

Sequence of Subjects in CC and UDC: A Case Study.
(Classification problems. 59). (Comparison series. 3).

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[Presents a comparative study of the helpfulness of the sequence of compound subjects going with the Basic Subject Geology in the latest versions of CC and UDC. Geology is placed among Biological sciences in CC and among the Physical and Chemical sciences in UDC. The hierarchical structure of subjects are represented more expressively in CC than in UDC. Arrangement of compound subjects in both the schemes generally conforms to the principles for Helpful Sequence. However, due to its enumerative DC core, the UDC occasionally deviates from postulates and principles for facet sequence.]

ABBREVIATIONS USED

(BS) = Basic Subject (MS) = Main Subject
CC = Colon Classification UDC = Universal Decimal
DC = Decimal Classification Classification

I Introduction

11 CRITERIA FOR COMPARISON

A comparative study of two schemes for library classification can be done by different methods. The study of the relative helpfulness of the overall sequence of compound subjects, obtained by classifying the subjects by the schemes for library classification concerned, can form a basis of comparison. The relative helpfulness of the subjects may be determined on the basis of a set of normative principles. The conformity or deviation of the sequence of subjects in respect of these principles would indicate the relative merits and demerits of the schemes in question. The helpfulness of arrangement of subjects according to a scheme for classification depends largely on the principles used in the design of the schedules for library classification. Therefore, the comparative study of the principles used in the design and construction of the schedules for library classification would itself show the helpfulness of arrangement of the subjects obtained by classifying the subjects according to the schemes.

12 A CASE STUDY

This paper presents, as a case study, a comparative study of the schedules for the classification of the subjects going with the (MS) Geology, given in the latest versions of CC and of the UDC (2, 10). The comparison is in respect of conformity to or deviation from, the canons, principles, and postulates for work in the idea plane, enunciated in Ranganathan's theory of library classification (7).

2 Geology and Related Subjects**21 DEFINITION AND SCOPE**

"Geology" is the study of earth. Its scope is as follows (1): It is one of the several related subjects commonly grouped as Geoscience. Geologists are concerned primarily with rocks that make up the outer part of the earth. An understanding of these materials involves principles of physics and chemistry; geophysics and geochemistry, now important scientific disciplines in their own right, are adjuncts to geology and cover the study of the visible and deeper parts of the earth. The study and mapping of surface forms are shared by geology with geodesy. The study of the earth's waters related to geologic processes is shared by hydrology; study of records left by animals and plants that lived in past ages is a part of geology, though it involves many fundamental aspects of the biological sciences.

22 BRANCHES OF GEOLOGY

The following are the main branches of Geology:

- 1 Physical geology;
 - 11 Mineralogy, study and classification of minerals;
 - 12 Petrology, study of rocks, their physical and chemical properties and their modes of origin;
 - 13 Weathering and erosion, study of processes that alter exposed bed-rock and shape land forms;
 - 14 Sedimentation, origin and deposition of modern sediments;
 - 15 Structural geology, study of geometry of rock masses with emphasis on crystal deformation;
 - 16 Economic geology, application of geologic knowledge and principles to solution of practical problems;
- 2 Historical Geology.
 - 21 Stratigraphy, systematic study of bedded rocks and their relations in time;
 - 22 Paleontology, study of fossils and their locations in a sequence of bedded rocks;
- 3 Geologic mapping, graphic representation of bedrock units defined by physical characteristics and geologic age.

3 Representation of "Geology" in CC and UDC**31 SCHEDULE OF MAIN SUBJECTS**

The following table represents a portion of the schedule of main subjects of CC, and a portion of the outline of the main divisions in UDC in columns (b) and (c) respectively.

SN	Schedule of (MS) in CC	Schedule of (MS) in UDC
(a)	(b)	(c)
1	A Natural sciences	5 Mathematics and Natural sciences
2	B Mathematics	51 Mathematics
3	C Physics	52 Astronomy. Surveying geology
4	D Engineering	53 Physics and mechanics
5	E Chemistry	54 Chemistry. Crystallography
6	F Technology	Mineralogy
7	G Biology	55 Geology. Meteorology
8	H Geology	56 Paleontology
9	HUB Geodesy	57 Biology. Anthropology
10	HV Geophysics	58 Botany
11	HVT Geochemistry	59 Zoology
12	HX Mining	
13	I Botany	
14	K Zoology	
15	KX Animal husbandry	
16	L Medicine	

311 Annotation

CC has placed "Geology" between the main subjects "G Biology" and "I Botany". That is, CC places it among Biological Sciences. The reason for this is that earth is the habitat of all living organisms studied in biology. Geology is the study of the properties of this habitat of living organism. Therefore, it should come latter than the study of the living organism — that is, Biology itself. On the other hand, UDC places "Geology" between "54 Chemistry" and "56 Paleontology". This is because it has taken Geology as a subject with affinity to the Physical and Chemical sciences.

32 SCHEDULE OF NON-MAIN BASIC SUBJECTS

The following table presents the schedule of non-main (BS) of the Main Subject H Geology in CC, and the subjects

in the array of Order 1 division of the subject "55 Geology" in UDC.

SN	Non-Main (BS) of H Geology and adjunct (MS)	Array of Order 1 of 55 Geology
1	H0Z Physical geology	550 Auxiliary sciences
2	H1 Mineralogy	(550.1 Physiography;
3	H2 Petrology	550.2 Geoastronomy
4	H3 Structural geology	550.3 Geophysics;
5	H4 Geomorphology	550.4 Geochemistry;
6	H4Z Historical geology	550.7 Geobiology)
7	H5 Stratigraphy	551 General geology
8	H6 Palaeontology	(Meteorology, Climatology
9	H7 Economic geology	Historical geology
10	HV2Z Internal geo-dynamics	Stratigraphy
11	HV3 Volcanology	Palaeogeography)
12	HV35 Geyser	552 Petrography
13	HV4 Seismology	553 Economic geology and
14	HV81 Meteorology	Mineralogy (Formation
15	HV83 Aeronomy	and deposits of minerals)
16	HV86 Ionosphere	

321 *Annotation*

The schedule in CC seems to be helpful in understanding the structure of the subject. For, it groups the traditional divisions of Geology under two partial comprehensions — namely, H0Z Physical geology and H4Z Historical geology. This is followed by the non-main basic subjects going with the adjunct Main Subjects. The latest version of CC has shifted Internal geodynamics — that is, Volcano, Geyser, and Earthquake — from Pure Geology to "HV Geophysics". This reflects the recent developments of the subject. Similarly 'Geomorphology' and 'Meteorology' are shifted from 'U Geography' to 'HV Geophysics'. Compared with CC, the structure of the UDC schedule does not represent the subordinate and coordinate relations of the subjects coextensively. Scatter of related subjects is indicated by a number of cross-references. For example, from

'Geophysics', cross-references are given to 'Internal and external geodynamics' and 'Physical geology and Meteorology'. Further, the schedule for Geology has excluded its traditional subdivisions (as indicated in Sec 22). This violates the Canon of Helpful Sequence (3), and the Canons for Filiatory Sequence (4).

4 Sequence of Compound Subjects

41 GUIDING PRINCIPLES

A compound subject is made up of a Basic Subject and one or more isolate ideas. The Arrangement of Compound Subjects in a sequence helpful to a majority of readers is generally based on certain guiding principles. Ranganathan has formulated eighteen guiding principles to determine the helpful sequence of Compound Subjects (8). We shall examine, as a case study, the different principles used in the design of schedules for Compound Subjects going with the Basic Subject Petrology, in CC and UDC.

42 PRINCIPLES FOR HELPFUL SEQUENCE USED IN CC AND UDC IN PETROLOGY

Table 1 in page 263 presents data about the use of the different Principles for Helpful Sequence used in the schedule for Compound Subjects going with the Basic Subject 'Petrology'.

43 ANNOTATION

The sequence of Compound Subjects and the principles used to arrange them in different arrays are more or less the same both in CC and UDC. But, in respect of "Igneous rocks", there is a change in the sequence of the characteristics used. CC applies the characteristics in the following sequence:

By Depth of formation

By Percentage of quartz on rocks.

Whereas, UDC applies these characteristics in the reverse sequence. Further, UDC uses the "Principle of Decreasing Quantity" (5), for subjects derived on the basis of the characteristic "By Depth of formation" in array of Order 3 of igneous rocks. Whereas CC uses the "Principle of Increasing Quantity" (5) to arrange the subjects derived on the basis of the same characteristic in array of Order 2 of Igneous rocks.

5 Sequence of Facets in Compound Subjects

51 PRINCIPLES FOR SEQUENCE OF FACETS

Let us examine the sequence of isolate facets in the Compound Subjects going with the Basic Subject Petrology in CC and UDC. Table 2 in page 264 presents the name of subjects, sequence of facets derived on the basis of a set of postulates (9),

Table 1. Use of Principles of Helpful Sequence

Schedule of	CC		UDC	
	Characteristic	Principle used	Characteristic	Principle used
<i>Varieties of Rocks</i> Array of ORDER 1	.. By Mode of Formation	Increasing Complexity	By Mode of Formation	Increasing Complexity
<i>Igneous Rocks*</i> Array of ORDER 2	.. By Depth of Formation	Increasing Quantity	By Percentage of Quartz	Increasing Quantity
Array of ORDER 3	.. By Percentage of Quartz	Increasing Quantity	By Depth of Formation	Decreasing Quantity
<i>Metamorphic Rocks*</i> Array of ORDER 2	.. By Hydrostatic pressure needed for formation	Decreasing Quantity	By Hydrostatic pressure needed for formation	Decreasing Quantity
Array of ORDER 3	.. By Load pressure and Temperature	Increasing Quantity	By Load pressure and Temperature	Increasing Quantity
<i>Sedimentary Rocks*</i> Array of ORDER 2	.. By Strength of Texture	Increasing Quantity	By Strength of Texture	Increasing Quantity
<i>Clasic Rocks†</i> Array of ORDER 3	.. By Grain Size	Decreasing Quantity	By Grain Size	Decreasing Quantity
<i>Chemical Rocks†</i> Array of ORDER 3	.. By Origin	Increasing Concreteness	By Origin	Increasing Concreteness

* Isolates in Array of Order 1. † Isolates in Array of Order 2.

Table 2. Sequence of Facets

SN	Subject	Sequence of facets according to		
		Postulates	CC Number	UDC Number
1	Methods of computing chemical composition of siliceous rocks	Petrology. Siliceous rocks. Chemical composition. Computation. Method.	H2,3541;82E:b1;0a Petrology. Siliceous rocks. Chemical composition. Computation. Method.	552.55:552.26. Petrology. Siliceous rocks. Chemical composition. Computation. Method.
2	Microscopic determination of minerals in Alkali granite rocks.	Petrology. Alkali granite rocks. Mineral constituents. Determination. Method. Microscopic.	H2,1731,(H1):t6;a91 Petrology. Alkali granite rocks. Mineral constituent. Determination. Method. Microscopic.	552.331.1:552.121 Petrology. Alkali granite rocks. Determination. Microscopic Method. Mineral constituents.

the sequence of facets according to the CC number, and the sequence of facets according to the UDC number.

52 ANNOTATION

It may be seen from the above table that CC and UDC numbers generally conform to the sequence of facets derived on the basis of Postulates (9) and Wall-Picture Principles (6). However, there are deviations in UDC. In example 2, the "Mineral constituents" is placed after the Method facet. But according to the Postulates and the Wall-Picture Principle, the "Mineral constituent" should precede the facet "Determinaton". This is largely due to the enumerative DC core around which the UDC schedules have been built.

6 Conclusion

This paper has only demonstrated a way of comparing two schemes for library classification, based on a set of normative principles formulated in the theory of library classification. It may be observed that both CC and UDC have been guided by these principles. As far as the schedules for the subjects going with "Geology" is concerned, UDC has given a more detailed schedule than CC. But its scope has been restricted as stated in Sec 32. The CC, on the other hand, has provided for many devices in its schedules. But, considering from the point of view of subjects being published in the form of books today, both CC and UDC require considerable revision and updating.

7 Bibliographical References

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