

**ENUMERATIVE TO ANALYTICO-SYNTHETIC  
SCHEME OF CLASSIFICATION :  
A CASE STUDY OF  
DEWEY DECIMAL CLASSIFICATION**

**A DISSERTATION**

**SUBMITTED TO THE PANJAB UNIVERSITY, CHANDIGARH  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
Master of Library Science  
1986-87**

By

**Sukhdev Singh**

**DEPARTMENT OF LIBRARY SCIENCE  
PANJAB UNIVERSITY  
CHANDIGARH**

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To

Thakurani Khushalaya Devi and  
Thakur Bharat Singh : My  
respected Parents.

**A C K N O W L E D G E M E N T S**

It is my pleasant duty to acknowledge my debt of gratitude to those who have helped me in completing the present study.

I express my deepest sense of gratitude and thanks to my learned teacher and guide, Dr. U.K. Tikku, M.Sc.(Hons.), M.Lib. Sc., Ph.D. (Pittsburgh, USA), M.I. Inf. Sc.(Eng.), Reader, Department of Library Science, who has taken keen interest in the subject. I am greatly indebted for his constant encouragement, inspiration, guidance, sincere help and valuable criticism without which the present investigation would not have been successfully completed.

I am indebted to Chairman and Teachers of Department of Library Science, Panjab University, Chandigarh, whose inspiration, guidance and encouragement prompted me to take up this project.

I also wish to express my earnest thanks to my friends, Mr. Sudesh Sood, Mr. Rajeev Vij and Mr. Jagatjit Singh, who have constantly supported and rendered their best help to me.

*Sukhdev Singh*

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Dated: 31st March, 1987

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## P R E F A C E

A research project requires a scientific temper. But to cultivate scientific temper as someone has said one requires, "The devotion of a mother, the poise of a 'Judge', the objectivity of a philosopher, the courage of a soldier, the preserverness and patience of a leaver and vision of a prophet". The list of qualities needed/outlined are indeed formidable. Still, I have tried to do justice to my research project.

### The Problem:

The problem of my research project — "Enumerative to analytico-synthetic scheme of Classification: A Case Study of Dewey Decimal Classification" — was assigned to me by the Chairman, Department of Library Science, P.U. Chandigarh on 16 January 1987.

The scope of the study was limited to examine the increasing trend in Dewey Decimal Classification for introduction of features of analytico-synthetic scheme of classification from its original enumerative nature; especially in editions subsequent to edition 14.

### Research Methodology

#### (a) Literature Survey:

The related literature was traced

through the help of standard indexing and abstracting tools like 'Library Literature' and 'Library and Information Science Abstracts'. Further tracing of literature was done through the citations and bibliographies available in already traced relevant articles and books. An attempt was made to go through all the relevant literature.

(b) Hypothesis:

To give research a systematic and logical direction, a Hypothesis was formulated after going through all the relevant literature available. Hypothesis states,

" Dewey Decimal Classification is becoming more and more analytico-synthetic scheme of Classification in nature over its various editions".

(c) Testing of the Hypothesis:

The hypothesis was tested by examining Edition 11, Edition 14 to 19 of Dewey Decimal Classification in the light of criteria for an analytico-synthetic scheme of classification as given by Dr. S.R. Ranganathan. It was impossible in a study of this nature to examine in detail the schedules of a voluminous classification scheme like DDC in the limited time that was available for this research project. However, examples were drawn from the scheme to examine the classification scheme for the criteria of analytico-synthetic scheme.

With the above methodology in view, I have divided the dissertation in 5 chapters, each dealing with specific thought content viz.,

(1) Introduction: Concepts

Here the concepts dealing with research problem are defined and explained.

(2) History of Library Classification

It gives history of classification and concludes that world trend is towards the analytico-synthetic schemes of classification.

(3) Dewey Decimal Classification Scheme: An Historical DEVELOPMENT from origin to 19th edition.

It gives history of Dewey Decimal Classification with special reference to introduction of synthetic features in editions subsequent to death of Melvil Dewey ( i.e. 14th edition onwards).

(4) DDC: March towards Analytico-Synthetic Scheme

Here various editions of DDC have been examined for features of analytico-synthetic scheme. Increasing tendency towards synthetic features have been shown over various editions.

**(5) Conclusion and Suggestions:**

Here findings of study have been concluded and some suggestions have been made to improve future editions of DDC.

**Method of Citations:**

For citing a reference, the indication is given within parenthesis starting with the surname of the author, followed by a comma, then year of publication followed by a colon and then page number. Complete bibliographical details of can be had from bibliography given at the end/dissertation.

**For example:**

( Ranganathan, ~~1967~~, 1967: 107)

Short form of Dewey Decimal Classification (DDC) have been used at places.

I have tried my best to do full justice with my research problem. Yet I do not rule out the possibility of few drawbacks, because of the short period of time during which it was supposed to be completed and submitted to the department.

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CHAPTER-1

INTRODUCTION : CONCEPTS



## 1. What is Classification:

Classification is nothing else but a mental grouping of facts or phenomena according to their resemblances and differences. This all is done as to serve some purpose in the best way. By classification, things or our notions of them, are arranged according to their resemblances or identities. It is primarily a mental operation, for arranging things or ideas in an order which corresponds with an idea or series of ideas in our minds. It involves putting together like entities and separating unlike entities. The characteristics of entities are used as a basis for determining the likeness or unlikeness between them. Thus the process of putting together of similar things, or arranging of things according to likeness and unlikeness is known as classification. According to Phillips "Classification is probably the simplest method of discovering order in the bewildering multiplicity of nature. It is a process of sorting; ideas or objects are collected in groups, and these groups stand for certain qualities, which its

members possess.....Classification not only assists the memory by arranging individuals into groups, but also expresses relationship of things and leads to the discovery of their laws" (Phillips, 1961:9).

The definition of classification given in Encyclopaedia of Librarianship is "the action of classifying or arranging in classes according to common characteristics or affinities" (Landau, 1959:74).

It can be concluded that classification is the process by which things are grouped according to their likeness and separated according to their difference. Classification is, the arrangement of things in logical order according to their degree of likeness.

### 1.1 Different meaning of "Classification"

Classification means differently in different contexts. The term classification has the following accepted meanings or usages.

1. The logical meaning, viz. the intellectual process by which our mental concepts are recognized to have likeness or unity, by which these concepts are set in inner relation to one another.

2. The act of arranging actual things so that they are placed in an order which corresponds with an idea or series of ideas in our minds, i.e. they represent the abstract arrangement as implied in its logical meaning. This is practical classifying.

3. The written or printed schedule of terms which represent a system of classification. This is also called a classification scheme, for example Dewey Decimal Classification scheme and Colon Classification Scheme, etc. In support of this Broadfield states:

" A classification is a series or system of classes arranged in some order according to some principles or conception, purpose or interest or some combination of such. The term is applied to the arrangement either of the class names, or of the things, real or conceptual, that are so classified. The term 'classification' is also by derivation and use, the name for the classifying or arranging of classes, or things, as a process or method." (Broadfield, 1946).

In ordinary classification, we deal with the arrangement of ideas and objects in a systematic order. However librarians and information scientists are mainly concerned with the arrangement of documents in a systematic order. This is achieved with the application of 'Library Classification'.

## 2. Library Classification

The documents in libraries of any appreciable size are arranged according to some system, and the arrangement is generally referred to as "classification". From the day when a man first assembled documents and records of any kind or form, men have been interested in ways of arranging them. In the record of libraries throughout the ages, wherever we have any details of them, we have also evidences of the preoccupation of

their librarians with this question. The act of classification in libraries and information bureaux may be briefly defined as:

" The systematic arrangement by subject of books and other material on shelves or of catalogue and index entries in the manner which is most useful to those who read or who seek a definite piece of information." (Maltby, 1978:15)

According to Mann, classification "is the arranging of things according to likeness and unlikeness. It is the sorting and grouping of things, but in addition, classification of books is a knowledge classification with adjustments made necessary by the physical form of books". (Mann, 1943: Chap III).

S.R. Ranganathan offered a classic definition for library classification which inter alia indicates the steps in the process of classifying or classing of documents in a library. According to him, "It is the translation of the name of the subject of a book into preferred artificial language of ordinal numbers, and the individualisation of several books dealing with the same specific subject by means of a further set of ordinal numbers which represent some features of the books other than their thought content" (Ranganathan, 1962:10).

This definition guides the steps to be followed by the classificationist for achieving what is known as "call number" of the document classified. The definition denotes two steps to be followed for classifying a document. If the first part of the is implemented it results in achieving what is called

'class number' of the book ( i.e. the first ordinal numbers in the definition). The second part of the definition results in achieving what is known as book number (i.e. the second ordinal number in the definition).

Library classification, thus, is a tool for very simple but infinitely important purposes. Its whole object is to secure an order which will be useful to readers and those who seek information with the smallest complication of search or other effort. It is a technique designed to expedite the full use of knowledge stored in books and other material housed in the collection.

### 3. Need of Library Classification:

The foundation of the Library is the book; the foundation of librarianship is classification. Without classification no librarian can build up a systematic library. One, that is to say, which represents adequately the field of human learning as it is recorded in books. Think of the difficulties facing him if he is honest in his work in an unclassified library. He must gather together temporarily all the books on any given subject from all parts of his library, every time he wants to add to the strength of that subject or weed out books which have become obsolete. We know that much efficient has resulted from the application of classification. Librarians of large libraries sometimes advocate the close classification of book entries in catalogues, but reject it for

their shelves in favour of no classification or at the best broad classification. But the reasoning on which this advocacy is based is not convincing. At any rate libraries arranged upon the OPEN ACCESS system, which is the only system in popular libraries these days, are impossible to work without adequate shelf classification. Readers would be lost hopelessly in an unclassified world of books.

The need for ordering, arranging or classifying the ideas or objects becomes imperative for better and efficient expression, communication or use e.g., a speaker must deliver his speech in some systematic manner in order to bring the subject matter to his audience. Similarly, in libraries where the readers can ill-afford, there is wastage of time in searching through thousands of volumes, some arrangement or classification of the reading material must be maintained in order to reduce the cumulative loss of time of the readers in laying their hands on the desired material and subsequently avoiding wastage of time and energy of the library staff to display initially, to restore properly the material consulted by the readers. Further man's universe of knowledge is increasing day by day. It is becoming so vast and complex that he can not comprehend in its totality unless he divides it in some convenient groups. In this age of specialization, literature in every field of knowledge is increasing exponentially and consequently this literature is pouring in the libraries at tremendous speed and the need for organizing the said literature in a helpful sequences becomes more and more essential.



Ranganathan through his "laws" establishes that library reading material is not meant for preservation or mere storage, but to be used to the maximum extent. In order to serve this purpose the adoption of some systematic arrangement of its stock is necessary in every library. The best solution is classification. Moreover, the retrieval of information without loss of time is required both by the reader and the library staff to save time for other researches and developments. Along with other tools, classification has to be exploited to maximum extent to meet this end. (Ranganathan, 1931). Palmer and Wells, taking into consideration the need for classification remarked, "any grouping is better than none, but some are better than others." (Palmer and Wells, 1951). Richardson<sup>s</sup> pleads for the need for library classification, "In an unclassified library the books are classified over again and again, every time when a man wants to use them." (Richardson, 1930).

So to conclude, it can be said that classification is the very foundation on which any library of worth can be built.

#### 4. Purpose of Library Classification:

Following are the important purposes of library classification.

##### 4.1 Helpful Sequence

It should arrange the documents in a method most convenient to the users and to the library staff. The related documents would be grouped in close proximity.

#### 4.2 Correct Replacement

It should enable the correct replacement of documents, after these have been returned from use.

#### 4.3 Mechanized Arrangement

It should enable the mechanization <sup>of</sup> the arrangement of documents on stacks or elsewhere. This is done by allocating notation, which expresses order.

#### 4.4 Addition of New Documents

It should enable addition of new documents in such a way that these documents go into most helpful positions among the existing collection of the library. In other words, new documents should be grouped with related existing documents of the collection of the library.

#### 4.5 Withdrawal of Documents from Stock

Library classification should facilitate withdrawal of documents if such a need arises.

#### 4.6 Book Display

It should be helpful in the organization of the collection in an open access library, so that it is well presented and guided.

#### 4.7 Other purposes

It should enable, compilation of bibliographies, catalogues, union catalogues and so on; classification and filing of information, reference queries, suggestions received



from the users, non-book materials and statistics of various kinds; arrangement of entries in classified part of the catalogue and derivation of subject headings. It should also assist the user of a catalogue to refer to the location of the document on the shelf.

## 5. Species Of Library Classification Schemes

On the basis of certain characteristics such as mapping of the universe of subjects, type of notation, length of schedules, provision of schedules of common isolates and special isolates, capacity for resilience and the structure of class number. Ranganathan (1969:204) categorized the existing library classification schemes under six kinds or species viz.,

- 5.1 Purely enumerative scheme
- 5.2 Almost enumerative scheme
- 5.3 Almost faceted scheme
- 5.4 Fully but rigidly faceted scheme
- 5.5 Almost freely faceted scheme
- 5.6 Freely faceted scheme

### 5.1 Purely Enumerative Classification

"An Enumerative Scheme for Classification consists essentially of a single schedule enumerating all subjects —of the past, the present, and the anticipatable future." (Ranganathan, 1967:95). The following limitations are found in enumerative classification:

- (1) Length of the schedule will be long.
- (2) The accommodation of newly emerging subjects in filiatory sequence within the existing subjects is difficult.

- (3) Class numbers of such schemes often consist of a succession of semantically rich digits not separated into meaningful facets. The class numbers of such schemes are said to be monolithic.

### Examples:

#### Library of Congress Classification

It is an example par excellence of Enumerative Classification. Even common isolates and geographical isolates have not been separated out in the schedules of their own. Obviously it has following limitations:

1. Length of schedule runs to 29 volumes totalling more than 7200 pages. It is arduous to handle so many volumes and to turn through so many pages to find the class number of a book.
2. In spite of liberal gaps in the notation, the schedule of library of Congress Classification is already being overpowered by the emergence of new subjects. This shows limited resilience of the classification.
3. It has monolithic class numbers. However the use of Indo-Arabic numerals and Roman Capitals provides some relief.

#### Rider's International Classification

It is another example of enumerative classification. It also have similar limitations.

1. Length of the schedule is large.
2. Resilience is very limited.

### 5.2 Almost- Enumerative Classification

"An Almost - Enumerative scheme for classification

consists of a large schedule enumerating most of the subjects of the past, the present and the anticipatable future and in addition a few schedules of common isolates" (Ranganathan, 1967: 97) The positive aspect of a scheme for classification which comes under this category is that it enumerates not only the basic subjects but also compound subjects. A few auxiliary schedules support the main schedules to construct class number for more compound subjects. The negative aspects are that as the scheme lists out basic subjects as well as compound subjects, the schedule will be lengthy, and it will soon be overpowered by the emergence of new subjects beyond the anticipated ones and beyond those which can be got by the continuation of enumerated subjects and auxiliary schedules. The class numbers of such schemes usually consist of succession of semantically rich digits which may not have been separated into meaningful facets by semantically poor digits. The class numbers of such schemes would be monolithic.

### Examples:

#### Dewey Decimal Classification

Dewey Decimal Classification (18th edition) provides independent schedules of common times, space and form isolates, as well as a long schedule of enumerated subjects. Most of the enumerated subjects are compound subjects. There is a limited degree of resilience provision of common isolates, which can be attached to the class number taken from the main tables alongwith the "Add to....." device have enabled Dewey Decimal Classification (18th edition) to withstand to some extent

the pressure of newly emerging subjects.

### Subject Classification

It consists of two schedules — the main schedule and a categorical table. The main schedule lists subjects, most of which are compound subjects. The categorical table contains enumerated isolates. In addition to compound subjects listed in the main schedule, additional compound subjects can be formed by combining the subjects listed in the main schedule with isolates given in the categorical table. However, the list of isolates provided in the categorical table is too short to be able to overcome the onslaught of subjects.

### 5.3 Almost - Faceted Classification

"An Almost -Faceted scheme for classification consists of a large schedule enumerating most of the subjects of past, the present and the anticipable future, and in addition a few schedules of common isolates and also some schedules of special isolates." (Ranganathan, 1967:102). The schedule of subjects of a scheme which come under this category will enumerate not only basic subjects, but also many compound subjects. With the help of schedules, common isolates and special isolates, class number of more compound subjects can be constructed. The class numbers constructed with the aid of common isolates and/or special isolates will contain indicator digits of a species different from semantically rich digits used in the schedules for the class numbers and isolate numbers. The compound class numbers formed with the aid of common isolates and special isolates will

be polythetic. The schedules of Almost enumerative schemes are generally long as they try to enumerate the subjects of the past, the present and the anticipable future.

Example:

Universal decimal Classification

It provides four independent schedules of common isolates, consisting of form, place, time and point of view common auxiliaries. Distinctive indicator digits have been provided for attaching these to main classification numbers, language isolates, race and nationality isolates are not common isolates. In addition, schedules of special isolates for use in compound subjects, have also been given. However, special isolates are not available in all possible cases. It also provides long schedules of enumerated subjects, most of which happen to be compound subjects. The scheme has recommended the use of the colon (:), which allows for the use of some of the enumerated subjects as facets in the formation of compound subjects. In addition, the colon has been employed to form complex subjects.

5.4 Fully But Rigidly- Faceted Classification

"In a Rigidly- Faceted Scheme for Classification, the facets and their sequences are predetermined for all the subjects going with a basic class" (Ranganathan, 1967:107)  
Each basic subject is divided on the basis of facets. The





the class number.

The class number for "Design in Mechanical Engineering" would be D6:1:14. Here, three consecutive colons have appeared, which cannot be omitted because the fourth facet is present, though the second and third facets are absent. This is a necessary evil because otherwise it would have been impossible to identify whether a facet is a "end-facet" or earlier facet.

It can be seen that the cluttering of indicator digits gives a clumsy look. Also it is against the law of parsimony which insists that indicator digits should be avoided in such a situation.

Also new compound subjects would bring up additional facets not provided for in the then existing facet formulae for basic subjects. As facet formulae are predetermined and rigid, it would be difficult to interpolate and extrapolate additional facets in these.

### 5.5 Almost-Freely Faceted Scheme

In a rigidly-faceted scheme of classification, "the facets and their sequence are predetermined for all subjects going with a basic class" (Ranganathan, 1967:107). This leads to a great deal of rigidity. A scheme becomes almost-freely faceted "because the use of different indicator digits for diverse kinds of facets and the concept of rounds and levels removed the severe rigidity in the number and the sequence of facets that can occur in a compound subject. However, some

rigidity linked in respect of levels of facet within a round" (Ranganathan, 1969:205). Therefore, such a scheme does have some rigidity, because of which it cannot be freely faceted in full measure. As a result, it can not be referred to as freely faceted classification.

#### Examples:

From Edition 4th to 6th of colon classification are the examples of almost- freely faceted schemes for classification.

#### 5.6 Freely Faceted Classification:

"In a Freely Faceted Scheme for classification, there is no rigid, predetermined facet formula for the compound subjects going with a basic subjects." (Ranganathan, 1967:109). In this scheme for classification whatever facets occur in a compound subject are identified by the Facet analysis of that subject. The sequence of facets identified is then determined according to postulates and principles and facet terms are arranged in that sequence. Each facet term is replaced by its facet number. Finally facet numbers are synthesised into class number with the aid of appropriate connecting symbols representing each facet. Thus each compound subject determines its own facets and its own sequence. There is no rigidity either in the class number or in the succession of facets. Rigidity is completely eliminated. Everything is free. Because of these characteristics the scheme is called Freely Faceted Classification. In view of analysis and synthesis occurring



successively in the course of construction of class number, another name for this kind of classification is Analytico - Synthetic Classification. "A scheme of classification which admits of facet analysis, provides rules for the arrangement of facets, provides for the schedules for the different kinds of facets needed in diverse subjects, provides connecting symbols and admits of the synthesis of Basic class and Isolate number of a subject into its class number is called Analytico - synthetic scheme of classification." (Ranganathan, 1962:101-2).

Example:

The proposed 7th edition of colon classification is believed to be a freely faceted, analytico-synthetic scheme for classification. A few schedules of 7th edition have already appeared.

HISTORY OF LIBRARY CLASSIFICATION

The history of classification would almost necessarily be a history of all attempts to organise human thought. Such attempts are not recent phenomena, but can be traced back to ancient and medieval times when philosophers divided human thought to organise it systematically. These philosophers based their systems on certain theoretical principles although in varying forms. All these philosophers thought that knowledge could be divided into mutually exclusive classes, according to the different faculties of the human mind like memory, reasoning and imagination. Each school of philosophers made an attempt to group the ideas according to their mutual relationship. These groups were also arranged in a preferred helpful sequence. In words of Bliss, "Classification, the tool of science, was long the toy of philosophy. The logical or metaphysical systems of the olden philosophers, lovers of knowledge with some of love's blindness, may have embraced entrancing aspects of truth, but they did not truly embody the order of nature, which indeed had not yet

appreciably been discovered by science. They contributed little toward reducing the mental chaos of increasing complexity to an orderly cosmos of coherent relations and related conceptions" (Bliss, 1929:307).

The early philosophers, prepared the schemes of classification for their mental satisfaction. They did not kept in view the arrangement of documents in a helpful sequence to serve the requirement of the users. In other words, no attempt was made to provide place for the application of a discipline. These classifications were theoretical in nature and largely speculative. However there can be no doubt, of the value of the study of philosophical systems of classification. Modern systems reflect earlier ones, and used in library classification has been inherited from the past. *and some of the terminology now*

## 2.1 Landmarks in Philosophers' Classification Schemes

E.C. Richardson (1930) in his book Classification lists more than 161 systems of classification of philosophers from ancient times to E. Barthel (1910). Bliss made a detailed and scholarly study of the methods used by intellectual workers in various fields for the analysis and synthesis of knowledge in all forms. His ultimate aim was to deduce the most practical, permanent and valid arrangement, in order that this may become the basis of a bibliographical system (Bliss, 1929). Ganesh Bhattacharyya and S.R. Ranganathan (1974:121) on the basis of ~~an~~ attempt to put the application of a discipline immediately after the discipline forming its foundation, ~~an~~ divided the schemes

by philosophers (Knowledge Classification) into two kinds.

2.1:1 Pure - Application - Sequence - Free Schemes.

2.2:2 Pure - Application - Sequence Schemes.

2.1:1 Pure - Application - Sequence - Free Schemes

(a) Vedic classification of India: It belongs to vedic period and was based on the different stage through which a society or an individual tends to move. Thus Vedic Classification was socio-centred (Chart I). S.C. Guha attempted to give a "modern workable system" of library classification based on the Vedic Classification (Guha, 1941:207) (Chart II).

(b) Greek Classification:

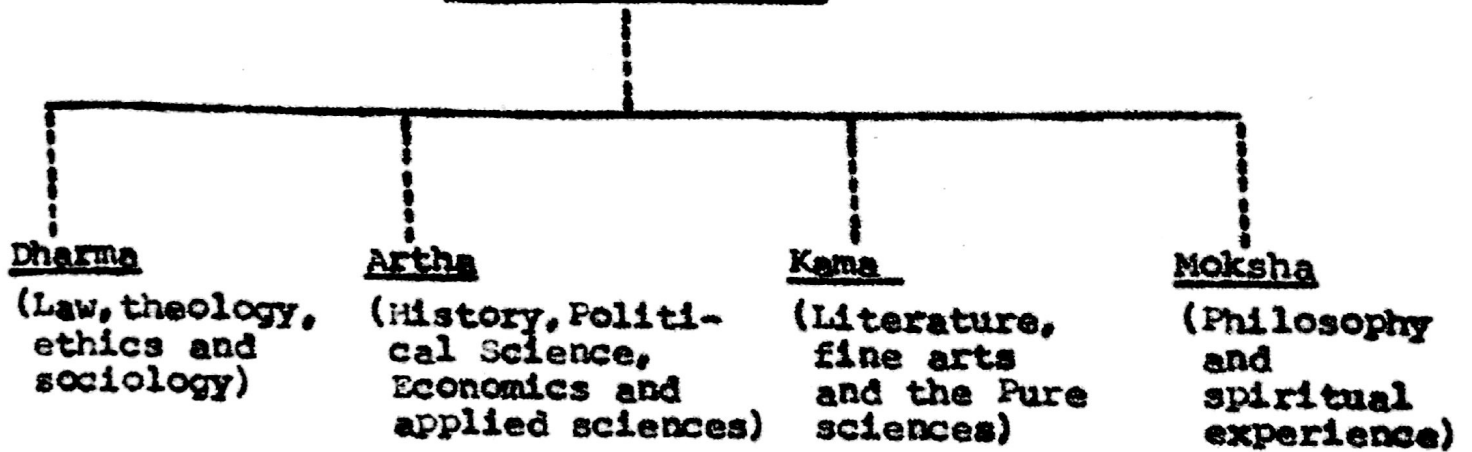
It was developed from the time of Plato onwards. Aristotle's scheme of knowledge classification may be taken as representative of the Greek Schemes. It was utility-centred (Chart III).

(c) Scholastic - Classification of Mediaeval Europe:

Scholastic classification may be taken to have developed after Greek Classification. It was based upon the practices and traditions prevailing in the mediaeval universities of Europe. Thus it was university-centred (Chart IV).

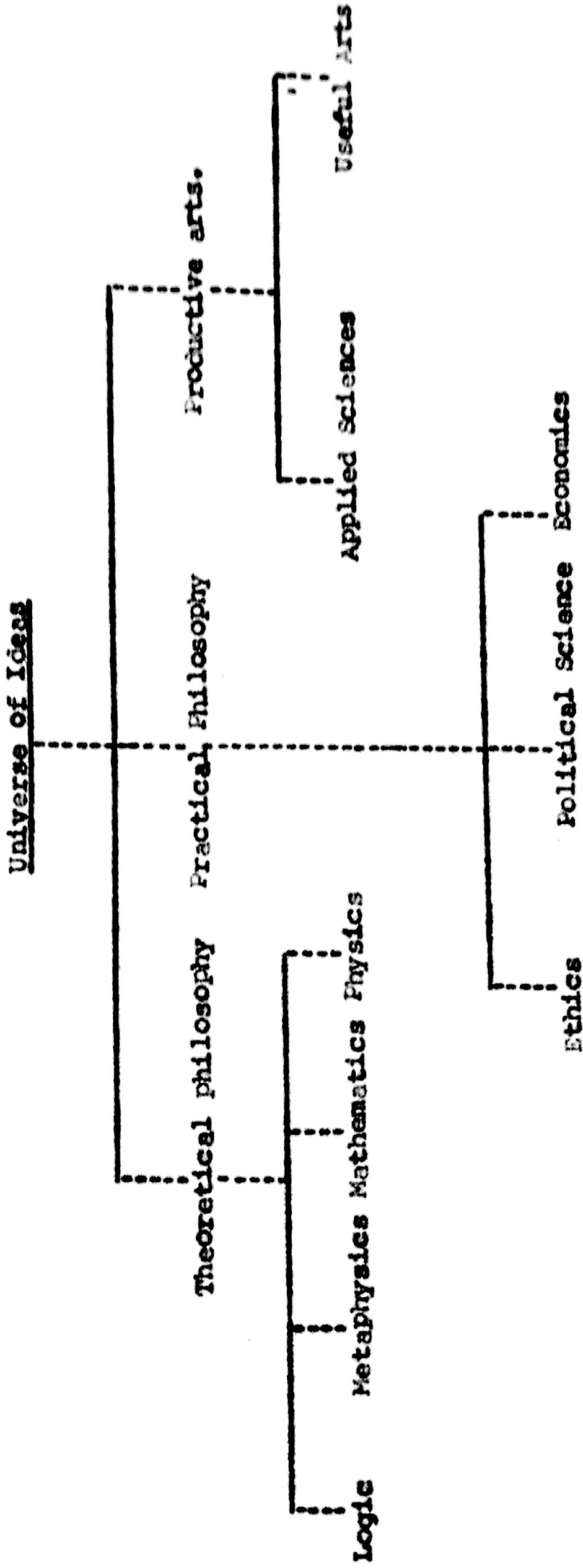
(d) Baconian Classification (1605):

It was given by Francis Bacon (1561-1626) in his Advancement of Knowledge (1605). It was psychology-centred. (Chart V).

**VEDIC CLASSIFICATION OF INDIA****(Vedic Period)****Universe of Ideas****(Chart I)**



GREEK CLASSIFICATION  
 (As put forward by Aristotle)

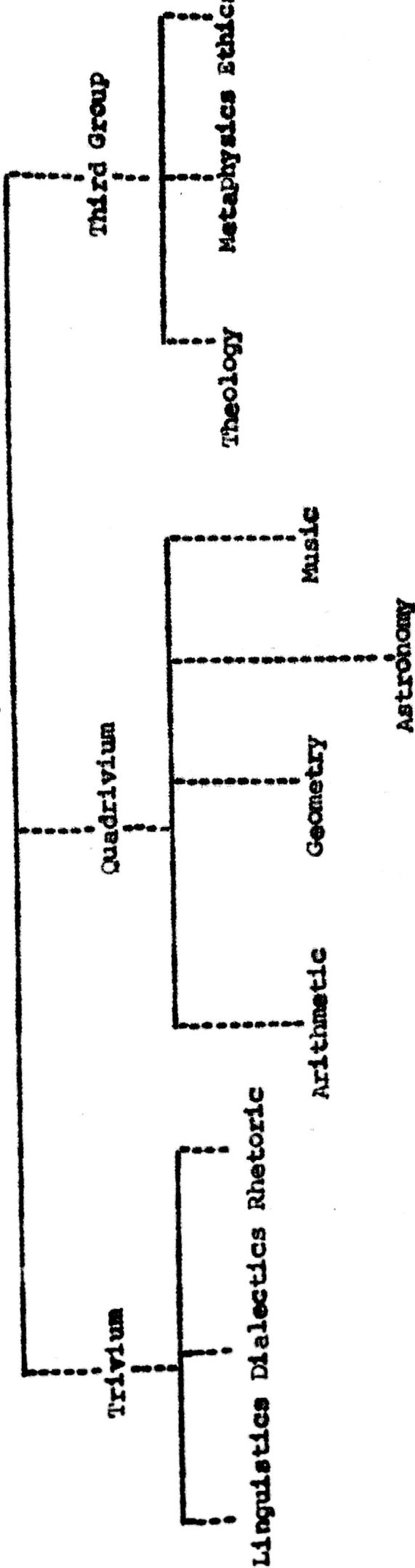


(Chart III)



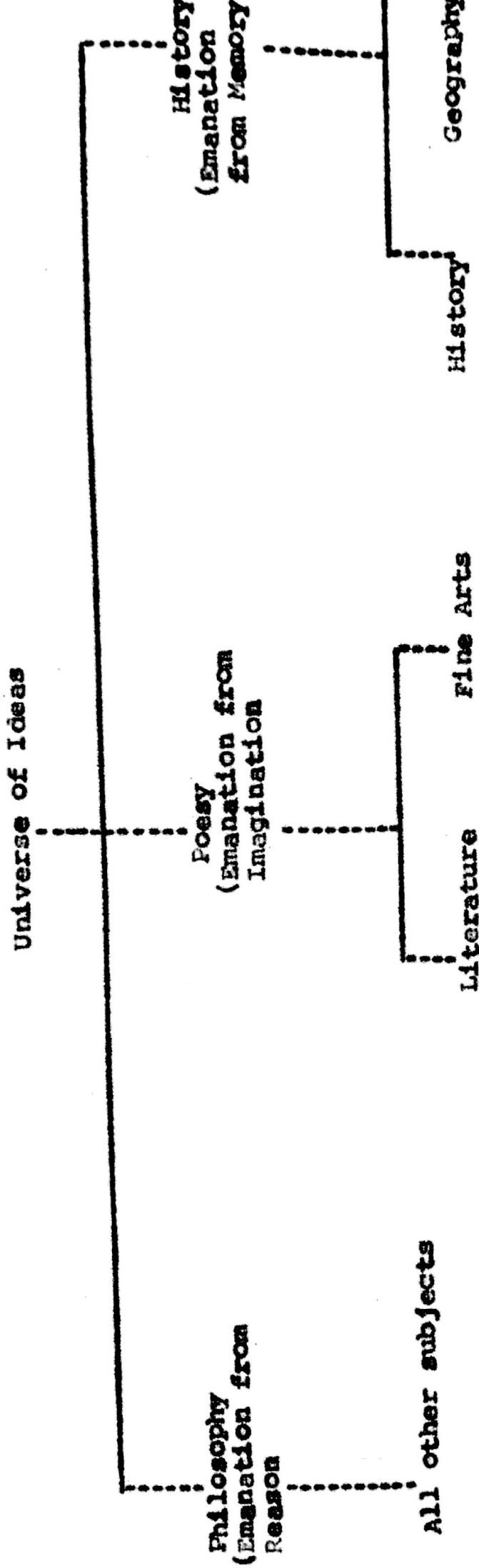
SCHOLASTIC CLASSIFICATION OF MEDIAEVAL EUROPE

Universe of Ideas



(Chart IV)

BACONIAN CLASSIFICATION



(Chart V)

(e) Kant's Classification:

It was given by Immanuel Kant (1724-1804) in his Critique of pure reason (1781). It attempts to exhaust all the entities under consideration, within two groups. It is apparently based on the primitive human instinct. (Chart VI).

(f) Hegel's Classification:

It was given by George Wilhelm Friedrich Hegel (1770-1831) in his Logic. This scheme is apparently influenced by the tradition of Greek Triad. (Chart VII).

2.1:2 Pure - Application - Sequence Scheme:(a) Hobbes's Classification:

Thomas Hobbes (1585-1679), described his scheme of knowledge classification in his Leviathan (1651). He put a pure discipline before its application. (Chart VIII).

(b) Comte's Classification:

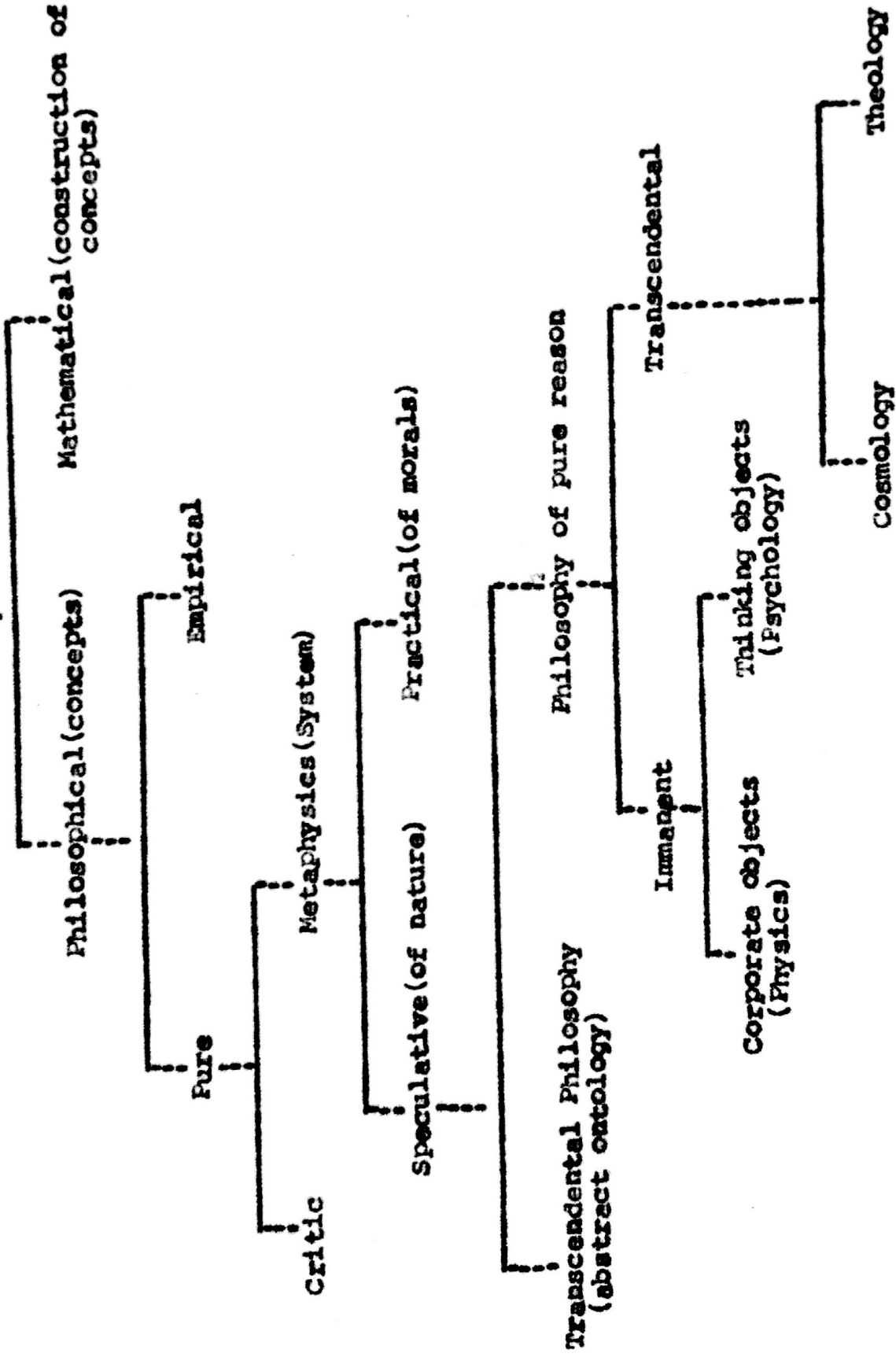
It was given by Auguste Comte (1798-1857) in his Cours de philosophie positive (1830). He arranged the subjects in a sequence and claimed that each subject is virtually an application of the preceding one. The term "Serial Classification" is used to denote this kind of knowledge Classification. (Chart IX).

(c) Ampere's Classification:

Andre Marie Ampere (1775-1836) worked out his system of serial classification in his Essai sur philosophie .... (1834-43). Here, applied sciences have been

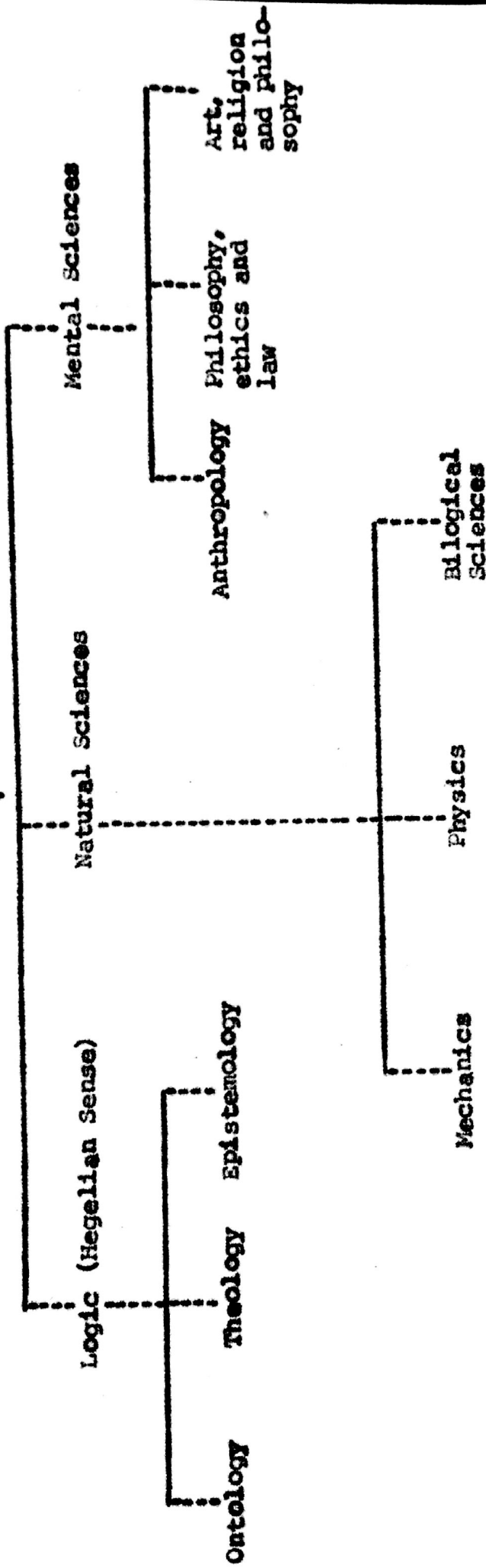
KANT'S CLASSIFICATION

Universe of Knowledge



(Chart VI)

HEGEL'S CLASSIFICATION  
Universe of Knowledge



(Chart VII)

HOBBS'S CLASSIFICATION

Knowledge

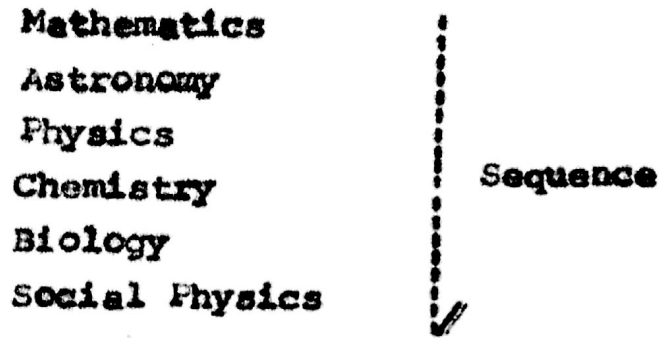


Mechanics, Engineering, Architecture,  
Navigation

Acoustics, Music

(Chart VIII)

COMTE'S CLASSIFICATION



(Chart IX)

placed next to the fundamental sciences on which these are essentially dependent. (Colon Classification follows the same sequence as that proposed by Ampere ) (Chart X).

(d) Spencer's Classification:

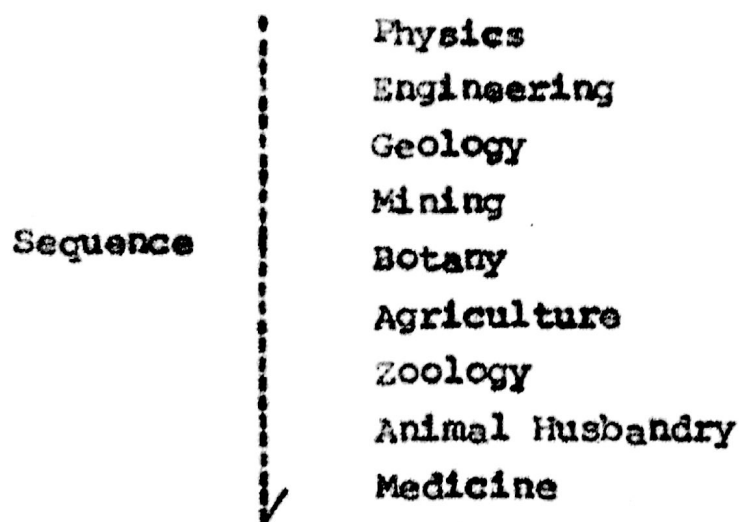
Herbert Spencer (1820-1903) formulated another serial scheme which was described in his Classification of Sciences (1864). (Chart XI). He appears to have been the first philosopher to have attempted a theory of Classification to be used as a guideline in designing a scheme of knowledge Classification.

All along, the philosophers appear to have been deeply interested in knowing the mutual relation between ideas, and also in their sequence. They tried to examine this on the basis of some assumed principle or another. This work of the philosopher; resulted in knowledge Classification, perhaps, for their own sake. They do not seem to have had in view the application of any detailed scheme for classification for arranging documents in a helpful sequence as an aid to the reader of documents in his easy, leakage - free, noise-free selection of the relevant documents satisfying his interest at the moment.

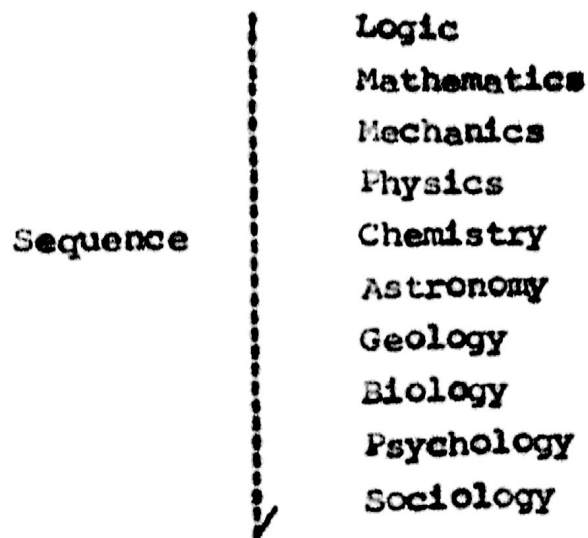
2. Landmarks in Library Classification

It is said that modern library classification began with Dewey Decimal Classification (DDC) (1876). The justification of the statement lies in the DDC notation.



**AMPERE'S CLASSIFICATION**

(Chart X)

SPENCER'S CLASSIFICATION

(Chart XI)

Indeed, the DDC notation was like a sort of modern invention. The decimal conception was the main thing, which gave the scheme its epoch-making distinction. Using the ten Arabic numerals as decimals, Dewey introduced the relative and adjustable subject arrangement of books on the shelves of a library.

Historically, however, the concept of decimal had been introduced in library classification before Dewey. As early as 1583, La Croix du Maine, a French scholar, devised for the library of Henry III of France, a decimal system which conceived a collection with a ceiling of 10,000 volumes, and this collection was to be accommodated in 1000 book cases of 100 volumes each. Again, in 1856, Nathaniel B. Shurtleff of Boston (U.S.A.), published a booklet "The Decimal System for the arrangement and administration of libraries", in which he suggested, Alcoves with ten bays, each of ten shelves, were to be used and the bays and shelves were to be numbered 1 to 10 (Ohdedar and Sengupta, 1977:217).

But, this sort of the use of decimal is completely different from the use made by Dewey. La Croix and Shurtleff applied the decimal system to book cases and shelves and not to subjects. Dewey applied his decimal concept to specify subjects.

Before Dewey Decimal Classification, the arrangement of books in libraries was of a fixed nature. It was usual to group books into a number of broad classes and then place

them in fixed location according to size on the shelves set apart for each class. These shelves were given some symbols and the call number of the book consisted of such symbols indicating to which book case and which shelve the book in question was to be placed. This is called "Fixed location arrangement". A different arrangement, sometimes followed was that of putting books under the broad classes in the alphabetical order of the authors' names. This would have proved adequate during few centuries, when book-production had been at a low rate. But by the nineteenth century, the rate of growth of the number of books added to a library became very great. Therefore, the fixed location arrangement had to give place to "Relative arrangement". In this arrangement, in course of time books will move on from one shelf plank to another and from one bookcase to another. Therefore, the number of the bookcases and of the shelf-planks -- the "Press Mark" as it was called -- proved futile and it was given up. On the contrary, each subject was given a number of its own.

In 1876, when the first edition of Dewey Decimal Classification came out, it adopted the decimal fraction notation and used the relative location or arrangement system. In 1893 came Expansive Classification which was an enumerative classification. But it used the mixed decimal notation, which gave it a broad base. Universal Decimal Classification started coming out in parts from 1899. It is an almost faceted scheme. The subject schedules of Library of Congress Classification have been published since 1901. J.D. Brown's Subject

Classification (1906) is an enumerative scheme. The first edition of Ranganathan's Colon Classification appeared in 1933. It broke new ground, providing for a faceted approach. The first edition of Bibliographic Classification appeared in 1935. Till this time, the schemes had been formulated without the aid of an objectively stated theory of library classification. This was due, perhaps, to the fact that by that time, the pressure of the universe of subjects was not enough to warrant basing the schemes on a fully developed theory of library classification. A static theory was found good enough to meet the challenge. Such a theory was more or less descriptive of the practices followed by the different schemes of classification existing then.

As the universe of subjects became increasingly dynamic and proliferation began to take place in an unanticipated manner, it began to be felt that there was a need to prepare freely-faceted schemes of library classification, based on a truly dynamic theory of library classification. A fairly dynamic theory was described by Ranganathan in third edition of Prolegomena to library classification (Ranganathan, 1967). The seventh edition of colon classification is being based on this dynamic theory. This will possibly result in a freely-facet scheme for library classification.

It can be inferred from the history of library classification that, in order to meet the growing demands of the universe of subjects, different species of library classification have been prepared to meet the requirements in different

periods of history. This has led from enumerative schemes to freely-faceted versions. This has been a process of evolution, which has undergone various stages of development, such as:

**Purely Enumerative Classification Scheme**  
(e.g. Rider's International Classification, L.C.).



**Almost Enumerative Classification Scheme**  
(e.g. D.D.C., Brown's Subject Classification)



**Almost Faceted Classification Scheme**  
(e.g. U.D.C., B.C. edition 1st).



**Fully But Rigidly-faceted Classification Scheme**  
(e.g. C.C. from edition 1st to 3rd )



**Almost Freely - faceted Classification Scheme**  
(e.g. C.C. from 4th to 6th edition)



**Freely faceted Scheme**  
(e.g. C.C. edition 7th)

To sum up, in early times a purely enumerative classification scheme was able to serve the requirements regarding the shelf arrangement of documents. It is due to the fact that there was restricted use of books, which were few in numbers from limited number of subjects and new subjects appeared after long interval of time. Therefore library Classification was a simple process. But the present situation

is entirely different. The number of micro- and macro-documents is large; the number of subjects is also large, and the subjects exist in varied relationships. New subjects are appearing constantly. This is because the universe of subjects has become increasingly dynamic. This would require a freely-faceted scheme for library classification to be able to face the onslaught of the ~~history of classification~~, universe of subjects.

The above study of the history of classification indicates that a given scheme can best be suited to meet the onslaught of the universe of subjects at that time, and not later. The universe of subjects has become increasingly dynamic, so that for a scheme to be successful, it must be based on a dynamic theory of library classification, as well as be revised constantly to keep pace with growing knowledge. Present day scheme also have to deal with an increasing amount of detail.

DEWEY DECIMAL CLASSIFICATION SCHEME:  
An historical development from origin  
to 19th edition



### 3.1 Edition 1 of DDC

The Dewey Decimal Classification was first devised in 1873 by Melvil Dewey for the Amherst College Library and was published anonymously in 1876 as A Classification and Subject Index, for cataloguing and Arranging the Books and Pamphlets of a Library (Dewey, 1876), consisting of fewer than 1,000 three-digit numbers on ten pages, equivalent to what latter came to be known as the Third Summary, and of eighteen pages of Index. However, even in this limited scope, development of some of the sophisticated concepts, which were later adopted by other schemes, been seen. B.A. Custer in this regard has remarked that "one may see the first development of some sophisticated concepts later adopted by other systems, such as successive division of a subject by two or more principles. For example, comparative philology was classed in 410, with specific topics in 411-418, e.g., 415 comparative grammar. Following this in 420-490 were classed specific languages, each with provision for the same specific topics in mnemonic notation, e.g., 420 English philology, 425 English

grammar. The concept of facet analysis was formalized, regularized and named by other classification makers at a later time, but Dewey invented it" (Custer, 1972; Vol 7:131). The major significance of this edition was that it was simplest to work with and provided systematic order by decimal fraction notation possessing the quality of simplicity and flexibility. The significance of this scheme had two advantages.

- (1) the principle of relative location of books on the shelves became more feasible as compared to the principle of fixed location.
- (2) the comprehensive relative index which showed those relative aspects of subject which the systematic order scattered solved what until then had been considered a serious drawback to systematic order.

Before going to next edition, it would be better to discuss the doubts regarding the originality of DDC. Melvil Dewey had claimed that his plan of classification and Index was 'the result of long study of library economy as found in hundreds of books and pamphlets and in over 50 personal visits to libraries'. But John Maass in his study has created a doubt concerning the very base of DDC and its originality. He questions whether DDC is Dewey's own creation or is based on the outlines of Blake who submitted his scheme at a meeting of the centennial Commission in Philadelphia on May 25, 1872. Maass also points out that DDC is virtually identical with that of Blake's. He

says "It is certain beyond the shadow of doubt that Melvil Dewey studied this Pamphlet by Blake (dated February 27, 1873) and derived from it the draft of his Decimal Classification (dated May 8, 1873)". The fact that Dewey has acknowledged in his introduction that he was most indebted to Natale Battezzati of Milan, Jacob Schwartz of New York, and W.T. Harris of St. Louis "Dewey must have deliberately cited them as 'red herrings' to divert attention from his real source" (Maass, 1972).

Likewise Sayers also points out that Dewey Decimal Classification does not resemble to the systems of Schwartz and Battezzati (Sayers, 1962:113). Bliss also comments that "It was not to be expected that in 1876 a young man of twenty-five years, however, brilliant could lay down a foundation that would provide, without change, for the future construction of fifty years; but he might have known where to find in other systems a better basis for such an undertaking (Bliss, 1939:2020)". According to Dhyani, "while Dewey has claimed that he has followed Harris's Inverted Baconian", but Ernest Crushing Richardson's 'Classification' (1901) enumerates 131 theoretical systems and 122 practical systems, which also may have been the source for Melvil Dewey's Scheme (Dhyani, 1983:13). From this one may conclude that Dewey's Classification if not borrowed was certainly influenced by the contemporary schemes of classification.

### 3.2 Edition 2 of DDC

The second edition appeared with the title **Decimal Classification and Relative Index**, by Melvil Dewey (Dewey, 1885). This remained thereafter for twelve more editions. This edition was "greatly enlarged" with 12 pages of summaries, 178 pages of sub-sections" or schedules, and 80 pages of index. It included three auxiliary tables on four pages, and introduced thousands of numbers of four and five digits and a good many of six digits --

e.g.,

264.033	Anglican litany,
271.973	Franciscan Sisterhoods,
349.372	Justinian sources of Roman Law,
628.253	Manholes

--and in the 800s many of seven digits,

e.g.,  
839.8364 Hans Christian Andersen.

It introduced definitions and cross references. Other major changes in second edition were as follows:

(1) Transferring parts of topic from one number to another.

e.g., the "mining" of hydraulic and mining" engineering from 628 to 622.

(2) Transferring whole topics completely. 129 topics were transferred entirely from one number to another.

e.g.,  
"Ornamental botany" from 583 to 716.

(3) Extending, through adding new headings or enlarging the scope of numbers. 192 headings were revised and enlarged,

e.g.,

629 from "Instruments and field books" to "other branches of engineering".

(4) Using the 'Divide-Like' (Now Add-to) principle to attain more specificity in subject analysis.

(5) Devising special tables Form Divisions (Now called standard sub-division Table 1) which reflect a characteristic presentation of the content.

(6) Using notation to the right of the decimal point after first three digits for detailed aspects of subject, usually but not always hierarchical in relationships.

(7) Furthering the Mnemonic or fixed faceting concept.

After introducing these changes in second edition Melvil Dewey assured his actual and potential users that the meanings of numbers were settled and no more major changes will be made in future editions. "Librarians making the necessary changes for the revised edition need not fear that a series of editions have begun each of which will call for such changes. The changes here submitted are the accumulation of twelve years' experience in using the system. They have all been very carefully considered, and while the first edition was in

its nature tentative, this one may be considered as having the numbers settled after sufficient trial and not likely to be again altered, though of course certain subjects not yet sub-divided will in due time have sub-divisions added" (Dewey, 1885:46).

### 3.3 Edition 3 to 14 of DDC

During the next 57 years, twelve more editions appeared, at intervals varying from 2 to 12 years. These were prepared by Dewey himself, by associates W.R. Bischoe, May Scymour, and Dorcas Fellows, and by C.J. Mazney and Myron W. Getchell. These editions, the third through the fourteenth, followed closely the pattern set by the second edition. The schedules grew to 1,046 pages, the index to 737 pages, and the auxiliary tables to 17 pages. The thirteenth edition included a fifty-five-page alternative scheme for psychology based on 159.9, and the fourteenth, a thirty-five-page alternative scheme for taxonomic botany based on 582. Numbers grew longer as new subjects were inserted and older ones subdivided, some numbers being printed in the schedules in twelve and thirteen digits, mostly in the engineering sections, where knowledge accrued and diversified at a rate quite unforeseen by the young Dewey. The standard subdivisions grew to as many as six digits, with opportunities for building them up to nine or ten digits, the whole applicable to base numbers upto twelve or thirteen digits, thus full notations of twenty-three digits were possible. The "divide-like" feature was widely used, though the feature of division

by more than on principle was extended very little beyond the level allowed in the second edition. Expansions were frequently uneven, e.g.,

in the fourteenth edition,  
under 670 manufactures,  
the classifier could find

671 metals,

672 iron and steel,

673 other metals,

674 wood,

675 leather and fur,

676 paper

677

678 rubber

679 miscellaneous

each with no decimal sub-division whatever, yet

677 textiles

had well over a hundred printed out plus — one of the few new instances of successive division — the opportunity to add nearly six hundred more by the simple expedient of dividing each kind of textile fiber by each kind of process.

Honoring Dewey's pledge in the second edition that the numbers were "settled", later editions through the fourteenth made very few changes or relocations — not more than one or two per edition.

Few efforts were made to improve format, modernize terminology, or clarify instructions, except where actual expansions and new entries were inserted. For this reason, the fourteenth edition used language almost as archaic as that of the second edition.



### 3.4 Edition 15 of the DDC

The Edition 15, known as 'Standard Edition' of DDC, appeared in 1951, under the editorship of Milton J. Ferguson. The following attempts were made to modernise, to standardise and to develop the classification evenly:

1. The degree of expansions were levelled off, e.g., the numbers 671-679 had from 2 to 29 sub-divisions each, depending upon libraries's needs.
2. The terminology was modernised.
3. The definitions were made full, instructions were clearly stated.
4. Number building procedures were extended. One of the outstanding examples being the divisions of 673 for non-ferrous metals, manufactured first by kind of metal like 669 for Metallurgy, and then by procedures like, 671 for Metal manufacturing in general.

There were various much needed new expansions, e.g. under manufacturing, under Judaism, under Sociology. But at the same time, in order to achieve standard size, there were so many reductions. As a result of this, in many parts of the schedules the hierarchical pattern of subject matter and notation was lost from view, e.g.,

942 History of England  
 942.1 London  
 942.34 Channel Island  
 942.89 Isle of Man  
 942.9 Wales



There was a decrease of schedule entries from 31,364 in the DDC 14 to 4688.

The Index to DDC 15, which had been prepared by the professional indexers provided less satisfactory to the users. So a revised index to the DDC 15 was published under the editorship of Godfrey Dewey, the son of Melville Dewey in 1952. The new index was also made available separately. This was the first edition to be designed on its little page: Dewey Decimal Classification and Relative Index.

### 3.5 Edition 16 of the DDC

DDC 16 made its appearance in 1958. It was the first edition edited under the directions of Library of Congress, and it was the first edition to be published in two volumes sets—Volume 1, Schedules; Volume 2, Index. This edition fully restored the hierarchical pattern and it retained and developed further most of the new expansions of the DDC 15. It was a standard edition, but for a much larger library collection than 200,000 volumes. The DDC 16 had 17,928 schedules entries because it made much more use of the number building features of the system than had the DDC 14. It provided more practically usable class number than earlier editions. The total relocations count was 1603.

In terminology, the DDC 16 was thoroughly modern, its instructions and classification aids were full and precise, its format was pleasing. The included topics were nearly overloaded with enumerations. DDC 16, all the

above, given good qualities. It tried so hard to fulfill the expressed needs of established libraries, but it failed to be consistent or truly hierarchical. It suffered from lack of predictability and of principles. It misplaced conversation of Wildlife in 799, as a subdivisions of hunting under Recreation. It provided that virtually any subject as it applies to the American Indian be classed in one of the two spans, either under History of North America or under that of South Africa, e.g., North American Indian pottery in 970.6783, but pottery of any other origin or style including other primitive races in 738.3

### 3.6 Edition 17 of the DDC:

The DDC 17, which was published in 1965, retained the many good features of the DDC 16. Among the innovative and bold changes or were: creation of a whole new schedule for 150 (Psychology) wherein new meanings were assigned instantly to previously used notations and to which psychological topics from 130 were transferred, assigning new meanings to the notation previously used, implementing a zero motif to achieve uniformity of standard sub-division of a specific class required the use of two or three 0's, then all standard sub-divisions of that class would be assigned a similar 0 notation, redesigning the 'form division' into a 'Standard Sub-divisions' table, through freeing --04, relocating collected essays and lectures to --08 and expanding -- 02 to include all of --08 (Except collections) as "Miscellany", expanding scope of analysis through increased

opportunities for number building; creating an "Areas table" as an auxiliary thereby identifying the 900's more significantly as the discipline of History; experimenting with an "Add to" rather than a "Divide Like" technique.

The most important new feature was the emphasis on consistency, predictability and the principle of hierarchy, wherein assures that what is true of a whole is true of its part. This emphasis resulted in the elimination of much repetitive matter.

There was a newly conceived Index. Previously indexes had contained entries mainly for those subjects or topics that were named in the schedules, plus significant synonyms and sub-topics. It had supplied numbers only for those aspects where the topics were named. It did not make any effort to guide the classifier to the vast hidden resources of the system, e.g. the index to DDC 16 indicated that:

591.43 Digestive organs of animals, but it did not make any attempt or reference to the instruction at 591. At 591, it is indicated that all topics in sub-divisions of , when applied to specific animal or animals group should be classed in the Taxonomic numbers under 592-599.

The new index to the DDC 17 provided full information for only a limited number of broad core concepts, referred to

these from more specific topics, and made many "scatter" references to remind the classifier of other aspects, e.g., under "Digestive tract, see also "Specific animals". But this principle or procedure frequently did not supply a precise number that could be used without close scrutiny of the schedules. Because of the non-availability of exact numbers, this index proved to be difficult and time consuming to use. It is replaced in 1967 by a "Conventional Index".

### 3.7 Edition 18 of DDC

The 18th edition published in 1971, is in 3 volumes. Vol.1 Tables, Vol.2 Schedules and Vol.3 Index. The Scheme carries the developments envisaged in the 16th and 17th editions, with required changes intended to make the schedules easier to use. The editorial policy committee observed that "this edition 18 will prove to be a happy combination of the high principles of Edition 17 and the ease of use of edition 16" (DDC, Edn 18:7).

The basic principle on which this edition is based is 'Subject Integrity'. The enumeration of the classes and the division of notation is based on the principle of hierarchy i.e. the process of division is from general to specific. The notation reflects this sequence in the dearest fashion.

To meet the ever-growing needs of libraries of all sizes and to achieve co-extensive class number, the edition

contains an increased number of provisions. This edition contains more entries with 'builtin expansion' than in the 17th edition. The 17th edition consisted of 2670 entries with built-in expansions whereas 18th edition consists of 3,389 entries with built-in expansions. 'Expansion with built-in expansion' means those entries which may be expanded or divided further by the application of instructions in the schedules and tables.

This edition provides several new features which are:

Auxiliary Schedules:

Perhaps the most important feature in this edition is the introduction of seven tables of common sub-divisions which are also known as auxiliary schedules. From a single table of 'Form Divisions' in the 16th edition through the 'Area table' in the 17th edition, we find 7 tables in the 18th edition. These are:

Table 1.	Standard Sub-divisions;
Table 2.	Areas,
Table 3.	Subdivision of Individual literatures (these are used throughout 810-899).
Table 4.	Subdivisions of Individual languages (These are used throughout 420-499).
Table 5.	Racial, Ethnic, National groups.
Table 6.	Languages (table 5 and 6 are used where numbers were formerly divided like 420-490).

**Table 7.****Persons.**

(This is used where even numbers formerly divided like either 001-999 or 920.19289 to designate persons by occupations, social status, ethnic background etc).

**Add Instructions:**

The add instructions replace the former instructions to expand the number or span of numbers by dividing like another span of numbers. These include: Add from Auxiliary tables, add from schedules, add from tables and schedules.

**Centered Headings:**

Centered Headings are used where there is no single number which represents a single concept. This is accompanied by a note instructing the classifier where to class comprehensive works on that concept.

**Phoenix Schedules:**

The schedules for Law (340) and Mathematics (510) have been completely remodelled with phoenix schedules. Each is built on the same base number. The obsolescent schedules are tables of concordance between the old and new schedules are included in this edition.

**Extra - Terrestrial Worlds:**

As the man's conquest of the outer space began, with the landing on the 'Moon', provision has been made to include

these extraterrestrial worlds in D.C. By adjusting 'Areas' notation 98 to accommodate Antarctica, the 18th Edition makes 'Areas' notation 99 available for extraterrestrial worlds to enable the system to class its anticipated literature on petrology of moon and later on the mineral resources of mars and so on.

### Discontinued and Unused Numbers:

The scheme provides, for the first time, discontinued numbers i.e. the numbers dropped from the immediately preceding editions because their content has been moved back to more general numbers. A note will indicate where the two topics formerly in the dropped numbers are now to be classed.

### Index:

The Index to 18th edition contains the good features of the Indexes to 16th and 17th editions. There are many cross references to enable the classifier to find a topic even if it is not specifically mentioned in the schedules. It contains an entry for every significant term named in the schedules and tables. The Index does not indicate relocation as did the Indexes of Editions 16 and 17. In the schedules these are identified within square brackets.

### 3.8: Edition 19 of DDC:

This was published in 1979 in 3 volumes — V.1 Tables, V.2. Schedules and V.3 Index. This edition, like the previous



three editions, was edited under the direction of Benjamin A. Custer, General Editor. The policy that was initiated for the 17th is carried out in this edition also.

As in the previous editions, more entries and more topics have been included in this edition. There are 29, 528 entries in total out of which 4,892 are "Entries that may be expanded." This clearly indicates the increase in the total entries and entries that may be expanded in the 19th edition.

In this edition, Sociology 301-307 has been recast from the former base number 301 making use in addition of 302-307, that have been unused from 16th edition. Likewise in Political Science 324 Political Process has been recast from the form base number 324 and 329 and the bias towards U.S. Political parties has been done away with. The meet the local needs of U.K. in the Area table the notation 41-42 has been revised. It was earlier announced that a phoenix schedule will be introduced in 19th edition for 560-590 Life Sciences. But the said revision was not effected in this edition. Besides this, there are 340 other relocations effected in this edition. These relocations were listed in Volume 1 at page 453.

The Index retains the pattern as in edition 18. It has been further refined to be more efficient tool. Many cross references have been deleted and replaced by numbers. It also includes more synonyms, and topics and numbers that can be subdivided are no longer printed in bold face.



A new feature in the editor's introduction is 'a practical guide to the use of the classification'. A very detailed step-by-step instructions for building numbers in the main class 800 (literature) have been introduced both in the schedules and in table 3 "Sub-divisions of Individual Literature". This table 3 has been supplemented by table 3-A, which replaces numerous repetitions of a long array of concepts. In Table 1 "Standard Subdivisions" there is a table of precedence.

CHAPTER-1DDC: MARCH TOWARDS ANALYTICO-SYNTHETIC SCHEME

It could be inferred from the "History of Dewey Decimal Classification" that there had been developments intended to introduce certain synthetic features into a largely enumerative base through the various editions and more particularly since the 13th edition. The 13th edition was published after Melvil Dewey passed away and the 14th edition was the first edition to be published after a faceted classification (first edition of Colon Classification) made its appearance. The techniques of analysis and synthesis have since been fully developed by Ranganathan and his associates in India and by many others in Europe. It should not, therefore, be surprising if these developments have influenced the subsequent editions of Dewey Decimal Classification.

Dewey's use of decimal notation has been the most potent and lasting contribution of Dewey to the philosophy of library classification. A fact to be noted, that most of the important features that are present in the 19th edition of DDC (current edition) were introduced for the first time in

the 2nd edition. Some of these are:

- (i) the use of three figure notation with a decimal point following the third digit if further subdivided;
- (ii) a separate table of 'form divisions' applicable throughout the schedule as against the enumeration of form divisions at main class headings where only they could be used;
- (iii) provisions at certain classes to 'divide like' various other numbers ("Add to" instructions since 18th edition).

Of these, the last two features are essentially aimed at providing for synthesising class numbers for subjects not enumerated in the schedule. These features have gradually become prominent in the current edition of DDC (19th edition).

For examining, the hypothesis for the present study — "Dewey Decimal Classification is becoming more and more analytico-synthetic scheme of classification in nature over its various editions" — DDC has to be examined for characteristics of an analytico-synthetic scheme of classification. Investigator has taken characteristics for an analytico-synthetic scheme as given by Dr. S.R. Ranganathan. According to him, "a scheme of classification which admits of facet analysis, provides rule for the arrangement of facets (i.e. postulates and principles) provide for the schedules for

the different kinds of facets needed in diverse subjects, provides connecting symbols and admits of the synthesis of Basic Class(BC) and Isolate number of a subject into its class number is called Analytico-synthetic scheme of classification" (Ranganathan, 1962: 101).

Thus for a classification scheme to be called as analytico-synthetic, it should fulfill the following criteria:

It should have the provision of:

1. Facet analysis
2. Rules for the arrangement of facets
3. Schedules for different kinds of facets.
4. Connecting symbols,
5. Synthesis of Basic Class and Isolate number of a subject

In connection of distribution of work of analysis and synthesis in the 'planes of work' Ranganathan defines "Analytico-synthetic scheme as a generic term used "to denote any scheme in which a compound subject is first analysed into its facets in the idea plane and later synthesised in the verbal plane and in the notational plane respectively" (Ranganathan, 1969: 205).

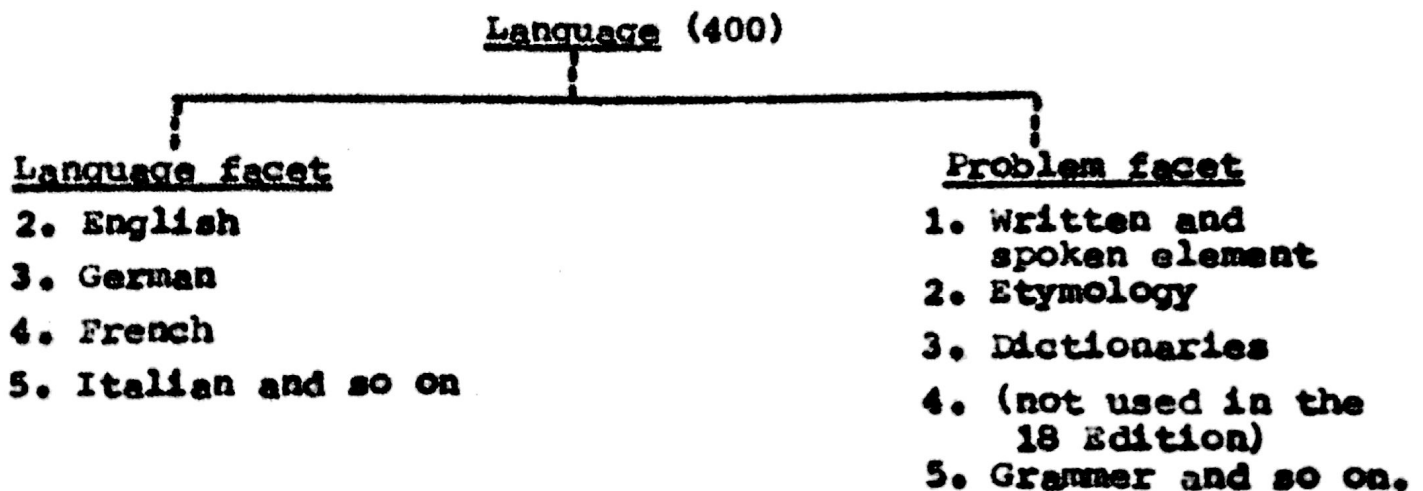
An analytico-synthetic classification scheme involves analysis of a subject into its facets in the idea plane. Transformation takes place in the verbal plane. Translation is done from verbal to the notational plane. Synthesis of the facet numbers into class numbers is carried out in the

notational plans.

In following part of this chapter, DDC would be examined for the characteristics of analytico-synthetic classification scheme.

### 1. Facet Analysis in DDC

Although DDC had been grouped under almost enumerative scheme according to Ranganathan's categorization of schemes of classification, but in certain main classes such as Language, Literature, History, Agriculture and Animal Husbandry the facet structure is distinctly visible. Not only at the level of these main classes but also there are several instances where analysis is visible at the level of sub-division of main classes. In 400 Language, the main class is divided first by languages and then by problem characteristic. Schematically this facet analysis can be shown as:



Upto the 17th edition of DDC., all the important languages of the world were listed under the main class language.

Problem isolates were listed under English language i.e. at 420 with a direction that a specific language can be divided on the basis of English, i.e., 421, 431, 422, 432, 423, 433 and so on. But in the 16th edition, specific languages were listed between 420-490. The detailed problem isolates were listed under table 4 "Subdivisions of individual languages" with a direction "under each language identified by \* add to the designated base number subdivisions of individual languages notation 01-86 table from table 4."

Example:

Title: Spelling and pronunciation in English  
 Class Number : 421.52

Here

4 = Main Class  
 2 = Specific Language (English)  
 1.52 = Problem (Spelling and pronunciation)

The adoption of facet analysis is no where more evident in DDC than in its class 'Literature'. In DDC 'Literature' is divided successively by the following characteristics:

Language

Form

Period

Work (for voluminous authors only)

The characteristics used in Colon Classification to divide the class Literature are also the same. Further, the facet sequence is also more or less the same.

**Example:**

**Title : Shakespeare's King Lear**

**In DDC Class Number 822.33T3**

**Where**

**8 = Literature**

**2 = English Language**

**2 = Drama (Form)**

**3 = Elizabethan period**

**3 = Shakespeare (Author)**

**T3 = King Lear (Work)**

**In Colon Classification the Class number would be**

**O111, 2J64, 35 where:**

**0 = Literature**

**111 = English Language**

**2 = Drama (Form)**

**J64 = Shakespeare (Author)**

**35 = King Lear (Work)**

**Thus facet sequence is seen to be identical.**

**These are few of the typical examples of facet analysis quoted from DDC. There are several more such examples of facet analysis employed in several other main classes. But due to their dominant enumerative nature and the use of pure notation the facet structure is not clearly visible in DDC. In the 18th and 19th editions of DDC we find numerous common facets of personality, matter and energy which add to the mnemonic quality in notation. This quality is greatly**



contributing to the synthetic nature of DDC to meet the ever growing needs of present day libraries.

## 2. Rules for the Arrangement of Facets

There are no clear cut rules available for the arrangement of facets in DDC. However, it can be said that facet sequence is provided by enumeration and "Add Instructions" (or the like) at some places in DDC. But it is to be noted that there is the lack of adherence to any definite principle in the structuring of subjects. For example, let us consider the class 633-635 specific plant crops.

Provision for synthesising class numbers for compound subject by the use of 'add to' device in this class was introduced for the first time in the 17th edition.

Example.

630 = Agriculture

633 = Field Crops

633.1 = Cereals

633.11 = Wheat

For deriving the class number for the subject 'Harvesting of wheat' the digit denoting 'Harvesting' is added to this base number resulting in the class number 633.115. This clearly reflects a structure parallel to

Basic Class + Personality + Energy

Similarly, the class number for 'Fungus Disease of

wheat' is

633.1194

This reflects a facet structure parallel to  
Basic Class + Personality + Matter Property

The sequence of components in these subjects is parallel to that in Colon Classification. This structure is not, however, uniformly adopted in all classes. For instance let us consider the subject

'Cataloguing of Sound Recordings'.

- 020 Library and Information Science
- 025 Library Operations
- 025.3 Bibliographic Analysis and Control
- 025.34 Cataloguing, Classification and Indexing of special materials.

For deriving the number for the subject 'cataloguing of sound recordings' the digits denoting 'sound recordings' is added as per instructions to this base number resulting in the class number 025.3482.

This reflects a facet sequence parallel to :

Basic Class + Energy + Personality

In other words, the facet structure of is reversed in this case. Thus we can conclude that DDC needs the adoption of definite guiding principles such as those suggested by Ranganathan.

### 3. Schedules for different kinds of facets:

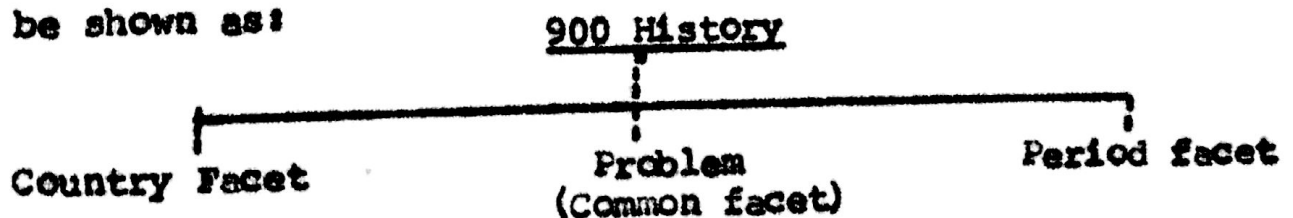
It could be inferred from the history of DDC that has started giving schedules for different kinds of facets.

These are known as tables in the current edition. Their number as discussed in earlier chapter has increased upto seven in the 19th edition. Table 1 and 2 can be used to any subject irrespective of its extension or intension. The use of remaining 5 tables is restricted. Not only this, there are 'Special Auxiliary Tables'. The special auxiliary tables are designed for specific subject or group of subjects. Therefore, the application of these special auxiliary tables is limited to the subjects or group of subjects for which they are designed. The number of the auxiliary tables is gradually increasing with every new edition of DDC. for example:

- (1) Special Auxiliary Table for Diseases provided under 616.1-616.9
- (2) Special Auxiliary for Specific Plant Crops under 633-635
- (3) Special Auxiliary provided under 617
- (4) Special auxiliary provided under 914-919 and so on.
- (5) Table 3-A in the Subdivisions of Individual literatures.

Example:

The main class History is first divided by Community facet. Schematically the facet analysis for History can be shown as:



General history of specific continents, countries, localities etc. is enumerated under 930-990. For the history of specific country or locality, the area notation 3-9 from table 2 is to be added to the base number 9. For example, history of India 954. In addition to community facet and period facet, another new facet which includes isolates such as areas, regions, places, persons, are also provided under History in the 18th edition. These divisions can be added to any country or locality. For example, General history of ethnic groups in India 954.004. This can be further divided by time division given under each country. For example, History of Paharis in India during the Mughal period 954.00491 496025

The facet analysis of this class is follows:

9 (Main Class) History (Enumerated in main schedules)  
 54 (Space) India (Enumerated in main schedules)  
 00491496 (Personality) Paharis (Table)  
 025 (Period) Mougai (Special Auxiliary)

It can be said that though attempts are there in every new edition of DDC to introduce separate schedules (Tables) for different kinds of facets but yet a lot of them are required to give DDC the character of analytico-synthetic scheme.

#### 4. Connecting Symbols

In an analytico-synthetic scheme for classification ready-made class numbers are not assigned to subjects. In this scheme the schedules consists of basic classes, common isolates

and different devices. These constitute certain standard unit schedules. Different unit schedules in an analytico-synthetic classification are joined together to construct a class number for compound and complex subjects with the help of indicator digits or connecting symbols.

Dewey suggested the use of a dot (.) after the first three digits in a class number in Decimal Classification. It is used to give relief to the eye. It has no syntactical function. It has neither a semantic nor ordinal value. Dewey also used zero and double zero for connecting form-divisions- (Standard Sub-divisions) with a Class number with the help of a division figure. Because of pure notation of Indo-Arabic numerals and lack of variety of indicator digits DDC was not able to indicate the different aspects of a subject in its class number.

Zero is used to indicate the application of standard subdivisions or different kinds of facets, e.g.

603      Encyclopaedia of Technology  
345.05   Criminal procedure.

In certain places two zeros are used to indicate the use of standard sub-divisions or different kinds of facets, e.g.

355.005   Periodicals in Military Science.

In certain places triple zero is used to indicate the use of standard sub-divisions or different kinds of facets, e.g.

350.0092 Government Corporations.

There are few places in the schedules of DDC where four zeros have been suggested for the use of standard subdivisions, e.g.,

350.0005 Serials on Public Administration

One zero is also used as connecting symbol for a facet representing problem, e.g.

347.05 Procedure

Zero with nine has been used in DDC to represent space facet. It can be a single zero, double zero or triple zero. e.g.,

330.954 Industrial relations in India

355.00973 Military Arts and Science in U.S.A.

352.000944 Local Governments in France

DDC also uses zero to represent time facet in some subjects as shown below.

759.06 20th century painting

954.025 Mougai Empire

From the 17th edition, DDC uses hyphen to indicate a subject spread over different consecutive class numbers but without individualising class number of its own, e.g.

017-019 General Catalogs.

However, the use of zero could be said to be the use of a connecting symbol in real sense. DDC needs a variety of indicator digits as to enable it to indicate the different aspects of a subject in its class number. But this is not

possible in the present notational framework of DDC, which is almost pure notation of Indo-Arabic numerals.

### 5. Synthesis In DDC:

The process of making a number more specific through addition of segments taken from other part of the classification is known as number building. DDC abounds in this synthetic quality in full measure.

There is an opportunity for the classifier to expand a given number or series of numbers even though the subdivisions are not specifically enumerated in the schedules. Upto the 17th edition, synthesis was achieved by the use of form divisions 01-09 and by the instructions such as divide like 930-999 or 940-999 or 000-999 and also alphabetical device. The synthetic principle is now achieved to a great extent by the following instructions stated in the current edition of DDC. These are:

- 5.1 Add from Auxiliary tables;
- 5.2 Add from the schedules;
- 5.3 Add from both tables and schedules; and
- 5.4 Alphabetical device.

#### 5.1 Add from Auxiliary Tables:

It was in the second edition of D.C.C.(1885) Dewey hit upon the idea of 'Form Divisions' for extention and synthesis of classes to meet the ever-growing needs of libraries.



This concept of 'Form Divisions' for the Subdivision of a subject is based on the point of view of the Author i.e. Bibliographical, philosophical, theoretical, historical or according to the form of thought content in documents i.e. digest, manual, monograph, dictionary, periodical and manual. This principle has been increasingly used in subsequent editions. These 'Form divisions' with varying degrees of detail continue to play very important role in construction of class numbers. The additional policy of the scheme since the 13th edition influenced by a plethora of auxiliary schedules in other library classification schemes, started giving more emphasis to the development of different types of auxiliary schedules culminating in the introduction of 7 'Auxiliary Tables' in Edition 18. The proliferation of these auxiliary schedules started from 13th edition and it included the following 5 tables viz.,

1. Geographical divisions,
2. Common sub-divisions,
3. languages,
4. Philological divisions,
5. Literature

The 14th edition included the following tables:

1. Geographical divisions
2. Uniform subdivisions 01-09, viewpoints 000-009, Miscellaneous common subdivisions 000,
3. Languages and literatures,
4. Philological divisions.



In the 15th edition the traditional 9 form divisions 01-09, without any detailed subdivisions, have been appended alongwith tables. In Edition 16, the original common subdivisions of form have been extended to approximately 70 divisions. The auxiliary schedules viz., Geographical, language and Literature, Philological divisions which have appeared distinctively in 13th and 14th editions have been dropped in 15th and 16th editions, and were listed under the main classes History 900, Language 400 and Literature 800. In edition 17, the table of 'Standard Subdivisions' (replacing the word 'Form divisions') 01-09 (102 in number) and the new 'Area Table' are appended to volume 2 along with Index. In 18th edition the following seven auxiliary tables have added to volume I with detailed analysis for number building. These have been retained in the 19th edition with still more capacity of synthesis of numbers.

#### 5.1.1 Table 1. Standard Subdivisions:

The standard Subdivisions Table enumerates isolate ideas commonly applicable to all the subjects enumerated in the Schedules. These are generally described as common isolates which may be used as and when required by the specific disciplines, subjects or their subdivisions. According to DDC (19th Ed. Vol. p.XXXI) Standard Subdivisions table is "A table of notations designating certain frequently recurring forms or methods of treatment applicable to any subject or discipline. The notations may be added as required, to any number in the schedule."

For actual use of Standard Subdivisions the following points should be kept in view:

- (a) The Standard Subdivisions are never used alone, but are added to the class numbers enumerated in the Schedules.
- (b) These can be used freely i.e. Standard Subdivisions may be used even when no instruction is regard to their use is given.
- (c) There are not to be used if standard subdivision type class is already enumerated in the Schedule e.g.,

Philosophy and Theory of Pure Sciences	501
Philosophy and Theory of Literature	801

The general practice of DDC is to use Indo-Arabic numerals 1-9 for subdividing the disciplines, subjects and their sub-divisions, e.g.,

Philosophy	100
110	Metaphysics
120	Epistemology
130	Paranormal phenomena and arts
140	Specific philosophical viewpoints
150	Psychology
160	Logic
170	Ethics
180-190	Historical and Geographical treatment of philosophy.

And Zero is used for Standard Subdivisions..e.g.

101-109 Standard subdivisions of philosophy.

in  
But/exceptional situations zero has been used by DDC for subdividing the various disciplines and subjects. In such

cases DDC directs the classifier that he has to use two or more zeros for Standard Subdivisions according to the instructions provided under such a class. This instruction is obligatory otherwise two documents on two different subjects will have the same class number.

### 5.1.2 Table 2. Areas

From the 2nd edition Dewey recognised that area divisions are common any may be required to be added to any base number. Yet a separate 'Area Table' was introduced only in the 17th edition. The isolates in this table were taken away from 930-999 without the traditional digit 9, and leaving the history schedules for history only. This new schedules simplified the construction of class number. In the previous editions these geographical divisions are used under the instruction "Divide Like" 930-999 or 940-999 or 093-099 which lead to the confusion whether the initial digit should be dropped or not.

This complexity of 'divide like' device has been resolved by the provision of an 'add' instruction that always gives the base number to which borrowed numbers must be added

For example:

373.3 —.9      Secondary education and schools by  
continent, country, locality.

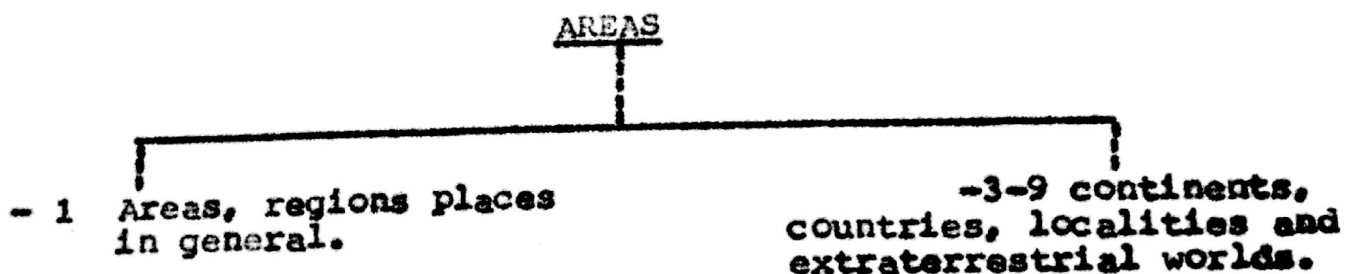
Add 'Area Notation' -3-9 from table 2 to base number  
373.

e.g. Secondary education in India = 373.54

This add instruction replaces all previous 'divide-like' devices and also allows much ease for the use of Area table. The Area table in Editions 18 and 19 of DDC are basically the same as Edition 17 with some expansions and few relocations. Following are the main criterias adopted by DDC for the formation of geographical isolates.

1. Zonal regions, e.g. Frigid Zones.
2. Physiographic regions, e.g. Plane regions
3. Types of Vegetation, e.g. Forests.
4. Air and Water, e.g. Atmosphere
5. Socio-economic regions, e.g. Western block.
6. Other kinds of terrestrial regions.
7. Space
8. Continents, Countries, localities and extraterrestrial worlds.

The above geographical divisions are grouped in DDC Areas table under two main heads:



Areas notation does not constitute by itself a class number. These are to be added to the class numbers enumerated in the schedules. However, there are two methods to use Areas notation.

(1) Use of Areas Notation through Instruction:

The DDC may direct the classifier through instruction given under a class number how the areas notation are to be used. The language used for the instruction is:

Add "Areas" notation 1-9 from Table 2 to  
base number.....

or

Add "Areas" notation 3-9 from Table 2 to  
base number.....

or

Add "Areas" notation 4-9 from Table 2 to  
base number.....

Example:

Title: General Libraries in India.

027 General libraries.

027.01- 09 Geographical treatment.

Add "Areas" notation 1-9 from Table 2 to  
base number 027.0

- 54 India

Base No.: 027.0

Table 2 : - 54

Class No.: 027.054

(11) Use of Areas Notation through -09 Standard Subdivisions: A Class number

where instruction to add Areas notation is not given, help of -09. Standard subdivision is taken. For example:

Title : Women Workers in India

331.4 Women Workers

**-093- 099** Treatment by specific continents, countries, localities; extraterrestrial worlds (Table 1)

Add "Areas" notation 3-9 from Table 2 to base number -09

**-54** India (Table 2).

Base No.	Table 1	Table 2
331.4	-09	-54

Class Number: 331.409 54

### 5.1.3 Table 3. Subdivisions of Individual Literatures

This table has been added from edition 18. In previous editions the literature form divisions were scattered fairly logically but confusingly over large part of class literature 800. In the 19th edition Table 3 has been supplemented by Table 3-A. However there is no basic difference between the isolates enumerated in Table 3 of 18th edition, and Table & Table 3-A of 19th edition. On analysing the isolates enumerated in Table 3 of 18th edition it was found that one and the same isolate idea is repeated under 0801-0809, 091-099, 1008-1009 i.e. the subdivisions under all these numbers are more or less identical.

	<u>18th Edition</u>	<u>19th Edition</u>
	Table 3	Table 3-A
1. Collections display-	-801-0803	
ing specific features	-091 -093	1-3
	-100801-100803	
	-10091 -10093	

	<u>18th Edition</u>	<u>19th Edition</u>
2. Realism and Naturalism	- 08012	
	- 0912	12
	-1008012	
	- 100912	
3. Humanity and human existence	- 08035	
	- 0935	35
	-1008035	
	- 100935	

The purpose of supplementary Table 3-A is to avoid repetition of the same concept as is evident from the above examples. Now in the 19th edition DDC has placed all such common concepts in Table 3-A. Whenever, these concepts are needed under -08 collections or -09 History, description, critical appraisal or with -1 Poetry the classifier can add these concepts from Table 3-A on the basis of the instructions provided under each of the above notations, e.g.

-08 Collections  
Add to --080 notations 01-99 from  
Table 3-A, e.g. Collections on  
holidays --08033

Example:

Title: Collections on Hindi literature  
displaying comedy

Edition 18.

Hindi Literature 891.43  
Collections on Comedy -08017 (Table 3)  
Class Number: 891.4308017

Edition 19.

Hindi Literature            891.43  
 Collections -08 (Table 3)  
     Add to -80 notations 01-99 from  
     Table 3-A  
 Comedy 17 (Table 3-A)  
 Class Number: 891.4308017

The class number got by edition 18 and 19 is same.

Thus the:

(1) The advantage of Table 3-A is that it has made possible to shorten the Table 3 of 18th edition by omitting unnecessary repetition of commonly applicable isolates.

(2) It is now easier for the classifier also to remember such isolate numbers,

(3) However, there is no difference in the class number by edition 18 and edition 19.

#### 5.1.4 Table 4. Subdivisions of Individual Languages

The language subdivisions are the problem isolates taken away from 420 English language in DCC edition 17 and earlier editions. It is stated that these divisions are not used alone, but may be used whenever required for individual languages under 420-490 specific languages, which states, 'under each language identified by \*, add "Subdivisions of Individual Languages" notation 01-86 from Table 4 to designated base number.....'



Example:

Title: First Grammatical Treatise: The  
earliest Germanic phonology.

430 Germanic languages. \*German

-15 Phonology (Table 4)

Base No. Table 4

43 -15

Class Number: 431.5

### 5.1.5 Table 5. Racial, Ethnic, National Groups

This table is derived to a greater extent from the notation for languages in the main class 400 of previous editions of DDC. The separation of these isolates from a subject class has allowed to detailed divisions of various social, ethnic and national groups. Like other auxiliary schedules. These divisions are never used alone but may be used with those numbers from the schedules and other tables to which the classifier is instructed to add.

Example:

Title : Psychology of the Bengalis

155 Differential and genetic psychology

.8 Ethnopsychology and national psychology

\*84 Specific races.

Add "Racial, Ethnic, National Groups" notation 01-99  
from Table 5 to base number 155.84

- 9144 Bengali (Table 5)

Class Number: 155.849144

### 5.1.6 Table 6. Languages

This table like table 5, is derived from the schedule for language in the Main Class 400 and freed itself sufficiently from the subject class to use the isolates more effectively for the construction of class number. The separation of languages from ethnic groups is of considerable value. One can now assign languages that belong to a special group or an ethnic group that does not have special languages. Like other auxiliary schedules, these language isolates are never used alone, but may be added with those numbers from the schedules and other tables to which the classifier is instructed to add language isolates.

#### Example:

Title : Tamil Encyclopaedia.  
 030      General encyclopaedic works.  
 039      In other languages  
           Add "Languages" notation 2-9 from  
           Table 6 to base number 039  
 - 94811 Tamil (Table 6)  
 Class Number : 039.94811

### 5.1.7 Table 7. Persons

This table allows subdivision of a particular race, ethnic, and national group notation 01-99 from table 5 to base numbers. The provision of this table in Edition 18 and Edition 19 replaces the divide like 001-999 or 920.1-928.9

to indicate persons and by the provision of isolates 03-08, to represent also such non-occupational groups like Negroids -03336, Parents -0431, adults -056 etc.

Example:

Title : Ethics of Library and Information  
Science profession

174 Economic, professional, occupational  
ethics

.9 Other professions and occupations

Add "persons" notation 09-99 from  
Table 7 to base number 174.9

-092 Persons occupied with library and  
information science (Table 7).

Base Number	Table 7
174.9	-092

Class Number: 174.9092

5.2 Add From Schedules

This is another important synthetic device employed in DDC. In this device digits from another sequence in the schedules are taken and added to the base number. It can also be said as a "Subject device", which implies that "sharpening a subject in an enumerative classification, on the basis of the subject characteristic, when their individualization admits of being made to depend conveniently

and helpfully on a subject in any manner or for any reason" (Ranganathan, 1967:346).

Under this device following different methods are employed for synthesising a class number.

### 5.2.1 Add 001-999

Here whole sequence of the classification schedule can be add when there are instructions to do so.

#### Example:

	<b>Title :</b>	<b>Sociology in Bible.</b>
	<b>220.8</b>	<b>Non-religious subjects treated in bible.</b>
		<b>Add 001-999 to base number 220.8</b>
	<b>301</b>	<b>Sociology</b>
<b>Base Number</b>	<b>Add Number</b>	
<b>220.8</b>	<b>301</b>	
<b>Class Number : 220.8301</b>		

### 5.2.2 Add Subdivisions of one main class

	<b>Title :</b>	<b>Agricultural Mechanics</b>
	<b>630</b>	<b>Agriculture and related techniques</b>
	<b>630.21 -29</b>	<b>Scientific principles</b>
		<b>Add to base number 630.2 the numbers following 5 in 510-590</b>
	<b>531</b>	<b>Mechanics</b>
<b>Base Number</b>	<b>Add Numbers following 5</b>	
<b>630.2</b>	<b>(5)31</b>	
<b>C.No.</b>	<b>630.231</b>	

### 5.2.3 Add Subdivisions of a Specific Division of a Main Class.

The third method used in Add Device is to allow the use of the subdivisions of the one of the Main Divisions of a Main Class. It means the classifier is required to use only those sub-divisions which are mentioned in the instruction. It may ask to use numbers following 19 in 191-199 or numbers following 29 in 291-299 and so on.

#### Examples:

Title : Prices of nutfruits

338.133-138      Prices of specific products.

Add to base number 338.13 the numbers following 63 in 633-638.

634.5              Nut fruits

Base Number      Add numbers following 63

338.13              (63)4.5

C.No.              338.1345

### 5.2.4 Add Subdivisions of one Specific Subdivision

In this method of Add Device permits to use numbers following specific subdivisions i.e., following 211 in 211.1 -211.9 or 581 in 581.1-581.8 or 683 in 683.1-683.5 and so on.

Title :              Rites and Ceremonies in Jain Religion

294.4              Jainism

294.41-.48      General principles.

Add to base number 294.4 the numbers following 291 in 291.1-291.8

291.38 Rites and ceremonies  
 Base number Add numbers following 291  
 294.4 (291) 38  
 C. No. 294.438

5.2.5 "One add to be derived from another add".

This may be termed as 'double' subject device. This is mostly applied in Sciences and Technologies.

Example:

Title : X-Ray treatment for cancer of the stomach.

(a) 616.994 Malignant neoplasms (cancer)  
 "Add to 616.994 the number following 611 in 611.1-611.9

611.33 Stomach

Cancer of Stomach = 616.994  
 +  
 (611).33  
 = 616.99433

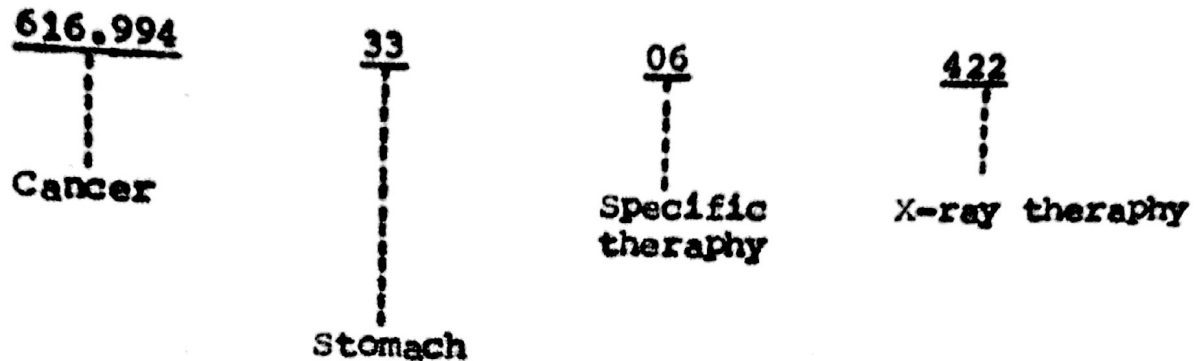
(b) 062-069 other theraphies "Add to 06 the number 615.8 in 615.82-615.89

06424 X-Ray therapy  
 ( 06 + (615.8) 422)

Thus the class number for above title is

616.9943306422

Where :



### 5.3 Add from both tables and Schedules

This may be termed as using first scheduled mnemonics and subject device or subject device and schedules mnemonics together. There are several instances in D.C. 18th edition where class numbers may be constructed by taking the isolates from auxiliary tables and adding afterwards isolates taking from main schedules.

#### Example:

	:	Title	Fransiscans in Church history in U.K.
271			Religious congregations and orders in Church history "Add to 271 the number following 225 in 255.01-255.98
271.3			Fransiscans in Church history (271 + [255] .3 ) then add . 0 and to the result add 'areas' notation 4-9 from <u>table 2</u>
271.3042			Fransiscans in Church history in U.K.

#### 5.4 Alphabetical device

In addition to the above 'add' instructions for the achieving of synthesis, alphabetical device is also employed in DDC in certain places in the schedules. As an aid to systematic arrangement, this device is used to meet local requirements. This is employed when there is very large number of specific co-ordinate classes with established names. Of course the use of this device is optional. The places where this device can be used is indicated in the schedules and in the auxiliary tables. For example, at 583, 598.1-88 and 'Area' notation 74-79 specific states of United States. The other places where this device can be applied for subdivision of a topic is

030, 071-079, 329.1-329.9, 378.4-.9,  
810-890.

Example:

030-039

General Encyclopaedic works in specific languages.

"If it is desired to give a local emphasis and a shorter number to encyclopaedias in a specific language place from first by use of a letter or other symbol, e.g., Arabic language encyclopaedias 031 (preceding 031)" (DDC, 18th Edition, p.480).



## 6. DDC Towards Increasing Degree Of Synthesis

While the basic principles have remained more or less unaltered since 2nd ed., there had been a large expansion in the following over various editions of DDC.

6.1 The number of entries and entries that can be expanded;

6.2 The number of tables and number of entries in the tables.

### 6.1 The number of entries and entries that can be expanded:

Over different editions of DDC, there had been a large expansion in the number of entries in the schedules as well as the 'entries that can be expanded' (can be developed into many entries by the application of instruction that appear under them). Comparative data from 16th edition onwards has been shown in Table 4:1. This shows a tremendous in both number of entries and the number of entries that can be expanded.

### 6.2 The number of tables and the number of entries in the tables:

Over different editions DDC, as observed earlier, the number of tables had increased upto seven tables. Comparative data from 16th edition has been shown in Table 4:2. It not only shows that there had increase in the number of entries in the tables but also shows that there had been increase in the 'entries that can be expanded in the tables

**TABLE 4:1**

**INCREASE IN THE NUMBER OF ENTRIES THAT MAY BE EXPANDED IN THE SCHEDULES**

Class	Edition 16		Edition 17		Increase from 16 to 17 edition		Edition 18		Edition 19		Increase from 18 to 19th Edition	
	TE	EE	TE	EE	TE	EE	TE	EE	TE	EE	TE	EE
0	333	55	341	51	8	-4	443	69	511	100	68	31
1	499	8	641	24	142	16	643	22	670	14	27	-8
2	760	80	1191	225	431	145	1291	286	1411	296	120	10
3	1703	69	2545	311	842	242	3430	398	4321	1080	891	682
4	324	52	369	135	45	83	280	114	268	133	-12	19
5	2083	53	2603	183	520	130	2830	698	3144	897	314	199
6	4031	115	5170	789	1139	674	5694	921	6089	1021	395	100
7	1407	180	1785	254	378	74	1912	270	2222	484	310	214
8	302	72	651	231	349	159	425	149	327	187	-98	38
9	6486	158	1836	448	-4650*	290	2032	391	2541	400	509	9
<b>Total</b>	<b>17928</b>	<b>842</b>	<b>17132</b>	<b>2651</b>	<b>-796*</b>	<b>1809</b>	<b>18980</b>	<b>3318</b>	<b>21504</b>	<b>4612</b>	<b>2524</b>	<b>1294</b>

Where TE = Total Entries

EE = Entries that may be expanded

\* = The reduction of 4650 entries in class 9 is offset by the introduction of new Area Table in edition 17.

(Table prepared from data available from Editor's Introduction of various editions of DDC)

**TABLE- 412**

**INCREASE IN THE NUMBER OF TABLES AND ENTRIES THAT MAY BE EXPANDED IN THE TABLES**

Table No.	Edition 16		Edition 17		Increase from 16 to 17 edition		Edition 18		Edition 19		Increase from 18 to 19 edition	
	TE	EE	TE	EE	TE	EE	TE	EE	TE	EE	TE	EE
1	69	9	113	15	44	6	112	17	116	20	4	3
2	-	-	5110	4	5110	4	5939	12	6933	6	994	-6
3	-	-	-	-	-	-	235	31	75	57	-160	26
4	-	-	-	-	-	-	28	5	29	5	1	0
5	-	-	-	-	-	-	182	181	192	191	10	10
6	-	-	-	-	-	-	234	0	239	0	5	0
7	-	-	-	-	-	-	431	1	440	1	9	0
<b>Total</b>	<b>69</b>	<b>9</b>	<b>5223</b>	<b>19</b>	<b>5154</b>	<b>10</b>	<b>7161</b>	<b>247</b>	<b>8024</b>	<b>280</b>	<b>863</b>	<b>33</b>

Where TE = Total Entries

EE = Entries that may be expanded

(Table prepared from data available from Editor's Introduction of editions of DDC).

as in the schedules.

Thus it can be concluded that DDC is moving towards increasing degree of synthesis.

CHAPTER-5

CONCLUSION AND SUGGESTIONS

## 1. Conclusion

The study was undertaken to examine the increasing trend in Dewey Decimal Classification for features of analytico-synthetic scheme of classification from its original enumerative nature; especially in editions subsequent to the death of Melvil Dewey (That is since 14th edition).

History of library classification shows that world trend in classificatory thought had changed from enumerative classification schemes to analytico-synthetic schemes of classification. As analytico-synthetic schemes of classification are in a better position to cope with the 'literature explosion'. The history of various editions of DDC reveals that it was not designed on the basis of a theory of analytico-synthetic classification. Yet, from the very first edition it has displayed synthetic features. But these appeared only in an 'embryonic' form. The development of faceted classification on the model of Colon Classification and Ranganathan's theory can be seen to have had a definite

impact on the development in DDC since 14 ed. and more particularly since the 17th ed. The devices that have been built into the DDC have demonstrated that the scheme, even within the existing framework, is capable of absorbing modern ideas/theories of classification. The forthcoming edition of DDC will do well to standardise the use of these devices on the basis of definite guidelines and principles such as those developed by Ranganathan and others.

However current editions of DDC when examined for the features of an analytico-synthetic classification revealed that these characteristics were present in varying degree. Synthesis with the help of various devices has been seen quite prominent. Facet analysis has been also revealed but due to their dominant enumerative nature and the use of pure notation the facet structure is not clearly visible. Moreover, lack of variety of indicator digits make it difficult to indicate the different aspects of a subject in its class number. Thus it can be concluded that DDC cannot be said to be an analytico-synthetic classification yet, as all the features of an analytico-synthetic classification are not present adequately. However, there had been an absorption some of these features, especially the synthesis of class numbers with the help of various instructions and tables, in the current editions of DDC.

## 2. Suggestions

For improvements in the future editions, investigator would like to suggest the following changes:

### 2.1 Changes in Standard Sub-divisions

An examination of Standard Subdivisions i.e., table-1 reveals that; the table does not include entries derived by the application of a single characteristic; instead it appears to accommodate several distinct types of divisions of more or less general applicability.

For example, the divisions 03, 05 and 08 denote bibliographical forms; 01 denotes sub-divisions of general applicability as well as bibliographical forms; 02 (miscellany) is used to introduce even phase relations in addition to bibliographical forms; 06 is used to introduce what Ranganathan would call as Posteriorising common personality isolate; 07 is again found to be a mixture of a variety of ideas of different types.

In effect the table of 'Standard Sub-Division' is an amalgam of many, often unrelated, types of ideas. From example, it includes:

- (i) Form divisions such as tables, bibliographies, dictionaries, etc;
- (ii) Certain generally applicable aspects such as Philosophy, scientific principles, etc;



- (iii) Certain generally applicable actions such as classification, study and teaching, etc;
- (iv) Treatment of a subject from particular viewpoints i.e. with a bias;
- (v) Certain commonly applicable entity type ideas such as organisation, institution, etc.

Obviously this has led to a certain amount of confusion and results in unhelpful grouping of documents on shelves and entries in a classified catalogue. There is, therefore, a need for systematisation based on definite principles.

For example, a reorganisation of the schedule of "Standard Sub-divisions" in a manner parallel to the scheme suggested below may be considered:

1. Form Divisions such as encyclopaedias, dictionaries, bibliographies, etc.
2. Particular view points such as bias.
3. Generally applicable 'action' type ideas such as study and teaching, classification, etc.
4. Generally applicable 'property' type ideas such as philosophy, scientific principles, etc.
5. Generally applicable 'entity' type ideas such as organisation, institution, etc.

Such a reorganisation of the schedule of standard sub-divisions is possible within the existing framework of the notational system of DDC, and will lead to a logical and more helpful grouping of documents on shelves and entries in a classified catalogue.

## 2.2 Seperate Table for 'Time'

The notation of 'time' as a common idea of general applicability has been recognised and provided for in DDC. However, its use is restricted to be used simultaneously with other tables. The 17th and 18th edition made an effort to improve upon the provisions of earlier editions by provide for adding to a base number both area and time divisions simultaneously. In the 19th edition, however, the simultaneous use of area division and time division is restricted to only a few classes (for example: 330.91- .99, Economic Geography).  
 The <sup>investigator</sup> suggests a seperate table for 'time' which could be used independently irrespective of the use of other tables.

## 2.3 Connecting Symbols

The earlier chapter-4 shows use of connecting symbols (zero, double zero, zero nine etc.) in DDC. But their use is through 'instructions'. However, once such symbols are used, it becomes difficult to recognize different facets in the class number. It is also very difficult to allow the use of various facets/tables simultaneously due to the fact

that along with the problem to recognize different facets in class number, this may give a number which might be enumerated in the schedules for some other subject. Such problems are due to lack of variety in indicator digits and of pure notation. The investigator suggest connecting symbols other than from Indo-Arabic numerals. However, the investigator admits that the simplicity of pure notation of DDC has to be sacrificed. However, this sacrifice would boost the synthetic character of DDC and make way to become analytico-synthetic in character in near future. Moreover, the claim of pure notation of DDC is not fully justified because it allows the use of Roman Alphabets along with Indo-Arabic numerals when it ~~g~~ allows the use of 'alphabetical device'.

Now the question comes, what would be the connecting symbols. The use of connecting symbols like Comma (,) , Semi-colon (;), Colon (:), dot (.) and single inverted comma(') in Colon Classification is well known. But their ordinal value has to be fixed by the classificationist (i.e. whether comma will come first or semicolon and so on). The users are not familiar with such conventional ordinal values. The experience shows that their speed of locating documents is lowered down. To overcome this problem the investigator suggests the use of Small Roman alphabets except "O" i.e. a, b, c, .....m, n, p.....x, y, z. Thus we have 25 connecting symbols. Capital Roman alphabets are not to be

used because these are already being used in case of Alphabetical Device.

Now the question comes that which alphabet should be used for a facet. Moreover, it should be remembered that DDC gives no explicit rules for the facet sequence. <sup>However it</sup> can be found in hidden form. Both these problems can be solved if editors of DDC decide the facet sequence and then give connecting symbols (alphabets) in that very ordinal value of the alphabets. But some "Gaps" should be left in between so as to allow for extensions in future if any.

Example:

Suppose it is decided that facet sequence would be

Main Class  
 Special Auxiliary  
 Place  
 Time  
 Form

Then the connecting symbols could be

d (for special Auxiliary)  
 f (for Place)  
 h (for time )  
 y (for form )

Suppose we have a title

"<sup>pathology of</sup> Dictionary of Cancer in India in 1980's".

Then here

Cancer 616.994 (Main Class)  
 Pathology 07 (Special Auxiliary)  
 India 54 (Area table)  
 1980's 09048 (Time taken from Table 1)  
 Dictionary 03 (Form)

The Class Number would be

616.994 d 07 f 54 h 09048 y 03

It appears to be a lengthy class number, but it should be remembered that it is co-extensive with the subject. Length is due to the fact that here number are taken from existing tables which are using zeros as initial digits to serve as connecting symbols. But when we are using alphabets as connecting symbols, such unwanted digits can be omitted and the tables can be modified. Thus in this example

Zero of 07

Zero nine zero of 09048

Zero of 03

can be omitted.

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\* B I B L I O G R A P H Y \*  
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