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Comparative Study of Schemes for Library Classification.
(Classification problems. 61).

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[This paper begins with an appreciation of the fresh air with which the editor Maltby begins his Symposium* on schemes for classification and of its service in stimulating study of comparative classification. Then follows in succession a critical evaluation of the five schemes—BC, CC, DC, LC, and UDC—centering round the account given of each of these schemes by different authors. It ends with an evaluation of the chapters giving respectively Comparison of a Thesaurus and of a scheme for classification, Compatibility of schemes for classification, and the Application of certain schemes to computer-retrieval.]

ABBREVIATIONS USED:

BC = Bibliographic classification
CC = Colon classification
DC = Decimal classification
LC = Library of congress classification
UDC = Universal decimal classification

A Arthur Maltby : Classification — Logic, Limits, Levels

A1 A "NEW VOICE" EMPHASISING THE UNITY OF LIBRARY WORK AND INFORMATION RETRIEVAL

The book edited by Maltby is an excellent and timely Symposium. It fulfils his objective stated by him in the words to form "a vehicle for stimulation of ideas and a series of personal anticipations of what lies ahead" in the field of library classification. He wisely observes that the technique of subject organisation in a library and that of retrieval of knowledge form a "unity to be studied in a carefully integrated fashion". To me this is the "New Voice" in the profession, pulling it out of the

* Maltby (Arthur), *Ed. Classification in the 1970s.* 1972. Clive Bingley Limited, London. P 269. £ 4.00.

confusion caused till now by looking on them as different disciplines — even to the point of inventing the new term 'Informatics' to perpetuate the older view about their being two different techniques with two different objectives.

A2 REMOVAL OF ALLERGY TO NOTATIONAL SYSTEM

In the second Chap of the book, we again hear the "New Voice" telling the classifiers, as it were, "Do not become despondent by imagining that the notational system, essential to any scheme for classification, requires an expert in Mathematics to understand and use it. I have gone this way, I can help you out of such a despondence. What is wanted is merely competence in scientific method and ability to think clearly. These qualities, each one of us possess in an adequate measure".

A3 PREFER INDIVIDUALISING CLASS NUMBER

A third refreshing statement of the "New Voice" is the clear underlining of the fact that the length of a class number will increase only with the depth of the subject. The arrangement of documents with deep subjects and of their main entries will become chaotic if individualising class numbers are not used. Normally, such documents may not have the necessary size admitting of arrangement on open access shelves as in the case of normal books. This fact also should be remembered. Moreover, it is largely specialist readers that will search for such deep subjects. The following words of Maltby are penetrating and worth quoting, "The librarian who wants specificity with short notation and a system which never changes but is always up-to-date is in a similar position to the investor who concurrently seeks extensive capital growth, high income and the maximum security for his money!"

Here is another illuminating statement by Maltby: "Broad classification, apart from the effect on cataloguing and the uncertainty of interpretation as to just what constitutes 'broad shelf arrangement', is at best often little more than a ruined shell of the scheme represented". This bold statement should put to rest the recommendation of broad classification commonly made during the last two decades.

A4 OPINIONS OF DOUBTFUL VALIDITY

It occurs to me that the following opinions and use of terms of Maltby are of doubtful validity:

1 The Theory of Integrative Levels put forward by the CRG of UK might be used as a "durable principle for the achievement of helpful order (sequence)".

2 "Inability of any scheme for classification to meet the special requirements of particular libraries." This difficulty is easily overcome by the formation of collections of relevant books and showing the fact that such books are in a "Special Collection" by the addition of a "Collection Number" to the Class Numbers of the documents concerned. This is a neat method for implementing the Principle of Local Variation. This method makes it unnecessary to change the Class Number of a document in any library. In fact the Class Number should be treated as if it were a proper name in the classificatory language. This subject is fully dealt with in my paper *Conflict of classification in document retrieval* published as Paper 1.10 in the volume of Papers and proceeding of the DRTC Seminar, (2) (1964).

3 "A single sound reader-interest-order (sequence) of subjects would be more valuable than the use of an alternative scheme to meet the interests of special classes of people, since the responsibilities and interests of the adult individual are fundamentally alike in all libraries." This is too naive a disposal of the real problem of minority-interests differing from majority-interests. The minority-interests should be respected as much as majority-interests. A method for satisfying both the interests has been suggested in Category 2 of this Section.

4 While Maltby is quite up-to-date in the Idea Plane, the same cannot be said about his statements as viewed from the Verbal Plane. Here are some examples:

1 The heavily homonymous word 'Order' might have been usefully replaced by the word 'Sequence' when arrangement is implied.

2 The word 'Knowledge' might have been usefully replaced by the term 'Subject' defined in Sec CR3 of my *Prolegomena to library classification* Ed 3, 1967 as "an organised or systematised body of ideas whose extension and intension are likely to fall coherently within the field of interest and comfortably within the intellectual competence and the field of inevitable specialisation of a normal person". For, the field of library classification is in reality the Universe of Subjects. Knowledge classification is the province of philosophers and not of librarians.

A5 AN EPIGRAM OF SAYERS EXHUMED

Many should feel thankful to Maltby for bringing back into circulation the following superb epigram of W C Berwick Sayers: "Classification is often tiresome, but we can't do without it".

A6 DRIVING OUT THE TERM 'LOGIC' FROM THE VOCABULARY OF CLASSIFICATION

One of the most confusing situations confronted by a student of classification, who thinks out and not merely absorbs whatever is said, arises when a scheme for classification is said to give a "Logical" sequence of subjects. For, "Logic" is the intellectual tool for making inference, and not for arranging subjects in a helpful sequence. Maltby has given a clue to the perplexed student of classification to avoid this trouble by asking him to replace the term 'Logical' by the term 'Rational and coherent'. It would have been even better, if he had used the term 'Helpful and coherent'.

A7 CLASSIFICATION WITHOUT ITS PHYSICAL BULWARK

Maltby makes the following statement: "The success of any classification must depend, to a large extent, on its ability to carry out its different tasks and still to remain intelligible, useful and psychologically acceptable to readers who are not classification experts and who are probably not subject experts either, although they seek subject information". This is perhaps the only one unrealistic statement in his Chapter otherwise full of clear well clinched realistic observations. The above statement is unrealistic because it ignores an essential function of the gang-way-guides, bay-guides, and shelf-guides in an open access stack room, and, of feature headings or guide cards in the classified part of a library catalogue. Each of these two entities have the same function—namely, to mention the class number covered by each of them, followed by their meaning in a natural language with the minimum of words as in a telegram. It is these aids that would make Class Numbers psychologically acceptable to readers from the very beginning. It is these guides that would make class numbers intelligible to them in the long run.

A8 ASCERTAINMENT OF OPINION OF READERS ON A SCHEME FOR CLASSIFICATION

There is no doubt that ascertaining the opinion of readers on the schemes for classification in use will go a long way in removing the contradiction often expressed by arm-chair speculators. However, to make the opinion of readers trustworthy, Statistical Calculus should be used. The essence of Statistical Calculus is dependence, at bottom, on Probability. The reliability of the probaibility obtained by observation essentially depends upon the largeness of the number of observations forming the basis, in different library settings—in respect of documents as well of readers—, in different national and other social groups, and in different times. This is a tall order. If it can be carried

out with all the necessary safeguards, it will be ideal. But, till the ideal could be achieved, we have to depend upon the conjectures of acute reference librarians with a penetrating insight and human nature and with a long period of experience in serving readers in different kinds of libraries serving different communities.

B J Mills: Bibliographic Classification (BC)

B1 INADEQUATE VERSATILITY OF THE NOTATIONAL SYSTEM OF BC

In this paper, Mills has put his finger correctly on the difficulties in BC being traceable to its notational system not being sufficiently versatile to implement all the findings in the idea plane about the helpful filiationary position of newly emerging subjects and isolates — and to some extent even in the sequence of some of the already existing subjects and isolates. Mills rightly points out that to increase the versatility of the notational system of BC it may be necessary to increase the number of indicator digits.

B2 RESISTANCE TO RECLASSIFICATION

The following passage occurring in the paper is of great depth and potentiality "... the forces of inertia, the cost-benefits of centralised indexing, and the difficulties of reclassification tend strongly to perpetuate the system in occupation, even if a better one comes along".

I wish that he had also pointed out the full implications of such a blocking by the Law of Inertia. They are,

1 It will shut out all new ideas on classification in spite of their being demanded by the continuing new formations in the Universe of Subjects, and by the continuous deepening of the interests of readers and of their range being made smaller and smaller; and

2 The classification of the future will have to be for ever what we now use; imagine what would have happened if we had succumbed to Inertia and continued to use the Classification Scheme of Callimachus!

B3 PLAN FOR REVISION OF BC

In describing the plan for the revision of BC — now being worked out by Mills with the help of a research assistant in the School of Librarianship of the Polytechnic of North London —, Mills makes some valuable general statements such as

1 In contrast with the excellence of its main structure, the detailed sequence of the divisions — isolates — unsatisfactory in some subjects;

2 In a nutshell the facet analysis is not very well done, the facets do not disclose clear marks of identity;

3 Editorially, a "once-for-all" redesigning is preferable to a piece-meal designing; this is particularly so, since revision in respect of one Basic Subject would affect decisions in respect of the other Basic Subjects also;

4 An analytico-synthetic faceted scheme, marking of the facets clearly for the compound subjects going with any of the specific Basic Subjects and having definite rules for classifying, is considerably easier to maintain and revise than an enumerative one; and

5 The proposed definitive revised edition will facilitate the reclassification in about 90 libraries — mostly academic, governmental, and specialist — in the Commonwealth.

C M A Gopinath: Colon Classification

C1 A MISLEADING FEATURE OF THE PAPER

About thirteen out of the thirty pages of the Paper are devoted to Ranganathan's Theory of Library Classification. Twelve out of these thirteen pages are at the very beginning of the Paper. This will produce the wrong impression that this theory had been specially worked out for CC and not for Library Classification in general. This wrong impression will have the effect of confirming a similar opinion often wrongly expressed by some of the librarians of the West. This misleading feature could have been avoided if an account of the CC had been given first, and then some of its features had been shown to conform to a few of the important Principles in the General Theory of Classification. In this way, some of the space now devoted to Theory could have been saved.

C2 FREELY FACETED CLASSIFICATION

The paper mentions the evolution of schemes for classification from an enumerative one to a freely faceted one. It further shows the evolution of CC itself through the three stages of,

- 1 Rigidly faceted stage;
- 2 Less-rigidly faceted stage; and
- 3 Freely-faceted stage

C3 BASIC SUBJECTS

C31 *Main Subject*

The primary schedule of CC is that of Main Subjects. In Ed 6 (1960), 39 Main Subjects were enumerated. In the forthcoming Ed 7 the number of Main Subjects is expected to reach a hundred or more. Many of the new Main Subjects are shown to consist of:

1 Distilled Main Subject: Theory of Management is an example. Till some years ago, Management-in-action alone

appeared as an isolate in Compound Subjects going with many Basic Subjects. But now there are books of Management-in-theory, as distinct from Management-in-action in relation to one or other Basic Subject.

2 Fused Main Subject: Biochemistry is an example. This subject is a recent one. It originated as a two phased subject with Chemistry as the Primary Phase and Biology as the Secondary Phase. But now, it has taken a definite shape to justify its being regarded as a Main Subject on its own right. In this view, Biochemistry is formed by the Fusion of the already enumerated Main Subjects Biology and Chemistry. The compound subjects going with it involve schedules of isolates distinctive to Biochemistry. Temporarily accommodating a new subject as a Phase or Complex Subject and converting it at the proper time into a new Main Subject is a helpful device of CC.

C32 *Adjunct Main Subject*

The Idea Plane would require that any of the kinds of subjects mentioned in Sec C31 should be placed in juxtaposition to the Main Subject forming the first member of Fusion. Therefore, such a subject is called an "Adjunct Main Subject"—adjunct to the Main Subject forming the first member of Fusion. CC has now developed the notational device to secure this. This notational device has led to the transfer of certain subjects, hitherto forcedly represented as Canonical Divisions of one Main Subject or another—such as Statistical calculus, Astronomy, and Astrophysics hitherto treated as Canonical Divisions of the Main Subject "Mathematic"—into Adjunct Main Subjects, adjunct to Mathematics on account of their great affiliation to it. This concept has also enabled CC to accommodate some newly emerging fused and other main subjects as Adjunct Main Subjects. Examples are Biometry, as adjunct to Biology; Econometrics, as adjunct to Economics; Bio-cybernetics, as adjunct to Biology; and Socio-cybernetics as adjunct to Sociology. We are not now able to conjecture the kinds of compound subjects likely to go with any of them, and still less of the facet structure. But, there is every chance for each of these new Adjunct Main Subjects calling for Schedules of special isolates needed by the respective compound subjects developing in association with them.

C33 *Non-Main Basic Subject*

A Canonical Division of a Main Subject came to be called a Non-Main Basic Subject, as a Main Subject has by itself got all the attributes of a Basic Subject. For some years, it has been difficult to define a Basic Subject. But, a question put to me

from the floor during the Rutgers Seminar (1964) on Colon Classification, made me take up this question seriously. Gopinath's paper gives the results as they were about two years ago. At that time we recognized four kinds of divisions of a Main Subject, other than isolate divisions based on one Fundamental Category or another, named respectively Canonical divisions, Specials divisions, Environmented divisions, and system divisions. A combination of a Main Subject with any of these divisions was defined as a 'Non-Main Basic Subject'. A few months back, it was found helpful to use the digit " - " (hyphen) as an Indicator Digit for any of the four above mentioned divisions of a Main Subject. This led to the confirmation of the idea developed about three years earlier about Compound Non-Main Basic Subject. These are got by combining after the host Main Subject any or any combination of the four kinds of divisions. Of course the Indicator Digit " - " (hyphen) should be inserted before every one of them.

C4 PARTIAL COMPREHENSION AND SUBJECT BUNDLE

Gopinath's paper brings out two types of Subjects entertained by CC — Partial Comprehension and Subject Bundle. An example of Partial Comprehension is "Physical sciences" as a partial comprehension of the Main Subjects Physics, Engineering, Chemistry, and Technology. However it has not yet become clear to our mind that whether there is anything to indicate where the Partial Comprehension ends. This is still being examined. There does not, however, appear to be any difficulty in regard to a Subject Bundle.

C5 SCHEDULE OF COMMON MATTER-MATERIAL ISOLATES

Gopinath mentions that "Ed 7 (CC) may include a schedule of common matter-material isolates". However, we have now found that this would be an unusually long schedule, and it will be difficult to make it fully exhaustive. Moreover it is felt that in any particular subject-context the matter-material isolates needed will be only a few and these few would be only those that are special to the subject-context. This implies that they will have to be enumerated in a separate schedule as manifestations of the Fundamental category Matter-Material. Therefore, we are likely to abandon the preparation of an exhaustive schedule of Common Matter-Material Isolates.

C6 WRONG OPINIONS ABOUT CC

C61 *Opinion about CC as a Theoretical Scheme*

Gopinath refutes the opinion expressed by some librarians that "CC is only an Ideal model used only for teaching and

demonstration of principles of classification". He has refuted this with facts and figures. But I feel that he has been too modest to say that such an erroneous opinion can be expressed only by one who had never used CC in actually classifying.

C62 *Opinion about Inadequate Schedules in CC*

Gopinath takes up another observation made by some librarians that "[In CC] the schedules provided for some of the physical sciences, engineering, and technology are inadequate". Against this he states the fact that about eighty depth schedules of CC — more detailed than in any other scheme — have been designed by DRTC, and many of these subjects belong to the subject-field Engineering and Technology. It was D J Foskett that originated this "inadequacy-idea" in about 1957. In fact, in a morning walk during the Dorking Conference he told about this and mentioned this as one of the reasons for the Librarians of UK — highly industrialised country — not adopting CC in practice. But in his paper entitled "*Some fundamental aspects of classification as a tool in informatics*" published in *On theoretical problems of informatics* (1969) Foskett has re-expressed his opinion in the following words: "The DRTC (Documentation Research and Training Centre) team at Bangalore has produced extraordinary detailed analyses . . . of several fields of Engineering". This is a significant fact to be noted by those who are still repeating his stigma of 1957 about CC.

C63 *OPINION ABOUT COMPLEXITY OF CC NOTATION*

Some speak of the complexity of CC notation. Against this Gopinath rightly states that the students, taking the course in CC, do not find it to be difficult in any way. I would add to this an experience of mine. About 25 years ago, I was teaching both CC and DC in the Banaras Hindu University. The Board of Examiners was told by one of the old teachers of that University that he had not been teaching CC and that the candidates of the old batches appearing for the examination should not be asked to give Colon Class Numbers to any subject. Therefore, I gave twenty titles instead of the usual ten for classification and asked the students, as I normally do, to give CC and DC numbers for ten of the titles or DC numbers for all the twenty titles. When the answer books came, I found that all the candidates, including those of the earlier batches, had selected the first option. Some months later, one of the candidates of an old batch came to meet me. I asked him why none of his batch preferred to give DC numbers alone to all the twenty titles. His reply was revealing. He said in effect, "The method of constructing CC Number is well laid down; it is easy to arrive at the CC Number very easily

and with some certainty. Once the CC Number is constructed for a title we find it easy to translate it into its near equivalent DC number. Therefore, to classify all the ten titles by CC and DC we took only three-fourth of the time allowed. But, finding number directly in DC is a matter of hit or miss and we found it difficult to choose between two or three alternative DC numbers suggesting themselves. We had to spend a good deal of time in the Examination Hall to choose one of the alternatives".

C64 *Frequent Revision and Changes*

Gopinath then takes up the complaint about "Frequent changes in class numbers disregarding the practical difficulties". The changes in class numbers, hardly ever affect either the Basic Subject number or even array isolate numbers of the first order. Further, such changes generally occur only in the case of new subjects without many books on them, and whose exact nature take some time to get firmly established. However, in the preparation of Ed 7, the Five Fundamental Categories are critically being examined in regard to their manifestation. In my *Preview* to that edition (Lib Sc. 6; 1969: Paper M), the results of this are given.

C65 *Result of New Thinking*

It has been shown in my *Preview* that:

- 1 The main changes in CC class numbers are changes of indicator digits;
- 2 This does not disturb the relative positions of the documents;
- 3 The new documents carrying the new Indicator Digits and the old documents carrying the old Indicator Digits can be inter-filed without any confusion; therefore
- 4 The changing of the Indicator Digits in the older documents could be done at leisure and even be spread over if necessary for some time; and
- 5 Further the Method of Osmosis (See my *Classified catalogue code*, Ed 5, 1965, Chap CG) allows the postponement of the correction of the Indicator Digits to a convenient later time.

C66 *Integrity of CC Class Numbers*

The term 'Integrity' is used to denote the extent to which the class numbers do not get changed while reclassifying in accordance with the revision of the scheme in use — which has to be made from time to time, as a result of the continuing changes in the Universe of Subjects. Total integrity is naturally impossible. Some change will be necessary. The question is to what extent or in what manner integrity is preserved in any part of the Class Number. Another question is how does the incidence of loss of

integrity in the different parts of a Class Number affect the relative position of the documents. Two factors help in the preservation of the integrity of CC numbers to a considerable extent.

C661 *Integrity of the First Digit of CC Number*

The design of CC was made half a century after the design of the pioneer scheme DC. By that time, the Universe of Subjects had been developed to a considerable extent. It was found helpful to recognise many more Main Subjects than at the time of the design of DC. Further, the sub-divisions of the Main Subjects of CC could be made more helpful than those of DC. Therefore, at the time of reclassification, the need for transferring a sub-division of one Main Subject to the care of another Main Subject has been very much lessened. The result: the integrity of the first digit of a class number is better preserved in CC than in DC (See Sec D66 and D67).

C662 *Integrity of the Sequence of Facets in CC Number*

The sub-divisions of a Main Subject in CC are not enumerated, as they are seen in the phenomenal level. On the other hand the sub-divisions are developed with the aid of certain objective intellectual principles. These principles take the form of postulates in terms of Five Fundamental Categories at the near-seminal level. There is first the "Postulate of Five Fundamental Categories" itself, there are also other postulates such as those for the Sequence of the Manifestations of the Fundamental Categories, Rounds, and Levels. Any sub-divisions of a Main Subject is examined in the light of such postulates. This leads to the recognition of a number of facets in the sub-division of a Main Subject. As the facets are routed very near to the seminal level, their sequence is stable. The result: the sequence of the facet numbers—the isolate numbers making up a sub-division of a Main Subject—in a CC number is seldom changed as a result of any reclassification. In other words the integrity of the sequence of facet numbers is preserved in CC.

C663 *Integrity of the Digits in Facet Numbers of a CC Number*

In any array within a facet the isolates are not consecutively enumerated as and when they get recognised. In other words, the numbers representing the isolates in an array are not always consecutive. On the other hand, they are fixed with the aid of five Canons for Mnemonics. Therefore, the chance for any new array isolate claiming to be represented by the same digit as the one representing an already existing array isolate and thus calling for a change in the digit of an array isolate is minimised to a considerable extent. Result: There is a good chance for the

preservation of the integrity of the array isolate digits and consequently of the array isolate numbers — that is of facet numbers — within a CC number.

C664 Incidence of Loss of Integrity in the Indicator Digits of Facet Numbers

Recently there has been some rethinking in regard to the Fundamental Category of which a facet of a class number should be deemed to be a manifestation. Consequently, the integrity of the indicator digits in CC class numbers has undergone a heavy loss. This has been so, mostly in the changing of the Indicator Digit ":" (colon) used for Energy, into ";" (semi colon) used for Matter-Property and Matter-Method. This necessity had arisen out of the vagueness in the concept of Energy-manifestation originating at the time of the design of CC and remaining so till about 1963.

C7 VERSATILITY OF THE NOTATIONAL SYSTEM OF CC

Gopinath had given a fairly good account of the versatility of the Notational system of CC. By the use of a mixed base and other concepts such as Sectorising digit and bracketed numbers the capacity of an array is shown to be 1,166 admitting as a digit not only singlets but also doublets and triplets deemed to be frozen into a single digit. To add to this there is also provision for endless interpolation between any two existing numbers in the array of Main Subjects. With this great versatility the notational system of CC is able to implement the findings of the idea plane in respect of the helpful position for any new Basic Subject or any new isolate idea emerging from the Universe of Subjects.

Of late a method has also been found to extrapolate any new Basic Subject or isolate at the very beginning of their respective Schedules (See Ranganathan (S R). Colon classification: Notational system: Towards a plan for its productive use (Lib sc. 9; 1972; Sec Ak).

C8 CC AND COMPUTER

Gopinath refers to the study in progress in the DRTC in the use of CC in Computer-retrieval. The DRTC is said to be experimenting not only with the fitness of CC numbers for use in document retrieval with computer but also with the possibility of synthesising CC class numbers with the help of computer.

D Sarah K Vann : Dewey Decimal Classification

D1 DOUBTFUL CLAIM FOR DC: INTERNATIONAL PERSPECTIVE

Vann speaks of the "thrust [of DC] toward an international

perspective both in depth of analysis and in adaptability of application". In the state of the universe of subjects widely known in the West at the time of the design of DC, it did have the above qualities. But,

- 1 The march of the universe of subjects;
- 2 The eruption of several new subjects during the last one century; and
- 3 The need for recognizing within the universe of subjects many oriental subjects then not well known in the West, have now overpowered DC in respect of the two qualities mentioned above by Vann.

D2 DOUBTFUL CLAIM FOR DC: BIBLIOGRAPHIC SERVICES

Vann speaks of the use of DC by "central bibliographic services . . .".

The general feeling is that the present-day requirements of "Bibliographic services" have outmoded the capacity claimed for DC in this respect. Does Vann have a higher hope than the present Editor of DC in "fitting DC even for bibliographical services" as they are required today. In this respect Vann's statement would have been more useful and informative if examples had been given to refute the following statement by the Editor of DC, "The latest (16th) full edition of DC was prepared as shelf classification which could meet the needs of general libraries of any size, though not necessarily those of special libraries . . . It is not intended to be used for deep bibliographical analysis" (Custer (BA). Mr Phillips (Lib Assoc Record 62; 1960; 406-7)). Or does Vann restrict the term 'Bibliographic services' only to mean a list of whole books bearing on a specific topic? If so, it is overlooking the great expansion that has taken place during the last 30 years in the scope and content of "Bibliographic services".

D3 DOUBTFUL CLAIM OF DC: THEORY OF CLASSIFICATION

As a characteristic of DC, Vann mentions "its pragmatic or realistic development now conjoined with an *a posteriori* molding of a philosophic design, notably purification of the concept of hierarchical subject relationships". According to this statement the Schedules of DC were constructed on the basis of experience with the subjects current in the days of Dewey — no doubt sublimated by a touch of intuition inevitable in a genius such as Dewey. Today Vann claims that the schedules are being based on a "philosophic design" — that is, design based on some inductive principles as the author points out. We have to cite against this claim of Vann the down right assertion of the Editor of DC, "... nor is it [DC] built on a framework of

philosophical theories" (Custer (BA). Mr. Phillips (Lib Assoc Record. 62; 1960;407)). Whose statement should be taken to be realistic and whose as wishful?

D4 COMPLEXITY OF NOTATION IN ED 17

Among other things, Vann accounts for the appearance of long class numbers in Ed 17 of DC by this edition providing — as it has rightly done to make DC serviceable today — for "... expansions for new topics which, within a decimal scheme, tend to be lengthier than notation for obsolescent or less current topics". Subjects of interest today and embodied in books are of greater intension and present more facets than the simpler subjects listed in the earlier editions and rendered obsolescent today. Naturally, the numbers of the present-day subjects will be longer than those of years ago. Should this truism be given as an explanation for the long DC numbers appearing in the schedules ?

D5 EXPERIMENTS IN THE NOTATIONAL SYSTEM OF DC

D51 *Segmentation*

Vann's paper gives a detailed account of the experiments being made in the notational system of DC. The introduction of the concept of "Segmentation" in the notational system of DC is a new venture. Do the three segments now allowed in a class number represent three different facets of a subject. This has not been made clear. If so a segmented DC number will amount to an analytico-synthetic class number. The result of the experiments will be eagerly awaited by all interested in the theory and practice of faceted classification.

D52 *Example of Segmented DC Number*

The first example of segmented DC number given by Vann is 301.3'64'071177595; where,

- 1 The first segment 301.3 = Human ecology, in which,
301 = Sociology and
3 = Ecology;
- 2 The second segment '64' = Urban; and
- 3 The third segment 071177595 = Study and teaching in college and universities in Milwaukee county; where,
07 = Study and teaching
11 = College and universities
77595 = Milwaukee county

From this example it can be seen that the first segment is a compound of the Basic Subject "Sociology" and a Properly Isolate "Ecology". Does the second segment represent Personality ?

The third segment is a compound of the facets:

- 1 Study and teaching (a common isolate);
- 2 College and University (is this personality?); and
- 3 Milwaukee County (space isolate).

Thus in the Class Number the first and the third segments consist of two and three facets respectively. Therefore our conjecture is that a segmented class number is potentially a faceted class number in which some facets are introduced by Indicator Digits and some are not.

D6 CHANGES IN THE SCHEDULES OF DC

D61 *Lengthy Account of Changes*

Vann gives a lengthy account of the changes in class numbers introduced in the latest editions of DC, in order to make the sequence of subjects more helpful than what it had been before.

D62 *Integrity of DC Class Number*

Vann highlights the problem of respecting the integrity of class numbers in referring to the "conflict that could polarize itself between 'maintaining integrity of notation' and keeping pace with knowledge" in the revision of DC. The revisers of DC have rightly decided to "keep pace with knowledge" even at the cost of very nearly giving up integrity of notation. The need for giving up the idea of integrity of notation arose out of the very design of DC.

D63 *Constriction by the Indo-Arabic Numerals forming the Base of the Notation*

The design of DC was largely based on the intuition of Melvil Dewey fed by the experience of the Universe Subjects then known. The Indo-Arabic numerals as the base for its notational system captured his imagination. He stuck on to it with a missionary zeal. This short base was somehow made to serve the needs of the Universe of Subjects with which Dewey was concerned in his early days. He could never give up his faith in the capacity of this short base. As time went on, and as edition after edition had to be brought out by himself, the last edition in which he had a hand was Ed 14 published one year after his death. He had to squeeze newly emerging subjects as subdivisions of one or another of the already enumerated subjects. This constriction by the short base had led to many unhelpful placings in the schedule.

D64 *Fascination to Decimal Fraction Notation*

Dewey was rightly fascinated with a notational system of

pure decimal fractions, which he had popularised so well. With the aid of his intuition he added arrays after arrays to form new DC numbers. He had no explicitly stated objective principles to help him in the enumeration of the divisions in the successive arrays. He went on with the policy of "first come first served" in the piling up of successive arrays. He should have discovered how this led to the freezing of all the facets of a subject except the last one. The difficulties caused by this are well known. And W S Merrill's effort to codify the varying practices followed by the different libraries in choosing between alternative DC numbers for one and the same subject is also well known.

D65 *Work of the Editors of Recent Editions*

The policy of the Editors of the recent editions of DC has been by and large to continue the notational structure established by Dewey. They have largely applied themselves to the task of re-arranging the subjects in the schedule, in such a way that each subordinate subject went with the Main Subject germane to it. In doing this the DC numbers had to be changed in several cases, without caring for the integrity of class numbers.

D66 *Changes in Edition 16*

In Paper N entitled *Change of (BC) in DC edition 16* and published in *Annals of library science*, 8, 1961, Guha and others have counted that 150 subjects were reallocated in Ed 16 to Basic Subjects different from those to which they were attached in Ed 14. It means that in these cases the integrity of the first few digits and of even the very first digit was totally given up.

D67 *Changes in DC Edition 17*

In Paper B entitled *Change of Basic Subjects in DC edition 17* and published in *Library science with a slant to documentation*, 7, 1970, Jayarajan has counted that 140 subjects were reallocated in Ed 17 to Basic Subjects different from those to which they were attached in Ed 16. It means that in these cases also the integrity of the first few digits and of even the very first digit was totally given up.

E J P Immroth: Library of Congress Classification

E1 LIGHT ON THE TANTALISING TERM 'GENERAL SPECIAL'

Immroth says "Phase relations within LC Classification are also fairly well handled although only by the principles of specific enumeration. This certainly can be seen in regard to the bias phase, the influence phase, and the tool phase. All of these may be covered in LC Classification by the often ambiguous heading 'General Special'. This refers to special aspects of a

general subject. This explanation of the enigmatic term 'General Special', often found in LC, is worth noting.

E2 FORM OF PRESENTATION

According to Immroth, in LC "First there are common facets for form of presentation". It is not clear whether the Author wants to say that form of presentation of a subject should go with its Class Number or outside it. Does the form of presentation in any way affect the extension of the subject? If not, it cannot be made to contribute to the Class Number, except in the Main Subject "Literature" where "form is paramount" as Berwick Sayers neatly puts it. The meaning of the term 'Facets' in the phrase "... common facets for form of presentation" is not clear. At any rate, it cannot be the currently accepted meaning of the word 'Facet'. Does the phrase mean "common schedule for forms of presentation?"

E3 CONFUSION BETWEEN "COUNTRY *qua* COUNTRY" AND THE COMMUNITY LIVING IN A COUNTRY

According to Immroth "Often in LC classification, especially in the Social sciences, subject division under country is used instead of country division under subject". Is it not better put by saying that "In some of the Main Subjects in Social sciences, the Fundamental Category "Space" officiates as the Fundamental Category "Personality", and thus takes precedence over divisions relating to other Fundamental Categories". This way of stating the result will not make the position of "Place Facet" to be something anomalous in Social sciences; and it will avoid "raising a man of straw to hang him". Generally speaking, it is found among the librarians of USA the non-recognition of the difference between the denotation of a term such as 'USA' as the "area called by that name", and the "community living in that area". Here is an illustration: In 1958, I was in Chicago. I was asked to speak on Classification before a gathering. Carnovski was in the Chair. At the end of my speech he said "In history of America we have only the Space Facet America!"

E4 CHALLENGE TO FUTURE RESEARCH

According to Immroth "The prospects for LC classification are most hopeful, and its huge vocabulary base and massive enumeration represent a unique challenge to future researchers".

E41 *Huge Vocabulary Base*

LC has unusual advantages — in man-power, financial resources, and in accumulation of documents — to keep the terms

in the Verbal Plane ever uptodate and help in the formation of a standard terminology for each subject field.

E42 SEQUENCE OF SUBJECTS

It is not clear in what sense the "massive enumeration" of subjects in the LC will be a challenge to research workers? Is it that the sequence of enumeration of subjects in LC is so good that it would not be easy for any person to work out a more helpful sequence of the subjects? In another place the Author says, "In considering the order [sequence] of application of characteristics, LC's basic pattern throughout is based upon literary warrant and the material concerned and not on an 'analysis of ideas' . . ." According to one Theory of Library Classification such as the one given in the *Prolegomena to library classification* there are eighteen Principles for the choice of Helpful Sequence among subjects or isolates. Ten of these Principles fall into five pairs each giving an alternative — such as "Bottom-upwards" or "Top-downwards". Omitting these five pairs, there are eight definite principles. These are arranged among themselves in the decreasing sequence of the preference to be given to them. The Principle of Alphabetical Sequence is prescribed as the last resort, to be used only when no Principle stated earlier than it gives a more or at least an equally helpful sequence. The "Principle of Literary Warrant" comes only as the last but one Principle to be used; even in its case it can be used only when none of the Principles stated earlier than it gives a more or at least an equally helpful sequence. This is the result of *a priori* and pragmatic research. Unless this result is proved to be wrong by some further research, the two statements,

1 "... LC's basic pattern throughout is based upon the literary warrant . . ."; and

2 "... its (LC's) . . . massive enumeration represents a unique challenge to future researchers", are not reconcilable.

The Principle of Literary Warrant is that "The subjects in an array of subjects or the isolates in an array of isolates may be arranged in the sequence of the decreasing quantity of the documents published or anticipated to be published on them, except when any other overwhelming consideration rules it out". It is difficult to understand how a helpful arrangement of the subjects contained in documents can be made without any consideration of the "analysis of ideas".

E43 MASSIVENESS OF ENUMERATION

What does the term 'Massive enumeration' mean? Does it mean a very long schedule of compound subjects — differing in their substance and not just in their geographical incidence.

If so, the claim is true, except for the fact that the same result can be obtained with a much shorter schedule-length in a faceted, instead of enumerative, scheme for classification. Further, is not much of the extraordinary length of the LC schedule due to its repeating the country-divisions of a subject under each subject. For example:

1 About 100 country-divisions of "HC National Production" are enumerated from the number HC95 to HC95-695; and

2 About 115 country-divisions of "HJ 4621-4831 Income tax" are enumerated from the number HJ4651 to HJ4831.

Surely, "massive enumeration" could not have been taken to mean this unnecessary lengthening of the schedule made necessary by a ruthless neglect, or is it impossibility, of the use of the Canons for Mnemonics, in fixing the numbers representing different countries.

E5 GUIDING PRINCIPLES

The Paper of Immroth would have been of help to classificationists — that is, designers of classification schemes — if she had enumerated all the Guiding Principles used in the arrangement of subjects in LC.

E6 GAP NOTATION

Immroth does not refer to an important feature of the notational system of LC. Its Class Numbers are integers and not decimal fractions as it happens in most of the other schemes. A decimal fraction notation admits of interpolation between two existing class numbers. It also admits of extrapolation to increase the intension of the class numbers. An integer notation does not allow this. However, LC is not unconscious of the demand for interpolation in array and extrapolation in chain of new subjects thrown forth by the Universe of Subjects from time to time. To meet this situation LC leaves a gap between two consecutively stated Class Numbers—a gap in integers. "What should be the length of the gap" appears to be a matter of guess. The first difficulty in the gap notation is that the same gap has to accommodate both interpolations in array and extrapolations in chain; with the result a mixture of classes of different orders may arise. Secondly, the gap left in the integer notation may sooner or later get choked up. What should be done thereafter for interpolation and extrapolation in that gap?

F GA Lloyd: Universal Decimal Classification

F1 ADAPTABILITY AND EXPECTATION OF LIFE OF UDC

Regarding the expectation of life of UDC Lloyd has the two remarks given in the succeeding sections.

F2 ADAPTABILITY OF UDC

According to Lloyd "Surprising or not, the persistent adaptability of the UDC is likely to manifest itself even more vigorously in the seventies".

If 'adaptability' means the capacity of UDC to provide, by one means or another, an individualising class number to any new subject thrown forth by the Universe of Subjects in the future, I am second to none in accepting this.

F3 EXPECTATION OF LIFE OF UDC

Lloyd says that the adaptability of UDC "may well refute the Rangan-avant-garde contention that the expectation of life of UDC has expired".

When applied to a scheme for classification, the 'Expectation of life' should not be interpreted to mean the number of years after which death is highly probable, if not certain, as in the case of a mortal human being. But in its application to a scheme for classification the term is used in a figurative sense. It denotes merely that,

1 Its capacity to provide for each new subject an individualising class number will get more and more involved — indeed, beyond tolerable limits; and

2 Its capacity to provide for each new subject a class number implementing the demands of the idea plane in regard to its unique position among the already existing subjects may fail.

With regards to capacity 1, the scheme should be provided with rules, far better than the present ones, to avoid the incidence of two or more meanings for one and the same UDC number and of two or more UDC numbers for one and the same subject. It is not easy to maintain capacity 2. The use of hyphenated-divisions and point-zero-divisions, and of coloned-divisions when the other two are not available, will produce a hotch-potch in the arrangement of subjects, defying the sequence demanded by the Idea Plane. When the hotch-potchness in the sequence of subjects increases, it may be easier to retire the scheme and replace it by a new scheme answering the requirements of a dynamic Theory of Classification. It is only in this sense that the "Expectation of Life of UDC" is said to have already expired.

F4 GRIP OF THE DC CORE**F41 UDC and DC Core**

UDC started with the enumerated Schedule of DC as its core. It made provision for adding to a DC number, as and when required, Time and Space facet numbers in the first instance and later on other facets. But the freedom of UDC to make its class

numbers fully expressive and faceted had been obstructed by the packed digits in the numbers of its DC core. No doubt, UDC has been slowly trying to escape from this grip of the DC core. By 1956, the core of UDC had deviated so much from the core of DC that Lorphevre of Belgium had found it necessary to have a concordance giving the DC equivalents of UDC. In spite of this it cannot be said that the UDC had acquired the full freedom required to keep pace with the developments in the Universe of Subjects. To get this freedom it should be able to throw off completely the DC tradition of enumerating compound subjects as core schedule and adopt the policy of having only short schedules of Main Subjects and Basic Subjects and of schedules of all kinds of isolates demanded by compound subjects going with each of the Main and Basic Subjects. If this is achieved by UDC, it would appear as a new scheme. If this conjecture be true the present UDC would stand retired automatically.

F42 *Notational Constriction*

The "adaptability" of UDC becoming vigorous in the future—even in the 1970s—will become a reality only if it can escape from the notational constriction inherited from DC. Then only the versatility of its notational system will enable it to keep pace with the cascade of new subjects which the universe of subjects has begun to throw forth continuously.

F5 PROGRAM FOR THE DEVELOPMENT OF UDC

Lloyd gives an elaborate account of the programs proposed for increasing the "adaptability" of the UDC in the 1970s. He mentions a short-term program and a long-term program.

F51 *Short-Term Program*

The items in the short-term program enumerated by Lloyd consist largely of filling up long-standing gaps in its schedule or giving new numbers or revising the existing schedules for subjects such as: Information sciences, Automation, Solid state physics, Molecular biology, Pathology, Veterinary medicine, Farming, Psychology, Organic chemistry, common auxiliary schedules for Materials, and Persons. But he does not state whether any guiding principles have been laid down to carry out the program in a consistent way. It is doubtful whether a schedule of Common Material Isolates is practicable in view of their great numbers (See Sec C5).

F52 *Long-Term Program*

The items in the long-term program are said to be "major relocations to achieve better balance in the main class structure".

On account of difference of opinion a possible provision of two different versions of UDC for use in library catalogues and in documentation lists respectively is said to be on the anvil.

F53 *The Proverbial Old Knife in the Irish Saying*

Will the result of carrying out all such programs to keep up the "adaptability" of UDC to meet the new needs arising from time to time, still preserve the same old UDC except in the sense of the Irish proverb that the same century old knife had been preserved in spite of all its parts having been changed severally on several occasions, leaving none of the originals in tact either in size or in shape or in relative position?

F6 AGENCY FOR MAINTAINING UDC KEEP PACE WITH THE UNIVERSE OF SUBJECTS

As the agency for continuously adapting UDC, without violent changes, so as to keep pace with the Universe of Subjects, Lloyd's paper mentions only the traditional "score or more UDC special-subject revision committees". In the absence of any information to the contrary, it is presumed that these special committees will consist as usual of specialists and documentalists in different subject fields, without any special training either in the design of schemes for library classification or in the dynamic theory of classification forming the basis for design. In the nature of things, it is the profession of classificationists that should have charge of the improvement and redesigning of UDC and the specialists in the different subject-fields should only serve as consultants. Otherwise, the unevenness and the hotch-potch nature in the arrangement of the schedules will increase more and more, as and when the so-called "adaptability" of UDC is brought into use. To put it in simple language UDC authorities should take up courage to burn the boat as it were, and reconstruct it on the basis of a carefully established dynamic theory of classification. It is gratifying to note that Lloyd had stated in his preface to *Towards a theory for UDC* (1969) by Jean M Perreault that "The title *Towards a theory or UDC* is apt, in that it implies that UDC still lacks a sufficient, consistent body of theory; and indeed this has been recognised by FID/CCC, who have just set up a second subcommittee CCC-F". The statement of this useful fact should have found a place in Lloyd's paper in Maltby's book.

F7 AN ENCOURAGING SIGN AT ELSINORE CONFERENCE

Personally I have some hopes about some useful achievement by the committee FID/CCC-F. I hope that this committee would not be deterred from going the whole hog lest the result should cease to be anything with any resemblance to UDC. As

far back as 1950 La Maistre, the President, and Donker Duyvis, the Secretary-General of FID, attempted to achieve this purpose by the appointment of the Committee FID/CA (Committee on General Theory of Classification) with me as Convener. I have sent reports on the subject for twelve years. Perhaps, the time was then rather premature. An evidence of the allergy to develop a theory of classification is the remark made by the Director of the Aslib about 17 years ago that all my theory was Theory only for CC! However, two international conferences were held on the subject — at Dorking near London in 1957, and at Elsinore in Denmark in 1964. An appreciable number of specialists in diverse disciplines attended the Elsinore Conference. This was encouraging.

F8 EVIDENCE FROM THE CONFERENCE IN YUGOSLAVIA IN 1971

In June-July 1971, an international conference on "UDC in relation to other indexing languages" under the umbrella of FID was held in Yugoslavia. A Neelameghan represented India in that Conference. He has reported about the favourable attitude of the Conference towards the desirability of UDC basing itself on a dynamic theory of classification. To quote Neelameghan "From the panel discussion and general discussions that followed the presentation of the papers, and also the discussions outside the conference, there appeared to be some concensus among the participants on the following points:

- 1 UDC in its present form may not adequately serve as an efficient universal classification system;

- 2 The present methodology, periodicity and organisation for revising UDC are not adequate;

- 3 The design and development of UDC should be based on a sound general theory of library classification. For this purpose, the available general theory of library classification should be carefully studied; and

- 4 The preparation of a manual, giving in summary the basic theory of library classification and detailed guiding principles and steps for designing a depth version of UDC for compound subjects going with a particular Basic Subject so as to meet the needs of documentation, would be helpful."

G BC Vickery: Classificatory Principles in Natural Language Indexing Systems

G1 SETTING THE STAGE FOR THE PAPER

Vickery sets the stage for his Paper with the following two contradictory and provocative statements:

- 1 "The justification for alphabetical sequence in information retrieval was trenchantly stated by John Metcalfe in a

superbly polemical, though often strong-headed book: 'All indexing depends directly or indirectly on alphabetical order, because whatever numbers, notation., symbols or codings it goes on to, it must begin with names written with the letters called the alphabet . . . Only known names in a known order, with direct entry under them as in alphabetical catalogues, or with references to another known order as in the classified catalogue, or to the codings of mechanical selection, will indicate information . . . Alphabetical order is the world's most important precision tool, because it is the most important device in indexing, and only familiarity has bred the stupid contempt with which it has been treated by so many supposed authorities on indexing'.

2 "Let us look at another passage, this time from S R Ranganathan: 'Classification means division into groups based on likeness, and arrangement of things in a more or less helpful sequence is an inherent habit of man. Such an arrangement is a neural necessity. It is instinctive, almost biochemical in nature, and involuntary . . . The complexity of the universe of things and of ideas exceeds the capacity of involuntary classification. Deliberate classification becomes necessary . . . Sharpness in thinking, clarity in expression, expedition in response, and exactness in communication depend ultimately on the deliberate exercise of the innate power of classification.'

G2 AN UNINTELLIGIBLE STATEMENT ABOUT "SEQUENCING"

According to Vickery "Classification involves one or both of two operations,

"(a) Grouping and division" [Is grouping first or division first?]

"(b) Sequencing".

"Either the first or the second operation is essential [in classifying]. . . . If either is used, the other is optional: entities may be sequenced without groupnig, and grouped entities may be arranged in a sequence not related to meaning".

It is difficult to understand these statements.

G3 CLASSIFICATORY PRINCIPLES AND SUBJECT HEADING

According to Vickery's paper a dictionary catalogue serves the purpose of classification if propped up by:

- 1 Inversion of headings;
- 2 Provision of sub-headings; and
- 3 Cross references.

In a Conference on Bibliographic Organisation held in Chicago in 1950, a member said that a dictionary catalogue with props such as those mentioned above contained a "hidden classification". This provoked me to say that it was like describing, a "hidden

horse", a picture with the face, the tail, each of the legs, and the other parts of the body of a horse scattered at random — a well-known saying by Tennali Raman, a king's jester. Behind the prop is the problem of the choice of the first heading, and of the successive sub-headings, if any, under which a document should be listed. It is here that there is a chance for subject headings being related to classificatory principles.

G4 CHOICE OF SUBJECT HEADING: CUTTER

Charles Ammi Cutter, the author of the classic *Rules for a dictionary catalogue*, had made a masterly analysis in the problem of the choice of the entry word in a subject heading. In his paper Vickery reproduces the essential prescriptions of Cutter. Cutter does not relate his prescriptions to any classificatory principles, on the other hand, he had only stated that if there were a good scheme for classification he would have written Rules for a classified catalogue rather than Rules for a dictionary catalogue.

G5 CHOICE OF SUBJECT HEADING: COATES

In his *British technology index* Coates uses subject headings as arrived at in the course of classifying a document according to the Postulational procedure prescribed for practical classification in my *Prolegomena to library classification*, Ed 3, 1967. In this procedure, while the class number is arrived at only in Step 8, the subject heading is arrived at even in Step 6. This brings out clearly the relation between subject heading and classificatory principles. To explain this simple fact Vickery takes nearly two pages of his paper.

G6 SUBJECT HEADING AND THESAURUS

Fourteen pages out of twenty-three pages of the paper of Vickery is turned on Thesaurus. Thesaurus becomes a necessary aid in the choice of a word for the first heading or any sub-heading of a subject heading, because names of subjects have not yet been standardised for many subject-fields. Therefore whatever term is used for the heading, it turns out that it has been chosen arbitrarily. The thesaurus-technique is used to enable any reader who is thinking of some term to denote the subject to get at the term actually used in the subject heading. The terms given in the list against a particular term in the Thesaurus are bound to have filiiary or classificatory relation to that term.

G7 TRUNCATION

Vickery's paper refers to the idea of "Truncation" contributed by the "computer search of word indexes". What Truncation does is illustrated in the paper by thirteen examples.

from which the following five are taken:

<i>Cell</i>	<i>Hermicellulose</i>
<i>Cellular</i>	<i>Concellation</i>
<i>Celluloid</i>	

The word 'cell' is the "truncated" element which the computer is asked to pick up with all its adjuncts preceding or succeeding it. According to Vickery Truncation produces "a meaningful group" of headings with the least noise. It is difficult to see how "a meaningful group" is produced? This should have been explained.

**H D Austin : Trends Towards a Compatible General System
H1 CRG SCHEME: THE FUTURE ANALYTICO-SYNTHETIC SCHEME**

This paper singles out DRTC and CRG as two institutions engaged in research in classification theory. This paper appears to be anxious to emphasise that the CRG is proceeding on its own steam and along its own rails quite independent of the work of DRTC. It is further claimed that the "future developments [based on the analytico-synthetic classification developed by Ranganathan] are likely to be along the lines indicated by the CRG rather than those used in CC". I wish every success to the original developments being made by the CRG.

H2 DRTC AND THEORY OF CLASSIFICATION

Austin's paper raises the doubt that in DRTC, "the emphasis appears to be more on developing the Colon Classification than on fundamental research". This is exactly what the Director of Aslib said about 17 years ago. This makes me doubt whether the author of this paper has read at all with some care the papers on the Theory of Classification produced by the DRTC. Or, if he had read them whether he failed to see that CC comes in at all only for illustration. Or is it that the CRG's development of its new scheme is at any point contrary to the theory developed in the DRTC. But, it may be stated that every new idea in the Theory of Classification hit upon by DRTC is "tested immediately" against the stream of documents in all subjects—especially micro documents (papers in periodicals) "which continuously passes through" the hands of the workers in the DRTC, even as it is said to be done by the CRG. "Comparisons are odeous," somebody said. I wonder why one of the only two institutions engaged in research in classification theory should undervalue the work of the other on grounds more imaginary than real. My mind goes back to the day in 1948 when Douglas Foskett, Bernard Palmer, Jack Wells, and myself spent a whole Sunday in the Chaucer House in studying the properties of a Faceted Scheme for classification. Between then and 1952, the

year of foundation of CRG, in each of my visits to London, the slightly enlarged group of the British Librarians interested in the study of Faceted classification and myself used to meet for exchange of ideas. I was therefore happy to learn about the foundation of CRG. The CRG also has been kind enough to send me copies of the Minutes of all its Meetings. I always read them with great care. But, even when I feel that certain decisions were along unhelpful and unproductive lines, I do not write to CRG about it. The reason is that any research group should have the freedom even to go along wrong lines and by themselves discover the mistakes. There are instances where they had withdrawn from one or other lines which I thought to be unhelpful. In my own case I have done this occasionally. But, I have not found this to be a loss for I have generally gained some valuable experience in this process. The only occasion when I had to write was when Fairthorne, according to the Minutes, had made a statement with which I could not agree. He promptly replied that he had been wrongly reported in the Minutes.

H3 THEORY OF INTEGRATIVE LEVELS

Austin makes prominent mention of the theory of integrative levels as a contribution of the CRG. But to what extent and to what depth this concept permeates the construction of the schedules is not at all clear, in order to justify the claim for it. I have myself used this concept only in explaining the march of main subjects in the schedule of CC. There have been a few isolated cases where it looked as if the phenomenon occurred. But, such examples are very few as we go into the higher order of array.

J Robert R Freeman: Classification in Computer-based Information Systems of the 1970's

I have little practical experience with computer retrieval of information. However, I had only examined the subject from a theoretical angle and the result of this has been reported in my papers

1 *Doc-finder* (Lib sc. 5; 1968; Paper N); and

2 *Classification and computer*

(Annual seminar, DRTC (4) (1967); Paper BC).

The students of DRTC are given a course on mechanized information retrieval using CC as an illustration, with demonstration. They are also made to do some programming work. Further, DRTC has succeeded in some experiments in the use of CC in computer-retrieval. Freeman has noticed this work in his article.