

# Specialist Users of Serials – the Royal Botanic Garden, Edinburgh

## Introduction

The way in which a subject is studied dictates the structure of its literature, and hence the management techniques needed within specialist libraries. The Royal Botanic Garden Edinburgh (RBGE) Library is a major collection which, together with the Herbarium and Garden, supports international research in plant taxonomy. RBGE works intensively on a finite range of plant families, and extensively on the whole range of plants found in a small number of geographical regions. The research leads to publication of specialised types of literature – Floristic and Monographic publications. Floras are region-specific, and Monographs are taxon-specific. Many serials are small-circulation and very specialised, with newsletters, small society journals and other ephemera being significant.

## History

The Garden was founded in Holyrood Abbey grounds as a Physic Garden in 1670 by Sir Robert Sibbald and Sir Andrew Balfour, who also brought plants from Patrick Murray's Livingston estate. It is the second oldest botanic garden in the UK, the physic garden at Oxford having been founded in 1621. Both founders were eminent physicians, co-founders also of the Royal College of Physicians of Edinburgh, and actively promoted the collection and propagation of plants in Edinburgh for use in medicine. The Garden's first 'Intendant' was James Sutherland, who established two more gardens and published the RBGE's

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first catalogue of plants, the Hortus Medicus Edinburgensis, in 1683. In 1699 he was granted a Royal Charter by King William III as the King's Botanist, and it is from then that the Royal connection the name Royal Botanic Garden, and the title of its Director, the Regius Keeper, dates. The Garden moved several times in its early years, to Trinity Hospital, to Leith Walk, and finally to Inverleith in 1820. Its function also changed, from physic garden to teaching collection, during the period when the Regius Keeper was also the Professor of Botany at the University of Edinburgh, and then to a 'botanical garden' maintained for the study of plants. It has also grown in size, by donations of land from the Royal Caledonian Horticultural Society and others, and by donations of buildings and library books from the Botanical Society of Edinburgh, recently renamed as the Botanical Society of Scotland. There are four sites which collectively make up the Garden; in Edinburgh, Dawyck near Peebles, Logan near Stranraer, and the Younger Botanic Garden at Benmore near Dunoon. These specialist gardens have different climatic and soil features, which enable them to grow plants from different regions.

## Objectives

Today, the Garden is run by a Board of Trustees, set up under the Natural Heritage (Scotland) Act of 1985 to carry out scientific research; disseminate the results;

maintain collections of plants, books and archives; and to afford research facilities, services and public amenities.

Most of the million or so visitors annually only come into contact with the Garden as an amenity, and fail to appreciate that its primary job is to undertake research. Funding is through grant-in-aid from the Scottish Office Agriculture and Fisheries Department, with additional top-up funding which has to be obtained from external sources, such as research grants, sponsorship, donations, bequests and commercial assistance via a trading company.

### **The nature of taxonomic research**

Plant science includes a number of different specialisms — plant chemistry, pathology, genetics, physiology, evolutionary and developmental studies. It also impinges on many other subjects, such as horticulture, ecology, agriculture, conservation. The research carried out in Edinburgh is primarily taxonomic — the study of plant classification — species and their relationships. The science serves as a common descriptive language for all other plant-based sciences. Unless the organism studied is defined or specified, research in the other plant sciences lacks focus. It is an underpinning science, carried out in a relatively small number of collection-based centres. Most other botanical research institutions are potentially moveable, but taxonomic ones have such large investments in collections, gardens, and sites that they tend to stay put.

### **A three-fold resource**

The science basically depends on comparisons between specimens of organisms, and in most taxonomic institutions there is a three-fold collection of data on such organisms — dried plant specimens in a Herbarium; a collection of living plants in a Garden; and a library of

published plant descriptions, illustrations, and keys for identification. RBGE holds approximately 2 million dried plant specimens, 15,000 species of living plants, and a Library which consists of 75,000 volumes books, ¼ million illustrations, and about 1600 current serials. The taxonomic library is integral to the way the research is carried out, and in Edinburgh it is one of the three main pillars supporting the research work.

The fundamentals determining the structure of the literature are:

- i) Species exhibit differences and similarities which form larger groupings (genera, families, etc.) — so that there is a specialisation by grouping in research.
- ii) Plants do not recognise political boundaries and the subject is studied internationally. Conversely, national governments like to have inventories of the plants growing within their borders.
- iii) Concepts of species have varied considerably, and hence plant names are in a constant state of flux.
- iv) The plant kingdom is large, diverse, and nothing like fully described. The potential uses of plants are enormous, and the surface has only just been scratched.
- v) Taxonomic research is intensive in its need for support services — libraries, computing (if affordable), photography, and in-house publication services.

### **Monographs**

Studies in individual orders and families of plants abound. Edinburgh is extremely strong in research on the non-flowering plants (cryptogamic botany). This includes fungi, both macro- and micro-scopic, lichens, mosses, liverworts, ferns, and more recently diatoms.

Of the flowering plant families, Edinburgh currently specialises in Ericaceae, (particularly *Rhododendron*), Gesneriaceae, Zingiberaceae, Pinaceae and other conifer groups.

These studies result in the production of what are termed 'Monographs'. Each monograph is a description of a single taxonomic unit — genus or family — and it will normally contain illustrations, keys for identification, synonymies, bibliographies, and lists of specimens studied. As the term implies, most monographic works are non-serial. There are, of course, exceptions, as some groups are so large that part-publication is used.

Single-family or single-species studies are often international, and lead to the production of newsletters and many specialist society publications.

### Floristic Research

Most of the larger western taxonomic institutions have the theoretical capability to undertake research on a world-wide or regional basis, because of the size and variety of their collections, but it is impracticable and undesirable for most of them to work in this way. National institutions tend to specialise in different regions. Edinburgh specialises in Brazil, Himalayan regions, China, Indonesia and Arabia. No single collection will hold all of the plant material required for study, and so researchers frequently either borrow preserved plants or have to travel between Herbaria. Thus Edinburgh plays host to the entire international botanical research community, as do other institutions, and individuals may spend periods ranging from hours to years working on the collections.

Descriptive catalogues of the plants of particular regions are called Floras. Whilst it would be more botanically useful to use biogeographical criteria as divisions, most of these floras have an element of government funding, and so they are normally published as floras of particular countries. Edinburgh

is currently publishing the Flora of Bhutan, and was the main centre for the ten-volume Flora of Turkey at a time when the Garden and the University of Edinburgh were still linked. The editorial offices for the European Garden Flora, a series of six planned volumes devoted to plants *cultivated* in Europe, are also based in Edinburgh. Most floras will contain material similar to that in the Monographs — text, keys, illustrations, often supplemented by maps of species distribution.

Most regional and larger national Floras are published as serials, with each part containing a single family or more. Nearly one hundred of the 1600 current serials taken at Edinburgh are floras. The criteria used for acquiring new floras is that they should be related to our research interests, contain input from our own staff, or that they are major works of international importance.

Some horticultural special-interest or small society journals contain material of potential interest to current research. These are the serials which presented most difficulties during serial subscription rationalisation in 1990. Society officials change frequently, and some are only used to dealing with individual members, rather than subscription agents and libraries.

### Some subject comparisons

The features of botanical literature described above are specific to the subject. In taxonomy, priority in naming is one of the most significant factors, in a similar way to that in chemistry, but for different reasons. In chemistry, first publication of entities or structures has potential commercial implications, but in botany, priority feeds into the complex naming procedures adopted in the International Code of Botanical Nomenclature. Whereas small societies, many of whose memberships are amateur, are prominent in botanical publishing, this is not the case in chemistry

or physics. There are societies of enthusiasts in these sciences but they tend to be made up of professionals. The nearest parallel in this respect would be the earth sciences, where sub-disciplines attract specialist societies, and where the geographical focussing of interests lead to the publication of many small-circulation journals. One of the problems facing the librarian in botany is that standards of refereeing vary very widely. Choices of acquisition, retention and cancellation often depend on criteria other than scientific worth. Another major problem is the sheer difficulty of tracking down the distributors of newsletters which may have a total world-wide circulation of less than a hundred.

### Specific problems

**Financial.** Whilst many of the serials are now obtained through subscription agents, there are some which cannot be obtained in this way — usually because subscription includes institutional membership, or the publisher is unwilling to deal with agents. The accounting system has to process payments in a wide variety of currencies, from US \$ to Malaysian ringgits. There are also the usual problems of Finance Departments, auditors and accountants who cannot seem to grasp such factors as calendar years not being quite the same as financial years; the Library's inability to predict exactly when particular prepaid issues of very obscure journals will arrive, and so on. The major financial problem is the lack of it. Budget increases of 2½% per year for the last four years have led to a shortfall in income, and despite considerable cost-saving efforts and improvements in financial management, some cuts are inevitable within the next year or so.

**Record-keeping.** Four years ago the record system in RBGE consisted of eight separate paper-based systems, each of which contained only enough information to run itself; few of the systems contained linking fields which could be used to integrate the

data. The marking-in deck did not list the shelf number or the financial data; the holdings list did not give the source; the subscription records made no mention of the shelf-number and so on. Having acquired and networked the Soutron Library System, the Library is now engaged in a rather complex data input exercise, which will improve serials management in the future.

**Exchanges.** About half of the serials are obtained through exchange with other institutions. Two main publications are used for exchange. RBGE publishes, via HMSO, the *Edinburgh Journal of Botany*, which is used for about 450 exchanges. The Library also purchases from the Botanical Society of Scotland 250 copies of the *Journal of Scottish Botany*. One or the other (or both) are distributed, depending on the value of the incoming material. Like most libraries handling exchanges, the recent political changes in eastern Europe have led to considerable editing of the label programme, and more significantly to reduced expectation of publications coming from these countries.

**Scanning.** Each serial coming in to the Library is scanned on the day of receipt, so that bibliographical databases can be kept up-to-date. Major taxonomic papers, botanical biographies, papers of relevance to current research, topical features, enquiry-related information, and significant botanical illustrations, are all indexed, mostly within Soutron or other databases.

**Planning.** Serials intake is monitored by a Research Management Group, of which the Librarian is a member, to ensure that acquisitions take account of current and future research planning.

A Strategic Plan for Information Services has recently been completed, which together with plans for Science, Horticulture, Conservation, Education, and Business, will make up an overall Strategic Plan for the Garden. This framework should ensure that progress continues in an integrated manner, in fulfilment of the Garden's statutory objectives.