

Lib sc. 3: 1966; Paper K.

**GEOGRAPHICAL SCHEDULE IN CC, UDC, AND DC.**  
(Classification problems. 18).

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Brings out the essential changes made in the Geographical Schedule of the forthcoming Ed 7 of CC, as a result of the Postulation of Emptying Digit which enables better conformity to the Principle of Geographical Contiguity and removes faulty suggestions implied in the Notational Plane in regard to the sovereign status of some countries. Traces the progress of ideas from Ed 1 to Ed 7 of CC. Makes a comparative study of CC, UDC, and DC in respect of the above points, the use of non-favoured first characteristics, and physiographical features and population clusters as second level of Space. Shows the accommodation of this level in CC to be due to the release of the entire Array of Order 1 in the Notational Plane and this in its turn was made possible by the use of a single Inverted Comma (') as a distinctive Connecting Digit for Time Isolate.

*Abbreviations Used*

(A1)	= Array of Order 1	DC	= Decimal Classification
(A2)	= Array of Order 2	Ed	= Edition (s)
(A3)	= Array of Order 3	(IN)	= Isolate Number (s)
(A4)	= Array of Order 4	N	= Number
(AD)	= Alphabetical Device	(SD)	= Subject Device
(AIN)	= Array Isolate Number (s)		
CC	= Colon Classification	UDC	= Universal Decimal Classification
(CD)	= Chronological Device		

## 1 RELEVANT CHARACTERISTICS FOR DIVISION OF SPACE

## 11 Divisions of the World

UDC as well as CC has used more than one first characteristic as relevant for the first order division of the world. Further, both use Continent *cum* Ocean as the favoured first characteristic. To find the basis of literary warrant for these, the books listed in the *British national bibliography* (1965) were taken as a random sample and a count was made. The geographical divisions have been used for an

1 Isolate in a Personality Facet in a subject going with a Basic Class such as, History and Law;

2 Isolate in an Individualising Facet in a subject going with the Main Class Fine Arts, and in certain Anteriorising Common Isolates such as Periodical and Serial;

3 Array Isolate in some subjects going with a Class, such as, Religion, Linguistics, and Sociology; and

4 Space *qua* Space Isolate.

110 TABLE 1. FREQUENCY DISTRIBUTION OF FIRST CHARACTERISTICS FOR THE DIVISION OF WORLD

S N	Isolate	Frequency in	
		Number	Percentage
1	2	3	4
1	Total	6,800	100.0
2	World as a whole <i>Divisions of World</i>	123	1.8
3	Continent <i>cum</i> Ocean	6,405	94.2
4	Near-Sovereign formation	150	2.2
5	Empire formation	49	0.7
6	Subject formation	40	0.6
7	Orientation	14	0.2
8	Sea-Surrounded area	11	0.2
9	Climatic zone	8	0.1

The above table clearly shows that the Continent *cum* Ocean characteristic has got the highest literary warrant—as much as 94 per cent. This accounts for practically all the schemes for classification choosing Continent *cum* Ocean as the Favoured First Characteristic for the division of World.

## 12 Division of a Continent

Even as the "World", Continent too can be divided on the basis of more than one relevant characteristic.

120 TABLE 2. FREQUENCY DISTRIBUTION OF FIRST CHARACTERISTICS FOR THE DIVISION OF CONTINENT

S N	Isolate	Frequency in	
		Number	Percentage
1	2	3	4
1	Total for Continent <i>cum</i> Ocean	6,405	100.0
2	Continent as a whole	483	6.3
3	Island in Ocean	8	0.1
4	Ocean	24	0.4
	<i>Division of Continent</i>		
5	Sovereign country	5,840	91.2
6	Orientation	98	1.5
7	Subject formation	17	0.3
8	Near-Sovereign formation	15	0.2
9	Climatic zone	—	—
10	Sea-surrounded area	—	—
11	Empire formation	—	—

The above table clearly shows that the characteristic "Sovereign Country" has got the highest literary warrant—as much as 91 per cent. This accounts for practically all the schemes for classification choosing "Sovereign Country" as the Favoured Second Characteristic in succession to the Favoured First Characteristic "Continent *cum* Ocean".

## 13 Division of a Sovereign Country

Divisions of a Sovereign Country too can be derived on the basis of more than one relevant characteristic.

130 TABLE 3. FREQUENCY DISTRIBUTION OF FIRST CHARACTERISTICS FOR THE DIVISION OF SOVEREIGN COUNTRY

S N	Isolate	Frequency in	
		Number	Percentage
1	2	3	4
1	Total for Sovereign Country Characteristic	5,840	100.0
2	Sovereign Country as a whole <i>Division of a Sovereign Country</i>	3,300	56.6
3	Constituent State or Administrative Division	2,515	43.0
4	Orientation	25	0.4
5	Subject formation	—	—
6	Empire formation	—	—
7	Sea-surrounded area	—	—
8	Climatic zone	—	—

Table 3 clearly shows that the characteristic "Constituent State or Administrative Division", as the case may be, has got the highest literary warrant (barring the Sovereign countries as a whole) — as much as 43 per cent. This accounts for practically all the schemes for classification choosing "Constituent State" or "Administrative Division" as the Favoured Third Characteristic in succession to the Favoured Second Characteristic "Sovereign Country".

## 14 Divisions of a Constituent State

Similarly it can be established that among the several relevant characteristics available for the division of a Constituent State, the characteristic "District or County" is taken as the Favoured

Fourth Characteristic in succession to the Favoured Third Characteristic "Constituent State or Administrative Division".

### 15 Arrangement of Geographical Divisions

Principle of Geographical Contiguity is the Principle *par excellence* for the arrangement of geographical divisions based on each of the successive favoured first characteristics. It reads as follows:

"If the classes of an array occur contiguously in Space, they may be arranged in the parallel spatial sequence" [11].

In addition to this Principle the following principles are used for the purpose of direction and arrangement.

1 Principle of Clockwise Direction or Principle of Anti-Clockwise Direction, according to the context, for geographical divisions lying within a near circle, such as China, Germany, and USA.

2 Principle of Bottom-Upwards (= South to North) or Principle of Top-Downwards (= North to South), according to the context, for sets of geographical divisions lying roughly one set above or below another, such as in Japan, Italy, and United Kingdom.

21 The direction in two consecutive sets should be opposite.

3 Principle of Left-to-Right (= West to East) or Principle of Right-to-Left (= East to West), according to context, for sets of geographical divisions lying roughly one set to the right or left of another along a direction deviating considerably from the vertical direction such as in West-Pakistan.

31 The direction in two consecutive sets should be opposite.

### 2 ARRAY OF ORDER 1 IN THE NOTATIONAL PLANE

The following table gives the list of geographical isolates in (A1) in Notational Plane in CC (Ed 6 and Ed 7), UDC (Ed 3), and DC (Ed 17), with their corresponding (AIN).

20 Table 4. SCHEDULE OF GEOGRAPHICAL ISOLATES BASED ON CONTINENT *CHIH* OCEAN

CC Ed 7 (1968)		CC Ed 6 (1960)		UDC Ed 3 (1961)		DC Ed 17 (1965)	
(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term
1	2	3	4	5	6	7	8
1	World	1	World	1	Places in general	1	Regions (not limited by continent, country, locality)
	<i>By Special Areas</i>	2	Mother country	100	Universality of place: 166		Oceans (as Physio-graphical divisions)
2	Mother country	3	Favoured country	26	World, International		Oceans (as Physio-graphical divisions)
3	Favoured country	4	Asia	261/264	Oceans (as Physio-graphic divisions)	1661	Atlantic
4aaz	<i>By Continents</i>	5	Europe	265/266	Atlantic	1665	Pacific
4	Asia	6	Africa	267	Pacific	1667	Indian
5	Europe	7	America	268	Indian	1669	Antarctic
6	Africa	8	Australia	269	Arctic	3	The Ancient World
7	America	93	Land within	3	Antarctic	4	Europe
			Pacific Ocean		Ancient World	5	Asia
8	Australia	947	Land within	4	Europe	6	Africa
			Arctic Ocean				

CC Ed 7 (1968)		CC Ed 6 (1960)		UDC Ed 3 (1961)		DC Ed 17 (1965)	
(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term
1	2	3	4	5	6	7	8
91aaz	<i>By Islands in Ocean</i>	95	Indian Ocean	5	Asia	7	North America
91	Indian Ocean	96	Atlantic Ocean	6	Africa	8	South America
92	Atlantic Ocean	97	Pacific Ocean	7	North America	91	Malay Archipelago
93	Pacific Ocean	983	Antarctic Ocean	8	South America	92	Sunda Islands
943	Antarctic Ocean	987	Arctic Ocean	9	Oceania	93	New Zealand and Malanesia
947	Arctic Ocean			91	Malay Archipelago	94	Australit
95aaz	<i>By Oceans</i>			92	Sunda Islands	95	New Guinea
95	Indian Ocean			93	Australia	96	Other parts of Pacific
96	Atlantic Ocean			94	Australia	97	Atlantic Ocean Islands
97	Pacific Ocean			95	New Guinea	98	Arctic Islands
98aaz	<i>By Polar Oceans</i>			96	Polynesia and Micronesia	99	Antarctica
983	Antarctic Ocean			97	Scattered Islands		
987	Arctic Ocean			98	Arctic Region		
				99	Antarctic Regions		

## Notes on Table 4.

*Note 1.*—The digits 2 and 3 are used for special purposes in different ways in all the three schemes. These two (IN) will not be considered along with the other isolates of (A1) in Sec 21 to 23.

*Note 2.*—The (IN) 4 to 98 are allocated to Isolate Ideas derived on the basis of different co-ordinate favoured characteristics. In CC, they are three — viz. Continent, Island in Ocean, and Ocean. In UDC and DC, they are only two — viz. Continent and Island in Ocean.

## 21 Telescoping of (A2) and (A1) of Idea Plane in CC

As seen from columns 1 and 3 of Table 4 in Sec 20, in CC, the digits 1, 2, ... 8, 91, 92 ... 98, are generally taken as favoured digits. These form the sectors (S - 1) and (S - 91). These favoured digits are used to represent the isolates derived from "1 World" on the basis of the favoured first characteristic. As already stated in Sec 1, the (A1) in the Idea Plane consists of only one isolate — the World. In CC, World is represented by the digit 1. The digits 2 and 3 are excluded (See Notes 1 and 2). Thus, the remaining favoured digits 4 to 8 in Sector (S - 1), and 91 to 98 in Sector (S - 91) of (A1) are fallow. Therefore, CC uses them to represent the geographical isolates of (A2), as viewed from the Idea Plane. In other words, (A1) and (A2) of Idea Plane stand telescoped in (A1) of Notational Plane.

22 Telescoping of (A2) and (A1) of Idea Plane in UDC and DC  
A similar telescoping occurs in UDC and DC.

## 23 Difference between CC and UDC

In CC, the six continents have been accommodated between the five (AIN) 4 to 8 by taking North America and South America as one continent. On the other hand UDC and DC have taken them as two separate continents; with the result Australia cannot be found a number in Sector (S - 1). It is represented by the (IN) 94. Here, it is enumerated as one of the Islands of the Pacific Ocean in spite of the term 'Island' denoting "a land mass lying inside an ocean, but not as big as a continent" [18]. Perhaps, in accommodating the six continents among five (IN), CC's



method of clubbing North America and South America into a single continent is better than the UDC's method of treating the continent Australia as an Island.

#### 24 Difference between CC and DC

The difference between CC and DC in the representation of continents is same as that between CC and UDC.

#### 25 Use of Sector (S - 91)

In CC, the eight (1N), 91, 92... 98 in Sector (S - 91) are shared equally by two co-ordinate favoured characteristics — Island in Ocean, and Ocean. Thus the isolates derived on the basis of these characteristics are made isolates of Order I of "World".

But UDC and DC use all the eight digits in Sector (S - 91) to represent Islands in Ocean leaving no place within that Sector for Oceans *quo* Oceans. UDC accommodates them as (A3) in "Physiographical Division" represented by 26. Similarly, DC accommodates them as (A4) in "Physiographical Divisions" represented by 166. Instead of this, UDC and DC could have accommodated the "Oceans" in the Sector (S - 991) as isolates of Order I of World. But the advantage of Sector Notation is new to them and therefore they have not taken the full advantage of it. This failure has driven UDC and DC to the necessity of clubbing the vast areas of oceans — vaster than continents — with well, river, waterfall, canal, and lake.

#### 26 Use of the Digit "2" in CC

In CC, the digit "2" is used to represent Mother Country of the library. Because, it is likely that a library gets a much greater number of books on its Mother Country and its subdivisions than on any other country. In the schedules, the (1N) of any country will have at least two digits. Because, the first digit will be used to represent its continent. This is to satisfy the Law of Parsimony. Incidentally, this gives precedence in arrangement for books on the "Mother Country". This provides a helpful conformity to the Canon of Local Variation [15].

## 27 Use of Digit "2" in UDC

In UDC, the digit "2" is used to represent "Physiographic Designation" such as, Atmospheric Features, Zone, Island, Mountain, River, Waterfall, Lake, Pond, etc. This makes the physiographic features co-ordinate with continents. This is not a happy solution. Perhaps, it is better to treat these physiographic features as a level of the fundamental category Space as CC does.

## 28 Use of the Digit "2" in DC

In DC, the digit "2" is used to represent biographies of "Persons".

## 291 USE OF DIGIT "3" IN CC

In CC, the digit "3" represents "Favoured Country". Here, the term "Favoured Country" denotes the country about which the library has much larger collection than about other countries except Mother Country.

## 292 USE OF DIGIT "3" IN UDC AND DC

In UDC and DC, the digit "3" is used to represent "Ancient World" such as, Ancient China, Ancient India, Ancient Greece, etc.

## 3 ARRAY OF ORDER 2 IN THE NOTATIONAL PLANE

The isolates in (A2) in the Notational Plane corresponding to each continent are derived on the basis of "Sovereign Country" as the first favoured characteristic. In sub-sections of this section, the method of arriving at a helpful sequence of the sovereign countries — geographical isolates in (A2) — is discussed. For definiteness but without loss of generality, the sequence of the sovereign countries of Asia is taken as example. The schedule is given in Table 5 given in the next two pages.

## 31 Violation of Geographical Contiguity in Edition 6 of CC

In Ed 6 of CC and in the earlier editions there are two clockwise cycles in the sequence of the countries (See columns 3

30 Table 5. SCHEDULE OF GEOGRAPHICAL ISOLATES BASED ON SOVEREIGN COUNTRY

CC Ed 7 (1968)		CC Ed 6 (1960)		UDC Ed 3 (1961)		DC Ed 17 (1965)	
(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term
1	2	3	4	5	6	7	8
4	Asia	4	Asia	5	Asia	5	Asia
41	China	41	China	51	China etc	51	China etc
41T	Manchuria	42	Japan	510	China	515	Tibet
41U	Korea	431	Indo-China	515	Tibet	516	Sinkiang
41U1	South Korea	4311	Annam	516	Sinkiang	517	Mongolia
41U3	North Korea	4312	Laos	517	Mongolia	518	Manchuria
41V	Formosa	4313	Vietnam	518	Manchuria	519	Korea
41W1	Tibet	4315	Tongking	519	Korea	519 3	North Korea
41W2	Sinkiang	433	Thailand	52	Japan etc	519 5	South Korea
41X	Mongolia	435	Malay States	520	Japan	52	Japan
42	Japan	43591	Singapore	52 3	Kyuku Island	53	Arabian Peninsula
43	Indo-China	436	Indonesia	529	Formosa	533	South-western Coast
43U1	Vietnam	437	Burma	53	Arabia	533 2	Yemen
43U2	South Vietnam	44	India	532	Saudi Arabia	533 5	Aden
43U3	North Vietnam	44971	Bhutan	533	Yemen		
43U5	Cambodia	44973	Sikkim	534	Aden and Hudhramaut	535	Oman

V	3	43U7	Laos	44974	Nepal	535	Muscat and Oman	536	Persian Gulf Region
Z	43V	Thailand	4498	Ceylon	536	El has, Qatar	536 3	Qatar	
2:	43W1	Philippines	44Q7	Pakistan	5365	Bahrain Islands	536 5	Bahrain	
	43W2	Indonesia	45	Persia	5368	Kuwait	536 7	Kuwait	
	43W4	Malaysia	46	Arabian Peninsula	54	Indo-Pakistan	538	Saudi Arabia	
	43W6	Singapore	461	Arabia	540	Sub-continent	54	South Asia	
	43X	Burma	462	Oman	541-31	India	541 9	Bhutan	
	44aaz	<i>Indian Peninsula</i>	464	Aden	(Independent)	(Independent)			
	44	India	645	Palestine	541-33	Sikkim	542 6	Nepal	
	44T	Nepal	4651	Jordan	541-35	Nepal (Independent)	542 7	Sikkim	
	44U1	Sikkim	4653	Israel	548-7	Ceylon	549	Pakistan	
	44U2	Bhutan	4655	Lebanon	548-82	Maldives	55	Iran	
	44V	Ceylon	466	Syria	548-83	Laccadives	56	Middle East	
	44W1	Maldivo Islands	467	Iraq	549	Pakistan	561	Asia Minor	
	44X	Pakistan	47	Asia Minor	55	Iran	564 5	Cyprus	
	44Y1	Afghanistan	48	Siberia	56	South-West Asia	566 7	Kurdistan	
	45	Iran	491	Afghanistan	560	Turkey	567	Iraq	
	46	Arabian Peninsula	494	Manchuria	564-3	Cyprus	569 1	Syria	
	46U1	Iraq	495	Korea	566	Kurdistan	569 2	Lebanon	
	46UN	Neutral Zone	496	Mongolia	567	Iraq	569 4	Israel	
	46UR	Kuwait	497	Sinkiang	569-1	Syria	569 5	Jordan	
	46V	Saudi Arabia	498	Tibet	569-3	Lebanon	57	Asiatic Russia	
	46W1	Yemen			569-4	Israel	581	Afghanistan	
	46W2	South Arabia			569-5	Jordan	59	South-east Asia	

CC Ed 7 (1968)		CC Ed 6 (1960)		UDC Ed 3 (1961)		DC Ed 17 (1965)	
(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term
1	2	3	4	5	6	7	8
46X 47 47T 47U1 47U2 47U5 47V 47W1 47X	Muscat and Oman Palestine Jordan Israel Lebanon Syria Turkey (Asia) Cyprus Russia (Asia)			57 58 581 59 591	Asiatic USSR Central Asia Afghanistan South East Asia Burma	591 593 594 595 596	Burma Thailand Laos Malaysia Cambodia Vietnam
				593 595 596 597 597.3 597.7 598	Thailand Malaya Cambodia Vietnam South Vietnam North Vietnam Laos		

and 4 of Table 5 in Sec 30). The first cycle begins with China and ends with Russia (in Asia). The second cycle begins with Afghanistan and ends with Tibet. Within each cycle the Principle of Geographical Contiguity is followed. But between the countries in the first cycle and those in second cycle, this Principle is violated. For example, consider Afghanistan in the second cycle with Iran in the first cycle. They are geographically contiguous. But in the schedule of Ed 6 of CC and of the earlier editions, the neighbours of "491 Afghanistan" are "48 Siberia" and "492 Manchuria". The neighbours of "45 Iran" are "44Q7 Pakistan" and "46 Arabian Peninsula". In fact, Afghanistan is separated from Iran by eleven sovereign countries. This anomaly had to be tolerated by the Idea Plane, on account of the limitation in the capacity of the Notational Plane. According to Ranganathan, the following were the reasons:

1 The number of sovereign countries of Asia is more than eight;

2 Only Indo-Arabic numerals could be used for geographical schedule;

3 There are only eight semantically rich single digitated Indo-Arabic numerals;

4 To satisfy the Law of Parsimony, one-digitated (IN) in the sector (S - 1) had to be reserved for the countries with great literary warrant; and

5 The two-digitated (IN) in sector (S - 91) had to be given only to the countries with relatively small literary warrant.

### 32 Restoration of Geographical Contiguity in Ed 7 of CC

In Ed 7 of CC, the above mentioned anomaly has been removed (See Columns 1 and 2 of Table 5 in Sec 30). All the sovereign countries of Asia are covered in one clockwise cycle. The Principle of Geographical Contiguity is followed in respect of all the sovereign countries, irrespective of their literary warrant. This has been made possible by the increase in the versatility in the notational system of CC. This increase has been due to

making the digits T, V, and X "Emptying Digits" and digits U, W, Y "Both Empty and Emptying Digits" [8].

### 33 Increase in the Number of Digits in Ed 7 of CC

The essence of use of the digits T to Y is "Interpolation". Among the sovereign countries with relatively poor literary warrant between two sovereign countries with relatively great literary warrant, the former can be given an (IN) of 3 digits with the help of the three emptying digits—T, V, and X. In the case of most of them the number of digits in the (IN) is the same in Ed 6 as well as Ed 7; but if the number of sovereign countries to be interpolated between two sovereign countries exceeds three, the (IN) of each of them will have to get four digits. This can be seen by comparing the (IN) of "44T Nepal" with the (IN) of "44Y1 Afghanistan" in columns 1 and 3 in Table 5.

### 34 Faulty Suggestion Removed in Ed 7 of CC

In Ed 6 of CC, the countries surrounding "44 India" and falling within the Indian Peninsula — Bhutan, Sikkim, Nepal, Ceylon, and Pakistan were represented by (IN) 44971, 44972, 44974, 4498, and 44Q7 respectively. These (IN) implied a faulty suggestion that the sovereign countries represented by them were parts of the sovereign country India. This violated the Canon of Reticence. In spite of it, the Idea Plane was unable to have this set right. This was due to the limitations of the Notational Plane. In Ed 7 of CC, this faulty suggestion has been removed with the help of the concept of Emptying Digit. The (IN) 44 is used to represent only "India". Each one of the sovereign countries surrounding India gets an independent (IN), co-ordinate with that of India. Thus, for example, the (IN) for Nepal is 44T. The digit "T" empties the second digit "4" of its semantic value. Thus, in 44T, 44 does not represent India. The first "4", however, continues to represent "Asia". It is only the whole number 44T that represents Nepal. Thus, in the (IN) 44T there is no faulty suggestion implying that Nepal is a part of the sovereign country India.

## 35 Violation of Geographical Contiguity in UDC and DC

The sequence "52 Japan" and "53 Arabia" in UDC and DC totally violates the Principle of Geographical Contiguity. It is difficult to see the principle on which the above sequence could have been preferred. The sequence appears to be a random one.

## 36 Violation of Law of Parsimony in UDC and DC

In UDC and DC the sovereign countries with great literary warrant such as, China, Japan, and India, are given three digitized (1N). This violates the Law of Parsimony. This is due to notational exigency. This could have been avoided if the sector (S - 991) had also been brought into use even as sector (S - 91) had been used, and the countries had been distributed in the three sectors in the measure of their literary warrant.

Further, on account of the exigencies of notation, UDC and DC are obliged to spread the isolates belonging to the (A3) as viewed from the Idea Plane among the (A2) and the (A3) and even further as viewed from the Notational Plane. This can be seen in columns 5, 6, 7, and 8 of Table 5 in Sec 30.

## 37 Dilemma

UDC and DC have secured geographical contiguity for the countries clustering round certain other countries such as, China, Japan, and India respectively. But the geographical contiguity has been ignored in the sequence of the focal countries of the clusters. Ed 6 of CC as well as UDC and DC have been made to face a dilemma as a result of the limitation of the same kind in the capacity of the Notational Plane (*See* Sec 31). Ed 6 of CC gets over the dilemma by upholding the Principle of Geographical Contiguity in respect of the countries with great literary warrant in order to respect the Law of Parsimony. UDC and DC have got over the dilemma by upholding the Principle of Geographical Contiguity within clusters of countries. A method of bypassing the dilemma with the help of Emptying Digits has been adopted in Ed 7 of CC (*See* Sec 32).



## 38 Faulty Suggestion in UDC and DC

In UDC and DC, meeting the dilemma through cluster idea, takes the countries to the (A3) in the Notational Plane. As a result, the constituent States of a country are taken to (A4) in the Notational Plane. But some sovereign countries are interpolated among the constituent States and territories of India as shown below:

541.2 Bengal	548.4 Andhra Pradesh (for-
541.31 Bhutan (Independent)	merly Hyderabad)
541.32 Sikkim (Independent)	548.7 Ceylon (Singala)
541.33 Nepal (Independent)	548.82 Maldiva Islands
541.4 Bihar	548.83 Laccadive Islands

The faulty suggestion of the Notational Plane is sought to be removed by the insertion of the term "Independent". A neater solution has been found by Ed 7 of CC.

## 391 INDIA IN DC

In Ed 17 of DC, there is no (IN) to represent the sovereign country "India" as a whole. In Ed 16 of DC, it was represented by 54.04. Edition 17 of DC (1965) could have followed at least Ed 3 of UDC (1961) — that is, represent "India" by 540. Perhaps this has been avoided because "0" is used as Connecting Digit for common isolates. Even then (IN) 541 could have represented "India" as a whole, thereafter the constituent States of India could have been represented by sharing the (IN) 542 to 548. This would have only meant telescoping (A4) into (A3) in the Notational Plane.

## 392 FALSE SUGGESTION IN DC

The Edition 17 of DC has the following:

545 Punjab Region of India	549.1 West Pakistan
546 Jammu and Kashmir	549.13 Kashmir
Kashmir is claimed by both India and Pakistan	Claimed by both Paki- stan and India

If preferred, class	(Optional: prefer area
Kashmir in area 549.13	546).

This is a violation of the Canon of Reticence. It is wrong for a classificationist to express his private wish or opinion in a schedule of classification. It is wrong to the highest degree to express wish or opinion contrary to the fact in political factors.

#### 4 DIVISION OF LARGE COUNTRY

In the case of a large country such as China, India, USA, and USSR, the isolates in (A3) in the Notational Plane are derived on the basis of "Constituent State" as characteristic. In the sub-sections of this section, the method of arriving at a helpful sequence among the constituent States is discussed. For definiteness, but without loss of generality, India is taken as example. Table 6 given in the next two pages gives the schedule of its constituent States.

##### 41 Regional Isolate in CC

In Ed 6 of CC, it can be seen from columns 3 and 4 of Table 6 in Sec 40 that regional isolates have been provided with (IN).

Example: 441 Southern States (= Southern Region).

It can be seen from the Table 11 in Sec 630 that Southern Region can also be represented by the (IN) 449G. Thus, a homonym will be created. This fault has been removed in Ed 7 of CC by the omission of isolates such as "441 Southern States". The question may arise why not rule out 449G in this case. For reasons of rigidity it is more helpful to rule out 441 than 449G. For administrative purposes, the constituent States will have to be and are being grouped into regions by orientation. But administrative exigencies will vary the contents of each region from time to time. Therefore, representing the regions by regional (IN) such as, "449G Southern Region", without defining its content, is helpful. But the (IN) 441 for Southern Region given in Ed 6 with the enumeration of the constituent States falling within

Table 6. - SCHEDULE OF CONSTITUENT STATES OF INDIA

CC Ed 7 (1968)		CC Ed 6 (1960)		UDC Ed 3 (1961)		DC Ed 17 (1965)	
(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term	(IN)	Isolate Term
1	2	3	4	5	6	7	8
44	India	44	India	540	India	541-548	India
4411	Madras	441	Southern States	541	Eastern India	541	North eastern India
4411T	Pondicherry	4411	Madras	541-1	Assam	541 2	Bihar
4412	Kerala	4412	Kerala	541-2	Bengal (West)	541 3	Orissa
4412V	Laccadives	4413	Mysore	541-4	Bihar	541 4	West Bengal
4413	Mysore	4416	Andhra Pradesh	541-5	Orissa	541 5	Tripura
4413V	Goa	443	Western States	541-9	Andaman and Nicobar	541 6	Assam and Naga-land
4415	Andhra Pradesh	4431	Bombay	543	Central India	541 62	Assam
4417	Andaman and Nicobar	4435	Maharashtra	543-1	Madhya Pradesh	541 65	Nagaland
4435	Maharashtra	4436	Gujarat	544-6	Rajasthan	541 7	Manipur
4436	Gujarat	4437	Rajasthan	545	Northern India	542	Uttar Pradesh
4437	Rajasthan	444	North-eastern States	545-2	East Punjab	543	Madhya Pradesh
4443	Haryana Prant	4443	Punjab	545-4	Himachal Pradesh	544	Rajasthan
4443V	Delhi	4445	Himachal Pradesh	545-5	Delhi	545	Punjab Region
4444	Punjab Suba	4447	Jammu & Kashmir	545-8	Uttar Pradesh	545 2	Himachal Pradesh

V 3.	4445	Himachal Pradesh	445	Northern States	546-1	Jammu & Kashmir	545 5	Punjab
Z	4447	Jammu & Kashmir	4452	Utter Pradesh	547	Western India	545 6	Delhi Territory
2:	4451	Utter Pradesh	4455	Madhya Pradesh	547-1	Maharashtra	546	Jammu & Kashmir
1966	4455	Madhya Pradesh	447	Eastern States	547-6	Gujarat	547	Western India
JUNE	4471	Bihar	4471	Orissa	548	Southern India	547 5	Gujarat
	4473	Orissa	4473	Bihar	548-1	Madras	547 9	Maharashtra etc
	4475	West Bengal	4475	West Bengal	548-2	Mysore	547 92	Maharashtra
	4477	Assam	4477	Assam	548-3	Kerala	547 99	Goa, Daman & Diu
	4477T	NEFA	448	Union Territories	548-4	Andhra Pradesh	548	Southern India
	4477U	Manipur	4481	Delhi	548-83	Laccadives	548 1	Laccadives
	4477V	Tripura	449	Islands			548 2	Madras
	4478	Nagaland	4491	Andamans			548 3	Kerala
	448	Union Territories	4492	Laccadives			548 4	Andhra Pradesh
							548 7	Mysore
							548 8	Andaman and Nicobar

it makes it rigid. For example, if Maharashtra is taken into Southern Region in some future date, this rigidity will prove obtrusive. This mistake is avoided in Ed 7 of CC (See columns 1 and 2 of Table 6 in Sec 40). This regional isolate will be 449G according to the scheduled mnemonics for orientation division.

#### 42 Geographical Contiguity in CC

In Ed 6 of CC, the sequence Delhi, Andaman and Nicobar Islands, and Laccadive Islands violates the Principle of Geographical Contiguity. This sequence happened because they are all Union Territories.

In Ed 7 of CC, this anomaly has been removed with the help of the Concept of Emptying Digit. Each Union Territory is given an (IN) corresponding to its right position according to the Principle of Geographical Contiguity. The isolate "448 Union Territory" in Ed 7 of CC should be used to represent only documents dealing with the Union Territories collectively.

#### 43 Sovereign Country with Non-Contiguous Areas

According to Sec 15, the Principle of Geographical Contiguity is the Principle *par excellence* for the sequence of geographical isolates. But the areas of some Sovereign Countries are in non-contiguous groups. Pakistan is an example. Should we place East Pakistan (East Bengal) next to West Bengal, which is contiguous to it, or next to West Pakistan, which is separated from it by the States of India? The former will give a faulty suggestion in respect of their sovereign country. Therefore, East Pakistan should be given an (IN) next to that of West Pakistan. This is as if they were contiguous areas. This is an anomaly caused by political factors. The position of Alaska with USA is another example.

#### 44 Regional Isolates in UDC and DC

As in Ed 6 of CC Ed 3 of UDC, (IN) and Ed 17 of DC, (IN) for Regional Isolates have been provided. Therefore, all the comments made in Sec 41 on Ed 6 of CC hold good for UDC and DC also.

## 45 Geographical Contiguity in UDC and DC

As it can be seen from columns 5, 6, 7, and 8 of Table 6 in Sec 40 UDC and DC do not at all follow the Principle of Geographical Contiguity. The sequence of the constituent States appears to be a random one.

## 5 ADMINISTRATIVE DIVISIONS

The isolates of (A4) (in the Notational Plane) of countries with constituent States and the isolates of (A3) (in the Notational Plane) in the case of the countries without constituent States are derived on the basis of Administrative divisions—"County or District" as they are called. For definiteness, but without loss of generality constituent States of Maharashtra and Gujarat are taken as examples.

50 Table 7. Districts of Maharashtra and Gujarat

CC Ed 7(1968)		CC Ed 6 (as before 1956)	
(IN)	Isolate Term	(IN)	Isolate Term
1	2	3	4
4435	MAHARASHTRA	4431	BOMBAY
443512	Ratnagiri	443111	Ahmednagar
443514	Kolaba	443112	Sholapur
443515	Bombay	443113	Akalkot
443516	Thana	443114	Jath
443521	Kolhapur	443115	Jamkhandi
443522	Satara	443116	Bijapur
443523	Sangli	443121	Dharwar
443524	Sholapur	443131	North Kanara
443525	Poona	443141	Belgaum
443526	Ahmednagar	443142	Sangli
443527	Nasik	443143	Savantvadi
443531	Khulia	443144	Kolhapur
443532	Jalgaon	443151	Ratnagiri
443541	Buldhana	443152	Kolaba

50 Table 7. Districts of Maharashtra and Gujarat

	CC Ed 7 (1968)		CC Ed 6 (as before 1956)
(IN)	Isolate Term	(IN)	Isolate Term
1	2	3	4
443542	Akola	443153	Satara
443543	Amraoti	443154	Aundh
443544	Wardha	443155	Bhir
443545	Nagpur	443156	Poona
443546	Bhandara	443157	Thana
443547	Chanda	443158	Jawhar
443548	Yeotmal	443161	Surat
443551	Nanded	443162	Broach
443552	Osmanabad	443163	Kathiawar
443553	Beed	443164	Pelanpur
443554	Aurangabad	443165	Mahikantha
443555	Parbhani	443171	Khandesh, West
4436	GUJARAT	443172	Khandesh, East
443611	Dangs	443173	Nasik
443613	Surat	443181	Ahmedabad
443615	Broach	443182	Baroda
443617	Baroda	443183	Kaira
443631	Panchmahals	443184	Panchmahals
443632	Kaira	443185	Rewa Kantha
443633	Ahmedabad		
443634	Mehsana		
443635	Banaskantha		
443636	Sabarkantha		
443651	Bhavnagar		
443652	Amreli		
443653	Junagadh		
443654	Jamnagar		
443655	Rajkot		
443656	Surendranagar		
443671	Kutch		

*Note 1.*—The reorganisation of States done in 1956, brought into Maharashtra part of the old Bombay State, Aurangabad, Beed, Nanded, Osmanabad, and Parbhani Districts from Hyderabad. Also, the Maharashtra part of the old Bombay State gave over to the new Mysore State the districts: Belgaum, Bijapur, Dharwar, and North Kanara.

*Note 2.*—In the further reorganisation of 1961, the State of Bombay was bifurcated into Maharashtra and Gujarat. This demanded the allocation of the districts of the old Bombay State into the two new States — Maharashtra and Gujarat.

#### 51 Impermanence of Administrative Boundary

As illustrated by Table 7, in Sec 50, boundaries of the administrative divisions of a country or a constituent State, as the case may be, are liable to change quite often due to administrative exigencies. Therefore, the administration characteristic used for the division of a Sovereign Country or constituent State does not satisfy the Canon or Permanence [10]. And yet this characteristic is demanded by the Canon of Relevance. Literary warrant puts great weight to the Canon of Relevance. Therefore, in this conflict between Canons, the claim of the Canon of Relevance has to be upheld and that of the Canon of Permanence has to be ignored.

#### 52 Inevitable Change of Isolate Number

The above decision, in the Idea Plane, naturally calls for correction of (IN). This is inevitable whatever be the scheme for classification. This need for correction is not due to any defect in the design of the scheme for classification. It is entirely due to political or administrative causes beyond the control of the classificationist. Therefore, on the part of the classificationist, such an inevitable correction in (IN) of Administrative Districts becomes necessary, though more often than in the case of (IN) large country of Sovereign Countries and of their constituent States.



### 53 Residual Problem

The change in the (IN) of the Districts does not completely solve all the difficulties arising in library service as a result of impermanences. For, the new (IN) will not suit the books pertaining to the period of validity of the old (IN). Some of the books on the old Bombay State may have chapters on North Kanara District now in the new Mysore State. These will be missed by those who look for North Kanara in Mysore in its new Districts. Perhaps, the situation cannot be met by the classification. Resort must be had to cataloguing and putting Cross Reference Entries. But such Cross Reference Entries will be far too many and swell the catalogue beyond the limits of convenience.

### 6 NON-FAVOURD FIRST CHARACTERISTICS

As already stated in Sec 111 of this Paper, the division of "World" admits of more than one first characteristics. The divisions based on Continent *cum* Ocean is taken as the favoured first characteristic on account of its high literary warrant. But as shown in Table I in Sec 111 the literary warrant demands the division of world based on several non-favoured first characteristics, since there is some literary warrant for each of them, though small. In succeeding sub-sections isolates based on some of these non-favoured first characteristics are discussed.

#### 61 Isolates Based on Near-Sovereign Formation

Literary warrant suggests the need for the division of "World" on the basis of groups of independent sovereign countries—grouped for peace keeping, defence, political, economic, or other purposes. Such a Group, though without full sovereign powers, has certain powers vested in it by mutual agreement by the independent sovereign countries constituting it. We call each such group a Near-Sovereign Formation. Member States of such a Near-Sovereign Formation need not necessarily be geographically contiguous. In most cases they are not. As shown in Table I in Sec 111 the literary warrant for it is 2.2 per cent. The following is an illustrative table of Near-Sovereign Formations.

610 TABLE 8. SCHEDULE OF NEAR-SOVEREIGN FORMATION

S N	Isolate Term	CC Ed 5 (1957) onwards	UDC	
			By (AD) (As it is)	By (CD) (Suggested)
1	2	3	4	5
<i>0 By Near-Sovereign Formation</i>				
		1A		
1	League of Nations area	1N	1-6LN	1-6*19*
2	United Nations area	1N4	1-6UN	1-6*194*
3	Commonwealth area	1N48	41-44	1-6*1948*
4	NATO area	1N49	1-65NATO	1-65*1949*
5	Colombo plan area	4N	5-62Colombo	5-62*19*
6	SEATO area	4N5	5-6 SEATO	5-69*19*
7	CENTO area	4N55	5-65 CENTO	5-65*195*
8	Council of Europe	5N	4-6CE	4-6*19*
9	European Communi- ties	5N5	4-6EC	4-6*195*
10	Western European Union	5N54	4-6WEU	4-6*1954*
11	Arab League	6N	6-Arab League	6-6*19*
12	Organisation of African Unity	6N62	6-60AU	6-6*1962*
13	Organisation of Ameri- can States	7N	7-60AS	7-6*19*

It can be seen from the Table 8 that the host geographical isolate for Near-Sovereign Formation is the

1 World, if it comprehends sovereign countries in two or more continents; and

2 Continent concerned, if all the sovereign countries comprehended are in one and the same continent.

It goes without saying that no sovereign country can by itself be the host isolate for a Near-Sovereign Formation.

## 611 COLON CLASSIFICATION

In CC, the (CD) [4] is used, to denote and represent a Near-Sovereign Formation. The (CD) carries with it infinite hospitality in the Notational Plane. Any sequence other than Chronological Sequence is taken to be not more helpful in the sequence of the Near-Sovereign Formation in the Idea Plane.

## 6111 HOW IT BEGAN

In Ed 1 (1933) and Ed 2 (1939) of CC a Near-Sovereign Formation was individualised in a peculiar way as shown in Rule 88/—that is, "In the case of the Subject Division 'V History', the Common Sub-division Digit / is to be used not only to represent learned societies and institutions but also organisations like the *League of Nations* and the *Institute of Pacific Relations* are associations of Nations or States. In such cases the digit / is to be applied immediately after the Geographical Number and amplified in accordance with the rules for amplification". This rule was suggested by the *League of Nations* being talked about in its early days as a "Society of Nations". This is a case of thought getting derailed by the use of imprecise term. Once the mistake was realised, this Rule is omitted in Ed 3 and Ed 4. We are informed by Ranganathan, that, as soon as the precise term "Near-Sovereign Formation" was coined by him in about 1952, it was decided to represent it as a sub-division of the World or the Continent, as the case may be. This decision was incorporated in Ed 5 (1957).

## 612 UNIVERSAL DECIMAL CLASSIFICATION

In UDC, the (IN) "I-6" represents "Geographical area covered by group of independent states." But to get a particular Near-Sovereign Formation there is no definite rule. In column 4 of Table 8 in Sec 610 it is individualised by (AD). It is also possible in UDC, to individualise the Near-Sovereign Formation by (CD). This was suggested by Ranganathan 1957 [16]. This will perhaps give a more helpful sequence than (AD).

## 613 Decimal Classification

In Ed 17 of DC, there is no host (IN) to represent a Near-Sovereign Formation. But some of the Near-Sovereign Formations such as 'The Commonwealth' is taken as British Empire. This is an anachronism.

## 62 Isolates Based on Empire Characteristic

Literary warrant suggests the need for the division of a geographical area on the basis of Empire Characteristic. As shown in Table 1 in Sec 111 the literary warrant for it is 0.7 per cent. The following is an illustrative table of the isolates on Empire Characteristic.

620 TABLE 9. SCHEDULE OF EMPIRE ISOLATES

S N	Isolate Term	CC Ed 7	UDC Ed 3	DC Ed 17
1	2	3	4	5
1	Roman Empire	1-52	37-44	171 232 5
2	Spanish Empire	1-541	46-44	171 2 ?
3	British Empire	1-56	41-44	171 242
4	British Empire in Asia	4-56	41-44: 5	500 971 242
5	French territories in Africa	6-53	44-44: 6	600 971 244
6	Belgian territories in Africa	6-55W	493-44: 6	600 971 2 ?
7	Spanish territory in North America	71-541	46-44: 7	700 971 2 ?

*Note.*—"?" indicates that in DC Ed 17 there is no (IN) to represent the respective imperial countries.

## 621 COLON CLASSIFICATION

It can be seen from Table 9 that in CC the (IN) for an Empire is made up of three elements.

- 1 The (IN) for the World or the Continent over which the Empire is spread;
- 2 The connecting digit "-" for super-imposition; and
- 3 The (IN) for the imperial country.

#### 622 UNIVERSAL DECIMAL CLASSIFICATION

It can be seen from column 4 of Table 9 that in UDC the (IN) for an Empire is made up of 3 or 5 elements according to context.

- 1 The (IN) for the imperial country;
- 2 The digit "-" and
- 3 The (IN) 44 representing the idea "Empire", if the Empire is spread over one continent and not all over the world;
- 4 The connecting digit ":"; and
- 5 The (IN) of the continent covered by Empire.

In UDC the connecting digit "-" is used for several kinds of isolates including "1 Orientation", "44 Empire", and "77 Undeveloped Areas". The following is the result:

- 41 United Kingdom
- 41-14 South-West region of United Kingdom
- 41-44 British Empire
- 41-77 Undeveloped Areas of United Kingdom.

The unhelpfulness of the above sequence is obvious. Some method is to be found out to remove this unhelpfulness, if the Empire as a whole is to go with the imperial country in the schedule for Geographical Divisions.

#### 623 Decimal Classification

It can be seen from columns 5 and 6 of Table 9 that the (IN) for an Empire spread over two or more continents, in Ed 17 of DC is made up of three elements.

- 1 The (IN) for "Areas not limited by continents";
  - 2 The (IN) 712 for the idea "Empire"; and
  - 3 The (IN) for the Imperial Country as direct array division.
- If the Empire is spread over a single continent the (IN) for it in

Ed 17 of DC is made up of three elements.

- 1 The (IN) for continent covered;
- 2 The (IN) 009712 for the idea "Empire"; and
- 3 The (IN) for imperial country.

In the Notational system of Ed 17 of DC the digit-group connecting the (IN) for the world or continent, as the case may be, with the (IN) for the imperial country consists of 3 and 6 digits respectively. This is unnecessarily cumbersome. This is possibly the result of maintaining pure notation at any cost.

#### 624 SEQUENCE OF THE COMPONENTS IN (IN) FOR AN EMPIRE

UDC uses the imperial country as the first component. But CC and DC use the imperial country as the second component. In earlier editions till Ed 17, DC used only the bare (IN) of the imperial country for the Empire also. It is gratifying that

- 1 Ed 17 of DC has recognised the need for composite (IN) for the Empire; and
- 2 It has followed the practice of CC as more helpful than that of UDC.

#### 63 Isolates Based on Subject Characteristic

Literary warrant suggests the need for the division of the geographical area on the basis of Subject Characteristic. As shown in Table 1 in Sec 111, the literary warrant for it is 0.6 per cent. Table 10 in the next page is an illustrative table of isolates based on Subject Characteristic.

#### 631 COLON CLASSIFICATION

In CC, the digit 9 followed by (SD) is used to denote and represent isolates based on the Subject Characteristic from Ed 7 onwards [5]. This Device secures not only helpful sequence in the Idea Plane, but also provides infinite hospitality in the Notational Plane and it also obviates the necessity for exhaustive enumeration. In Ed 2, CC introduced linguistic divisions alone using "00" as the connecting digit-pair between the (IN) for the host-area and that for the language. In Ed 3 (1950), it introduced the use of (SD) which in those days consisted of adding the (IN) for the subject immediately, next to the host class. - But in the investigation made after 1950, the faults created by using (SD) was discovered; and it was decided to enclose the Class Number of the subject in circular brackets — that is, introduced Packet Notation [3]. Packet Notation meant the introduction of a new digit in the notational system. This required great circumspection. Ranganathan says that he got some impetus by his British library colleagues welcoming the Packet Notation in 1954. But even then he was very hesitant

198 630 TABLE 10. SCHEDULE OF SUBJECT DIVISIONS

S N	Isolate Term	CC	UDC			DC Ed 17
			Actual	Suggested	By SRR	
1	2	3	4	5	6	7
1	Agricultural countries of the World	19 (J)	63 (1-02)	1-02 [63]	1 [63]	..
2	English speaking areas of the World	19 (P111)	1=2	1=2	1=2	1752
3	Muslim countries of the World	19 (Q7)	297 (1-02)	1-02 [297]	1 [297]	1767
4	Democratic countries of the World	19 (W6)	327 (1-02)	1-02 [327]	1 [327]	..
5	Communist countries of the World	19 (W691)	321-63 (1-02)	1-02 [321.63]	1 [311.63]	1717
6	Muslim countries of Asia	49 (Q7)	297 (5-02)	5-02 [297]	5 [297]	5009767
7	Democratic countries of Asia	49 (W6)	327 (5-02)	5-02 [327]	5 [327]	..
8	Underdeveloped countries of Asia	42 (Y:492)	5-77	5-77	5-77	5009724
9	Mining areas of India	49 (HX)	622.2 (54-02)	54-02 [622.2]	54 [622.2]	..
10	Agricultural areas of India	49 (J)	63 (54-02)	54-02 [63]	54 [63]	..

to introduce a new digit. Therefore, he continued to experiment with it. He finally included it in Ed 5 of CC (1957).

### 632 UNIVERSAL DECIMAL CLASSIFICATION

In UDC, in the case of a linguistic sub-area of a geographical area, the (1N) is made of the

- 1 (1N) of the host geographical area.
- 2 Connecting digit for language—viz, “=”; and
- 3 (1N) for language (See Example 2 in Table 10 in Sec 630).

But in the case of sub-areas based on any other subject, the (1N) is made of the

- 1 (CN) for the subject; and packeted number consisting of
- 2 (1N) for the host area; and
- 3 Digit-group 02 to represent “Zone as defined for use in particular sciences.” [1].

Ranganathan said that the inversion was not helpful. Therefore, he made two suggestions [16].

1 The use of (SD) and packeted numbers as in CC, using square brackets instead of circular ones, as the latter is Connecting Digit for geographical isolates; and

2 Inserting between the host geographical area the packeted number for (SD), its connecting digit-group—viz, “02”.

### 633 DECIMAL CLASSIFICATION

Ed 17 of DC gives an *ad-hoc* enumerated schedule of six major subject-divisions for geographical area. The sub-division of three of these (excluding empire divisions) are prescribed to be got by (SD). In the case of the other three, the sub-divisions are also enumerated *ad-hoc*.

### 64 Isolates Based on Orientation

Literary warrant suggests the need for the division of a geographical area on the basis of “Orientation Characteristic”. As shown in Table 1 in Sec 111, the literary warrant for it is 0.2 per cent.

### 640 TABLE 11. SCHEDULE OF ORIENTATION ISOLATES

*Note 1.*—In spite of the table illustrating the orientation division of World only, such an orientation division is possible of any geographical area from Continent through Country, District, and down to a village even.

*Note 2.*—There is no definite boundary line between two consecutive Orientation Divisions. It is left vague, because physiological, political, and administrative factors may take the



S N	Isolate Term	CC		UDC
		Ed 7	Ed 6	
1	2	3	4	5

0	<i>By Orientation</i>	19A		
1	East	19B	19B	1-11
2	Near-east	19C	19C	
3	Middle-east	19D	19D	
4	Far-east	19E	19E	
5	South-east	19F	19F	1-12
6	South	19G	19G	1-13
7	South-west	19H	19H	1-14
8	West	19J	19M	1-15
9	North-west	19M	19R	1-16
10	North	19N	19S	1-17
11	North-east	19P	19W	1-18
12	Central	19R		1-191·2
13	Peripheral	19S		1-192
14	Neighbouring	19T		1-194·2
15	Inside	19U	19X	1-191
16	Excluded (area)	19UV		
17	Outside	19V	19Y	1-194

boundary line slightly differently in different host geographical area. Further, administrative factors may also shift the boundary line from time to time. It is for this reason that rigidity in boundary lines of regional isolates is avoided. And interpretation of the exact coverage of an orientation division for a host geographical area is left to local context.

#### 641 COLON CLASSIFICATION

In CC, Array Isolates for orientation are enumerated in the clockwise sequence. Sector (S-9A) has been assigned to the divisions derived on the basis of Orientation Characteristic. In Ed 7 of CC, some additional orientation divisions demanded by literary warrant are included. Consequently, the (IN) for some of the older orientation divisions are being changed in Ed 7. This has been done from Ed 5 of CC (1957) onwards. In Ed 4 (1952), orientation divisions were accommodated as subdivision of (AIN), "7". This led to many difficulties. These

difficulties were removed with the aid of the Sector (S - 9A) which was just brought into use.

#### 65 Isolates Based on "Sea-surrounded" Characteristic

Literary warrant suggests the need for providing geographical isolates made of areas surrounding a sea or an ocean, such as Atlantic countries, Mediterranean countries, and Baltic countries. As shown in Table 1 in Sec 111 the literary warrant for it is 0-2 per cent. The following is an illustrative table of isolates based on "Sea-surrounded" characteristic.

650 TABLE 12. SCHEDULE OF "SEA-SURROUNDED" ISOLATES

S N	Isolate Term	CC	UDC	DC Ed 17
			Suggested By SRR	
1	2	3	4	5
	0 <i>By Sea-surrounded area</i>	11		
	1 Countries bordering on the Indian Ocean	15	1-016-7	182 4
	2 Atlantic countries	16	1-016-1/4	182 1
	3 Mediterranean countries	161	1-016-2	182 2
	4 Pacific countries	17	1-016-5/6	182 3
	5 Baltic countries	567	4-016-13	500/982/1

#### 651 COLON CLASSIFICATION

In CC, the divisions of the World based on "Sea-surrounded" characteristic are enumerated. Here CC has followed Canon of Scheduled Mnemonics [12]. With the result, that in 16 Atlantic countries, the Array Isolate Digit "6" is the same as the rich digit "6" in 96 Atlantic Ocean, given in the Schedule for Oceans in Table 4 in Sec 20. This provision was made even in Ed 1 of CC (1933), as there was some literary warrant even then. The (IN) 567 given to Baltic countries in CC creates a potential homonym. This fault should be removed in Ed 7. Perhaps the digit "0" may be inserted between the (IN) for the continent and the (IN) for the Ocean.

#### 652 UNIVERSAL DECIMAL CLASSIFICATION

In UDC, (IN) is provided for Mediterranean countries only — that is, 4-015. But this (IN) can represent only Mediterranean

countries in Europe. The proper (IN) will be 1-015. Apart from this, mnemonic digit for Mediterranean should be 2 as this digit is used as the significant digit for the Mediterranean Sea in the schedule for seas is 262. But digit 5 is used. This could be easily avoided. Further, the connecting digit "- 01" indicates only "vaguely defined regions". Ranganathan has suggested "-016" digit-group as the (IN) for a "Sea-surrounded area" [16]. Here, the digit "6" is taken mnemonically from the (IN) 26 Oceans. Column 4 of Table 12 in this section illustrates this suggestion.

### 653 DECIMAL CLASSIFICATION

In Ed 17 of DC the digit-group "82" is used to represent ocean and sea basins. The digits following this digit-group is the (AIN) for the "Ocean or Sea". But these digits violate the Canon of Scheduled Mnemonics [12]. For example, the digit "3" represents Pacific Ocean in column 5 of Table 12 in Sec 650, while the digit for Pacific is "5" in the schedule for oceans — viz, "1665 Pacific Ocean."

### 66 Isolates Based on Climatic Zone

Literary warrant suggests the need for the division of a geographical area on the basis of Climatic Zones of earth as shown in Table 13 below. These Climatic Zones are marked off by lines of latitude. As shown in Table 1 in Sec 111, the literary warrant for it is 0.1 per cent. The following is an illustrative table of isolates based on Climatic Zones.

660 TABLE 13. SCHEDULE OF CLIMATIC ZONES

SN	Isolate Term	CC	UDC	DC
1	2	3	4	5
0	<i>By Climatic Zone</i>	91aaz		
1	Equatorial Zone	91		
2	Tropical Zone	92	213	13
3	South	923	213.2	
4	North	927	213.1	
5	Sub-tropical Zone	93	213	
6	Temperate Zone	95	212	12
7	South	953	212.2	
8	North	957	212.1	
9	Polar Zone	97	211	11
10	North	973	211.2	
11	South	977	211.1	

## 661 COLON CLASSIFICATION

In CC, climatic zones are got by enumeration. Their sequence is determined by their respective removes from the Equator. In other words, according to the Principle of Away-from-Position [2]. Their (AIN) from (A1) with reference to the host geographical area is taken as the immediate universe. They belong to the Sector (S - 91). These isolates can form divisions not only of the World as a whole but also of any other geographical area warranting them; for example, a continent, or even a country such as India, USA, or USSR. These divisions were first introduced in Ed 2 (1939).

## 662 UNIVERSAL DECIMAL CLASSIFICATION

In UDC, the climatic zones are accommodated among the physiographical divisions given under "21 Earth's Land areas, belts, and zones". In applying the Principle of Away-from-Position, the divisions start from Polar Zones and end with Tropical Zones. This is not happy because, there are two polar regions. Perhaps, starting from the Equatorial Zone as in CC is preferable.

## 663 DECIMAL CLASSIFICATION

As it can be seen from column 5 of Table 13, Ed 17 of DC has provided (IN) for some climatic zones. But the sequence is the similar faulty one as in UDC.

## 67 Division by Other Characteristics

The schedule of Geographical Isolates in CC is hospitable enough to accommodate any geographical isolates based on any other first characteristic, as demanded by the Literary Warrant from time to time. For, there are in it several unused sectors, such as (S - 9a), (S - Z1), (S - Z1), and (S - ZA).

## 68 Avoidance of Homonym

We have seen that several first characteristics are used to divide a geographical area. Along with each first characteristic a distinctive train of characteristic can and will be taken. In so doing, at some stage or the other, one and the same geographical area may appear as an Array Isolate on the basis of two or more of the trains of characteristics. There will then be the incidence of homonym in the Notational Plane — that is, in the classificatory language. But one of the essential qualities to be preserved in a classificatory language is the absence of homonym [14]. Here is an example of such a homonym.

Thailand can appear as an isolate in the classification of

the world based on trains of characteristics with the following respective first characteristics—

- 1 Continent *cum* Ocean as a sovereign country.
- 2 Near-Sovereign Formation as a member of the UN.
- 3 Subject formation as Buddhistic country.
- 4 Orientation as a region in South-east Asia.
- 5 Climatic zone as a Tropical country.

The following is the particular enumeration of convention followed by CC in avoiding the occurrence of such a homonym:—

- 1 The division on the basis of the second, third etc of the above-mentioned characteristics will be arrested at the stage at which Thailand will appear.
- 2 The division on the basis of the first of the above trains of characteristic will be allowed to reach the Isolate Thailand.

The general enunciation of the above convention is as follows:

- 1 The decreasing scale of preference of the trains of characteristics, having for their respective first characteristics, those mentioned in Table 1 in Sec 111, is the same as the sequence of first characteristics in Table 1, in Sec 111.
- 2 If a geographical isolate will arise on the basis of more than one train of characteristics, it should be reached only on the basis of the scale of preference for the irrespective first characteristics.
- 3 The division on the basis of a later train of characteristics should be arrested just before the said isolate would appear.

## 7 LEVELS OF SPACE FACET

Let us consider the universe of bicycles. This can be divided into classes such as Man's Bicycle; Lady's Bicycle; Child's Bicycle. In each of these classes, each entity is a whole bicycle. Division resulting in whole entity is taken to lead only to a new array in the same facet. Again, the Class of "Man's Bicycle" can be further divided into classes such as, Hercules Bicycle; Hind Bicycle; Raleigh Bicycle. The entity in each of these sub-classes is a whole bicycle. Therefore, this second order division also takes us only to isolates of a further array in the same facet. In general, a succession of arrays with only classes of whole entities is said to fall within one and the same facet in the schedule. On the other hand, we can look upon a typical Bicycle as a Universe of its Organs. Then, we can derive from it isolates of (A1), such as, Wheel; Frame; Seat. It is not helpful to mix up such isolates of organs and isolates of wholes in one and the same array or in one and the same facet. To keep them separate, Ranganathan introduced the Postulate of Levels [13, 17]. The facet of whole

GEOGRAPHICAL SCHEDULE IN CC, UDC, AND DC

bicycles forms Level 1; and the facet of organs of bicycle forms Level 2. This can be continued further into later levels of Organs and so on. According to Ranganathan, in the universe of geographical entities it is possible to find an analogue of levels [13. 16]. Ed 7 of CC uses this analogy as shown in the following table.

70 Table 14. Level 2 of Space Facet

(1N)	CC Ed 7 Isolate Term	(1N)	UDC Isolate Term
1	2	3	4
<i>baaz</i>	<i>By Physical feature</i>	2	Physiographic Designation
<i>baaz</i>	<i>By Land feature</i>	203	In air. Atmosphere
<i>b1</i>	Subterranean	204	In water
<i>b5</i>	Submerged land	21	Earth's land areas
<i>caaz</i>	<i>By Surface feature</i>	210	Land
<i>c3</i>	Plain	210·1	Peninsula
<i>c4</i>	Desert	210·2	Capes
<i>c5</i>	Marsh	210·3	Headlands
<i>d</i>	Prairie	210·4	Isthmuses
<i>d3</i>	Cultivated land	210·5	Coasts
<i>e5</i>	Delta	211	Polar zones
<i>e6</i>	Island	212	Temperate zones
<i>f</i>	Forest	213	Tropical zones
<i>g1</i>	Valley	22	Islands
<i>g2</i>	Plateau	23	Mountain
<i>g5</i>	Watershed	24	Interior of Earth
<i>g6</i>	Hinterland	25	Plains
<i>g7</i>	Mcuntain	251	Prairies
<i>haaz</i>	<i>By Land cum water feature</i>	252	Desert
<i>h1</i>	Coast land	253	Forest
<i>h3</i>	Peninsula	254	Cultivated land
<i>h6</i>	Cape	255	Marshy land
<i>kaaz</i>	<i>By Water feature</i>	257	Built up land
<i>k1</i>	Underground water	26	Ocean
<i>k4</i>	Salt underground water	27	Ocean currents
<i>k7</i>	Fresh underground water	28	Freshwater etc

70 Table 14 Level 2 of Space Facet

(IN)	CC Ed 7 Isolate Term	(IN)	UDC Isolate Term
1	2	3	4
<i>m</i>	Coastal sea	28·01	Freshwater
<i>m2</i>	Bay	282	Running water
<i>m3</i>	Gulf	282·1	Springs
<i>m4</i>	Strait	282·2	River
<i>m5</i>	Inland sea	282·3	Waterfalls
<i>m6</i>	Estuary	282·4	River basins
<i>p1</i>	River	282·5	Canals
<i>p2</i>	Stream	282·6	Estuaries, Deltas
<i>p3</i>	Spring	285·2	Lakes
<i>p6</i>	Lake	285·3	Swamps
<i>p64</i>	Salt water lake	289	Brakish water
<i>p67</i>	Freshwater lake		
	Ocean		
<i>vaz</i>	<i>By Air spaces</i>		
<i>v</i>	Atmosphere		
<b>9Aaz</b>	Population cluster (Collective)		
<b>9A</b>	Hamlets	—201	Towns
<b>9B</b>	Villages	—202	Villages
<b>9D</b>	Towns		
	Super-towns		
<b>9F</b>	Cities		
<b>9J</b>	Super-cities		
<b>9M</b>	Extra-super-cities		
<b>9Aaz</b>	Population cluster (Individual)		
	<i>Division by (AD) appli- cable only after a host geographical area (Illustrative)</i>		
<b>44B</b>	Bombay		

71 Physiographical Feature  
 710 TABLE 15. SAMPLE SCHEDULE FOR RIVERS

CC (IN) 1	Example 2	UDC (IN)	
		Actual 3	Suggested by SRR 4
4.p10B	Brahmaputra (passes through more than one country)	282.253.22	5:282.22
44.p10GP	Godavari (passes through more than one State in one country)	282.253.26	54:282.26
4413.p10N	Netravati (passes through one State only)	282.253.294	548.2:282.26
5.p10R	Rhine (passes through many countries)	282.243.1	4:282.21
561.p10T	Thames (passes through one country only)	282.242.4	420:282.21

*Note 1.*—The sequence of the two levels in CC and UDC is the opposite of each other. In CC, the sequence of the host geographical isolate precedes the physiographic feature isolate. The Wall Picture Principle [7] would prefer this sequence. It is for this reason that Ranganathan is suggesting UDC (IN) in column 4 in the Table 15.

*Note 2.*—The host isolate of Level 1, selected for a specific physiographical isolate in Level 2, is the geographical area of the minimum extension containing the physiographical isolate.

*Note 3.*—The host isolate in Level 1 should be taken from the isolates in the schedule got from the train of successive favoured, first characteristics.

*Note 4.*—This is considered more helpful than taking it, as UDC does, from a schedule involving a non-favoured characteristic, such as Orientation, in any array.



*Note 5.*—In Ed 7 of CC a physiographical isolate is individualised by (AD). For this, Sector (S - 0A), in order not to freeze the host number is used (See columns 1 and 2 of Table 15).

## 72 Population Cluster (Collective)

720 TABLE 16. SAMPLE SCHEDULE OF COLLECTIVE POPULATION CLUSTERS

CC (IN)	Isolate	UDC (IN)
1	2	3
56-9B	Villages of United Kingdom	410-202
56-9F	Cities of United Kingdom	410-201

*Note 1.*—In effect, UDC has treated Collective Population Clusters as isolates of Level 2.

*Note 2.*—The following convention is used to distinguish between different sizes of population clusters.

TABLE 17. CONVENTION ABOUT POPULATION CLUSTERS

Population Clusters	Population	
	Greater than	Less than or equal to
1	2	3
Hamlets		500
Villages	500	5,000
Towns	5,000	50,000
Super-towns	50,000	100,000
Cities	100,000	500,000
Super-cities	500,000	1,000,000
Extra-super-cities	1,000,000	

## GEOGRAPHICAL SCHEDULE IN CC, UDC, AND DC K730

*Note 3.*—However, when population clusters are used to represent Community Isolates in subjects going with the Main Class History, this rigid convention about population cluster is relaxed and legal designation is used as provided for Parish, Urban area, Borough, City Corporation area, etc. in UK; and Panchayat area, Municipal area, and City Corporation area in India.

*Note 4.*—Further, in subjects going with Main Class V History "9R" is used to represent Countries in (UK) and Districts (in India), taken collectively, as they have their respective local bodies.

73 Population Cluster (Individual)  
730 TABLE 18. SAMPLE SCHEDULE OF INDIVIDUAL POPULATION CLUSTERS

CC (IN)	City	Population	UDC (IN)
1	2	3	4
44.B	Bombay	2,839,270	540-201 Bombay
4411.C	Coimbatore	195,755	548.1-201 Coimbatore
4473.C	Cuttack	10,505	541.5-201 Cuttack
56.L	London	3,273,000	410-201 London
561.B	Bristol	440,500	420-201 Bristol
56122.D	Dover	35,400	422.3-201 Dover

*Note 1.*—The following convention is used in CC, in regard to the host geographical isolates in Level 1.

TABLE 19. CONVENTION ABOUT HOST GEOGRAPHICAL AREA

*Note 2.*—In UDC, Individual Population Clusters are in effect assigned to Level 2. The full name of the Population Cluster is used after the (IN) for Collective Population Clusters as the (AIN) for the Individual Population Cluster.

Population Cluster (Level 2)	Host Geographical Isolate (Level 1)
1	2
Extra-Super-City and Super-City	Country
City	Constituent State, if any, otherwise Country
Super-Town and Town	District
Village	Taluk (Subdivisions of District)

#### 74 Level 3 of Space Facet

There can be levels later than Level 2 of Space Facet. The isolates such as Snow zone, Treeless zone, of Mountain can be taken to belong to Level 3. Similarly, isolates such as Source, Delta, of a river can also be taken to belong to Level 3. Research is in progress in DRTC to draw up a schedule of isolates in the Level 3 of Space Facet.

#### 75 Development of Levels in Space Facet

In its Ed 2 (1939) CC had included a schedule of physiological isolates. They were placed in (A1) with the divisions of the "World" derived on the basis of the favoured first characteristic, Continent *cum* Ocean, and were accommodated under "19". This continued till Ed 4. Ed 4 (1952) of CC provided also for the construction of the (IN) of an individual population cluster or a physiographical feature. The (IN) for it was got by adding directly after the (IN) of the host geographical area, a Roman Capital to indicate the nature of the physiographical feature or a population cluster and using (AD) hereafter. For example,

4MH HIMALAYAS 44CB BOMBAY 44RGP GODAVARI

But this produced an unhelpful sequence. After making several experiments to solve this difficulty [9] the solution of this problem with the aid of the concept of Level was hit upon by Ranganathan in 1957. This solution was made possible by the release of the entire array in the Notational Plane—from *a* to *Z*—for Space Isolates. This in turn was made possible by reserving the Con-

necting Digit dot for Space Isolates only, taking it away from Time Isolates, and providing for Time Isolates a different Connecting Digit—*viz.*, a single inverted comma [6].

## 8 ACKNOWLEDGEMENT

We are indebted to Dr S R Ranganathan, National Research Professor in Library Science, for suggesting the subject for the paper and helping us in developing it.

## 91 Bibliographical References

*Note.*—1 The following is the list of documents used.

- 4 Column 1 gives the serial number of the document included in it.
- 3 Column 2 gives the number of the section in the text, where the reference to the document is made.
- 1 Sec 632 BRITISH STANDARDS INSTITUTION. Universal decimal classification—English edition. 1943. V 1, Pt 1. P 21.
- 2 Sec 661 INDIAN STANDARDS INSTITUTION. Indian standard glossary of classification terms. 1964. Sec N343.
- 3 Sec 631 PARTHASARATHY (S). Packet notation (An lib sc. 2; 1955; 109-11).
- 4 Sec 611 RANGANATHAN (S R). Colon classification. Ed 6. 1960. Sec 0581.
- 5 Sec 631 ——. ——. Sec 0583.
- 6 Sec 75 ——. Connecting symbols for space and time in CC. (An lib sc. 8; 1961; 69-79).
- 7 Sec 710 ——. Elements of library classification. Ed 3. 1962. Sec N33.
- 8 Sec 32 ——. Notational plane: Interpolation and extrapolation (An lib sc. 10; 1963; Paper A).
- 9 Sec 75 ——. Optional facets of classification (3), (4) and (5). (Annals, Ind lib assoc. 1; 1950; 73-83, 97-107, 140-7).
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- 14 Sec 68 ——. ——. Sec 3653.
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K91

GOPINATH AND MALHOTRA

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- 92 Statement of Man Hours  
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for 6,800 main entries in the *British notational bibliography* (1965)  
took 300 man-hours.  
Total man-hours were 400.