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Global Forest Decimal Classification (GFDC)

Globale Forstliche Dezimal-Klassifikation (GFDK)

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Global Forest Decimal Classification

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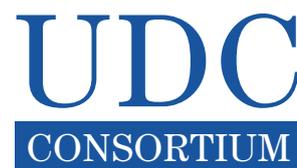
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In memory of Oscar Fugalli

A Special Farewell to Special Oscar (from IUFRO News no. 10)

"Sadly, we announce that **Oscar Fugalli** died on Saturday, 15 October 2005 in Rome. Those who had the privilege to work with him will always remember him as a dedicated forester, generous mentor and special person. To give an appreciation of his outstanding personality to all who did not have the opportunity to know him personally, we would like to share our memories of him:

Oscar Fugalli was special in many ways to IUFRO and the staff at IUFRO Headquarters. During his work at FAO, he developed a global perspective on forestry, established personal friendships with forestry leaders in many countries, and especially came to a deep understanding of the forester's problems in developing countries.

These work experiences and his ability to relate effectively and affably with foresters and scientists at all levels in all parts of the world eminently qualified him to be selected as the first Coordinator of the IUFRO Special Program for Developing Countries (SPDC) in 1983. As Coordinator of SPDC, he conceived and brought to fruition many activities - workshops, training courses, the 'SPDC Information Bulletin for Developing Countries' - that benefited forestry research managers and scientists in developing countries. With his activities he laid the basis for subsequent projects of SPDC in Africa, Asia and Latin America.

Following his retirement as SPDC Coordinator in 1990, he continued to volunteer services to SPDC and IUFRO in Vienna and Rome. With his rich experience he would comment upon IUFRO's activities with indulgence and foresight. Among many anecdotes, we remember his affection for a little black typewriter that he would not remove from his office although he ably manipulated computers and email services.

Oscar was modest and untiring in his work but even during the busiest time his warmth and sense of humor came through. He was extremely talented in playing with words and it was a delight to listen to him. For the reception of his Honorary Membership in 1995 he conveyed the following message: 'More than honored I am "everwhelmed". But if I confront myself with the Honorary Members of the past …. I cannot help feeling like a pygmy. But I may still have time to grow!"

To Oscar with wishes from the tribe."

Oscar made a huge contribution to this edition of the classification, contributing almost 100 suggestions for additions and extensions (clarifications).

Introduction

History

The Global Forest Decimal Classification (GFDC) is a "tool for organizing and retrieving electronic and paper format forestry related information resources".

First conceived in 1903, the "Flury" version of the forestry classification was adopted by the International Union of Forest Research Organizations (IUFRO) in 1933, updated and published in English by the Commonwealth Agriculture Bureaux (now CABI) in 1954, and updated and published by IUFRO in German in 1992. A trilingual short version (English - French - German) was published in 1990.

The Universal Decimal Classification (UDC) is used in parallel with GFDC to cover non-forestry topics. Similarly, GFDC is used with UDC to provide in-depth coverage for forestry topics - so the classifications have a historic symbiotic relationship.

This edition was prepared by the Global Forest Decimal Classification unit of IUFRO (6.03.03) over a period of three years using collaborative web technology to bring together members from Europe, North America and Australasia. The unit has initiated a database that produced this edition and will provide a future Master Reference File for future updates.

The success of the initiative is a tribute to the spirit of collaboration and professionalism found among IUFRO members and supporters.

Background to this edition

IUFRO aims to encourage "more efficient use of resources by forest research at regional and global levels" and attempts to ensure "scientists and others have access to the best available information". In 2002 an international group of forestry information professionals, working as part of IUFRO's Division 6, Social, Economic, Information and Policy Sciences, formed a steering committee to revitalize and update the classification to reflect current reality in our discipline.

The steering group went through a planning exercise to set up values and goals. One of the steering group's values is to use web technology to overcome distance. Microsoft Livemeeting (a web-conferencing tool) proved an effective means of holding "virtual" meetings with participants from Canada, England, Austria, Switzerland and Finland.

Goals for 2003-2005 were:

* Create and foster a dynamic community of contributing stakeholders
* Update the classification with assistance from forest researchers worldwide
* Publish updated versions in paper and electronic formats
* Work in parallel with allied IUFRO and non-IUFRO groups.

To ensure that the initiative made sense the steering group initiated a survey of classifications used for forestry collections worldwide. The survey showed that ODC/FDK were still widely used, with stakeholders welcoming the updating effort.

Volunteers set up a database to manage the updating effort, using Inmagic software and modelling the database structure on UDC's Master Reference File, with additional fields to accommodate the English 1954 edition and the German 1992 edition of the forestry classification. The 1954 edition of the classification was scanned, checked by a professional editor and uploaded into the database. The German edition was uploaded from its original electronic file.

A database consultant (Andornot Consulting of Vancouver, British Columbia) developed web-based forms to allow input of suggested changes to the database from anywhere in the World, and generously hosted the database on their server free of charge. The editorial committee displayed suggested changes with the original structure to facilitate discussion and decision-making.

The GFDC database is part of a toolkit for volunteer contributors. The toolkit includes:
- A statement of our mission, vision, values and goals
- A roadmap for the consultation process
- The GFDC classification database
- The scanned 1954 edition of the classification in pdf format
- The 1990 German edition in pdf format
- GFDC schedules with proposed amendments in pdf format
- A password protected area for viewing the UDC Master Reference File database
- A link to a discussion area in GoogleGroups.

One of the steering group's stated goals is to "work in parallel with allied IUFRO and non-IUFRO groups". With this in mind we invite IUFRO groups to participate in the continued updating of the classification. We also approached the UDC Consortium to revive and consolidate our historic cooperation and received generous encouragement, advice and support, including free associate membership of the Consortium.

The current reality is that with web technology and printing on demand it is practical to update the classification schedules on a rolling annual basis so we are happy to receive new suggestions via the website, or by any other method of communication.

We are proud to publish this revised edition of the Global Forest Decimal Classification with generous financial support from Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW).

History of the Decimal Classification (from the 1953 edition)

The International Association of Forest Research Institutes - in 1929 renamed the International Union of Forestry Research Organizations (IUFRO) - put the creation of a universal classification system and an international forest bibliography on its programme as early as 1903. This task was entrusted to the Bibliographical Committee.

The work was conducted under the chairmanship of Prof. A. Bühler (Tübingen), Prof. A. Opperman (Copenhagen), and Prof. R. S. Troup (Oxford), and in 1933 the Committee presented a complete classification for forest literature which was adopted in Congress. The 'Forest Bibliography' came to be widely known as the Flury System, because most of the creative work had been done by the Swiss forester Dr. Philipp Flury. Its main purpose was to promote the regular exchange of internationally important references between the member countries of IUFRO. The System was assigned the decimal signature 634.9F to distinguish it from the head 634.9 Forestry in the Universal Decimal Classification (UDC), which differs in the details of its subdivision.

Meanwhile, the rapid developments in forest research necessitated a revision almost at once. At a meeting in Zurich in 1948 under the chairmanship of Prof. H. Burger, F.C. Ford Robertson, Director of the Commonwealth Forestry Bureau (CFB), Oxford, presented a completely revised system which had been prepared by his Bureau with the Research Station of the U.K. Forestry Commission (Alice Holt) and the Forest Products Research Laboratory of the Department cf Scientific and Industrial Research (Princes Risborough). Much of the credit for this new, creative work belongs to P. G. Beak, then Assistant Director of the CFB.

Later on, the International Council of IUFRO proposed to the FAO that they appoint a joint bibliographical committee to study the new classification and make appropriate recommendations, the IUFRO representatives being A. Oudin, Director of the Ecole Nationale des Eaux et Forêts, Nancy; F.C. Ford Robertson, Director of the Commonwealth Forestry Bureau, Oxford; and E. Saari, Professor of Forest Economics, University of Helsinki. The FAO welcomed the suggestion, and appointed J.D.B. Harrison and R.G. Fontaine as its representatives. J.D.B. Harrison was subsequently succeeded by I. T. Haig and R.G. Fontaine by E. Moerath. From time to time, various other specialists were brought in for consultation, as shown below. This Joint FAO/IUFRO Committee on Forest Bibliography, which superseded the former Bibliographical Committee as Section 01 of the newly organized IUFRO Research Sections, held its first meeting in Helsinki in 1949 under the chairmanship of J.D.B. Harrison. Subsequent meetings, under the chairmanship of E. Saari were held as follows:

Date	Place	Consultants
30 Jan.-4 Feb.1950	Oxford	Beak, Kitchingman, Laurie, McCracken, Varossieau
5-8 Jun. 1950	The Hague	Beak, Donker Duyvis, Van Heurn, Van Vloten, Varossieau
30 Aug.-4 Sept. 1951	Wageningen	None
8-10 Jun. 1953	Oxford	Beak, Hilf
18-25 Sept. 1953	Rome	Abetz, Beak, Hilf, Holmstrom, Varossieau

The new classification was carefully examined at these and other special meetings and at the same time circulated for criticism among IUFRO members and other forestry research bodies. The classification of Forest Economics in the broadest sense heads 6, 7, and 9 was completely reorganized according to proposals from Saari, Abetz, and Mantel, while heads 30, 35, and 36 were also entirely revised according to proposals submitted by the FAO Pilot Committee on Logging Techniques, and collated by Hilf (Reinbeck-Hamburg) and Gläser (Hann. Münden). Further, the Committee had established early contact with the International Federation of Documentation (FID) with a view to incorporating the new system into the UDC.

The definitive English text of the new system - the Oxford System of Decimal Classification for Forestry, was finally presented to the IUFRO Congress in Rome in September 1953, and unanimously adopted with the following recommendations:

1. In view of the high importance to forestry science of using a single up-to-date system of classification, the Congress urges all its members to adopt the Oxford System of Decimal Classification for Forestry to the level of subdivisions that they require and also to conform to such authorized applications and developments of system as may from time to time be prescribed.

2. The original text of the Oxford System being English, it is desirable that authorized translations be published in at least French, German and Spanish.

Two months later the Conference of FAO, at its 7th Session in Rome, approved the System through the following resolution:

THE CONFERENCE-

Notes with satisfaction the completion by the Joint FAO/IUFRO Committee on Bibliography of a definitive English text of the Oxford System of Decimal Classification for Forestry, shortly to be published.

Notes, also, that translations into the official languages of both FAO and IUFRO are in hand. Commends this system of classification for adoption by forest libraries, institutes and documentation centers in member countries.

Requests the Joint FAO/IUFRO Committee on Bibliography to review from time to time the classification as now established and to formulate recommendations for the application and development of the Oxford System, as may appear desirable.

by Eino Saari, Helsinki, 1953;

revised by Regina Schenker and Margaret Joyce Sieber, Zurich, 1989.

The Classification from 1954 to 1990

In the 1980's the forestry classification was out of date. It had not been updated for more than 10 years, although progress in forestry research was enormous in those 10 years.

Consequently, foresters readily believed that the Oxford System (ODC) was antiquated and no longer useful, particularly for computer applications. The users of the card catalogues at the Commonwealth Forestry Bureau in Oxford were in favour of changing the system. S. Schrader's article in Forstarchiv, 50, 1979, 3: 51-53 then caused a complete change in the documentation situation. The few large documentation centres would use a different classification language than the many small libraries.

However, at a meeting of IUFRO Subject Group 6.03 in Hamburg in 1979, forestry librarians from England, Finland, France, Yugoslavia, Austria, the Federal Republic of Germany, and Switzerland refused to abandon the system. Most of the libraries concerned were established over 100 years ago, and the adoption of a new system would have complicated their work needlessly.

So it was in 1979 that the forest classification reached another turning point, as it had in 1953. In 1980, with the agreement of Prof. Lars Strand, Leader of Division 6, and O.N. Blatchford, first leader of our group, an ad hoc Working Party undertook a worldwide survey of the use of the ODC. This survey showed clearly its importance for forestry.

At the 17th World Congress in Kyoto in 1981, on the initiative of Dr. Walter Bosshard, Birmensdorf, the Executive Board approved the foundation of Project Group P6.01-00 "Revision of the Oxford System of Decimal Classification for Forestry", in order to resume responsibility for its control, maintenance, and development.

All session papers published between 1949 and 1973 by the Joint FAO/IUFRO Committee on Bibliography and Terminology were studied so as to establish a background based on previous traditions and experience.

As the Oxford System comprises part of the UDC, the "Principles of the Universal Decimal Classification and Rules for its Revision and Publication" were consulted.

At the 18th IUFRO World Congress in Ljubljana in 1986, it was a pleasure to see how many ODC users were interested in an updated forest classification. From 1983 to 1989, the Project Group P6.01-00 published 8 amendments to the system.

Regina Schenker

Introduction to the classification

The classification was designed to be precise, flexible, and capable of extension. Users should study these notes carefully. Since the classification technique remains the same for the full and the short version, the examples are the same for both versions.

(1) THE PRINCIPLES OF DECIMAL CLASSIFICATION

(a) The decimal point

In a decimal system, all subdivisions are preceded by a decimal point, i.e., are represented as decimal fractions of a number signifying a particular subject. In the Forest Decimal Classification the ten primary heads run from .0 Forests, forestry, and the utilization of forest products to .9 Forests and forestry from the national point of view. Social economics of forestry. By convention, the decimal point is omitted in writing, but must be remembered in filing, so that, e.g., 239 precedes 24. It follows that the decimal points which are written after every third figure are purely conventional, serving merely to make long figures easier to read. For instance, 23232521 becomes 232.325.21.

(b) Meaning of the digits .9 and .0

It is extremely important for the user that the general and the particular are not mixed and that general heads are not cumbered with fractions. In this system the digit .9 is exclusively reserved for 'miscellaneous'. Even where it does actually appear it is deemed to exist for every subdivision. Precisely defined, .9 means 'Miscellaneous topics belonging to the head of next higher rank but not classifiable under any of the subdivisions .0 to .8'. Thus 819 signifies 'Any property of wood which cannot be classified under any the heads 810-818', and excludes all preceding individual topics but includes any topics relevant to the next higher head, 81. This appears to be the only satisfactory means of guaranteeing accommodation for rare or new topics, and leaving the digits .91 to .98 available should such topics become so numerous or important as to require a subdivision of their own. In that case, 'miscellaneous' is classed under .99 [cf. (c) (ii)].

Sole exception: The primary head 9 (q.v.)

At the other end of the scale, the digit .0 has, as far as possible, been left open for subdivisions of more general import than the heads .1/.9. It should be borne in mind that .0 is not identical with its preceding head; for instance, 114.30 is more restricted than 114.3.

(c) Occasional deviations from strict decimal subordination

In principle, subdivisions ought to receive numbers decimally subordinate to the number for the subject. This, however is an ideal which is not always possible, but obviously there is no automatic connection between the way in which knowledge is conventionally subdivided and the decimal scale, nor any absolute relation between the length of a decimal number and importance of the subject. Departures from strict decimal ranking consequently occur where:

(i) the subdivisions of a subject are logically exhausted when only two or three digits of the decimal scale have been used; (ii) the subdivisions are too numerous to fit the decimal scale and difficult to form into convenient groups for this purpose.

For instance, under 83 Timber manufacturing industries and products. Uses of wood as such, the numbers 831 to 838 are inadequate for the subdivision required. Therefore 9 'Miscellaneous' was subdivided into 8 subheads, 839.1 to 839.8, which still left 839.9 open for 'Miscellaneous'. With this procedure, any head can theoretically be expanded ad infinitum. The departure from strict decimal ranking is unimportant in practice, and the various subdivisions can be distinguished through italics, bold type, insetting, etc.

(d) Alphabetical subdivision

The system allows for alphabetical subdivision of heads, e.g., under names of species, persons, etc. 174.7 Pinus sylvestris; 902.1 Leibundgut, H. wherever suitable and desirable. Users classifying plant or animal families are advised to do so under heads 14 or 17 in parallel with the relevant UDC numbers.

(2) MAIN AND AUXILIARY NUMBERS. SIMPLE AND COMPOUND NUMBERS.

The decimal numbers of the subject classification are called main numbers. Any main number standing alone, with no further symbols or numbers is a simple number.

Finer classification is achieved through auxiliary numbers of three kinds: (i) auxiliary numbers of subject; (ii) auxiliary numbers of form; and (iii) auxiliary numbers of place (geographical numbers). The numbers of (i) are listed in Appendix A, those of (ii) and (iii) in Appendix B.

To express combinations of ideas a main number may be combined with other main or auxiliary numbers or both, connected by standard symbols. The result is a compound number and - according to the connecting symbols used - some or all of its components may be separately registered, i.e., cross-referenced. The first component is then termed the key number.

Compound numbers require special rules for filing, as they are filed under both key and cross-reference numbers. These rules are described in the next section, assuming the use of citations, together with suggestions for the use of auxiliary numbers and cross-references. These rules should also apply to a computer database. Programs should be written for search strategies according to these rules, with citations stored as database records.

(3) SYMBOLS USED TO FORM COMPOUND NUMBERS AND ORDER OF PRECEDENCE IN FILING

Symbol	Meaning
/	The stroke links two or more consecutive numbers, e.g., 172.6/.9 means ALL the heads from 172.6 through 172.9. Such a number constitutes a single collective number and thus should be registered as a single citation.
+	A plus sign between two numbers means that each number has to be filed individually, e.g., 174.7 + 175.2 needs one citation under 174.7 and another under 175.2.
(0/9)	Round brackets indicate UDC auxiliary numbers of form (0) and place (1/9). Citations are not made for these unless they are written as key numbers or are preceded by a colon.
:	The colon means "in relation to". As in the UDC it implies that each of the numbers so joined receives a separate citation. If desirable for a big collection, 174.7 : 811 could be filed under 174 preceding 174.7 : 811.1 and under 811 the reverse form 811 : 174.7 could precede 811 : 174.9.
--	The double hyphen is peculiar to this system, and has two functions: (i) it denotes the auxiliary numbers --01 to --09; (ii) when it precedes a main number, to show that this is not registered in a cross-reference. In fact, it is used as an 'auxiliary number' with a more specific sense than the true auxiliary numbers. In filing under key numbers it has the same function as the colon, i.e., 174.7--811 is treated exactly as if it were written 174.7: 811, the only difference being that the former receives no citation under 811 (cf. example below).

Thus any number preceded by + or : must be given a separate citation. Otherwise, only the key number has a citation, the second number with () or -- serving merely to define the subject more precisely and ensure that it is filed correctly.

Order of citations under a key number

(I)   Numbers connected by / to consecutive numbers. Note that, e.g., 172.6/.9 precedes 172.6/.7 because it includes more.
(II)   Simple numbers or numbers preceded by + have equal rank.
(III)   Compounds in which the key number is followed by UDC numbers of form and place (0/9); a colon makes no difference in the filing order.
(IV)   Compounds in which the key number is followed by another main number connected by either a colon or a double hyphen.
(V)   Alphabetical subdivisions of a key number
(VI)   The next decimal subdivisions, i.e., .1/.9 of the relevant number.

Sequence of numbers and their meanings:

Example 1

174.6/.7	*Ginkgoales and Coniferae as a group*
174.6	*Ginkgoales*
174.7 or	*Coniferae; the second case is one*
174.7 + 175.2	*where conifers and monocots are treated separately in the same work, the + sign indicating that one reference will be filed here and the other under 175.2 Monocotyledoneae;*
174.7: (021)	*Handbook of the Coniferae, with or without a cross-reference under (021) Handbooks;*
174.7(021)	*identical for filing purposes*
174.7: (51)	*The Coniferae of China, with or without a cross-reference under (51) China;*
174.7(51)	*identical for filing purposes.*
174.7--011.1	*Nomenclature of the Coniferae*
174.7: 181.5	*Reproductive behaviour of the Coniferae, with or without a cross-reference under 181.5 Reproductive behaviour;*
174.7--181.5	*identical for filing purposes.*
174.7 : 811	*Wood structure of the Coniferae, with or without a cross-reference under 811 Wood structure;*
174.7--811	*identical for filing purposes.*

Coniferae subdivided alphabetically according to genus and species if this is desired

174.7	Abies alba
174.7	Abies amabilis
174.7	Picea abies
174.7	Tsuga yunnanensis

Example 2

847/848	*Drying, handling, and storage of timber*
847	*and/or Drying of timber, in the second instance*
847 + 854	*the subject "grading" is treated separately in one and the same work and referenced as an entirely distinct bibliographical entity*
847.2	*Kiln drying*
847.2 : (048.1)	*Bibliography on kiln drying, with or without a reference for bibliographies*
847.2(048.1)	
847.2 : (43)	*Kiln drying in Germany, with or without a reference tor Germany*
847.2(43)	
847.2--01	*Research on kiln drying*
847.2--090.2	*History of kiln drying*
847.2 : 174.7	*Kiln drying of conifers, with or without a reference for conifers*
847.2--174.7	

(4) AUXILIARY NUMBERS AND CROSS-REFERENCES

(a) The auxiliary numbers of form (0) refer only to the form for a given subject, e.g., encyclopaedia, textbook, etc. Like the geographical numbers (1/9), they are pure UDC numbers. Other auxiliary numbers of form can be borrowed as the user desires.

(b) The auxiliary numbers of subject --01/--09 are peculiar to this forest classification and must only be used within it. Their function is to allow a useful subdivision of numbers where these are likely to accumulate rapidly and form large masses difficult to consult. They classify general notions and are of wide application throughout the heads 1 to 9, but have little significance unless related to a particular subject. Cross-references to particular heads could not achieve the same effect, as the meaning of subject heads is restricted by the section to which they belong.

EXAMPLE: --090.2 means 'history', so that we can, for instance, write 841--090.2 for 'history of wood preservation' or 114--090.2 for 'history of soil science'. Neither of these concepts demands an independent main head, such as that at 902 for 'forest history'. It would be improper to use 902 as a cross-reference under 841 or 114 unless the meaning were 'in relation to forest history'.

The auxiliary subject numbers were designed:

(1) to allow more detailed classification of notions;

(2) to possess as much mnemonic value as possible by:

(a) using common mental associations of numbers and ideas, as between the main subdivisions --01/--09 and the main divisions 1/9, and reserving certain digits for particular senses, e.g., 4 for 'protection';

(b) furnishing numbers easily memorized and widely applicable to give certain kinds of subdivision involving a frequently recurring set of ideas;

(3) to render possible a readily understandable sequence of information under the various heads.

Such auxiliary numbers are obviously only useful in large collections of documents. Where they are used, the following rules apply: Only cross-reference if the cross-reference gives the right sense. Only use an auxiliary subject number if a cross-reference cannot give the right sense.

(c) Subject cross-references express relationships between different heads and make it possible to deal with complex subjects analytically. They provide the most rational means of effecting certain types of subdivision. For example, the classification gives only a single head, 443.3, for fungal and bacterial diseases of adult trees, with no explicit subdivision. However, it is practical to cross-reference in one of the several possible standard sequences, e.g., fungus species, type of control, geographical region, or host species. Not all of these cross-references need be registered separately (see below), but all will be taken into account in filing. The resulting combination would be: 443.3: 172.8 Ceratostomella ulmi: 414: (73) : 176.1 Ulmus, meaning 'fungal disease : caused by C. ulmi: its chemical control : in the USA: on Ulmus'. If all these numbers are made it is possible to find under 172.8 Ceratostomella ulmi all aspects of this fungus as a pathogen, under 414 all information on the chemical control of tree diseases, under (73) all tree diseases in the USA, and under 176.1 Ulmus all diseases of that genus. This is clearly an ideal which can seldom be fully achieved. The user can apply the principle according to his needs and economic situation. Many unsubdivided heads can be similarly treated, e.g., 242 Thinnings can be effectively subdivided by using auxiliary numbers, cross-references to tree species, to increment, etc.

In many cases the full set of cross-references is unnecessary. Consider two decimal numbers, A and B; it will often happen that information of the type A: B is not considered of direct interest under, say, B. In this case; we may write A--B, which defines the subject and ensures a proper filing order under A without necessitating a reverse entry under B : A. It may well be that the combination A: B is of direct interest under both heads but occurs so frequently as to involve needless duplication, since a single citation at B : A will suffice. As the symbols -- and : are equivalent in filing, the combinations A--B and A : B appear in the same place under 'A'. This is important, because special cases may occasionally require the combination A : B. Continuing the example above, it is clear that if the standard order is adopted for tree diseases, the second term is always a subdivision according to fungal species, and many citations can be saved by writing 443.3--172.8 Ceratostomella ulmi, etc. There are no universal rules for the sequence of components in compound numbers. The user must decide for himself what the key number is to be and in what sequence any auxiliary numbers and cross-references should follow. The filing rules described above automatically apply to the compound number selected. This question should be carefully considered to ensure that the choice accords with the relevant needs.

(5) FILING ORDER OF CROSS-REFERENCES

For those who still use catalogue cards, a compound number will appear in identical form on all cards. To show the filing order of cross-references, it is then convenient to mark in colour the number that has to be read first. A compound of the type A : B + C : D would be marked thus:
- 1st card   **A** : B + C : D
- 2nd card   A : **B** + C : D
- 3rd card   A : B + **C** : D
- 4th card   A : B + C : **D**

Long compound numbers, very rarely used in practice for big collections but theoretically possible, can be resolved by using the + sign, e.g., 'Seed research in Sweden on Scots pine and Norway spruce' will be read as: FDC : 232.31--010: (485) + 174.7 Pinus sylvestris + 174.7 Picea abies and could be divided

as follows:
- 1st card 232.31--010
- 2nd card (485) +
- 3rd card 174.7 Pinus sylvestris --232.31--010 +
- 4th card 174.7 Picea abies --232.31--010

A simplified and more used version will be this without addition of the -- numbers.

(6) MISCELLANEOUS

(a) Alphabetical index: This was compiled to facilitate the use of the system, and also assist those wishing to construct a concordance with another system. Users should not rely on this index alone but should consult the number in the systematical part. Only with adequate experience can it be ensured that a number is being used in the right sense.

(b) Domestic subdivision: Until subdivisions are authorized, any undivided main number may be subdivided provided the subdivision remains entirely domestic and unofficial, as in the subdivisions *325 or 326. An asterisk denotes that no one method of subdivision has gained international acceptance. Users should not take the vacant numbers of a partly subdivided head and fill them domestically. These vacancies are reserved for new heads. Under 31, for example, the only numbers that may be used are 311, 312, and 319. If domestic subdivisions are wanted they must be applied to these three heads, the heads 313 to 318 being left vacant. When a number is domestically subdivided the symbol x should be inserted between the approved head and its domestic subdivisions, e.g., 319x1, 319x2, etc. This symbol does not affect the filing order. If it coincides with the conventional decimal point, the latter is best omitted, 319x1 being read for filing as 319.1. It is undesirable that domestic numbers appear at all in printed literature. In case it is absolutely necessary that they should, they must be clearly designated as such with the x symbol.

by F. C. Ford Robertson, Oxford, 1953;
completely revised by Regina Schenker, Marja Zorn-Pogorelc, and Margaret Joyce Sieber, Zurich, 1989.