

Some Sources of Data and Aids for a Study of the Towns of Ceylon

I. General Remarks

A classification of Ceylonese towns is recognised for local administration.¹ This, in an ascending order comprises of :—

Town Councils	36
Urban Councils	35
Municipal Councils	8 (Fig. 1)

The Minister of Local Government, in fact, is empowered to confer town, urban or municipal status or raise such status (a village council to town council, town to urban, urban to municipal) provided such an area has a large population, possesses certain facilities and utilities and has certain civic problems which require an appropriate civic organisation. The basic requirements for town, urban and municipal status, however, are neither defined nor written. The Minister's discretion, consequently varies widely.² In the absence of written or accepted definition of a Ceylonese town, it is necessary to attribute certain minimal characteristics in order to distinguish a town (an urban settlement) from a village (rural settlement). Some characteristics of an urban settlement³ are : (1) a minimum population of 5,000⁴ and an average density about 8-25 persons per acre ; (2) a compact form and texture especially in the core area where the component buildings, street system and open spaces are tightly woven ; (3) minimum equipment providing commercial facilities (market or bazaar or fair or retail stores etc.); transport yards (bus-stand or railway station), hospital, secondary schools, and places of religious worship (*vihāra* or *kovil*, church

1. Report of the Commission on Local Government. *Ceylon Sessional Paper*, XXXIII—(1955).

2. Recently, there has been a proposal to confer municipal status on Ratnapura, a town having a population about 16,598 (1953). Although, it is a regional centre and the provincial capital, it holds rather a low position in the Ceylonese urban hierarchy. It may be pointed out Moratuwa, Kotte, Matara and Trincomalee should be raised to municipal status before Ratnapura.

3. B. L. PANDITHARATNA, "A geographical Description and Analysis of Ceylonese Towns." *The Ceylon Journal of Historical and Social Studies*. Vol. 4, January-June, 1961, No. I, pp. 71-95.

4. Many Ceylonese settlements with less than 5,000 people are, in fact, considered as towns, because these are raised to town or urban status by the minister. In each of these, there is a local body administering its own affairs.

or mosque); (4) minimum urban utilities, at least electricity, water service (either pipe borne or any other arrangement), conservancy system and disposal of refuse etc., maintained by the local council.

In respect of population numbers, some 35 towns (11 urban councils and 24 town councils) do not deserve to be designated as towns. The second feature is associated with urban morphology. Morphological variety is seen in the Ceylonese urban landscapes. Colombo townscape shows block building development, storey-variation characterising a high skyline. Besides, morphological areas such as the core and the integuments are distinctly recognisable. Each morphological district shows special spatial associations emphasising specific functions.⁵ The provincial capitals and district towns on the other hand, do not possess such well-developed morphological areas as in the national capital. Besides, the building density, textural variety and associations, architectural features are very different. This contrasts with the typical string-line development or radial plan of predominantly ground-floor buildings with mixed functions, a common feature in the small towns, also called the junctions centres. Detailed field researches would enable us to recognise different morphological areas and varieties in the different townscapes, an important basis for establishing a town hierarchy in Ceylon. Urban equipment contributes to the development of a variety of functions so characteristic of a service centre. Depending on the nature, quality, range and usefulness of such services and assessing the impact and nature of inter-relationships of such services with the surrounding regions, a classification of towns may also be made. Regarding the fourth, electricity seems to be available in all the towns, whereas a pipe borne supply of water, sewage and satisfactory standards of environmental sanitation are lacking altogether in most towns.

II. Sources : Maps and Photographs

A conventional method is the study of town maps. Town maps are of three types. (a) Historic maps, (b) Town Survey series maps, (c) Special maps.

Historic maps are available either at the Government Archives,⁶ or the Museum Library or the Surveyor General's Office.⁷ These help to re-

5. B. L. PANDITHARATNA, "The Colombo Townscape : Some Aspects of its Morphology." *University of Ceylon Review*. Vol. XIX, No. I, pp. 45-56.

6. Appendix I gives a selected list of maps found at the Government Archives, Gangodawila.

7. Most of those at the Surveyor General's Office are printed and reproduced in R. L. Brohier, *Lands, Maps and Surveys*, Vols. I and II.

construct the historical geography of a town in respect of the following aspects: (1) the morphology of the town at a specific date (date given in the map); (2) its areal extent, the nature of the buildings and other elements of the ground plan; (3) any unique feature peculiar to specific periods which may give a clue to the functional aspects and which may have subsequently vanished from the present face; (4) the changing morphology in relation to different stimuli.

Both the energising stimuli and the restricting factors vary in their effectiveness through time and so, for purposes of comparison, they must be considered in relation to specific time or period.

Town Survey series maps (available at the Survey General's Office) are basic in town studies. Cartographically, sketches of either the whole town plan comprising its component elements (roads, buildings and open spaces) or special morphological areas such as core, slums, middle class or high class housing zones have to be drawn to scale. It is with the aid of these maps that the researcher reconstructs his base map or maps on which he intends plotting details of the urban survey. Appendix 2 is a full list of the Town Survey series maps. The scale of the maps varies between one inch to one chain to one inch to sixteen chains. For Colombo, detail surveys are available on the scale of one inch to one chain and one inch to four chains. Details may be studied in these large scale maps, but the relevant data may be plotted on a useful base map on the scale of one inch to sixteen chains. For Kandy, Galle, Jaffna and Negombo, maps on the scale of one inch to two chains may be used for detailed assessment, but final base maps may be on the scale of one inch to ten or twelve chains. For the smaller towns, those less than 1,000 acres in area, the base map may be on the same scale as the published map. The large scale maps are useful to identify individual garden plots, households, fences, roads, paths, alleys and other physical structures. After detailed reconnaissance, it may be possible to group certain areas showing common characteristics and thus delineate morphological areas or regions within the townscape. Large scale maps, however, are too unwieldy and may not be easily reducible for purposes of reproduction.⁸ In Ceylon, map reduction processes either by photographic or photostat methods are available only in a few places.⁹ It is

8. For example, if it is required to reduce a large scale map for reproduction in an article, then it may not be possible without sacrificing the details shown, blurring of letters etc. Such a map is of little cartographic value.

9. There are a few commercial photographers who are able to handle this type of work (both reduction and enlargement). The Surveyor General's Office handles only governmental orders. The Archives at Nuwara Eliya undertakes map reproduction by photostat method. Elsewhere, facilities are extremely limited.

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advisable to select a medium size base map (one inch to eight chains, if the town is small in area, and one inch to sixteen chains for Colombo) for plotting details.

The Town Survey series are revised and published incorporating subsequent changes in the townscapes. Different editions of these maps reveal these changes in the built-up areas, the new areas where the urban spread has subsequently taken place and the spatial and textural relationships of the different areas. These maps are then an essential requisite and help to evaluate comparative morphology at different times and the nature of the changing face of the townscape.

There is a third type of 'special maps' available at the local council offices. Some of these are published in special reports such as the Ceylon Sessional Papers. Others are published for planning purposes by the Department of Town and Country Planning.¹⁰ These maps are designed for 'ad hoc' purposes such as housing, slum clearance, urban renewal, sanitation, drainage and planning. These reveal up to date information about the nature and plan of present development and the proposed future extensions. A recent search in the Record Office of the Government Agent, Kandy, brought to light a very useful collection of town maps of the Highlands of Ceylon. It would be very rewarding indeed to search for similar maps in the other district kachcherics. Unfortunately, those at Kandy, are not catalogued or systematically arranged. Further, some maps and records, for reasons of security and secrecy are not available to the public, even to the academic researcher. It is a pity indeed that these maps and documents remain closeted and their study denied to the researcher.¹¹

Maps are two dimensional and are drawn according to accepted conventional symbols. A vertical aerial photograph or a series of such photos amenable for stereoscopic study of the same area as shown in the map, on the other hand gives a three dimensional and an accurate picture of the urban landscape. The stereo pairs reveal the textural, structural and even cultural details of the physical forms and thus help to group them according to certain similarities and differences. The Canadian Hunting Air Survey

10. Since the Department is in charge of aspects of physical planning of our towns, it has a very useful collection of town maps. The officials there, from the Town Planner to the Geographer are very willing to help any student of urban areas and problems.

11. It is required to obtain written permission from the Permanent Secretary, Ministry of Home Affairs, in the first instance, secondly, the permission of the Government Agent of the local kachcheri and finally the goodwill of the Record keeper.

Corporation has made available a complete coverage of the entire Ceylonese landscape. For urban studies, however, these photographs which are usually on the scale of 1:40,000 need to be enlarged by about 8 or 10 times. The enlarged aerial photographs will thus complement in many respects the survey maps. The importance of these photographs may be emphasised because some of these town survey maps are sadly out dated and have not been revised.¹²

Oblique air photographs taken at considerable altitude or oblique photographs taken from commanding heights such as tops of buildings may also be used. In addition, photographs of distinctive features such as buildings and their architectural details, features of lay out, textural characteristics, relics and monuments are useful aids to portray accurately the complex, heterogeneous and sometimes not too easily describable features of the urban scene.

III. Documents

Documents relevant to the study of the towns of Ceylon fall into two categories : (1) published sources, (2) unpublished sources.

Published sources include (1) the Ceylon Sessional Papers dealing with the administration of the municipalities for the different years. There are also those based on studies of specific problems such as housing, flood control, harbour extension, sanitation etc., (2) other public reports and books about specific urban problems, (3) Ceylon Census Reports, (4) books and articles where references are found about towns etc.

Unpublished sources are mainly the local council minutes and proceedings which record the personal choices and prejudices of members of council, expressed as decisions for the civic welfare and material prosperity of their respective towns.

Most of the published sources are available for reference at the Museum Library, Archives, University of Ceylon Library and some of the research libraries. Regarding the use of data in the Ceylon Census Reports for 1953, it must be pointed out, that the figures given in the report printed in October

12. If we examine carefully Appendix 2, it is seen that most of the editions of the Town Survey maps available for use have been published ten or twenty years ago. Thus, the necessity to refer to air photographs to incorporate the features of the present urban landscapes.

1953¹³ differ considerably from the reports printed in May 1958.¹⁴ It is advised to use the latter. Although these reports contain demographic data,¹⁵ yet they do not give the acreages of the wards of towns at the time of the census. This data is important for the computation of ward densities of population, housing and spatial relationships. For this data, the researcher may have to go through either the relevant sessional paper for the respective year and this is limited to the Municipalities of Colombo, Galle and Kandy or the unpublished data available in the town council offices. Access to unpublished sources is rather difficult if not tricky. Obviously one has to present one's 'bona fides'¹⁶ and establish beyond reasonable doubt that the data would be used purely for academic research. The records in most of these offices are not kept in systematic sequence and are often misplaced or may even be missing. The researcher, however, should never lose faith, for patient and determined search sometimes may lead to the rediscovery of missing data which certainly should prove rewarding. In fact, most current data about Ceylonese towns are unpublished or when these are published, they are sadly out of date.¹⁷ Thus unpublished data are more useful than published sources because of the relevance of the former in the contemporary urban scene.

IV. Some Selected Readings in Urban Geography

The researcher should possess a sound grasp both of the theory, principles and also the methods and techniques of Urban Geography. The scope and techniques of Urban Geography, though little developed in Ceylon are well established in some of the advanced countries of the west, and it is for this reason that one has to study some of the foreign sources. The selected readings may be classified into two categories : (1) Books, (2) articles, monographs and documents.

An admirable book which summarises and illustrates the contents of Urban Geography is *The Geography of Towns* by A. E. Smailes. Its introductory chapters trace the origin and bases of towns and discuss problems of their classification and ranking, followed by a discussion of the setting of towns, in its aspects of site and situation. Towns are also examined

13. K. WILLIAMS, *Census of Ceylon*, 1953. Printed in October, 1953, Colombo.

14. N. MANICKA IDAIKKADAR, *Census of Ceylon*, 1958. Printed in May, 1958, Colombo.

15. These include population numbers, density, growth of population, the classification according to age, sex, religion, race and nationality, place of birth, movement, conjugal conditions, orphanhood and literacy.

16. It would be best to obtain a personal introduction to the officials.

17. The Administration Report of the Colombo Municipality for 1956 was published only in February, 1962.

as expressions of different cultures and considerable attention paid to their internal geography, the nature and development of distinctive regions within the structure of urban areas. Finally, the importance of every town's relations with its surroundings is emphasised and the intimate links between towns and the districts they serve are shown to provide a regional basis in Social Geography.¹⁸ *The West European City* by R. E. Dickinson gives a methodological approach in the study of forms of dwelling-place and interpreting them in the light of their functions and historical development.¹⁹ *City, Region and Regionalism* deals with the idea of the geographical region as a social unit, the functions and structure of the city as a centre of regional integration.²⁰ *Readings in Urban Geography* edited by H. M. Mayer and C. F. Kohn, a symposium of topics concerned with geographical concepts, principles and generalisations related to urban functions, structure, distribution and growth should prove a very useful aid.²¹

Other studies, mainly articles in the learned journals suggest different methods of analysis which are useful with appropriate modifications. Urban morphology attracts our attention. In this respect H. S. Thurston's "Study of St. Albans",²² M. J. Wise's "The Evolution of the Jewellery and Gun Quarters in Birmingham"²³ and A. E. Smailes' "Some Reflections on the Geographical Description and Analysis of Townscapes"²⁴ are very useful. Some of these methods and techniques have to be modified when applied to Ceylon because of the varying and dissimilar historical, socio-economic factors and different geographical environments. My paper on "The Colombo Townscape: Some Aspects of its Morphology" is an attempt in the application of suitable methods to describe the morphology of the city and to divide it into morphological areas.²⁵ The phenomenon of segmentalisation based on cultural elements such as community, religion, language, architectural and other culture forms is an unique feature in urban

18. A. E. SMAILES, *The Geography of Towns*, London, 1953.

19. R. E. DICKINSON, *The West European City, (A Geographical Interpretation)*, London, 1951.

20. R. E. DICKINSON, *City Region and Regionalism*, London, 1956.

21. *Readings in Urban Geography*, edited by H. M. Mayer and C. F. Kohn, Chicago, 1959.

22. H. S. THURSTON, "The Urban Regions of St. Albans." *Institute of British Geographers, Transactions and Papers*, 1953, pp. 107-21.

23. M. J. WISE, "The Evolution of the Jewellery and Gun Quarters in Birmingham," *Institute of British Geographers, Transactions and Papers*, 1949.

24. A. E. SMAILES, "Some Reflections on the Geographical Description and Analysis of Townscapes." *Institute of the British Geographers, Transactions and Papers*, 1955.

25. B. L. PANDITHARATNA, *The Colombo Townscape: Some Aspects of its Morphology* *University of Ceylon Review*, Vol. XIX, No. I, pp. 45-56.

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morphology. E. Jones in his *A Social Geography of Belfast*, pointed out the segregation and segmentalisation of Irish catholics in the residential areas of Belfast.²⁶ In my paper on "A Geographical Description and Analysis of Ceylonese Towns," communal segmentalisation especially the Muslim and Tamil communities in certain wards of certain towns is indicated.²⁷

The American morphological studies, especially those of the C.B.D. (Central Business District) based on land use, land values, block frontage values, values of sales etc. by Murphy and Vance,²⁸ are of limited practical significance for these techniques are difficult to apply. Besides, historical and social factors seem to play rather a prominent role in the location, lay out and subsequent spread of our towns. Historical, social, economic, administrative forces and imperial policies have all been considered in delineating "The Functional Zones of Colombo City".²⁹

Data on occupations, business and other functions covering most of our towns are not available. Thus the task of attempting a functional classification becomes difficult. The studies conducted in other countries, however, tend to stimulate field work in the direction of collecting such data based on sampling surveys and computations. For instance, papers on this topic by C. Harris,³⁰ Sellwood,³¹ L. L. Pownall,³² H. J. Nelson³³ and M. Arousseau³⁴ should be consulted. Another important aspect, "The Basic-Non-Basic Concept of Urban Economic Functions" is clearly presented by J. W. Alexander.³⁵ The essence of the concept may be explained as follows: The term functional structure defines the division of

26. E. JONES, *A Social Geography of Belfast*, London, 1960.

27. B. L. PANDITHARATNA, "A Geographical Analysis and Description of Ceylonese Towns." *The Ceylon Journal of Historical and Social Studies*, Vol. 4, 1961.

28. R. E. MURPHY AND J. E. VANCE, "Delimiting The C.B.D." *Economic Geography*, Vol. XXX, 1954.

29. B. L. PANDITHARATNA, *The Functional Zones of Colombo City*. *University of Ceylon Review*, Vol. XIX, No. 2.

30. C. HARRIS, "A Functional Classification of Towns in U.S.A." *Geographical Review*, Vol. 33, 1943.

31. SELLWOOD, *An occupational classification of towns of England and Wales based on the Census of 1931*.

32. L. L. POWNALL, "The Functions of New Zealand Towns." *Annals of Association of American Geographers*, Vol. 43, 1953.

33. H. J. NELSON, "A Service Classification of American Cities." *Economic Geography*, 1955.

34. M. AUROUSSEAU, "The Distribution of Population, A Constructive Problem." *Geographical Review*, 1921.

35. J. W. ALEXANDER, "The Basic-Non-Basic Concept of Urban Economic Functions." *Economic Geography*, 1954.

urban population into active (basic and non-basic) and inactive members. The differentiation into basic and non-basic groups relates to their contributions to the foundation and development of the town. The basic group includes people employed in establishments and institutions whose activity reaches beyond the town and so reflects the position occupied by the town in its region. The members of the non-basic group serve the residents of the town itself, especially the basic group. The non-basic group thus has a secondary character and appears only when the proper stimuli exist. The functional approach has been developed within the framework of economics and town planning. Geographers have shown interest in it only relatively recently, but it is already yielding interesting results in geographic research. In contrast to the studies of the functions of towns, research on the basis for economic stimulation of small towns does not belong to conventional geographical studies. Although the small towns tend to develop more slowly than the large ones, nevertheless their processes of growth or decline or stagnancy are important to assess the general progress of urbanisation. Again, since the majority of small towns will continue to perform the role of local centres, it is also important to analyse the condition of the surrounding agricultural economy and its possibilities for development, together with their possible effects for the town.

The problem of classifying towns and establishing an urban hierarchy has been undertaken by A. E. Smailes in his paper on "The Urban Hierarchy, in England and Wales."³⁶ He regarded retail trade as the most important single service rendered by a town. This, however, was difficult to measure without adopting certain indices or criteria. He chose three or four banks, a branch of a wellknown department store (Woolworth's or Marks and Spencer's), a cinema, a secondary school, a hospital and a local newspaper as the minimum endowment of a town. Dickinson made a similar study based on banking facilities in the 'rural towns' of East Anglia.³⁷ I. Carruthers grouped the towns of England and Wales into first, second and third order service centres based on the limits, size and extent of the delivery zones, (grocery), the limits of the local newspaper circulation and the furthest places from which the people came to the town for regular purchases and services.³⁸ The minimum equipment of a Ceylonese town has been

36. A. E. SMAILES, "The Urban Hierarchy in England and Wales." *Geography*, 1944.

37. R. E. DICKINSON, "The Distribution and Functions of the Smaller Settlements of East Anglia." *Geography*, 1932.

38. I. CARRUTHERS, "A Classification of Service Centres of England and Wales." *Geographical Journal*, 1957.

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suggested elsewhere in this study, but the task of establishing a Ceylonese urban hierarchy has yet to be accomplished.³⁹

Regarding the urban field⁴⁰ (referred to also as umland,⁴¹ sphere of influence⁴² and hinterland⁴³) western geographers have selected criteria which form the pivots of inter-relationship between town and region. For example, C. Harris⁴⁴ has selected twelve services performed by Salt Lake City such as retail trade, wholesale grocery trade, wholesale drug store, radio broadcasting, newspaper area, religious sphere of influence, telephone area, bakery distribution, oil distribution together with three less important services. F. H. W. Green⁴⁵ studied the town as a centre of communication network on the basis of bus services. Since every town in Ceylon is also a centre of bus services, it may prove successful to adopt his technique to delineate town regions with special reference to bus commuting and passenger mobility. Data about bus routes, time tables, season tickets and daily tickets may be obtained from the seventeen regional depots. Field work is essential to assess the dynamics of flow, nature and volume of traffic, the adequacy or inadequacy of such transport services, in relation to facts of social geography in the town-region under study. It may also be possible to obtain information from the Public Works Department about the 'origin-destination' traffic surveys conducted by them in conjunction with the United States Operation Mission. The dynamics of this movement of in-commuters and out-commuters is shown in Dickinson's study of "The Geography of Commuting: the Netherlands and Belgium."⁴⁶ This provides us with a technique of approach to study the commuting pattern of Colombo, involving the movement of 200,000 people daily.

The concept of conurbation propounded by P. Geddes⁴⁷ and conurbation studies, especially those of Great Britain by C. B. Fawcett,⁴⁸ G. Powell,⁴⁹

39. L. WIJAYAPALA, (formerly Geographer, Town and Country Planning Department) is at present researching in this problem.

40. A. E. SMAILES, "The Analysis and Delimitation of Urban Fields." *Geography*, Vol. 32, 1947

41. E. VAN CLEF, "Hinterland and Umland." *Geographical Review*, Vol. 31, 1941.

42. F. H. W. GREEN, "Urban Hinterlands in England and Wales." *Geographical Journal*, 1950.

43. E. W. GILBERT, "Urban Hinterlands." *Geographical Journal*, 1950.

44. C. HARRIS, *Salt Lake City, A Regional Capital*. University of Chicago, 1940.

45. F. H. W. GREEN, *op. cit.*

46. R. E. DICKINSON, "The Geography of Commuting: the Netherlands and Belgium" *Geographical Review*, 1957.

47. P. GEDDES, *Cities in Evolution*, London, 1915.

48. C. B. FAWCETT, "The Balance of Urban and Rural Populations," *Geography*, 1929.

49. G. POWELL, "Recent Developments in Greater London", *Journal of the British Association for the Advancement of Science*, 1960.

Sir Patrick Abercrombie⁵⁰ and T. W. Freeman⁵¹ provide useful reading. The first plan of Colombo city drafted by Geddes envisaged planning the city in reference to a 'Greater Colombo,' where the garden suburbs would shape into suburban centres.⁵² Since 1921, Colombo has developed rapidly spreading out especially south and south east irrespective of any plan. The concept of planning the city in relation to its region was adopted in the proposals of Sir Patrick Abercrombie and O. Weerasinghe.⁵³ In a study of the Colombo conurbation, these reports are invaluable. Besides, field investigations are essential to assess the changes, especially those of population numbers, housing density, spread of houses into new areas, the corresponding growth of civic amenities, new road systems, the increasing value of new areas, the pattern of changing land values, changes of land use, provision of public utilities and a host of other problems.

The studies of eastern towns which would help us directly should not be ignored. For instance, R. H. Singh's *Banaras: A Study in Urban Geography*;⁵⁴ O. H. K. Spate's "Studies of Rangoon"⁵⁵ and the "Cities of the Gangetic Plain"⁵⁶; E. G. H. Dobby's "Singapore Town and Country"⁵⁷ and R. H. Huges's *Hongkong: An Urban Study*,⁵⁸ provide many useful suggestions and methods. In addition, W. L. Jeyasingham's "Urban Geography of Jaffna"⁵⁹ and the author's "Colombo: A Study in Urban Geography"⁶⁰ attempt to establish a methodology especially suitable to the study of Ceylonese towns.

V. Field Data

A reconnaissance survey of the entire town (under study) followed by detailed surveys of parts of it would provide an intimate knowledge so

50. P. ABERCROMBIE, *The Greater London Regional Plan*, 1944.

51. T. W. FREEMAN, *The Conurbations of Great Britain*, 1959.

52. P. GEDDES, "Town Planning in Colombo: A Preliminary Report." *Ceylon Sessional Paper III*, 1921.

53. P. ABERCROMBIE AND O. WEERASINGHE, *The Colombo Regional Plan*, (unpublished) Colombo 1947.

See also: C. HOLLIDAY, *City of Colombo. Memorandum on Town Planning*. Colombo, 1940.

54. R. H. SINGH, *Banaras: A Study in Urban Geography*, Banaras, 1955.

55. O. H. K. SPATE, "Rangoon: A Study in Urban Geography." *Geographical Review*. Vol. 32, 142.

56. O. H. K. SPATE, "Five Cities of the Gangetic Plain." *Geographical Review*. Vol. 40, 1950.

57. E. G. H. DOBBY, "Singapore, Town and Country." *Geographical Review*. Vol. 30, 1940.

58. R. H. HUGES, "Hongkong: An Urban Study." *Geographical Journal*. Vol. 117, 1951.

59. W. L. JEYASINGHAM, *Urban Geography of Jaffna*. Doctoral Dissertation submitted to Clark University, 1958, (unpublished).

60. B. L. PANDITHARATNA, *Colombo: A Study in Urban Geography*. Doctoral Thesis submitted to the University of London, 1960, (unpublished).

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essential to understand the complexity and variety of the townscape. At the start, the acreages under the uses of urban land provide the skeletal framework of detailed inquiry and study. Such a grouping of different urban land uses that would help the dissection of the townscapes is shown in Appendix 3.

A method usually considered as suitable for western towns based on fractional notation may not be followed except for Colombo city. According to this method, details of any building are reduced to a fraction with three figures in the numerator and three in the denominator. Broadly, the numerator presents a functional picture of the building concerned, the denominator, structural details and age. (see Appendix 4). This system, with practice, is easy to operate since some of the digits as the first and second in the numerator and first and second in the denominator are easily discernible. In the actual process of recording data, one becomes aware of specific fractions that may repeat constantly, enabling one to recognise the salient types of buildings together with their functions. The change of the fraction from one part of the city to another gives clearly the impressions of the character and extent of the different urban zones.

Field work is also required to determine the nature and range of functions of the town or towns within the region and the extent to which life outside towns depends upon the town's resources. This is with a view to ascertain to what extent the equipment of services centred in the town itself suffices the needs of the local inhabitants and to what extent they look to larger towns (districts, provincial and capital city itself) for special features. Appendix 5 is a tentative questionnaire relevant to Ceylonese conditions,⁶¹ based on indices which may portray effectively the urban field of towns.⁶²

In conclusion, the problems of Ceylonese urban geography have hardly received any attention. There is some interest shown in aspects of physical planning of our towns—the task of the Department of Town and Country Planning. If this paper in some way or the other stimulates interest in, and promotes the study of our towns and related problems, my efforts are amply rewarded and aims fully realised.

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61. This is partly based on the Questionnaire prepared by the Standing Committee on Urban Spheres of Influence under the auspices of the Geographical Association (Great Britain).

62. It has to be circulated in the surrounding villages and when completed, it is possible to delineate the urban field of the particular town under study fairly accurately.

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APPENDIX I

SOME SELECTED HISTORICAL MAPS AVAILABLE AT THE GOVERNMENT ARCHIVES DEPARTMENT, NUGEGODA.

Description	Author, Editor or Publisher	Date
Colombo		
1. Fortress of Colombo in 1518	Printed (S.G.O.)	
2. Indication of the important Places and Roads of Colombo		1656
3. Colombo at the time of the Siege by the Dutch	Baldeus	1670
4. The Castle of Colombo as it is Today (Jan. 1697) showing what works remain to be finished		
5. The Haven of Colombo and the West Coast of Ceylon	Van Keulen	1750
6. Map of the Fortress, the old Town of Colombo	P. Foenander	1785
7. Plan of the Castle and of Colombo		1790
8. Plan of the Harbour of Colombo on the West Coast		1790
9. Plan of the City and of the Fort of Colombo in the Island of Ceylon at the time of the surrender to the English on 16th February, 1796	Delineated and engraved by Taedien	1796
10. Ground Plan of the City and Castle of Colombo		
11. Maps of Colombo—4 chains to an inch		1906
12. City of Colombo		1927—34
13. Plan of the Fortress of Kalutara built in 1661		1681
14. Plan of the Fortress situated in Kalutara		Dutch Period
15. View of Galle		1670
16. Galle fortified in 1663	Martinus Neyhoff	1670
17. Ground Plan and Castle of Point de Galle		1744
18. Point de Galle	Van Keulen	1750
19. Plan of the Fort of Galle and the defences relating to the project of 1787		1787
20. Plan of the Fortress of Galle	Major Reinier and G. E. Schneck	1790
21. The Galle Harbour with Surroundings	G. E. M. McDougall and H. Harris	1860
22. Plan and Profile of the Fort of Matara	Van Eck	1766
23. Plan of the Matara Fort and the surrounding area		Dutch Period
24. Projected Plan for the improvement of Matara		Dutch Period
25. The Fortress of Batticaloa		1698
26. Trincomalee in the East Coast of the Island of Ceylon	Van Keulen	1750
27. Plan of the Bay and Harbour of Trincomalee		1762

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28. The Bay of Trincomalee	Van Keulen	1794
29. The Bay of Trincomalee	Copied from the plan of D'apre de Manvilette Lieut.	
30. Harbour of Trincomalee	James Cannon and Hector Loring	
31. Plan of the Wharf and the Jetty		1813
32. Plan of the Fort Ostenburg		Dutch Period
33. Jaffna, inserted in the Mss. Atlas	Johannes Vingboons	1665
34. General Map of Jaffnapatnam and Wannu		1720
35. Jaffnapatnam		Dutch Period
36. Fort and Castle at Jaffnapatnam		Dutch Period
37. Picture of the Town and Castle of Jaffnapatnam		Dutch Period
38. Mantota		1719
39. Mannar		1719
40. Plan of the Fort, the channels and gardens at Mannar		
41. Kalpentyn		Dutch Period
42. Plan of the Fort and road situation at Kalpentyn		Dutch Period
43. Special Map of the Fort, Old City and further the road situation of Negombo		
44. The Fort at Sitawaka		Dutch Period
45. The Fort at Hakmana		Dutch Period
46. The Fort at Ruanwella		Dutch Period
47. The Fort at Hanwella		Dutch Period
48. Plan of Kandy together with the encampment of Gov. Van Eck		1766
49. Map of Kandy Town, congested area and northern suburb	Done under the order of G. K. Thornhill	
50. Entrance to the River Hoogly, the Harbour of Colombo, the Harbour of Point de Galle (1818) and the Harbour of Trincomalee		1820
51. Monumenta Cartographia	Dr. F. C. Weider	
52. Photostats of Ceylon Maps and Plans at the States Archives, Holland.		

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APPENDIX 2

SCHEDULE DESCRIBING THE NAMES, SCALES, DATES AND MAPS PUBLISHED OF THE TOWNS FOR WHICH TOWN SURVEYS EXIST.

No.	Name of Town	Nature of Plan, Scale and Date	Scale of Map Published	Remarks
1.	Colombo	Skeleton survey Details filled in No tenement list	1 chain scale 1917-1923 1931-1932	4 chains 16 chains*
2.	Jaffna	Skeleton survey	2 chains scale 1929	10 chains*
3.	Kandy	Assessment survey* (Congested area)	2 chains scale 1932	12 chains* 6 chains* (Congested area)
4.	Negombo	Skeleton survey (Assessment survey based on the 1 chain Skeleton)	1 chain scale 1916 2 chains scale 1927	10 chains*
5.	Matara	Skeleton survey (Assessment survey* based on the 1 chain Skeleton)	1 chain scale 1920 2 chains scale 1928	8 chains* Revised in 1941
6.	Kalutara	Skeleton survey	2 chains scale 1929	8 chains* Revised in 1939
7.	Panadura	Assessment survey*	2 chains scale 1930	8 chains*
8.	Batticaloa	Skeleton survey	1 chain scale 1924	10 chains*
9.	Matale	Skeleton survey	2 chains scale 1924	8 chains* Revised in 1949
10.	Trincomalee	Assessment survey	2 chains scale 1924-1925	8 chains*
11.	Badulla	Skeleton survey	1 chain scale 1921	8 chains*
See 43 below		Cadastral Survey (old) with Tenement list	2 chains scale 1907-1908	10 chains* Revised by Plane Table 6-10-1934
12.	Anuradhapura	Detail survey with Tenement list	1 chain, 2 & 1923-1924	12 chains* T.S.P.P.14, 14a and 14b
13.	Ratnapura	Assessment survey*	4 chains, scale and 1926	8 chains* Revised see 69.
14.	Nuwara Eliya	Cadastral survey (old) with contours No. Tenement list	2 chains scale 1930	8 chains* Revised by Plane Table 18-2-1935
See 42 below			2 chains scale 1899-1900	12 chains*
15.	Chilaw	Skeleton survey	2 chains scale 1926	8 chains*
16.	Gampola	Assessment survey*	2 chains scale 1927	8 chains*
17.	Puttalam	Assessment survey*	2 chains scale 1930	6 chains*
18.	Nawalapitiya	Assessment survey*	2 chains scale 1929	10 chains*
19.	Mannar	Detail survey with Tenement list	1 chain scale 1920	5 chains*
20.	Madampe	Detail survey with Tenement list	Chains scale 1911 & 1920	— Final T.S.P.P.15.
21.	Bandarawela	Assessment survey*	1 chain scale 1919	5 chains T.S.P.P. 12.
22.	Gampaha	Details survey with contours and Tenement list	2 chains scale 1930	5 chains* Revised with Contours T.S.P.P. 23.
23.	Kadugannawa	Detail survey with Tenement list	1 chain scale 1923	— T.S.P.P. 8
See 46 over			1 chain scale 1918	— T.S.P.P. 8
24.	Minuwangoda	Assessment survey*	2 chains scale 1930	6 chains

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25. Nattandiya	Detail survey with Tenement list	1 chain scale 1919	—	T.S.P.P. 13
26. Mawanella	Detail survey with Tenement list	2 chains scale 1922-1923	—	T.S.P.P. 27
27. Matugama	Detail survey with contours and Tenement list	2 chains scale 1921	—	M.S.P.P. 18
28. Undugoda	Detail survey with Tenement list	2 chains scale 1923	—	T.S.P.P. 17
29. Kendangamuwa	Block survey	2 chains scale 1932	—	V.P.691, Sab.
30. Diyatalawa	Detail survey with Tenement list	2 chains scale 1925-26	4 chains 6 chains	T.S.P.P. 28 Revised by plane Table in Sept. 1934.
31. Panwila	Detail survey with Tenement list	1 chain scale 1920	—	T.S.P.P. 9
32. Haldummuulla	Detail survey with Tenement list	2 chains scale 1924-1926	—	Final T.S.P.P. 26.
33. Padiyapalalla	Detail survey with Tenement list	2 chains scale 1924	—	T.S.P.P. 30
34. Bogawantalawa	Detail survey with Tenement list	1 chain scale 1920	—	T.S.P.P. 10
35. Ella	Detail survey with Tenement list	1 chain scale 1920	—	T.S.P.P. 11
36. Koslanda	Detail survey with Tenement list	1 chain scale 1925	—	Final T.S.P.P. 29
37. Welimada	Detail survey with Tenement list	1 chain scale 1937	—	T.S.P.P. 38
38. Erukkalampiddi	Detail survey with Tenement list	2 chains scale 1925	—	M.S.P.P.
39. Passara	Detail survey with Tenement list	1 chain scale 1937-1938	—	T.S.P.P. 39
40. Lunugalla	Detail survey with Tenement list	1 chain scale 1937-1938	—	T.S.P.P. 40
41. Dehiwala-Mount Lavinia	Detail survey with Tenement list	2 chain scale 1938-1940	12 chains	T.S.P.P. 41
42. Nuwara Eliya	Detail survey with Tenement list	2 chains scale 1938-1940	see 14	T.S.P. 12
43. Badulla	Detail survey with Tenement list	2 chains scale 1936-1941	see 11	T.S.P. 43
44. Lindula	Detail survey with Tenement list	1 chain scale 1939-1940	—	T.S.P. 44
45. Wattagama	Detail survey	1 chain scale 1939-1940	—	T.S.P. 45
46. Kadugannawa	Detail survey with Tenement list	1 chain scale 1939-1940	—	T.S.P. 46
47. Galle (selected areas)	Detail survey with Tenement list	1 chain scale 1940-1941	—	T.S.P. 47
48. Galaha	Detail survey with Tenement list	1 chain scale 1940-1941	—	T.S.P. 48
49. Norwood	Detail survey with Tenement list	1 chain scale 1941	—	T.S.P. 49
50. Maskeliya	Detail survey with Tenement list	1 chain scale 1941-1942	—	T.S.P. 50
51. Ja-Ela	Detail survey with Tenement list	2 chains scale 1945-1946	—	T.S.P. 52
52. Horana	Detail survey with Tenement list	2 chains scale 1947	—	T.S.P. 53
53. Avissawella	Detail survey with Tenement list and Contours	2 chains scale 1949	—	T.S.P. 55

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54. Wattala Mabole Peliyagoda	Detail survey with Tenement list	2 chains scale 1949	—	T.S.P. 56
55. Hambantota	Detail survey with Tenement list	2 chains scale 1947	—	T.S.P. 54
56. Rakwana	Detail and Contour survey with T.L.	2 chains scale 1951	—	T.S.P. 57
57. Kurunegala	Detail survey with Tenement list	2 chains scale 1952	—	
58. Alutgama	Detail survey with Tenement list	2 chains scale 1951	8 Ch. Map	T.S.P. 58
59. Rambukkana	Detail survey with Tenement list	2 chains scale 1954	—	T.S.P. 59
60. Anuradhapura New Site	Detail and Contour Survey	1 chain scale 1954	—	
61. Haputale	—	2 chains scale 1956	—	T.S.P. 61
62. Kirillapone	Detail and Contour	1 chain scale 1954	1 ch. sheet	
			4 ch. reduced plan	No number; part of Colombo
63. Kotte	Detail survey with T.L.	2 chains scale 1954-1959	—	T.S.P. 62
64. Medawachchiya	Detail survey with T.L.	2 chains scale	—	T.S.P. 63
65. Polgahawela	Detail survey with T.L.	2 chains scale	—	T.S.P. 64
66. Kekirawa	Detail survey with T.L.	2 chains scale 1953-1957	—	T.S.P. 65
67. Kolonnawa	Detail survey with T.L.	2 chains scale 1958-1961	—	T.S.P. 67
68. Moratuwa	Detail survey with T.L.	2 chains scale 1958	—	T.S.P. 68
69. Ratnapura	Detail and Contour	2 chains scale 1958	—	T.S.P. 69
70. Panadura	Detail with T.L.	2 chains scale 1961	—	T.S.P. 66.
Revision		1961	—	T.S.P. 70
71. Trincomalee	—	1916	—	T.S.P. 70
72. Galle	—	1961	—	T.S.P. 70

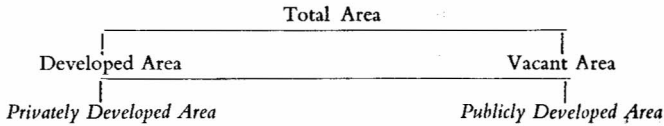
* Documents in the Office of the Commissioner of Local Government.

(From the Surveyor General's Office, Colombo)

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APPENDIX 3

TENTATIVE SCHEME FOR DISSECTING TOWNSCAPES INTO DIFFERENT URBAN USES



- | | |
|--|--|
| <p>I. Commercial</p> <ol style="list-style-type: none"> (1) The Core area (2) Secondary cores (3) Other retail areas <p>II. Residential</p> <ol style="list-style-type: none"> (1) Contiguous dwellings (lines) (2) Contiguous households (single family) (3) Detached houses (4) Detached houses with compound (5) One-storey residences (6) Multi-storey dwellings (flats) <p>III. Industry</p> <ol style="list-style-type: none"> (1) Heavy industry (2) Light industry (3) Dangerous and Offensive <p>IV. Recreation</p> <ol style="list-style-type: none"> (1) Playgrounds (2) Swimming pools (3) Other open spaces. | <p>A. Administration (offices and institutions)</p> <p>B. Public Utilities</p> <ol style="list-style-type: none"> (1) Roads (2) Railways (3) Water reservoirs (4) Gas and Electricity (5) Public parks and playgrounds. <p>C. Residential</p> <ol style="list-style-type: none"> (1) Ministry of Housing housing areas (2) Department owned housing areas (3) Local council owned housing areas (4) Owned by company or corporation <p>D. Industrial</p> <ol style="list-style-type: none"> (1) Industrial areas (2) Industrial estates or zones. <p>E. Open spaces</p> <ol style="list-style-type: none"> (1) Unused crown land (2) Marshy land (3) Water bodies. |
|--|--|

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APPENDIX 4

MORPHOLOGICAL SURVEY OF TOWNSCAPE BASED ON FRACTIONAL NOTATION

Numerator—presents a functional picture of the building concerned.

Denominator—structural details and age.

Numerator :

- 1st digit—major functional group.
- 2nd digit—to show function in further detail.
- 3rd digit—shows the number of floors occupied by the function.

Denominator :

- 1st digit—details of material used for walls.
- 2nd digit—details of material used for roof.
- 3rd digit—period during which it was constructed, (periods chosen to suit the town under study)

Numerator—1st digit—major functions.

1. Commercial (wholesale, retail and warehousing).
2. Manufacturing.
3. Institutional (administrative and socio-civic).
4. Residential.
5. Recreational.
6. Transportation.
7. Agricultural.
8. Vacant spaces.

Numerator—2nd digit—functional detail, for example, 1—with the combination of any category in 2nd digit. 15—means commercial, insurance.

1. (commercial) :

1. Wholesale trade and shops.
2. Retail shops, depots, stalls etc.
3. Markets.
4. Banking services.
5. Insurance services.
6. Estate agencies.
7. Business offices.
8. Legal offices.

(In case of 12 (commercial, retail) a further detailing of the function is necessary. Thus, —a, b, c, may designate further descriptions of the 2nd digit. (12d means—commercial, retail, barber shop).

Ex. 12 :

- a. Restaurants, cafes and taverns.
- b. Hotels with residence, resthouses and boardings.
- c. Laundries, dry cleaners and dyers.
- d. Barber shops, beauty saloons and therapy clinics.
- e. Photo studios.
- f. Funeral undertakers.
- g. Miscellaneous—boutiques, kiosks, stalls etc.

2. (manufacturing) mostly dealing with agricultural raw materials.

1. Tea firms.
2. Rubber firms.
3. Coconut firms.
4. Firms dealing with minerals and mine products.
5. Engineering, assemblage plants.
6. Motor garages and repair yards.
7. Light industries (like 12, 27, has several details, such as

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- a. Printing.
- b. Tailoring.
- c. Rice milling.
- d. Grinding mills.
- e. Aerated waters.
- f. Bakeries.
- g. Cigarettes, cigars and beedi manufacturing.

(Thus 27e means—manufacturing, light, aerated waters):

3. (institutional) :

- 1. Government offices.
- 2. Local government offices.
- 3. Churches.
- 4. Schools.
- 5. Hospitals, clinics, nursing homes.
- 6. Homes for the aged, asylums, retention homes.
- 7. Cemeteries and cremation grounds.

4. (residential) :

- 1. Residential flats.
- 2. Storeyed houses.
- 3. Houses with separate compound.
- 4. Houses without compound.
- 5. Contiguous houses.
- 6. Contiguous tenements (lines).
- 7. Shanties and hovels.

5. (recreational) :

- 1. Cinemas and theatres.
- 2. Parks and playgrounds.
- 3. Public houses, halls.
- 4. Swimming pools.
- 5. Clubs.

6. (transportational) :

- 1. Port yard.
- 2. Railway yards, sheds, and other properties.
- 3. Bus stands, garages, depots.
- 4. Air field and other facilities (if any).

7. (Agricultural) :

- 1. Garden (mixed).
- 2. Horticulture (vegetables, legumes and grass).

8 (vacant) :

- 1. Unbuilt crown land.
- 2. Water bodies.
- 3. Marshy land.

Numerator—3rd digit—number of floors, as follows :

- 0. no—storey.
- 1. one—storey.
- 2. two—storey.
- 3. three—storey.
- 4. four—storey.

Denominator—1st digit—walls :

- 1. Reinforced concrete.
- 2. Brick.
- 3. Stone.

4. Timber.
5. Corrugated iron or asbestos.
6. Clay and sand mixture.

2nd digit—roof :

1. Concrete (flat).
2. Tile.
3. Corrugated iron.
4. Asbestos.
5. Thatch.

3rd digit—period of construction :

1. Pre-European.
2. Colonial period upto 1870.
3. 1870 to 1945.
4. Post war period.

Thus any fraction, say $\frac{352}{344}$ = institutional, hospital, two-storey, stone, asbestos roof, post war construction.

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APPENDIX 5

INVESTIGATION TO DELINEATE THE URBAN SPHERES OF INFLUENCE

I. Retail Services :

- A. Name the place (town or village) to which people most commonly go for each of the following :
 - (a) Rice, flour, sugar, salt and other currystuffs.
 - (b) Green groceries and oilman goods.
 - (c) Fish and beef.
 - (d) Hardware goods.
 - (e) Textile and apparel.
 - (f) Bank, pawn brokerage, loans etc.
 - (g) Professional services (i) Doctor.
(ii) Lawyer.
- B. What town is commonly visited at least once a week either on the day of the fair, Saturday or any market day for shopping ?
- C. What towns are visited occasionally for special shopping ?
- D. To what markets do farmers in the immediate locality send their general produce ?
- E. From what towns or farm organisations do the farmers obtain supplies of seed, fertilizers, feeding stuffs, machinery and advice ?

II. Governmental Services :

- A. What secondary schools do pupils attend ?
- B. Where are each of the health services obtained ?
 - (i) Government dispensary.
 - (ii) Cottage hospital or maternity clinic.
 - (iii) General hospital.
- C. Where is the closest District Revenue Officer's Office located ?
- D. Where is the closest Police Station ?
- E. Where is the closest Kachcheri (Government Agent's Office) ?
- F. Where is the closest Magistrate's Court ? District Court ?
- G. Where is the closest Town/Urban/Municipal Council's Office ?

III. Transport Services :

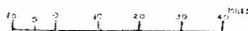
- A. At what time is the earliest bus or train to the nearest town ?
- B. At what time intervals do the buses or trains operate to the nearest town ?
- C. What time does the last return bus or train leave the nearest town ?
- D. Give the names of towns to which people travel to work. If possible give the approximate numbers travelling to each place, or say whether the number is large or small.

IV. Recreation and Religious Services :

- A. Where are the popular places of worship most commonly visited ?
- B. Where is the cinema hall most commonly visited ?
- C. Where are the playgrounds most commonly visited ?

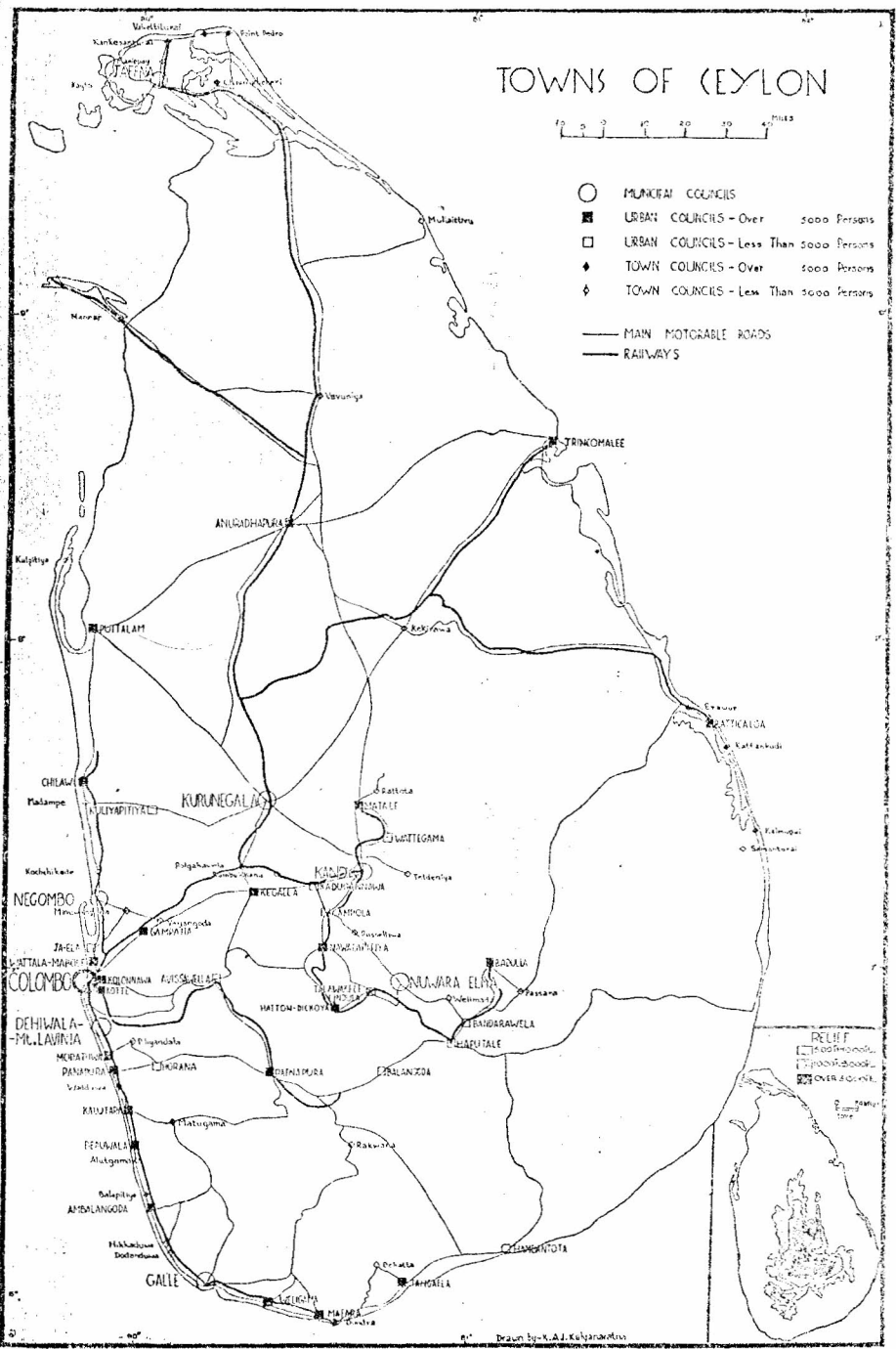
V. Any other information ?

TOWNS OF CEYLON



- MUNICIPAL COUNCILS
- URBAN COUNCILS - Over 5000 Persons
- URBAN COUNCILS - Less Than 5000 Persons
- ◆ TOWN COUNCILS - Over 5000 Persons
- ◇ TOWN COUNCILS - Less Than 5000 Persons

— MAIN MOTORABLE ROADS
 — RAILWAYS



Drawn by K.A.J. Kalyanaswami

FIG. 1