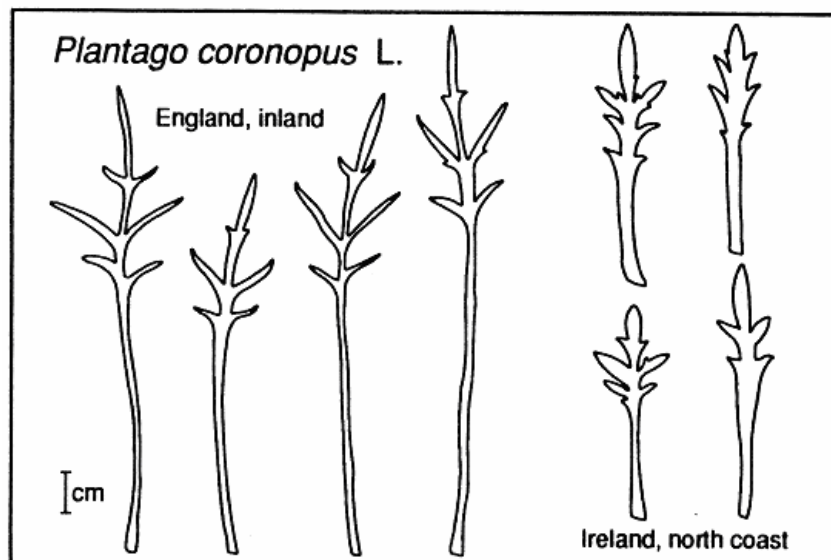


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COMMITTEE FOR IRELAND, 1992-93
BOTANICAL SOCIETY OF THE BRITISH ISLES

Elected at the Annual General Meeting, held in the National Botanic Gardens, Glasnevin, Dublin on 3rd October, 1992 (office bearers were subsequently elected at the first Committee meeting):

Mr John C.L. Phillips, Chairman (retiring October, 1993)
Dr Ralph S. Forbes, Secretary (retiring October, 1993)
Dr David W. Nash, Field Meetings Secretary (retiring October, 1994)
Miss Maura J.P. Scannell (retiring October, 1994)
Dr Micheline J. Sheehy Skeffington (retiring October, 1994)
Mr John J. Earley (retiring October, 1995)
Mr Alan Hill (retiring October, 1995)

The following are also members of the Committee:

Mrs Sylvia Reynolds, B.S.B.I. Council Representative
Mr Paul Corbett, Department of the Environment (Northern Ireland)
Representative
Dr Brian S. Rushton, co-opted October, 1992

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The cover illustration is of representative leaves of *Plantago coronopus* L. from two geographical areas, the north coast of Ireland and inland areas of England. The leaves are derived from plants grown from seed and kept under identical greenhouse conditions.

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EDITORIAL

The general theme for this issue is recording and the publication of records. This has been stimulated by two recent events. Firstly the theme of the A.G.M. held in Glasnevin in early October, 1992 was botanical publishing where we heard a variety of papers ranging from sources of information and directed fieldwork towards Flora production to financing publication and 'doing-it-yourself' publishing in the form of Desk-Top-Publishing. Secondly, in 1991, the Northern Ireland Biological Records Centre was established at the Ulster Museum and this is now beginning to form a focus for recording effort in the North and the related record-keeping part is now being utilised by recorders. All this suggests that the activities of the Society in Ireland are currently buoyant.

Included in this issue is the long-overdue list of members' interests – various problems have beset the compilation of this list some of which were outside my control but I will not bore you with the details. I received replies from 54 members – which represents about 45% of the membership. I intend to keep the data base up-to-date and therefore I will be adding any new or changed information that comes in and if you wish to be included, please send me details.

The next issue of *Irish Botanical News* will be out in February, 1994. Please keep the flow of material coming in. I would very much welcome small items so don't think you have to write long articles – small snippets on interesting finds, interesting habitats visited, unusual forms of plants, etc. would be most welcome. I am desperately short of illustrative material, particularly for the front cover (isn't it obvious from this issue?) and any offers of help in this area would be gratefully accepted.

Have a good field season,

Dr Brian S. Rushton, Editor, *Irish Botanical News*.

BIOLOGICAL RECORDING IN NORTHERN IRELAND – THE NORTHERN IRELAND BIOLOGICAL RECORDS CENTRE (N.I.B.R.C.)

D. Mitchel

Ulster Museum, Botanic Gardens, Belfast, BT9 5AB

The Northern Ireland Biological Records Centre (N.I.B.R.C.), through grant-aiding by the Department of the Environment, Northern Ireland, was established in the Botany and Zoology Department of the Ulster Museum in October, 1991. It is the intention of the N.I.B.R.C. to set up and maintain a permanent computerised data bank of information on the distribution of flora and fauna within Northern Ireland. This information will be stored on computer using the relational database RECORDER. Having information stored on computer facilitates ease of access and retrieval and makes answerable those what, when, why, who and where questions. Importantly, RECORDER is seen as a tool which will be as important to educational and research institutes as it will be to conservation groups and planning organisations.

COMPUTERISATION OF BIOLOGICAL RECORDS

Biological recording is conducted by many organisations for a wide variety of functions. Information, which may be duplicated several times, may be held by a number of agencies, for example, by the Biological Records Centre, a local records centre and probably the local natural history/study group. Given the increased demand for concise and detailed biological information, a demand that is expected to increase in the future, there already exists a need for the coordination of biological records. Given that biological records and associated data are complex and inter-related it has been difficult to achieve the standards which are expected of biological recording without involving a computerised database.

The history of the development of computerised databanks to handle biological records is not a happy one. Indeed, a common practice has been to modify existing databases in order to specifically meet the needs of local government bodies and other organisational centres. Unfortunately this has resulted in a lack of uniformity and, often, disappointing performances. As a consequence of this lack of standardisation, in 1987 the National Federation for Biological Recording put forward the proposal that the local records centres within Britain should co-operate and design a biological recording program which would be suitable for common use. This development led Dr Stuart Ball, whilst working for the Terrestrial Invertebrate Zoology Branch, Nature Conservancy Council (N.C.C.), and who had previously been involved in the development of the Invertebrate Site Register (I.S.R.), to develop a software package, RECORDER, which would run under the REVELATION data manager program on IBM-compatible micro-computers. This package has been accepted by N.C.C. and its successor body English Nature as the standardised way by which biological records can now be stored and exchanged. RECORDER has been recognised by the Ulster Museum and the Department of Environment (N.I.) as being the most powerful and versatile software package available to run on PCs for handling biological records.

A biological record is a clear statement; it denotes that a particular species was recorded by an individual at a given locality in time. A record is, therefore, a complex interaction between species, site and individual. This degree of identity for a particular species' locality can be supplemented by addition of the vice-county within which the site is to be located and details of any relevant publication and any personal comments relating to the site-species interactions. RECORDER is also flexible in that it allows the individual to add to the amount of information relevant to a particular site over a period of years.

At present the availability of a species' distribution or a comprehensive species list for a particular site is limited by the unavailability of information. This is generally a consequence of information not being published or the lack of communication between study groups. In order to gain a more detailed understanding of the relationships between species and the conservation importance of particular sites, it is essential that 'total' information is available for any given area. Collaboration between individuals, recording groups and government bodies is, therefore, imperative. The establishment of the N.I.B.R.C. within the Ulster Museum is seen as being central to this goal. Its centralised position will facilitate the 'building of bridges' to all interested parties, thus facilitating a steady flow and exchange of information. RECORDER will also be able to highlight areas or taxonomic groups that are under-recorded and hopefully also stimulate better and fuller recording once the amount of information that is retrievable on RECORDER becomes obvious.

RECORDER AVAILABILITY

In order to maximise the rate of entry of biological records on to RECORDER it is the intention of the N.I.B.R.C. that an effective biological recording network be established throughout the Province. As well as increasing the rate of entry of records this will also hopefully allow the distribution and status of species to be determined more readily and accurately. It is the N.I.B.R.C.s intention that the network will incorporate individuals and groups with broad ranges of taxonomic expertise. In effect the Ulster Museum will function as a Local Records Centre (L.R.C.) and this fits well with the traditional role of the Ulster Museum in curating, displaying and interpreting collections of biological and geological specimens. For the individual or group acquiring RECORDER, the advantages will be in having their own records in an instantly accessible form and the power to analyze and map their records.

If a particular individual or group is interested in obtaining a copy of

RECORDER the following items of computer hardware and software are essential:

1. A personal computer which is IBM-compatible. Ideally the computer should have at least a 386 processor with a 60 mega-byte hard disc unit. A wide range of computers is available from a variety of sources, including mail order – shop around and get the best deal.

2. RECORDER has been developed as an implementation of Advanced Revelation (AREV), which is a database management system. Development (£850) and run-time (£150) systems of this software are available. Versions 2.0, 2.1 and 3.0 of AREV are available for both of these systems. RECORDER runs on both the development and run-time systems, but only for AREV versions 2.0 and 2.1. The RECORDER upgrade 3.1, which will be imminently released, also does not run on either system of AREV 3.0, so taking this into account and given the cost differential between the run-time and development systems, the N.I.B.R.C. advises that the run-time version 2.1 is purchased. Importantly, all potential users must obtain their own personal copy of AREV prior to the installation of RECORDER – copies of AREV are *not* obtainable through the Ulster Museum nor can RECORDER be installed through the utilisation of a pirated AREV version. Further details can be obtained from Revelation Technologies, 270 Upper Fourth Street, Central Milton Keynes, MK9 1DP, England.

English Nature and the Royal Society for Nature Conservation are providing back-up for the development of the package and additional upgrades will be periodically distributed for incorporation through the N.I.B.R.C.

This package, which currently includes c. 30000 species of British animals and plants and four habitat recording systems in its files, occupies c. 18 Mb of disc space. Extensive use is made of codes, to

reduce the amount of space required to store information, to reduce typing errors and to facilitate the retrieval of information in a more flexible manner. Species and habitat codes are included within RECORDER files, but the codes for sites and individuals specific to a local record centre's area need to be established.

The establishment of site definitions and boundaries for study areas within Northern Ireland is an integral component of the work of the N.I.B.R.C. It is the intention that sites of important conservation interest be encompassed within a boundary. Although boundary definitions already appear to be the subject of much debate, boundaries will only be defined after a period of negotiation with all interested bodies. Importantly, all boundaries should be flexible and may well be subject to temporal change.

In Northern Ireland RECORDER can only be obtained through the Ulster Museum and once a computer and the specified software have been purchased and the conditions of RECORDER availability have been agreed to a member of the N.I.B.R.C. staff will install RECORDER on your computer.

A PRICING POLICY FOR RECORDER

Through conjunction with English Nature charge bands have been agreed for RECORDER as follows:

Band A. Local Records Centres, county Wildlife Trusts, country conservation agencies, other conservation organisations, natural history societies (£150 including VAT).

Band B. Individuals including national recording scheme organisers, county recorders and specialists on particular groups (£75 including VAT).

Band C. Commercial users, environmental consultants, universities

and other educational establishments, government agencies, statutory bodies, research institutes and public utilities (£940 including VAT).

Band D. Individuals supported by a local record centre or other recording organisation (£50 including VAT).

ENQUIRIES AND FURTHER INFORMATION

For further information and any other queries that you may have about RECORDER and its availability please contact either Teresa McMullan, David Mitchel or Bernard Picton at the Ulster Museum, Belfast (0232 381251 ext. 255 or 295).

GETTING TO KNOW RECORDER – A USER’S EXPERIENCE

R.S. Forbes

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BT7 INN*

I believe that I was the first individual plant recorder in Ireland, North or South, to use this computer database biological recording tool. As such, I hope that a brief account of my experience in learning its use, my progress in realising (the hard way) both its capabilities and its limitations, might assist other users to avoid possible difficulties, and might stimulate other potential users to give the program a try.

At the outset let me make it clear that after 18 months use, I am still very impressed by the RECORDER package’s handling of the Co. Fermanagh plant records. Robert Northridge and I are joint B.S.B.I. vice-county recorders for H33 (Fermanagh), and have been working towards a *County Flora* for about twelve years or so. We both have Personal Computers at home, each with a copy of RECORDER, and have been actively entering data from field record cards for about twelve months (mainly during last winter). We currently have

sites and 75684 plant records in the Fermanagh Plant Database, which is the bulk of our own field card information up to 1991 (i.e. the easiest data format to enter), plus the records from a couple of major surveys by conservation staff of the Department of the Environment, Northern Ireland.

COMPUTER MEMORY REQUIREMENTS

As mentioned in David Mitchel's earlier article in this issue, *Biological Recording in Northern Ireland*, RECORDER is hungry when it comes to disk space. As we are only interested in the plant species, a major saving of hard disk memory can readily be achieved by deleting from the RECORDER Species Dictionary all the animal species. The plant species dictionary then only occupies a mere 0.008 Mb. This is a wise move, as data of the scale of ours (mentioned above), already occupy 15.21 Mb, and the total space occupied by Advanced Revelation (Full Development Version), plus RECORDER at the moment is 20.4 Mb, and is set to rise when we enter our 1992 and pre-1980 information. The program runs rather slowly on my 286 machine (particularly when searching for records in response to a query), and really appears to need DOS 5.0 memory handling. It also requires quite a large amount of memory 'headroom' (say about 6 Mb), in order to compute and present data output, e.g. maps of species or sites. I have a 40 Mb Hard Disk, and recently had to remove a number of less used programs in order to create a bit more operating space. I would advise anyone buying new to go for 80-120 Mb, if you intend using other large programs such as Windows and Word for Windows.

RECORDER INSTALLATION AND SUPPORT

Deleting the animals from the RECORDER Species Dictionary is NOT the sort of operation I would advise you to attempt yourself. It would be wise to get whoever is installing RECORDER on your machine to do this for you. Ideally the RECORDER package should be customised for your particular use by the RECORDER manager

who supplies you (e.g. in Northern Ireland, the N.I.B.R.C. staff at the Ulster Museum).

ASPECTS OF SITE INPUT

The input of data to RECORDER falls conveniently into two main categories, Sites and Plant Records. In both cases there are 'windows' already established in RECORDER which set the patterns to follow. The 'Site' entry window's first requirement is for a code number. You will be issued with a personal set of numbers by the N.I.B.R.C. for this purpose. With several different users all entering data into RECORDER for their own purposes, it is obviously vital that they don't use the same code numbers for DIFFERENT sites. The management of site specificity, over the whole of Northern Ireland (let alone all Ireland), is potentially a major problem with RECORDER. Even with two operators working on the same data set, there is the potential for overlap and confusion. This is the reason Robert Northridge and I subdivide our input so that, at the moment I enter all the sites and he does all the plant records.

There are several different ways in which to code and specify a site. You can have 'subsites', within an already listed/coded site; indeed I feel you should! To give an example, 'Florencecourt Estate' might serve as a 'site', being given a central Grid Reference (G.R.). It might then contain 20 or more named 'subsites' for which plant records exist, each given a more precise G.R. The more precise your delimitation of sites and subsites, the better. It is fairly obvious that you cannot get more detail on RECORDER output than you supply in your input. We used to be content with four-figure G.R.s, and would record on our field card every plant from the moment we opened the car door at the vicinity of a site. Experience has taught us to record entirely on six-figures, and to record broadly different habitats on separate field cards. While by this means we maximise the mappable precision of the data output, it is an inevitable consequence that field recording is slower, more laborious, and involves tedious duplication of

commoner species records. Having said this, I do not doubt that in time, when we are completely confident that we have recorded the common species in a particular area (easily checked by plotting a species map on screen), we will simply neglect to record them further.

MAPPING DATA

Site or Species maps are plotted by an in-built program called 'Plot 5'. It offers the possibility of plotting your records at several different levels of precision, from 10-km to points. When the latter are used for a species with many records, the symbols tend to overlap and turn the screen red! Plotting on a 1-km square basis tidies up the display and allows you to identify any such square for which the plant has not yet been recorded. This highlights one of the very real benefits of using RECORDER – you can use it to indicate precisely where you should direct further recording effort.

ENTERING SPECIES LISTS

(a) Creating a window

The input of Species data can follow several different modes. By far the most efficient is the 'Input a Species List: Brief List' window. To use this you need to create a window with a species list comparable to the Field Record Card you are using. RECORDER came to me with such lists for some insect groups and birds. Building up the species list in the window proved really slow, and RECORDER didn't readily forgive any mistakes! It was slow to move the cursor up and down the list when creating it, and it was necessary to remember every step in the quite complicated input sequence, and to concentrate to avoid errors as these were difficult to correct. Worse, it was all too easy to lose a whole session's input by pressing the wrong key. (This happened to me several times.) I found this process was very user unfriendly. It was facilitated by starting the list at the end and working backwards, as this enabled stopping and restarting the process.

(b) Using the Species List window

Once the window with your Plant Species List is established, it is child's play to insert the data for a particular site or subsite from the relevant field card. After giving the site code and its name (available from a pop-up window which accesses the Site File), name of recorder(s) and date, a screen window is called up which presents about 15 plant names or abbreviations at a time in the order they appear on the field card. You then simply use the arrow keys and 'enter' to record the species presence. Care is required, of course, in reading and transferring the data to the computer, as (unless they are whoppers!) any errors will be hard to trace at a later stage. If you notice that you have made a mistake at this stage, it is simply corrected by going back up the list with the arrow key and pressing 'enter' again, which switches the toggle off and deletes the species from that particular listing.

ENTERING RARER SPECIES

After the more frequent species printed on the field card have been dealt with, the rarer species not listed in the above window are then added by a second method. We return to the Main Menu of RECORDER and select 'Add/Edit data', followed by 'Records'. The record number, again from a series allocated to the individual user by the N.I.B.R.C., is supplied by an automatic default. Location details are then requested, i.e. Site code, G.R., Location name and Habitat. The latter is best obtained from another pop-up window accessed by pressing 'F2'. There are three possible sets of habitat codes provided by the package. We use the N.C.C./R.S.N.C. habitat codes, which offer a fairly comprehensive selection. We have added quite a few extra codes to those available as they are seriously deficient in codes for disturbed ground, man-made habitats, tracksides, riverbanks and so on. Again, I would like to see the setting up of such additional codes greatly simplified, as everyone will need to customise the package in this way.

Having supplied the Location information relevant to the plant record, the next step is to specify the species. This is achieved by typing six keys only, e.g. to register *Carex remota*, you would type '/carem', followed by 'Enter'. The program then hunts the species dictionary using the first two letters of the genus and the first three letters of the species name. It is quite rapid and quite marvellous. If it discovers more than one option with this pattern, then it produces a list in a pop-up window for you to select the correct one. The species dictionary of RECORDER version 2.1 was very poor on hybrids, but version 3.0 has a much improved range available. I am confident that later updates will keep on improving this position. After the plant name, you complete the species record by giving the Date (various levels of precision accepted), recorder's name (and Determiner if desired), Type of record (a list of nine options such as S = field record; V = voucher specimen; PH = photograph).

TRANSFERRING DATA BETWEEN COMPUTERS

One of the major headaches which has become apparent through using RECORDER, is in the transfer of data between users, or to the Biological Records Centre. There is an extremely involved and slow process by which RECORDER allows you to 'Select' new records from the stored data set and then 'Recordcopy' them on to a floppy disk containing pre-established 'New_records' or 'New_sites' files. With a data volume as big as we now have, the record selection can take hours, and frequently the process fails for some technical reason (perhaps because PCs and software are not infallible).

THE IMPORTANCE OF BACKUP

It is also vital to update RECORDER's indexes before trying any data transfer method. The indexing of the package is central to how it works, and woe betide you if it gets corrupted! It is crucially important to keep regular, frequent backup floppy disks when you are dealing with RECORDER. You cannot overdo making backups!

USING A BACKUP METHOD FOR DATA TRANSFER

Both Robert Northridge and I possess a very useful piece of Disc Utility software (Shareware) called 'Fastback Plus'. This program can backup the whole '\Data' subdirectory (about 15 Mb), in about ten minutes. I select off the new sites entered since I last transferred them to Robert (using the above mentioned 'Select' process). This takes some time, but since the number of sites is not huge, it is nothing like as tedious as making a 'Species Record' selection. Then I can 'Restore' using the Fastback floppy disks supplied by Robert, which will give me all his new records, but at the same time erase my new sites, which I then have to copy back on to my hard disk using the floppy with 'New sites'. I think you can appreciate the difficulty just from reading this description.

CONCLUSION

Despite the difficulties described, as I declared at the beginning, RECORDER is a marvellous tool for storing and retrieving plant distribution data. The mapping and other report generating possibilities are very impressive. I haven't got time or space to explain why, but just think of the flexibility with regard to mapping the plant species.

Quantitative data can be generated for a chosen species and immediately plotted on screen, the symbol size indicating on a continuous scale the number of records at each site, or in each 1-, 25- or 10-km square (whichever you prefer). Hardcopy of such maps can, of course, be generated if you have access to a plotter. It is also possible to generate and view maps showing interspecies associations, with up to eight species at a time involved. This could be used with suitable 'ecological indicator' species to pinpoint sites of significance, and at the same time suggest areas where more recording is desirable.

Really, the potential is tremendous. Personal computer prices are tumbling, particularly in the present economic recession, and I suggest that whatever your plant records are like, they would benefit from the organising power of RECORDER. If nothing else, I'm pretty certain if you used the package, it would stimulate you to record more, and do so better.

IRISH PLANT RECORDS

P. Hackney

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B.S.B.I. members will be aware that significant new plant records may be published in *Watsonia* but that on the whole Irish records tend not to appear there.

In the late 1970s when Elizabeth Platts was Editor of the *Irish Naturalists' Journal* I put forward a scheme for streamlining and encouraging the publication of Irish plant records in the *Journal*. The objective was to encourage more Irish field botanists to publish their records, including single, isolated but interesting records, as well as lengthy lists. Originally I had envisaged a precise format resembling that in *Watsonia* or the now defunct *Nature in Wales*. This is the origin of the Plant Records section in the *I.N.J.*

It quickly became clear that Irish botanists disliked rigid formulae and that the straitjacket of a *Watsonia*-like listing did not appeal: people simply ignored the format and sent in lists as short notes in the old manner! One obvious disadvantage of submerging all records in one list was the loss of integrity of individual contributions as short notes appearing over an author's name. The *Plant Records* section, therefore, has stabilised as a 'short note' format in which individual recorders can publish lists with some short explanatory preamble – these may be lists for one particular year from a particular vice-county

or a group of sites or a region. The actual records themselves are, or should be, submitted in the format:

Plant name, vice-county number, vice-county name, habitat details, locality, grid reference, date, recorder (use initials if repeated many times). Comments (e.g. herbarium codes, new vice-county record, first post-1930 record, etc.).

At present plant names are stipulated as being those published in Maura Scannell and Donal Synnott's *Census Catalogue* (2nd edition, 1987) but Irish members may like to give some thought as to whether they might now like to change to the nomenclature of Clive Stace's *New Flora of the British Isles*. Authorities for plant names may be omitted except for names not included in the *Census Catalogue*.

One of the objectives in setting up the *Plant Records* section in *I.N.J.* was to winkle out odd significant records which could not by themselves justify a separate note for publication. To date I have received no such records but I would urge members to send any such to me and I will compile an amalgamated listing for publication as occasion demands.

The criteria for selecting which records are worth submitting for publication have been left deliberately vague and I largely prefer to leave the decision to the person submitting the records. In general, however, there are certain fairly obvious categories such as first records for Ireland or for a vice-county, major extensions of range, first record after a prolonged period of not being recorded (but I have no hard-and-fast cut-off date such as 1930 or 1950). Finally I would remind submitters of records that neither I nor the *I.N.J.* are responsible for vetting the records sent in: that remains the responsibility of a competent authority which is generally but not always the B.S.B.I. Recorder for the vice-county concerned. If records are received which I believe have not been vetted in this way I will seek the advice of the relevant Recorder prior to publication. In

connection with plant records I should also like to draw the attention of Irish B.S.B.I. members to the Northern Ireland Biological Records Centre in the Ulster Museum which has recently been set up on a more formal and properly-funded basis than hitherto with the aid of the Department of the Environment for Northern Ireland. All records pertaining to Northern Ireland will eventually be placed on a computer database maintained by the Records Centre staff. For those familiar with such things the Centre uses the program RECORDER, which is an application of ADVANCED REVELATION, developed by Stuart Hall of N.C.C. in England. The situation in the Republic since the demise of An Foras Forbartha remains a little unclear (at least to me) but I understand that steps are being taken to set up a centre in the Wildlife section of Office of Public Works. As I see it one of the main functions of the N.I. Biological Records Centre is to facilitate the free flow and exchange of all plant and animal records.

Plant records for publication in *I.N.J.* should be sent to: Paul Hackney, c/o Department of Botany and Zoology, Ulster Museum, Belfast, BT9 5AB or to Dr R. Govier, Editor *I.N.J.*, School of Biology and Biochemistry, Queen's University of Belfast, Belfast, BT9 7BL.

RESEARCH SOURCES AND PUBLICATIONS

T. Collins

The Poplars, Seapoint, Barna, Co. Galway

Librarians, or information specialists as they are now often termed in current jargon, have much in common with botanists. To be successful, they must both possess certain traits, such as a healthy curiosity when seeking to make order out of chaos, a certain neatness about their work, dogged perseverance in pursuit of their goals, limitless patience and, above all, a sense of humour. I have also discovered something else that librarians and botanists have in common, and that is that both groups, often thrifty by nature, tend to

buy cheap computers and cut-price software for storing their most critical information, frequently with catastrophic results!

It is as an information specialist with certain botanical affinities – an armchair botanist – that I would now like to draw attention to certain practices and shortcomings in botanical publications which continually cause difficulty to myself and to anyone seeking relevant information on a specialized topic.

First among these is the large amount of unpublished work that exists in the world today. Only a percentage of all the theses that are accepted for higher degrees and doctorates are ever published in whole or in part. It is understandably very difficult for anyone who has gone through the trauma of researching, writing up, typing, binding, and submitting a thesis, to immediately turn around and commence re-writing it for publication purposes. As part of my work with postgraduate and postdoctoral researchers, I continually find that I must point out how much more beneficial it would be to the world of learning if their own findings were available in the public domain. Of course there are valid reasons why the results of much research cannot be made freely available immediately, but it is very frustrating when one cannot avail of information which is known to exist somewhere, and which would be extremely useful to one's own work.

What I find even more disturbing is the amount of information researchers carry around in their own heads. Not only is it unpublished, it does not exist even in the crudest form of manuscript notes. As an undergraduate I took part in botanical field trips organized by the late Professor Mairin de Valera, whose specialized knowledge of the intertidal flora of Galway Bay was second to none. My one regret today is that I did not pay more attention to all Professor de Valera had to say, both botanical and anecdotal.

With regard to the published literature, suffice it to say that there

are good and bad journals, which are a product of good and bad editors. One yardstick, often used in the United States to assess the quality of one's work, is the number of times a paper is cited by others in the years following its publication. While this method has its merits, it is fatally flawed. For instance, if one were to publish something that turned out to be absolute rubbish, one would see a deluge of subsequent publications by fellow researchers gleefully drawing attention to this fact.

To keep control of this vast and growing pile of information, there exists a number of abstracting and indexing journals, designed with various cross indexes to guide a user to the specific information required. Most researchers know what it is like to plough through *Biological Abstracts*, or keep up to date by flipping through *Current Contents* or wrestle with *Science Citation Index*. Today one can gain access to literally millions of references on-line through a modem linked via a telephone line to the computer which stores all this information, or more readily on compact disc, if one possesses a suitably equipped personal computer.

However, even with all the latest technological innovations at one's disposal, there will always be gaps in the literature. This is understandable at the cutting edge of research, but not really acceptable when one is searching the literature retrospectively, while reviewing a topic or putting a current project into perspective. The lack of comprehensive, up to date bibliographies is particularly distressing, as is the limited number of keys to problem groups, a source of much annoyance to taxonomists everywhere.

Over the years I have tried to overcome gaps in my own knowledge of Irish science by delving into past publications, seeking information which is to be found, but with difficulty. I developed a growing curiosity about the kind of lives led by the great names in Irish natural history, of whom very little is known, other than their published work.

This interest has centred around the growth in popularity of the study of natural history in Ireland in Victorian times and the rise of the amateur naturalist's field clubs, culminating in the rather short lived Golden Era which began with the twentieth century and came to rather an abrupt end, for obvious reasons, in 1914. One person who came to epitomise the amateur naturalist of this period was Robert Lloyd Praeger. By studying Praeger's publications over some fifty-odd years, I became aware that this work had become as much a study of social history as of science. Funding, or more commonly the lack of it, is always a major factor in the successful completion of research projects and is also reflected in both the number and quality of Praeger's publications.

The first decade of this century was full of energy and ideas. As well as individual work, Praeger took part in early vegetation studies with George Pethybridge. Joint projects followed, such as the Lambay Survey of 1907, the visit of the British Association to Dublin in 1908 and the crowning achievement of the amateur and professional naturalist in Ireland, the Clare Island Survey of 1909-1911.

As already mentioned, the sense of order and optimism which characterized the arts and the sciences in Ireland in the Edwardian Era was lost in the First World War which followed. In Ireland the Easter Rising led to a war of independence and a civil war which left the island divided politically. It also meant that naturalists, whether singly or in groups, just did not go 'botanizing' about the countryside as they used to. The 1930s brought economic woes and the 1940s another world war. The 1950s saw yet another post-war depression and it was really only in the middle of the 1960s that government money in any quantity became available once more for research. All of this coincided with the growth of third level institutions and numbers of competent researchers which continued happily through the 1970s. Since then the tide has turned and the picture has been one of shrinkage and decline.

Starting the twentieth century with something of a bang, Praeger published *Irish Topographical Botany* as a special volume of the *Proceedings of the Royal Irish Academy* in 1901 and for a further 40 years published periodic updates. This comprehensive work originally involved tramping through every Irish vice-county, personally verifying every plant station and took Praeger some five years. The experience gained gave Praeger a unique insight into the flora of Ireland and was the basis of all his later work. Even he began to feel the passage of time eventually and in 1946, in his 82nd year, he published a paper entitled *Things left undone*, laying down clearly for future generations of botanists where work needed to be done.

This did not mean that Praeger himself was finished with fieldwork or writing up his results. In fact his output of published work continued right up to his death and even after. In 1949 he published *Some Irish naturalists*. That same year, Praeger attended the opening of the Ninth International Phytogeographical Excursion in Dublin, which later toured Ireland and brought many eminent European botanists into contact with the Irish flora for the first time. Praeger also wrote the introduction to the published proceedings which resulted. In 1950 *The natural history of Ireland* was published by Collins. Although originally intended to be part of Collins' *New Naturalist* series, it was published as a separate monograph. Praeger's last book *Irish landscape* was not published until some months after his death in 1953. Various other international gatherings have left their mark in the literature and give some idea of the state of affairs in Irish botany in recent years.

To sum up, the historical study of botany is an on-going process. Research in many diverse fields continues to be successfully completed and published, although in many cases it is only as a result of individual perseverance rather than major backing by a parent body. As an information specialist I am happy to be able to chronicle this continued growth.

DESK-TOP-PUBLISHING: BOTANICAL PUBLISHING MADE EASY

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The advance of computing power has increased beyond recognition in the last 15 years – it seems like only yesterday when I used to walk around the campus of the University carrying heavy trays full of computer cards which would tie up a computer, and its four attendants for six to eight hours at a time doing analyses that today I can do from the comfort of my own office with a remote computer terminal and which take only seconds to complete. And, similarly, the very first wordprocessor that my University Department acquired had all the letters as capitals and ‘real’ capital letters were shown in reverse as black on white – that was only thirteen years ago. Today, of course, the situation has changed dramatically, and computers pervade all aspects of our lives, often without our knowledge.

One of the greatest changes has been in the publishing arena. The days of ‘Hot Metal’ have now all but disappeared and computers are used for the typesetting tasks that required considerable ingenuity on behalf of the typesetters of old. The extension of the computer software (i.e. the computer program required to do these typesetting tasks) to a personal computer platform was inevitable and is now described as desk-top-publishing (D.T.P.). Loosely described, this is the process by which a final typescript ready for printing (Camera Ready Copy or C.R.C.) is produced on the desk top by the author thus cutting out the expensive and often time consuming process of typesetting. A relatively inexpensive set up and a little practice can now produce a reasonably good looking piece of work ready either for photocopying or other forms of reproduction including actual printing.

WHAT DOES IT ENTAIL?

Computers bought for home or business use usually have a word processor, i.e. a piece of computer software that enables text to be typed into the machine, to be corrected, stored and finally printed. The most basic word processors offer little more than that. Depending on the printer attached to the computer, you may have a range of different fonts (= type faces), and even the most basic wordprocessor will now give you the ability to centre text or to align text either right or left or both and other such text enhancements such as underlining.

A word processor may allow you to construct relatively simple graphics on the screen using line drawing facilities but many of these are rather crude and only offer 'chunky-looking' final results.

D.T.P. offers considerably more than this and the following section outlines only a few of the possibilities:

1. The text itself can be manipulated in a number of different ways including such possibilities of multi-column format (that is the arrangement of text in two or more columns, like a newspaper) and wrapping the text around graphic images, a technique often seen in the dynamic layout of popular magazines. In addition, though I can think of no really obvious application in botany, text can be rotated!
2. Ability to highlight text in various ways, such as 'drop-shadow' boxes containing important text.
3. Having running headers on each page (so-called 'Master Pages') which help to produce a customised feel to a publication – see *B.S.B.I. News* which is a good example of this style of presentation.

A word of caution is however necessary. Many publications (especially some of the low circulation newsletters) seem to be over done with printing gimmicks – I once counted eight different styles of type face and four different sizes of type on one single page. The trick is to keep it simple and to try and emulate the design of professional publishers.

WHY SHOULD BOTANISTS USE D.T.P.?

There is little doubt that a. the cost of publishing is escalating and b. botanists are now much more likely to be wanting to distribute information than in the past.

It has been argued that Biology is the science of the next century and that many of the problems of the world will have biological, rather than out-and-out technical, solutions. Coupled with this is the increased awareness of the environment and ecology that we are beginning to see in the media and in our everyday lives. Take for example the case for global warming. The evidence suggests that if global warming is taking place, its effects will be seen in the changes in species distribution and that monitoring these will begin to give us our first 'early warning'. Predictions are, for example, that the bluebell (*Hyacinthoides non-scripta*) carpets of many of our woodlands would disappear as the species became less competitive at higher temperatures. The base-line surveys produced for the Monitoring Scheme and the *Atlas* are thus of vital importance. Similarly, there are now excellent arguments for site-specific surveys (see Doogue, D.A. Are County Floras obsolete? *Irish Botanical News* 2, 11-13) as a way of directing much recording. Such recording, whether it be extensive (country-wide, vice-county) or very restricted (a small woodland, or bit of fen) produces valuable information and it is important that this information is not lost but is distributed and used. And it is here where clear, attractive presentation of the results is important. If you are trying to persuade a government officer (either central or local government) not to put a bypass through a botanically exciting piece of bog, he/she is more likely to be impressed by a well produced document rather than something hand written or typed on an aging typewriter where the keys constantly jump and the line spacing is erratic. We have to face facts – we live in a world of 'the corporate image' and to get the message across now demands slick and impressive presentations and it is this that D.T.P. can achieve

with effort only marginally greater than that required to type a document in the first place.

WHAT DOES IT COST?

A comparative costing is given in Table 1 and like most things there is both a cheap way of doing D.T.P. and an expensive method. The costings can only be given as a very rough guide since the prices (particularly in the wake of the Sterling Crisis) are fluctuating. A microcomputer with display is essential and whilst the majority will run D.T.P. software quite adequately, the main advantage in having a super-duper machine is that it will respond faster. The choice of Apple MAC or IBM clone is slowly resolving itself since the Windows display of an IBM resembles closely that of the Apple and file exchange between the two is becoming easier and more common place. Apple still has the edge for general ease of use for the novice.

The software (the program) is also essential. At the expensive end are packages such as Aldus PageMaker costing about £450-£500 but there are others such as PagePlus which are about a tenth the price. For most applications, the final look of the document is going to be dependent more on the quality of the printer and to some degree on the imagination of the author than on the sophistication of the software.

Apart from the two basics of a microcomputer and a D.T.P. package, there are two other pieces of equipment that are important – a printer and a scanner. A laser printer with PostScript emulation (which will give you access to an almost infinite number of different type styles) is an expensive item of machinery and will probably be at least as expensive as the microcomputer itself. On the other hand, there are a number of good alternatives. A 24-pin dot matrix printer with a new ribbon will give excellent output and the new range of bubblejet printers (look for ones with 360 ‘dots per inch’) give a quality that can match that of many laser printers. If you want to incorporate graphics into your reports, etc. then a scanner is essential – what it

TABLE 1. The approximate cost of a D.T.P. system

Microcomputer and display	
IBM/IBM clone	£1000
Apple MAC	£1000
Printer	
Dot-matrix (good quality, 24-pin)	£250
Laser printer (PostScript)	£900
Scanner	
Hand-held	£150
Flat-bed	£600
Software	
Cheap package, e.g. PagePlus	£50
Expensive, e.g. Aldus PageMaker	£450
TOTAL	£1450-2950

does is to produce a computer image of whatever is placed on the scanning device. It's a bit like a photocopier except that the image is not a printed image but a computer graphic which can then be manipulated as appropriate – it can be rotated, cropped (i.e. parts deleted), magnified, reduced, more information added, etc. A scanning device can also have a secondary function; it can scan in text from typescript or a book or magazine and convert it to actual text in the computer that can be edited as necessary. Many of the articles in this issue of *Irish Botanical News* were not re-typed by me but were input into a wordprocessor via a scanner.

Both a laser printer and a scanning device are expensive items but it is worth bearing in mind that there are now many small businesses that offer a scanner service and they will scan in images and produce

for you a computer file that can be input into whatever application you require. Similarly, a final lasered printout of text can be obtained relatively inexpensively from these agencies. This would avoid the high capital outlay which the small volume produced by a single botanist might not justify. On the other hand, you could set up as a small business yourself producing C.R.C. for others!

Because of the ready availability of D.T.P., it is now becoming extremely common and, in some fields, it is almost expected that reports and other such documentation should be D.T.P.-ed. If therefore you are involved in production of material for external consumption, whether it be reports to local councils on sites of particular botanical interest, or check-lists for vice-counties, or the full-blown Flora, D.T.P. offers not just the possibility of substantial savings over traditional typesetting but also the flexibility to modify the document and produce it exactly the way you want it. Besides, it's great fun and a good way to spend those long winter evenings when field work is some way off.

COLLECTING PLANT-LORE

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Since the early 1980s I have been trying to collect information on the folklore and traditional uses of plants in the British Isles. This work started as a survey of unlucky plants – plants which are thought to cause misfortune when picked or taken indoors. The most surprising result of this work was that it showed that over 70 species of plants were thought to be, or remembered as being, unlucky. Of the 524 items of information received, many concerned other aspects of plant-lore. Thus there was a considerable amount of material which although unsuitable for inclusion in the published report on the survey, demonstrated how much plant-lore was currently known in the British

Isles. This stimulated further work and eventually lead to the *Dictionary of British and Irish Plant-lore* project described in *B.S.B.I. News* **56**: 30 (1990).

As a result of appeals in local newspapers, and on local radio, a total of 4037 items have been received from 521 contributors. Thus we now have a more complete knowledge of the plant-lore of Britain and Ireland as a whole than we have had at any time in the past. However, coverage is patchy. Some areas such as County Antrim are well represented, but there are other parts of Britain and Ireland from which information, if not actually lacking, is scarce. At present there is sufficient material to produce a worthwhile and wide-ranging overview, but insufficient material to gain more than a vague impression of the distribution of different beliefs and practices.

Although the plant-lore of Ireland differs from that of the rest of the British Isles, interesting parallels can be found, and it appears that much, if not most, of the lore found in Ireland today was formerly more widespread throughout the rest of the British Isles. Irish plant-lore is particularly interesting because of the comparatively long and strong tradition of collecting folklore in Ireland. Thus the archives of the Department of Irish Folklore at University College, Dublin, contain a wealth of material which is unrivalled elsewhere. As far as the plant-lore material goes there are difficulties, notably in the interpretation of some of the plant-names, but at least we have material dating back to the late 1930s which can be compared with what is being collected today. Part of the folklore of folklore is that it is always about to become extinct, but recent collecting has shown that nearly all aspects of folklore continue to change, adapt, and survive.

Another aspect of the folklore of folklore is that many people believe that they know no folklore, but most of us have knowledge of some plant-lore. Have you ever played conkers, or other games with plant materials? Have you ever collected wild plants for food? Do you know

6.
of any local trees to which legends are attached? Have you ever been told that it is unlucky to take a certain flower indoors? Have you ever been told to plant potatoes on Good Friday? Have you ever tried any herbal remedies? If you can answer yes to any of these questions, then you could make a useful contribution to my work. Anything which you think might be plant-lore, no matter how widespread and well known you think it might be, would be gratefully received.



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1992 has proved a very rewarding and productive year botanically; consequently, only the more important plant finds are listed in the present report. A particular effort was made to update Cork information on protected species for the forthcoming 2nd edition of the *Irish Red Data Book* (Curtis & McGough 1988). I thank those mentioned in the text, who helped me towards this end.

In March, *Claytonia perfoliata* was found in small quantity in the grounds of Cork Corporation's Nursery, at Blackrock (H4, W/7.7). It is new to the Cork flora. Work along the River Blackwater from March to May, updated old records, and produced new stations for *Lathraea squamaria* and *Allium scorodoprasum* – the latter of very local occurrence along both banks of the river between Mallow and Fermoy. Other River Blackwater finds included a count of 15 tussocks of *Carex depauperata* from its sole Irish site; *Veronica crista-galli* in abundance in the grounds of Castle Hyde House; *Allium vineale* in small quantity east of Killathy (not seen on the river since c. 1870), and *Carex strigosa* in damp woodland on the south bank of the river below Ballyhooly bridge.

In April, *Orobanche rapum-genistae* was found near Kinsale (H4, W/6.5), a new 10-km square record, and only the second known extant site in Mid Cork. *Euphorbia amygdaloides* is still locally frequent in Dunderrow Wood on the River Bandon, and about Belgooly, where it grows with *Euphorbia hyberna*. In late-April, *Trichomanes speciosum* was rechecked in C. Donovan's c. 1875 station near Leap (H3, W/1.3). At least eight clumps occur here, but all fronds examined were barren.

In May, Michael Troy and Jacintha Reynolds accompanied me to

Three-Castle-Head near Crookhaven (H3, V/7.2) to recheck populations of *Tuberaria guttata* and *Viola lactea*. The *T. guttata* proved specially frequent on acid hillocks near the castle ruins, while it has recently been reported from a few new sites within this general area, including a station near Toormore, found by James Jordan in April 1992. The rock rose is now known from at least four 10-km squares in this part of West Cork. Four small, scattered populations of *Viola lactea* were found at Three-Castle-Head during our hurried visit, and it seems likely to be widespread here. The putative hybrid *V. lactea* x *V. riviniana* occurred with it.

On June 4th, the range of limestone outcrops at Carrigshane, Midleton (H5, W/8.7 to W/9.7) were visited, to check on the only likely *native* Irish populations of *Sedum dasyphyllum*. The stonecrop is still locally frequent here, but its precise present-day range needs to be established and protective measures to ensure its future survival put in place. Additional finds here included *Torilis nodosa* and *Geranium pusillum*, the latter not having been reported from East Cork since c. 1900.

In July, a visit was paid to Lough Gurtavehy in the Caherbarnagh Mountains west of Millstreet (H3, W/2.8). Here M. Troy and J. Reynolds searched for R.A. Phillips' 1900 station for *Listera cordata* and eventually found 24 plants near the summit cairn. On the same trip I added *Thalictrum minus* to the flora of this mountain range, and also rechecked my 1979 find of *Juncus conglomeratus* x *J. effusus* from the western end of the lough, where it still occurs in small quantity. On the journey home, a stop at Ovens bridge (H4, W/5.6) turned up seven tussocks of *Carex divulsa* x *C. muricata*. In the Irish flora, this hybrid is now known from four stations in two 10-km squares in Mid/East Cork.

In August, *Eleocharis uniglumis* was found in a brackish marsh at Lough Beg, Cork Harbour (H4, W/7.6). It is new to Mid Cork, this find bridging the large gap between its West Cork and Wexford

stations. A number of visits to Kilcolman Wildfowl Refuge, near Buttevant (H5 R/5.1) updated records for *Rumex maritimus*, *Chenopodium rubrum*, *Carex rostrata* x *C. vesicaria* and *Veronica anagallis-aquatica* x *V. catenata*. Additions to the Refuge included *Ophioglossum vulgatum* and *Zanichellia palustris* in its first inland Cork site.

Lastly, in September, *Carex otrubae* x *C. remota* was found at Slatty's Bridge, facing Fota Island (H5, W/8.7); it is new to East Cork. However, the most spectacular find of the year was Rosemary FitzGerald's discovery of *Alopecurus aequalis* in a few freshwater ponds near Castlemartyr, East Cork (H5, W/9.7). Orange Foxtail Grass is new to the Irish flora; its distribution and frequency in East Cork remains to be ascertained.

A REPORT ON THE FLORA OF CO. LIMERICK (V.C. H8), 1992

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A satisfying day in July was spent in Limerick City recording plants around the north end of King's Island, and along the Shannon River south east of Athlunkard Bridge. The west side of King's Island is tidal, and the luxuriant vegetation included one small patch of the protected species *Schoenoplectus (Scirpus) triqueter*. Near it, we were offered beer by a gang of small boys hiding in the dense *Salix*! The eastern side of the island, towards the Abbey River, has extensive marsh dominated by *Glyceria maxima*. In the Abbey River, *Potamogeton* spp., *Myriophyllum* sp. and other aquatic species flourished but, being grab-less, we could not investigate them further. Deep drains and stampeding horses made botanizing in this area somewhat hazardous.

In contrast, it was peaceful at the Shannon Fields which extend east

along the Shannon River from Athlunkard Bridge to the now disused canal. Here, members of the Limerick Field Club collected specimens for their herbarium nearly 100 years ago. The Shannon Fields are mostly still open and unspoilt; one had abundant *Lotus pedunculatus* (*L. uliginosus*). The best finds along the river's edge were *Butomus umbellatus*, *Sagittaria sagittifolia* and *Spirodela* (*Lemna*) *polyrhiza* growing with *Lemna minor*.

By the end of the summer, work on the flora of Foynes Island in the Shannon Estuary had been completed, and an annotated check-list of approximately 360 taxa should be published shortly.

A REPORT ON THE FLORA OF CO. WEXFORD (V.C. H12), 1992

Rosemary FitzGerald

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As usual (since the initiation of the Wexford Check-list Project in 1989), the season has been complicated by untoward events. This summer was spent by R.F. having a lumbar disc operation, and by corecorder John Akeroyd in England balancing the demands of consultancy work with establishing a nursery garden. Active botanizing in Ireland was limited to Cork for both recorders, R.F. continuing the Wildlife Service Protected Flora Survey into that county, and J.R.A. being drawn into the production of a *Flora of Roaring Water Bay*.

However, the B.S.B.I. meeting at the end of May was notably rescued by David Nash, Maura Scannell and Nick Stewart, and the excellent records, including a new site for *Hyoscyamus niger* and the only old record for *Potamogeton coloratus* confirmed, were telephoned to R.F.'s hospital bed, the best medicine imaginable!

Convalescence put Cork out of bounds for a while, so some work was

then done on Wexford A.S.I.s and rare plant sites. A nice collection of old records were reconfirmed, for species including *Cuscuta epithymum*, *Epipactis helleborine* and *Trifolium medium*, while a damp field near Rosslare, heavily poached in winter, proved to have thousands of plants of *Anagallis minima* in August, a new site for this uncommon annual. The most interesting discovery was a gravel pit on the Slaney with large populations of the protected *Clinopodium arvensis* and the Red Data Book *Erigeron acer*, and abundant *Filago vulgaris*. Basil Thyme had only ever been recorded in the county as a tillage casual and “colonist in clover fields” by Moffat in 1889, so it was very satisfying to find it in the characteristic disturbed ground habitat of the well-known sites in Carlow, Kildare and Offaly.

In the autumn, an exciting weed find was communicated by Fergus Hemmingway of Teagasc. *Datura stramonium*, last seen in the county in 1978 (O’Sullivan, A. 1979. Occurrence of *Datura stramonium* L. and other aliens in Irish tillage fields. *Ir. Nat. J.* **19**: 434-435), had appeared among rhubarb crowns near Enniscorthy. The recent mild winters have undoubtedly favoured a number of aliens.

The most pleasing additions to the county list were *Elymus caninus* found on woodland banks near the Slaney and *Stellaria pallida* from several S.E. coast dune areas (previous reports of this fast-fading ephemeral chickweed had proved to be *S. media* dwarfed by trampling and herbicide effects). Several picturesque aliens were noted, *Claytonia perfoliata* on the sandy golf course at Rosslare, *Tragopogon porrifolius* at Kilmore Quay, presumably a relic of an old vegetable garden, and the huge ugly mullein *Verbascum densiflorum* is erratic on several road verges round New Ross.

1993 is to be the last field season before the check-list, which will then be a ‘snapshot’ of five years’ recording. Annotations will indicate earlier records, and species on the *Census Catalogue* list for H12 which have not been reconfirmed. It is hoped that this list will shrink further

in 1993 – at the moment it has about 80 species, though many of these are casuals or extreme rarities apparently extinct, such as *Serratula tinctoria*. The list in my 1991 report, of species common enough in Ireland but tantalizingly not relocated in Wexford, has been reduced by refinding *Cirsium dissectum*, *Crepis paludosa*, *Luzula pilosa*, *Melampyrum pratense* and *Pinguicula vulgaris*, but the others including *Chamaemelum nobile* and *Geum rivale* are still ‘lost’, as are both butterfly orchids (*Platanthera chlorantha/bifolia*), *Radiola linoides* and both species of *Gentianella* (*campestris* and *amarella*). A report of *Campanula trachelium* in the vicinity of Praeger’s 1932 Pollmonty site (DBN, Praeger (1934)) could not be confirmed, and several historic records, such as Druce’s report of *Scilla verna* on the Raven in 1907, and Hart’s *Blysmus rufus* in Wexford Harbour in 1881, remain a challenge to the modern botanists.

All 42 grid squares now have some records, and the average species total today (30 October, 1992) is 279.3! Although this is not quite so despicable as it seems, because 25% of the ‘squares’ are fragmentary, and most proper 10-km square units have over 300, or up to 400 species, I can only report last year’s lament of the ‘intimidating’ amount still to be done. My special gratitude goes to those who helped so loyally this year, including those who saved the B.S.B.I. meeting, and Rosie Stewart whose introduction to being married to a botanist in Ireland has had some testingly uncomfortable square-bashing in H12, and never complained!

A REPORT ON THE FLORA OF FERMANAGH (V.C. H33), 1992

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The winter months were spent inputting sites and species records to the computerised RECORDER database which is part of the Biological Records Centre scheme being administered by the Ulster

Museum. To date, the Fermanagh part of the scheme has over 1000 sites and 75,000 plant records; we estimate that this is just over half of the total existing available records, both historical and recent. The aim is to use the records in the data base to produce a *Flora of Fermanagh* which will include maps.

During the summer, visits were made to lesser known areas of the county. The most interesting find was a well established colony of *Orobanche hederæ* on an island in Lower Lough Erne – I do not believe that this plant has been seen in Northern Ireland since 1939. The shore of Lower Lough Macnean produced large stands of *Carex riparia*, only the second county record. New sites were found for *Equisetum hyemale*, *E. variegatum*, *E. x trachyodon* (*E. hyemale* x *E. variegatum*) and *Juniperus communis*.

13 flowering spikes of *Spiranthes romanzoffiana* were found in the usual meadow and six flowering spikes of *Neotinea maculata* on Knockninny.

A REPORT ON THE FLORA OF CO. ANTRIM (V.C. H39), 1992

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Recording has continued with approximately 50 record cards being completed during the year. The average number of species now recorded since 1985 for each 10-km square (or part of a square) has increased to 320, an increase of 6.5% during the year. The highest number of species recorded from a single square is 522.

Some squares have a restricted range of habitats which reduce the total species score but there are still some squares where relatively common species have not been recorded so there is still plenty to do.

In addition to his usual help with general recording John Wilde has been looking at subspecies of *Dryopteris affinis*. Subspecies *affinis*, *borreri* and *cambrensis* have all been found but it appears that subsp. *cambrensis* is the most common in Co. Antrim.

The spread of some plants continues and *Senecio viscosus* (Sticky Groundsel) and *Heracleum mantegazzianum* (Giant Hogweed) are becoming widespread in the county. Four new sites for *Oenothera glazioviana* (Large-flowered Evening Primrose) have been seen during the year. New sites have also been found for the following less common plants:

Veronica agrestis – Green Field-speedwell

Malva moschata – Musk-mallow

Cystopteris fragilis – Brittle Bladder-fern

Aethusa cynapium – Fool's Parsley

Oxalis exilis – Least Yellow-sorrel

Lamium confertum – Northern Dead-nettle

Galeopsis speciosa – Large-flowered Hemp-nettle

Stachys x ambigua (*S. sylvatica* x *S. palustris*) – Hybrid Woundwort – two sites

Hypericum perforatum – Perforate St John's-wort – three sites

Sedum rosea – Roseroot

Listera cordata – Lesser Twayblade

Melilotus officinalis – Ribbed Melilot

Plantago media – Hoary Plantain

Malva sylvestris – Common Mallow – inland site

Smyrniolus olusatrum – Alexanders – inland site

Lepidium draba – Hoary Cress – two sites

Campanula latifolia – Giant Bellflower

Polystichum x bicknellii (*P. setiferum* x *P. aculeatum*) – four sites

Hypericum humifusum – Trailing St John's Wort – two sites

Mentha arvensis – Corn Mint – three sites

Antennaria dioica – Mountain Everlasting

Gymnadenia conopsea – Fragrant Orchid

Sedum anglicum – English Stonecrop – inland site
Pyrola media – Intermediate wintergreen
Pseudorchis albida – Small-white Orchid
Platanthera bifolia – Lesser Butterfly-orchid
Rubus saxatilis – Stone Bramble
Heracleum mantegazzianum – Giant Hogweed
Thlaspi arvense – Field Penny-cress
Juncus inflexus – Hard Rush
Cerastium diffusum – Sea Mouse-ear – inland site
Oenothera glazioviana – Large-flowered Evening-primrose – four sites
Ranunculus trichophyllus – Thread-leaved Water-crowfoot
Ophioglossum vulgatum – Adder's Tongue
Alisma lanceolatum – Narrow-leaved Water-plantain
Chelidonium majus – Greater Celandine

In addition, Tim Rich found hybrid *Fallopia japonica* x *F. sachalinensis* (= *F. x bohémica*) and *Elodea nuttallii* in the Lough Neagh area.

It seems to be becoming standard to use species names (scientific and common) from Stace's *New Flora of the British Isles*. I have done so in this report so if some names are not familiar, don't blame me.

IRISH MEMBERS OF B.S.B.I. AND THEIR INTERESTS

B.S. Rushton

*Department of Biological and Biomedical Sciences, University of Ulster,
Coleraine, Northern Ireland, BT52 1SA*

This annotated membership list arose out of a questionnaire circulated among Irish members three years ago. The data remain comparatively unsorted, though I have summarised some of the returns. I intend to keep the database and add to it if information is forthcoming from members and perhaps to re-publish it at a later date in a more complete form. If there are inaccuracies in the list, of either

a typographic nature or errors of fact, please let me have corrections.

Each entry provides the following minimum information: Surname, Christian name(s) or initial(s), Title and Address. Vice-county recorders are listed with their vice-county number. Then, for those members who replied, there is the following information: 1. General botanical interests, 2. Specific areas of interest within Ireland, 3. Specific areas of interest within Great Britain, 4. Specific areas of interest in the rest of Europe, 5. Specific areas of interest in the rest of the world, 6. Interest in specific plant groups, 7. Identification expertise of specific groups, 8. Critical taxa that the member would be willing to identify, 9. Other relevant experience.

AKEROYD, John R., Dr, 24 The Street, Hindolveston, Dereham, Norfolk, NR20 5BU, H12 (joint), 2. General, 3. Wales, East Anglia, Cornwall/Scilly, 4. General, esp. Balkans, Aegean, 5. Mediterranean, 6. Coastal plants, weeds, 7. Polygonaceae, *Anthyllis vulneraria*, *Chenopodium*, *Atriplex*, 8. Polygonaceae, *Anthyllis vulneraria*, *Chenopodium*, *Atriplex*, 9. European and Mediterranean flora, Intraspecific variants

ALLEN, Marion D.B., Miss, 122 Kensington Rd, Belfast, BT5 6NJ, 2. Anywhere, 3. Anywhere, 6. Lichens, Grasses, Sedges, 9. Photography, Botanical surveys

ANGUS, John G., Mr, 11 Osborne Drive, Bangor, Co. Down, BT10 3DH, 2. Northern Ireland (eastern counties), 3. General, 4. France, 5. All, 9. Photography, Botanical surveys

AUSTIN, A.A., Mrs, 2 Mount St Crescent, Dublin 2

BATAILLE, Arlette, Ms, Department of Biological and Biomedical Sciences, University of Ulster, Jordanstown, BT37 0QB

BESLEY, Stanley, Mr, 12 Downview Park, Greenisland, Carrickfergus, Co. Antrim, BT38 8RY, H39, 2. North east, particularly Co. Antrim, 4. Majorca, 9. Photography, Computer mapping and recording, Botanical surveys

BOYD, Elizabeth M.A., Dr, 25 Castle Gardens, Belfast, BT15 4GA, 3. General, 4. General

BRADLEY, Winefride M.T., Professor, 51 Wellington Rd, Ballsbridge, Dublin 4, 2. Connemara, Dublin area, 7. *Centaureum*, *Viola*, 8. *Centaureum*, *Viola*, 9. Anatomy, Cytology

BRADY, Aidan, Mr, National Botanic Gardens, Glasnevin, Dublin 9

BRADY, Catriona, Ms, 66 Templeville Drive, Templeogue, Dublin 6, H9, 2. Co. Clare, east coast particularly Wicklow/Arklow area

BREEN, Con, Mr, 101 Bettyglen, Raheny, Dublin 5, H16 and H23, 2. Midlands, Connemara, Aran Islands, Irish montane flora, 3. Scottish montane flora, 4. Alpine flora, 6. *Carex*, Orchidaceae, Aquatics, 7. *Carex*, 8. *Carex*, 9. Irish botanical literature, photography

CARTER, A.B., Miss, Flat B, 86 Balmoral Ave, Belfast, BT9 6NY COATES, G.N.L., Mr, 1 Gilnahirk Rise, Belfast, BT5 7DT, 2. North Down, 6. Flowering plants

COLLINS, A.J., Mrs, 3 Pinegrove, Mansfields Land, Kinsale, Co. Cork

COLLINS, D.R., Mr, 3 Pinegrove, Mansfields Land, Kinsale, Co. Cork

COOPER, A., Dr, Department of Environmental Studies, University of Ulster, Coleraine, BT52 1SA

CORBETT, P., Mr, Countryside and Wildlife Branch, DOE(NI), 123 Castle Place, Belfast, BT1 1FY

CRAIG, A.J., Dr, Office of Public Works, National Parks and Monuments Branch, Upper Ely Place, Dublin 2

CRICHTON, Joan H., Mrs, Carrowgarry, Beltra, Co. Sligo, 2. Co. Sligo, 6. Ferns

CUNNINGHAM, R.E., Miss, 10 Ballytrim Rd, Killyleagh, Co. Down, BT30 9TH

CURTIS, T.G.F., Dr, 39 Ryecroft, Church Rd, Bray, Co. Wicklow, H20 and H35

DONALDSON, F., Mrs, 'Heron', Coolyduff, Inniscarra, Co. Cork

DOOGUE, Declan A., Mr, 12 Glasilawn Rd, Dublin 11, H19, 2. Dublin, Kildare, Wicklow, Meath, 3. General, 6. *Taraxacum*, *Rosa*, *Rubus*, *Hieracium*, 8. *Rosa*, 9. Multivariate analysis, N.V.C., Biogeography, Conservation, Landscape history, Habitat classification

DOUGLAS, C., Ms, National Parks and Wildlife Service, 51 St Stephens Green, Dublin 2

DROMEY, M., Miss, 10 Pinehurst, Navan Rd, Dublin 7

EARLEY, John J., Mr, Cork County Council Offices, Skibereen, Co. Cork, H25, 2. Roscommon, West Cork, Kerry, 7. General, 9. Photography

FAULKNER, John S., Dr, Drumherry Lodge, Orchard Rd, Loughgall, Co. Armagh, BT61 8JD, H37, 2. Co. Armagh, Co. Tyrone, 6. Cyperaceae, 7. *Carex* (esp. *C. acuta* group), 8. *Carex* (esp. *C. acuta* group), 9. Plant breeding, Conservation, Cultivating wild species

FERGUSON, I. Keith, Dr, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, H6, 2. Waterford, 6. Saltmarsh plants, Hardy herbaceous horticultural plants, *Cornus*, 7. *Salicornia*, *Verbascum* (British Isles and Europe), 8. *Salicornia* and good whole plants with notes of *Verbascum*, 9. Photography, Pollen, Electron microscopy, Comparative pollen morphology and plant systematics

FIELD, R.W., Mr, 24 Old Grange Drive, Carrickfergus, Co. Antrim

FITZGERALD, R, Miss, 606 River Forest, Captain's Hill, Leixlip, Co. Kildare, H7 (joint)

FITZGERALD, R.A., Lady, Borris House, Borris, Co. Kilkenny, H12 (joint), 2. South east, 3. South east, South west, 4. S. Portugal, Greece, Crete, 5. Kenya, 6. General, 9. Historical research and field surveys for rare plant mapping

FORBES, Ralph S., Dr, Institute of Continuing Education, The Queen's University of Belfast, Belfast, BT7 1NN, H33 (joint), 2. Fermanagh, Burren, Connemara, Mountain areas, 3. Pennine limestones, Scottish mountains, 4. Alps and Pyrenees, Greece, Italy, Mediterranean islands, 5. New Zealand, Australia, Tundra areas, 6. Alpines, Macrolichens, Orchids, Exotic conifers, Broadleaved angiosperm trees, 7. European-alpine and Mediterranean-spring floras, British macrolichens, Trees, 9. Microscopy, Photography

FOSS, P.J., Dr, 33 Bancroft Park, Tallaght, Dublin 24, H14

FULLER, B.S.D., Ms, School of Botany, Trinity College, Dublin 2

GOGGIN, Bernard, Mr, Strand St, Dingle, Tralee, Co. Kerry, 2. Dingle peninsular

GOODWILLIE, R.N., Mr, Lavistown House, Kilkenny, H11

GRANT, Philip J., Mr, 43 Bettyglen, Raheny, Dublin 5, 2. Dublin, North Midlands, Leitrim, Cavan, 6. All, esp. Crassulaceae, 7. All except apomictic taxa, 8. No, 9. Anatomy, Microscopy, Data analysis, Botanical survey, Taxonomy, Vegetation

GRIFFIN, J.A.K., Mr, Glosa, Cromane, Killorglin, Co. Kerry

HACKNEY, Paul, Mr, 146 Gobbins Rd, Islandmagee, Co. Antrim, BT40 3TX, H38, 2. Northern Ireland generally, 3. Snowdonia, Yorkshire Dales, S. W. Scotland, 6. Ferns, *Rosa*, *Hieracium*, 7. Most groups, *Hieracium*, *Rubus*, 8. *Polypodium*, *Equisetum* hybrids, *Rosa*, *Hieracium* (to agg. level)

HARRON, W. John, Mr, Whitehill Cottage, 54 Craigdarragh Rd, Helen's Bay, Bangor, BT19 IUB

HILL, Alan G., Mr, 2 Woodgrange, Holywood, Co. Down, BT18 0PQ, 2. Northern Ireland, 3. General, 6. General, 9. Photography

HODSON, P., Miss, 60 Forest Ave, Kingswood Heights, Dublin 24, H34

HOWARD, Sean, Mr, Carra, Granard, Co. Longford, H24

HUDSON, H.J., Mr, The Bungalow, Hampstead, Whitehall, Dublin 9

KELLY, Daniel L., Dr, 41 Whitebeam Rd, Clonskeagh, Dublin 14, H29, 2. General (esp. Killarney), 5. New World tropics (esp. Jamaica), 6. Vascular plants, Bryophytes, 7. *Quercus*, 8. No, 9. Woodland ecology

KIRKPATRICK, A. Hilary, Dr, Department of Environmental Science, University of Stirling, Stirling, FK9 4LA, 6. Bryophytes, 9. Botanical survey, Multivariate analysis, Upland plant communities of Northern Ireland and Scotland in a European context

LAMB, J.G.D., Dr, Woodfield, Clara, Co. Offaly, H18

LAMBERT, Doreen S., Miss, 49 Main St, Castlerock, Co. Derry, BT51 4RA, H36 and H40, 1. General, 2. General, 3. General, 6. All, 9. Field botany

LEADER-WILLIAMS, G.E., Mr, Carrigdoun House, Leap, Co. Cork

LEDHAM, David, Mr, 4 Causeway Villas, Island Rd, Ballycarry, Carrickfergus, Co. Antrim

LEWIS, K., Dr, 1A Windsor Court, Belfast, BT9 6JE

MCALISTER, M.C., Miss, 4 Millisle Rd, Donaghadee, Co. Down, BT21 0HY

BT21 OHY

MCDEVITT, H., Mr, Ochtore, Kerrykeel, Letterkenny, Co. Donegal, 1. General

MCGRATH, D., Mr, Morley Terrace, Waterford

MCNEILL, W. Ian, Mr, 86 Fair Hill, Cookstown, Co. Tyrone, 2. General, Co. Tyrone, S. Derry, 3. General, 7. Wide range of plants but not difficult or critical taxa, 9. Plant distribution (geography, climate, soil type, geology, etc.)

MEGAW, Helen D., Dr, 22 Dunamallaght Rd, Ballycastle, Co. Antrim, BT54 6PB, 2. Co. Antrim, 3. Cambridgeshire, 4. Alps, Norway, Sweden, 5. Canada, U.S.A., 7. Common families, 8. No, 9. Photography, Botanical surveys

MHIC DAEID, E. Caroline, Dr, 'Avondale', Moynalty, Kells, Co. Meath, H1, 2. Kerry, Meath, 4. Northern (Arctic/subarctic), 5. Australia, New Zealand, 6. Mosses, Liverworts, Ferns, 7. *Sphagnum* spp., other bog and mountain bryophytes, 9. Microscopy, Botanical surveys

MITCHELL, M.E., Professor, Botany Department, University College, Galway

NAPIER, James A., Mr, 1 Portmore Ave, Upper Ballinderry, Lisburn, Co. Antrim, BT28 2EW, 2. General, 2. General, 9. General ecological field techniques, Ecology of woodland plants

NASH, David, Dr, 35 Nutley Park, Dublin 4, H10 and H21, 2. North Tipperary, Dublin, 6. General, 7. Charophytes, 8. *Chara*, *Nitella*, *Tolypella* (with J. King, Fisheries Board)

NELSON, E. Charles, Dr, National Botanic Gardens, Glasnevin, Dublin 9, 2. Burren, Connemara, 5. Southern hemisphere, 6. Ericaceae, Proteaceae, 8. *Erica*, 'Shamrocks', 9. Botanical history, Editing

NEWBOULD, J.P., Mrs, Dromore House, 88 Coolyvenny Rd, Coleraine, BT51 3SF, 2. Co. Derry, Co. Antrim, 4. Mallorca – Albufera, 6. Ferns, 7. *Dryopteris affinis* (agg.), 8. *Dryopteris affinis* (agg.), *D. filix-mas*, 9. Anatomy, Microscopy, Photography, Botanical survey

NI LAMHNA, Eanna, Miss, 6 Ashdale Gardens, Terenure, Dublin 6,

H7 (joint)

NIC LUGHADHA, Eimear M., Ms, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, H13, 2. Dublin, Carlow, 3. London, Cumbria, 5. Brazil, Venezuela, Guiana, 6. Neotropical Myrtaceae and Melastomataceae

NORTHRIDGE, Robert H., Mr, 9 Coole Drive, Enniskillen, Co. Fermanagh, BT74 6BS, H33 (joint), 2. Co. Fermanagh, Co. Donegal, 7. Ferns, 9. Photography, Botanical survey, Flora production

NORTON, M.P., Miss, Tinode, Manor Kilbride, Blessington, Co. Wicklow, H22

O'CONNELL, Michael, Dr, Department of Botany, University College, Galway, 2. Connemara, Burren, 9. Pollen identification

O'CRIODAIN, C., Dr, National Parks and Wildlife Service, St Stephen's Green, Dublin 2

O'DONNELL, H., Mr, 15 Lakeshore Drive, Renmore, Galway

O'HARA, D. Patrick, Mr, Manor House, Currabinny, Carrigaline, Co. Cork, 2. All, 3. All, 4. All, 5. All, 9. Botanical sculptor

O'MAHONY, T., Mr, 6 Glenthorn Way, Dublin Hill, Cork, H3,4,5 (joint)

O'MALLEY, J.L., Mr, Cullenagh Lower, Beauford, Killarney, Co. Kerry

O'SULLIVAN, A.M., Dr, Irish Agricultural Museum, Johnstown Castle, Wexford

PARNELL, John A.N., Dr, The Herbarium, School of Botany, Trinity College, Dublin, H28, 2. Dublin, Sligo, 3. Scotland, 5. Thailand, Mauritius, 6. Angiosperms, 7. *Sempervivum*, *Jasione*, 8. Yes, 9. Anatomy, Microscopy, Photography, Data analysis

PARR, Sharon L., Dr, 20 The Drive, Woodpark, Ballinteer, Dublin 16, 2. L. Talt, Co. Sligo, 9. Traditional uses of plants in animal diseases

PARTRIDGE, J.K., Dr, 26 Temple Burn Rd, Crossgar, Co. Down, BT30 9NG

PHILLIPS, J.C.L., Mr, 110 Crawfordsburn Rd, Newtownards, Co. Down, BT23 4UJ

PIPER, Raymond F.R., Mr, 11c Nottinghill, Malone Rd, Belfast, BT9 5NS, 2. All, 3. All, 4. All, 5. All, 6. Orchids and associated plants in

Ireland, 7. *Epipactis*, *Dactylorhiza*, all other groups of British and Irish orchids, 9. Microscopic characters of orchid morphology

REILLY, Patrick A., Mr, 26 Nephin Rd, Dublin 7, H30, 1. Cavan
REYNOLDS, J.V., Ms, Inniscarra Laboratory, Inniscarra, Co. Cork
REYNOLDS, Sylvia C.P., Mrs, 115 Weirview Drive, Stillorgan, Co. Dublin, H8, 2. Co. Limerick, Co. Dublin, 6. Alien plants (excluding plants of garden origin), 7. Higher plants except critical taxa, 8. No, 9. Anatomy, Microscopy, Botanical surveys

RICH, Timothy C.G., Dr, 24 Lombardy Drive, Peterborough, PE1 3TF, 2. General, 3. General, 6. Cruciferae, *Sorbus*, 7. Cruciferae, *Sorbus*, 8. Cruciferae, *Sorbus*, 9. Data analysis, Computer mapping, Botanical surveys, Vegetation

RILEY, D.H., Dr, 161 Duncrun Rd, Gortmore, Limavady, Co. Derry, BT49 0JJ

RODEN, Cilian M., Dr, 21 St John's Terrace, Henry St, Co. Galway, H17, 2. West, 7. Mountain plants, 9. Botanical surveys

RUSHTON, Brian S., Dr, 44 Kinnyglass Rd, Coleraine, Northern Ireland, BT51 4NW, 2. Coastal, upland areas, 4. Greece, 6. *Quercus*, weeds, invasive species, 9. Data analysis, Vegetation and floristic surveys, Computing, Numerical taxonomy, Editorial work

RUTHERFORD, J.H., Mr, Stranmillis College, Stranmillis, Belfast, BT9

SCANNELL, Mary J.P., Miss, 43 Raglan Rd, Ballsbridge, Dublin 4, H3,4,5 (joint), 2. Cork, Galway, Clare, West Meath, 3. West, 4. West, N.W. Spain, Lakeland in Poland, 5. S. Africa, Namibia, 6. *Rorippa*, *Erica*, *Taraxacum*, *Carex*, *Rumex*, 7. *Hydrilla*, *Elodea*, *Erica*, *Rorippa*, 8. *Elodea* and related species, *Erica*, *Carex*, 9. Epiphytic algae, Microfungi, Microscopy, Wood Anatomy

SEMPLE, J.W.D., Mr, 34 Park Ave, Belfast, BT4 1JJ

SHARKEY, G., Mr, 81 Jamestown Rd, Finglass, Dublin 11, H26 and H27

SHEAHAN, Mary C., Dr, 61 Westmoreland Rd, Barnes, London, SW13 9RZ, 2. South and west, 3. South and east, 9. Anatomy

SHEEY SKEFFINGTON, Micheline J., Dr, Department of Botany, University College, Galway, H15, 2. Burren, Connemara, Midland

eskers, 3. Pennines, Scotland, 4. France, 5. Tropics, South east Asia, Venezuela, 9. Vegetation analysis/classification, Ecology of threatened habitats, wet and dry grasslands, inner city floras

SHEPPARD, Ralph, Mr, Carnowen House, Raphoe, Lifford, Co. Donegal, 2. Donegal, 3. New Forest, Downs, 4. Alps and Arctic, 6. Ferns, Orchids, 7. Orchids (incl. *Dactylorhiza*), 8. No, 9. Photography, Computer mapping, Botanical surveys, Conservation

SIMS, B.A, Dr, 2 Orchard Hill, Gracehill, Ballymena, Co. Antrim, BT42 1JP

SPOUNCER, C.K., Ms, 2 Green Row, Castle Ward, Strangford, Co. Down, BT30 7LR

STEWART, Christopher B., Mr, 11 Loughbeg Park, Carryduff, Co. Down, BT8 8PE, 2. Kerry, Donegal, Lough Neagh basin, Lagan Valley, North Antrim, 3. Fens, Chalk downland, 4. Southern Mediterranean, 6. Orchids, Broomrapes, Crucifers, 7. Orchids, Broomrapes, Crucifers, 8. No, 9. Botanical surveys, Plant associations and factors related to their distribution

STEWART, N.F., Mr, Five Winds, Glencap, Kilmacanogue, Co. Wicklow

SWEENEY, Michael, Mr, District Wildlife Officer, Ballinrobe, Co. Mayo

SYNNOTT, Donal M., Mr, National Botanic Gardens, Glasnevin, Dublin 9, H31 and H32

TIRARD, Nesta, Lady, Coolnabrune, Borris, Co. Kilkenny

TROY, M., Mr, 3 Farleigh Place, Middle Glanmire Rd, Montenotte, Cork

THE CURATOR, Ulster Museum, Stranmillis Rd, Belfast 9

WALDREN, Stephen, Dr, School of Botany, Trinity College, Dublin 2, 2. W. Cork, Kerry, Connemara, Shannon Callows, 3. Wales, 4. Spain, Pyrenees, 5. Mascarene Islands, Polynesia, 6. Saxifrages, Ferns, 7. *Saxifraga*, 9. Photography, Data analysis, Botanical surveys, Ecology

WATTS, W.A, Dr, 16 Lawnswood Park, Stillorgan, Co. Dublin

WEBB, David A, Professor, 23 Trinity College, Dublin 2, 2. South, West, 4. West (Ga, Hs, Lu, He, It), 6. Vascular plants, 8. *Saxifraga*

WEIR, D.A., Mr, Palaeoecology Centre, The Queen's University, Belfast, BT7 1NN

WEYL, R.S., Mr, 24 Beechill Park South, Belfast, BT8

WHATMOUGH, J.A., Ms, Clock House, Dundrum, Newcastle, Co. Down, BT33 0NE

WHILDE, Tony, Dr, Corrib Conservation Centre, Ardnasillagh, Oughterard, Co. Galway, 2. All and West (Connemara, Corrib Country, Burren), 7. Angiosperms, 9. Botanical surveys, Distribution and ecology, Effects of changing land use and climate

WHITE, Faith, Ms, The Lake House, Crookedwood, Mullingar, Co. Westmeath

WHITE, James, Dr, Department of Botany, University College, Dublin 4, 2. General, 6. General, 8. No, 9. Vegetation survey/analysis

WILDE, John, Mr, 10 Kensington Court, Kensington Rd, Belfast, BT5, 2. Co. Antrim, Co. Down, Burren (Co. Clare), 3. General, 4. Alpine areas, 5. Western Australia, 6. General (accent on ferns and orchids), 9. Photography

WILSON, C.J., Miss, 358 Glasdrumman Rd, Annalong, Co. Down, BT34 4QN

WILTSHIRE, E., Mrs, 62 Carroll House, Lancaster Gate, London, W2 3PR

WYSE JACKSON, Michael B., Dr, 26 Upper Mount Pleasant Ave, Ranelagh, Dublin 6, H2 (joint), 2. Co. Kerry, Co. Dublin, 3. Scotland, 5. Australia, 6. Caryophyllaceae, 7. Caryophyllaceae esp. *Cerastium*, 8. Caryophyllaceae, limited expertise with *Sparganium erectum* subspp., 9. Botanical surveys, Taxonomy, Botanical history, Nomenclature, Bibliographies

WYSE JACKSON, Peter S., Dr, Botanic Gardens Conservation Secretariat, 199 Kew Rd, Richmond, Surrey, TW9 3BW, H2 (joint), 2. Co. Dublin, Co. Kerry, 4. Azores, 5. Oceanic islands particularly in Indian Ocean and Caribbean, 6. Higher plants, 7. European *Cochlearia*, 8. *Cochlearia*, 9. Computer databases, Local Irish Floras, Living plant collection development and management, Floristics, Taxonomy, Conservation, Botanic gardens