co. Leitrim, v.c. H29) reported on the database he had set up for his plant records and explained how his *Atlas 2000* recording had targeted areas he felt were of conservation value and how he felt there were many gaps to be filled. A letter from Maura Scannell, detailing the field meeting held in Cloyne (H5), was read out and Ian McNeill (Co. Tyrone, H36) reported the finding of *Utricularia stygia* (Nordic Bladderwort) which was a first for Ireland. Robert Northridge (Fermanagh, H33) reported that what appeared to be *Epipactis phyllanthos* (Green-flowered Helleborine) had been turning up in dark sites under introduced trees – Declan Doogue enquired as to whether they might have been weedy specimens of *Epipactis helleborine* (Broad-leaved Helleborine).

A discussion followed Don Cotton's comments re data collection for *Atlas 2000*: John Faulkner pointed out that all of the projects are conceived in Britain and are often not suited to Ireland's needs. It was suggested that we sit down after *Atlas 2000* is over and decide what we need to do ourselves. For example, mapping those once relatively common plants that appear to be in decline, preparing a 'pink species' list or to start targeting habitats and classifying them using the NVC whilst also developing site inventories.

Elections

A single vacancy was created by the retirement of Caroline Mhic Daeid. Graeme Day, proposed by Alan Hill and seconded by Caroline Mhic Daeid, was deemed to be elected.

AOB

John Faulkner reported on the Biodiversity Strategy Proposals for Northern Ireland and said that comments were needed on its content by the end of November. It was suggested that a Northern Ireland Sub-Committee, co-ordinated by Shaun Wolfe-Murphy, look into and report on the matter.

The afternoon was enlivened by three presentations. The first by Professor Jonathon Pilcher on Palaeobotany, focussed on the changes in vegetation over time as documented by pollen analysis from peat cores. This was followed by Alan Hill who made us all jealous with his spectacular Orchid slides from Cyprus and the Dolomites. The afternoon ended with a stimulating talk on dendrochronology and the possible link between narrow tree bands and asteroid impacts that raised the question of whether there's any hope for us at all!