ANATOMY OF A DOCUMENTATION SERVICE

**Introduction**

The encyclopaedic compilation "Wealth of India" is a compilation on economic products of India, based on the "Dictionary of Economic Products of India" by George Watt and published in 1889-93. It is intended to serve as a reference guide to people with varied interests.

Consisting of two series, "Raw Materials" and "Industrial Products", the former deals with raw materials of vegetable, animal and mineral origin, while the latter is concerned with the present position and development of industries - chemical and engineering industries, and industries based on indigenous crafts in India.

A documentation service, oriented to the needs of information for compilation of papers for this encyclopaedia, exists here since 1947. It aims at maintaining a central reservoir of information consisting of literature files and catalogue of bibliographic references. This catalogue is compiled after careful scrutiny and indexing of relevant scientific literature contained in numerous journals, reports, bulletins etc.

Its secondary function is to provide the editorial staff with an up-to-date and comprehensive information in the form of subject bibliographies about topics on which they are compiling papers for the encyclopedia till their final drafts are complete. This forms the essence of SDI (Selective Dissemination of Information) service rendered by the Documentation section here.

**SDI Service**

The cataloguing of bibliographical references of useful information pertaining to the encyclopedia is a prelude to successive technical operations leading to the compilation of subject bibliographies.

To many, the SDI service seems to be associated with the rapid processing of information through electronic digital computers; but whatever may be the means of operation - computerised processes or the manual methods - the end purpose is the same in both cases i.e., to supply selected information to the client - as if "on a platter" - at regular intervals.

Depending upon the exigencies peculiar to a particular project, the system or the operational process may not follow a beaten track. The underlying principle of information storage and retrieval remaining the same, the operational system may consist of technical processes not necessarily conforming to the conventional ones. Uniterm indexing system which forms the basis of manual and mechanised means of information retrieval in a conventional SDI service, has not been adopted here due to needs peculiar to the project under discussion.

**Indexing System**

Primary and secondary periodicals, patents, standards, technical bulletins, research reports, proceedings and conference
papers etc. are regularly scrutinized by subject specialists and analytical entries are made for useful information with appropriate subject headings. Bibliographical entries for articles are made under one or more subject headings in conformity with the list provided. Thus this process differs in principle from the computerised SDI service wherein the indexing and retrieval of information is based on keywords occurring in titles of articles. When a title is not sufficiently meaningful or does not contain adequate number of appropriate keywords, the retrieval will bring in "noise" or irrelevant information. The problem of "noise" is still more accentuated in KWIC (Keyword in context) indexing wherein the title is mechanically recirculated by bringing each of the terms to the forefront and eliminating those (mostly prepositions, conjunctions etc.) which are not considered meaningful. In such cases the titles of papers have to be editorially supplemented, when necessary, with additional keywords to provide multiple search terms for each paper. Thus each key term, whether in the title originally or added through editing, becomes a search term listed in the alphabetical arrangement.

In the present system, keywords for use in subject headings are selected from titles only when they help to identify the subject dealt in the article, otherwise they are selected from abstracts, or the text, or supplemented by additional keywords. These keywords are selected from an authority list of subject headings or thesaurus which will be discussed in the next paragraphs. A few examples may clarify the point.


   The text of the article contains the following common names which concur with those in the list of subject headings:
   
   Wheat, Maize, Jowar, Mung, Pea and Gram.

Since the raw materials of vegetable origin are entered under their corresponding botanical names, six analytical entries are made under the following subject headings:

   Triticum, Zea mays, Sorghum vulgare, Phaseolus aureus, Pisum sativum, and Cyamopsis tetragonoloba


   The paper reports the isolation of a number of new alkaloids for the following plant species:

   Fumaria officinalis L.
   Corydalis ochroleuca Koch.
   Corydalis tubrosa De.
   Corydalis pallida (Thunbs.) Pers.
   Corydalis sibirica (L.) Pers.

   Since the information is indexed on only Indian plants or exotic plant species naturalised in India, only two analytical entries were made with the following terms as subject headings:

   Fumaria officinalis Linn.
   Corydalis sibirica (L.) Pers.


   The article reports studies on the plant growth inhibitory activity of two diterpenoid alkaloids isolated from the common larkspur Delphinium ajacis, only one index entry is prepared with the following subject heading:

   Delphinium ajacis Linn.

For animals and minerals, their common names--and not scientific names--are listed in the thesaurus because the people in general are more familiar with the former, e.g.


   Index entry is made under the common name 'Molluscs' as its subject heading.


   In this case, 'parasitic worms' is the subject heading.
The citation of bibliographic references in index entries follows the pattern of title abbreviations as in the 'World List of Scientific Periodicals'.

**Role of Thesaurus**

In the foregoing passage, it has been noted that subject headings are taken out of an approved list. This list is, in fact, a thesaurus containing a list of terms - botanical names for materials of vegetable origin, and common names of those of animal and mineral origin, all arranged alphabetically. While selecting terms or supplementing them, the indexer is guided by this list. This thesaurus, which is kept up-to-date with additions of new terms and elimination of superseded ones, may be said to constitute the User Profile, while the array of index entries forms the Subject Profile of the SDI service.

In case of raw materials, the thesaurus contains an alphabeticall array of botanical names--first under genus, and then under species.

A list of subject headings for industrial products is also included in the thesaurus.

**Why not Uniterm Indexing**

As the articles selected for indexing deal with a limited range of disciplines, a number of keywords will be common as subject headings to many index entries, e.g.,


The botanical term *Trigonella corniculata* Linn. is common to several index entries here and such cases are many. A critic may very well ask why Uniterm indexing has not been followed here as it would have effected economy of material and labour. The answer is that the filing system of index entries, being oriented to the needs peculiar to this project, is so different from the conventional one that Uniterm Indexing cannot be adopted here.

As the gradual development of scientific studies on a subject has to be traced from its initial stages, catalogue cards bearing index entries are arranged in a chronologico-alphabetical sequence. This is different from a purely alphabetical arrangement which is a prerequisite to Uniterm Indexing system. The index entries bearing botanical subject matters are first arranged alphabetically under genus, and then under their respective species. In case of an economically important plant with a large number of bibliographical references, the entries are further classified according to its cultivation, disease, utilisation, statistics, trade etc., and then arranged according to corresponding subheadings. An example is given below:

Tamarindus Linn. (Leguminosae)

T. Indica Linn.
- General
- Botany
- Cultivation
- Diseases and Pests
- Utilization
  - Timber
  - Feeds and Fooder
  - Textiles
  - Medicinal
  - Tannins, Dyes, Gums,
    Resins, Pectin
  - Miscellaneous
- Chemistry

The arrangement of index entries on such plants follows the same pattern of layout of topics in the encyclopaedia. Their final arrangement is according to their years of publication followed by an intrinsic alphabetical arrangement of genus, species and subheadings. An extract from a subject bibliography is given below:

*Trigonella foenum-graecum* Linn.

Diseases and Pests
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List of common names of Indian plant diseases. Indian J agric Sci 20(Pt 1):140-41, 1950


Gupta, K.G. & Sen, A. Variations in the characteristics of Rhizobium Spp. of gram (Cicer arietinum), methi (Trigonella foenum-graceum) and pea (Pisum sativum). Indian J agric Sci 1962, 32(Pt 4) 260-65


Obviously Uniterm Indexing is not suited to such an arrangement of index entries which does not follow the conventional alphabetical sequence, but is oriented to the needs of a particular project.

A documentalist with training in library classification may be tempted to classify all these index entries according to some classification scheme to form a classified file, and then prepare an alphabetical subject index as a key to its contents. But any such attempt will disturb the existing pattern which is exclusively geared to specific needs of a service for compilation of this encyclopaedia. Besides, a classified order will entail a two-way search through alphabetical subject to the classified file instead of the present system of one-way direct approach to the contents of the index file.

Cross References

With progress of research, botanical names of some plants have either been changed or are likely to undergo alteration in future.

Index entries already made under such defunct botanical names as subject headings are not discarded, but are coordinated to the correct names through cross references.

In such cases, a correct name is correlated to the superceded name through cross reference entries implying that index entries exist under all these terms and an enquirer should preferably consult them also to have a comprehensive idea about the topic, e.g.,

Sterculia Spp. See also Erthropsis, Pterocymbium, Petrygota, Scaphium

Besides guiding an enquirer from erroneous and superseded names to correct names, cross reference entries help to correlate synonyms including coordinate and subordinate terms, e.g.,

Urochloa See also Brachiaria

Vernonia See also Centratherum

Vitis See also Caryatia, cissus, Parthenocisus, Tetrasigma

These cross references are also used to inter-relate collateral terms, e.g.,

Textile industry See also Cotton industry, Jute Industry, Silk Industry, Synthetic Fibres, Synthetic Fibres, Wool Industry

The nomenclature of plants is frequently rectified in conformity with the Rules of Botanical Nomenclature to eliminate discrepancies. Botanical names in current usage are referred from superseded ones by 'see' reference entries:-

Nothopanax See Panax Spp. See Polyscias

Pristimera See Reissantia

SDI Service

Subject bibliographies on any particular topic are typed out from index entries pertaining to them and supplied to the editorial staff when they commence writing articles on it. Then useful articles on this topic are
regularly sought out from incoming periodicals, and analytical entries, prepared for them, are kept separately. Supplementary bibliographies are thereafter typed out from these subsidiary entries, and supplied to the editorial staff at specified intervals till the final drafts of papers are ready for the press.

These entries are, thereafter, containing the indexed information, are transferred to the adjacent library where they can be consulted with convenience.

**Ancillary Service**

An array of filing cabinets with systems hold literature files— all arranged in an alphabetical order according to their subjects. These files contain bibliographies, lists of reference books, photocopies, pamphlets, reprints, abstracts, clippings from newspapers, standard specifications, drafts of articles, and correspondence relating to them—all arranged in a helpful sequence. In short, they contain all useful materials which can be accommodated inside them, and thus they hold out a vista of information within a limited space.

These files are sent to the editors for their consultation when they start compiling papers for the encyclopaedia. All documents, subsequently received, are also sent to them for their perusal and incorporation in literature files lying with them.

**To Conclude**

As bibliographies, supplied through the SDI service, contain only a list of citations, it would not have been considered as an adequate source of information but for the fact that all scientific periodicals—after they have been scrutinized by the technical personnel here—are sent to the editorial staff who screen screen them again to ensure if some useful information has not been indexed. In such an eventuality, they are again sent back to the Documentation section with their remarks. This ensures that no useful information, even of marginal value, is left out and nothing useful is missed. View points of indexing and editorial staff are thus made to concur ensuring that the 'noise' or the number of redundant entries are kept at a minimum.

This system, which has gradually developed into its present form to reduce time and labour of the editorial staff involved in compilation of the encyclopaedia, has been found to work well, and may indeed serve as a guide to those who would like to undertake similar projects.