

Guide to the population estimates of Eastern
India 1811-1820.

By — Durgaprasad Bhattacharya

A GUIDE TO THE POPULATION ESTIMATES OF
EASTERN INDIA 1811-1830

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Abstract

This guide to the draft of the Report on the Population Estimates of India, Vol. 3, 1811-1820 (with supplement for 1821-1830), Part I, Eastern Zone, submitted to the Registrar General, India, is intended to summarise the material presented in the volume for the period 1811-1830 and roughly for the tracts represented by the present Arunachal, Nagaland, Manipur, Assam, Meghalaya, Tripura, Bangladesh, West Bengal, Bihar, Orissa. This guide spells out the design of the pre-census population studies aimed at compilation of population statistics and statistics on the composition, characteristics and material condition of the people. The guide shows in a tabular form the places or geographical tracts for which population statistics are available, 1961 geographical equivalent of the old tracts, area and population of each tract, methodology used in population statistics and sources of the data. This guide specially shows the scope of the enquiry of Dr. Francis Buchanan who surveyed the three districts of Bihar in 1810-1814 and the main features of the survey. The guide also summarises the descriptive and statistical material of the entire volume in a tabular form, showing the main trend of population history for the period 1811-1971. It also presents a brief summary of the material on morbidity and mortality of the period 1811-1830. The typed volume contains 1302 pages including 408 statistical tables.

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A Guide to the Population Estimates of Eastern India,
1811-1850*

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Section I. The Plan of Pre-Census Population Studies

1.1 The pre-census population studies were sponsored in 1961 by Asok Mitra the then Registrar General, India. The primary purpose was to compile material on population prior to 1872 scattered in unknown sources and places. It was decided to publish the material in eight volumes as follows.

Vol. I - Eighteenth century

Vol. II - 1801-1810

Vol. III - 1811-1820

Vol. IV - 1820-1830

Vol. V - 1831-1840

Vol. VI - 1841-1850

Vol. VII - 1851-1860

Vol. VIII - 1861-1872

1.2 The fourth volume entitled Report on the Population Estimates of India, 1820-1830 edited by Durgaprasad Bhattacharya and Bibhavati Bhattacharya^{1/} was published first in the series in the year 1965. It was stated in the Foreword by Asok Mitra, Registrar General, India (January 8, 1963), "This is the first of eight projected volumes on Population Estimates for various parts of India made from the eighteenth century upto 1870, when the first census of India was

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planned for execution in 1872 As this volume is one of the first ventures of its kind, I advised that there should be a minimum of editing, appraisal being limited to 10 points mentioned in para 1.5 of the editor's Preface. The first volume is primarily designed to elicit suggestions and criticisms for improvement. The Census Commission, therefore, invites comments and criticism so that future volumes may be enriched".

1.3 In para 1.2 of the editor's Preface of the volume relating to the period 1820-1830 (referred to subsequently as the published volume in this guide), it was stated, "The purpose of the report is primarily to compile all estimates of population of India or any part of it and to present them systematically in a uniform manner. Relevant materials about the composition and characteristics of population such as number of villages, houses, breakdown of population into age, sex, religion, caste, occupation, etc., have also been compiled as far as possible. Factors favouring or regarding the growth of population have also been taken into account". In para 1.5 of the editor's Preface of the published volume it was stated, "Each estimate has been presented under the following heads.

- (1) Year - the year to which the estimate refers.
- (2) Place - the name of the geographical tract to which the estimated population refers.
- (3) Source - (a) the book in which the particular estimate has been discovered - a full catalogue;
(b) the particular document or essay or note in the book where the estimate has been found. Each book is preceded by a number which is the serial number in our register.

It is followed by another number, e.g., BSL XIIA-1 which is the call number of the library where the book was available. BSL - Bengal Secretariat Library, NL - National Library, ASL - Asiatic Society Library, ISI - Indian Statistical Institute. Page numbers in the third parenthesis refer to particular pages from which materials have been extracted.

- (4) Materials - (a) Geographical location - location of the geographical tract, its latitude, longitude, boundary, length, breadth, physical aspects, area, etc., as far as available.
- (b) Particulars of population - total population, breakdown of population into houses, households, age, sex, religion, caste, occupation, urban and rural division, any other characteristics of population, vital statistics, other relevant data, e.g., number of villages, mauzas, mahallas, types of houses, etc., as far as available.
- (5) Method - Method followed by the author in arriving at the particular estimate such as complete enumeration, enumeration of houses, availability of land for cultivation, number of ploughs, consumption of grain or salt, etc.
- (6) Explanation- Any detailed explanation of the materials presented under item 4, or materials available on items referred there, e.g., description of caste and its function in a rural community, state of cultivation, manufactures and other productive economic activities, migration, material conditions of the people, moral character of the people, origin of the population, their language, habits, manners, social relations, natural check, famine, epidemic, etc.
- (7) Gaps - Any gaps mentioned by the author in any respect in the population estimate formed, e.g., under-coverage in respect of area, non-reporting by enumerators, prejudice of the informant, lack of reliability of any figure. etc.

(8) Essential information - The editors of this work have scrutinised whether the following information is available in an estimate presented (N. A. means not available, Av. means available).

- (a) area
- (b) houses/household
- (c) breakdown of population into
 - (i) male/female
 - (ii) occupation
 - (iii) religion
 - (iv) caste
 - (v) age
 - (vi) urban/rural
 - (vii) others [to be mentioned]

Items 1 to 7 have been reproduced in author's own words as far as possible. These are extracts from sources mentioned under item 3. The editors have inserted their own comments, where necessary, or have collated relevant materials from other sources, but such comments have always been placed within third parenthesis []. Extracts from documents other than the source mentioned in item 3 have been presented in a manner clearly distinguishing it from the main source and the document extracted has always been fully catalogued.

(9) Editorial comment - The editors have made their own comments on the materials presented or have extracted other relevant documents by way of comparison or criticism.

(10) Reference to- (i) earlier estimate
(ii) latter estimate

This item is naturally incomplete."

1.4 The above is an extract from published volume. Arrangement in the present volume differs in certain aspects as elaborated below. Under (3) Source- (a) and (b) have been omitted. If the material is extracted for a homogenous type of document, a full catalogue of the volume has been given with particular page

It is followed by another number, e.g., BSL XIIIA-1 which is the call number of the library where the book was available. BSL - Bengal Secretariat Library, NL - National Library, ASL - Asiatic Society Library, ISI - Indian Statistical Institute. Page numbers in the third parenthesis refer to particular pages from which materials have been extracted.

- (4) Materials - (a) Geographical location - location of the geographical tract, its latitude, longitude, boundary, length, breadth, physical aspects, area, etc., as far as available.
- (b) Particulars of population - total population, breakdown of population into houses, households, age, sex, religion, caste, occupation, urban and rural division, any other characteristics of population, vital statistics, other relevant data, e.g., number of villages, mauzas, mahallas, types of houses, etc., as far as available.
- (5) Method - Method followed by the author in arriving at the particular estimate such as complete enumeration, enumeration of houses, availability of land for cultivation, number of ploughs, consumption of grain or salt, etc.
- (6) Explanation- Any detailed explanation of the materials presented under item 4, or materials available on items referred there, e.g., description of caste and its function in a rural community, state of cultivation, manufactures and other productive economic activities, migration, material conditions of the people, moral character of the people, origin of the population, their language, habits, manners, social relations, natural check, famine, epidemic, etc.
- (7) Gaps - Any gaps mentioned by the author in any respect in the population estimate formed, e.g., under-coverage in respect of area, non-reporting by enumerators, prejudice of the informant, lack of reliability of any figure, etc.

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(9) Editorial comment - The editors have made their own comments on the materials presented or have extracted other relevant documents by way of comparison or criticism.

(10) Reference to - (i) earlier estimate
(ii) latter estimate

This item is naturally incomplete."

1.4 The above is an extract from published volume. Arrangement in the present volume differs in certain aspects as elaborated below. Under (3) Source- (a) and (b) have been omitted. If the material is extracted for a homogenous type of document, a full catalogue of the volume has been given with particular page

numbers where the extracted materials occur. If, however, the material has been taken from a volume which contains different essays or articles by the same author or by several authors, the particular essay or article has come first with the author's name first, followed by the title of the essay, then putting the word "In; the author (if any) and title of the main volume has been inserted giving information on volume number, date and place of publication, publisher, etc., and particular pages where the relevant material occurs.

1.5 No serial number follows the catalogued volume. Instead, only Call no. of the Library or libraries has been given in the third parenthesis. In this volume, the abbreviation of libraries are as follows :

WBSL = West Bengal Secretariat Library

NL = National Library

AS = Library of the Asiatic Society

ISI = Indian Statistical Institute Library

BSP = Bangiya Sahitya Parisad.

Names of Archives have been given in full.

1.6 (4) Materials (a) - "location of the geographical tract, etc." mentioned in para 1.5 of the Preface of the published volume stands intact, but another sub-item has been in the present volume by a sub-heading "geographical identification". Below this is presented the identification of any old tract of the period 1811-1830 referred to in the population estimate in relation the political-geography of 1961. The material presented under the sub-heading "geographical identification" is written by the editor and typed in single space. On the methodology of geographical identification, we shall speak afterwards.

(b) Particulars of Population - there are no changes so far as materials from original sources are concerned. But there are two distinct changes.

[1] (b) "Particulars of Population" starts with a Summary table in the form given below.

(4)-(b) - Particulars of population

Summary table

srl. no.	item	particulars
(1)	(2)	(3)
1.	area in square miles	
2.	number of villages	
3.	population : persons	
	males	
	females	
4.	number of families	
5.	number of houses	
6.	population per square mile	
7.	average size of a village	
8.	average size of a family	
9.	average size of a house	
10.	females per thousand males	

Naturally, this is a table prepared by the editor. This table is followed by tables or estimates of population reproduced from sources mentioned under item 3. These are called "Original Table" where tables exist. A fly-leaf is placed after the original tables. The fly-leaf is followed

by "Subsidiary Tables", that is, tables prepared by the editor from "Original Tables". The method of constructing the "Subsidiary Tables" has been given in the fly-leaf. Obviously, the "Summary Table" is also a "Subsidiary Table".

(5) Method - methodology of population estimates and allied statistical tables as given by the author of the estimate has been reproduced in author's own words wherever possible. In other cases, methodology of original estimate as understood by the present editor has been stated in editor's own words and typed in single space.

(6) Explanation - the scope is same as for the published volume.

(7) Gaps - the scope is same as in the published volume, often editor's understanding of gaps has been stated and presented in single space.

(8) Essential information - the scope is same as in the published volume, only "(vii) others" has been omitted.

(9) Editorial comment - in addition to the type of comments given in the published volume, attempt has been made to construct a time series of population for the relevant points of time in 1811-1830 and for the years 1872 (or 1881), 1921, 1961 or 1971 on the basis of area indential to the geographical tract covered by a population estimate in 1811-1830 through all the points of time. This time series show the growth between a point of time in 1811-1830, 1872 (or 1881), 1921, and 1961 (or 1971). Attempt has been made to assess whether in the light of rates obtained for 1872-1921, or for subsequent period, the pre-census rates of population increase obtained between a year in 1811-1830 and 1872 or 1881 is a plausible one. In case of towns for which estimates have been presented for a year in 1811-1830, population for census years from 1872 to 1971 has been presented as far as available.

The editorial comment also contains, often, other available estimates of pre-census period without any critical appraisal just as a matter of ordinary references.

(10) Reference to - etc. - this item has been abolished.

The editor's own comments have been often inserted in between the description by original authors, but such comments have been typed in single space or ended by the word "-ed", where the insertion is brief.

Section II. Draft Report of 1965 and the evolution of the present design

2.1 A draft volume entitled Report on the Population Estimates of India, 1811-1820 (with supplements for 1820-1830)^{2/} edited by Durgaprasad Bhattacharya, Anima Bhattacharya, Bibhavati Bhattacharya was submitted to the Registrar General, India in April 1965 containing about 2,500 typed pages. It contained 47 estimates for Provinces or States, 28 estimates for Districts, 99 estimates for towns. In addition, it contained an Appendix giving several sections such as (1) Tabulated information on Districts, Cities, Towns and Villages from the East India Gazetteer, 1815,^{3/} (2a) Houses in a large number of tracts in Rajasthan, (2b) Edur State 1821 - number of houses, (3) factors affecting growth of population such as famine, pestilence, cholera, fever, natural calamity, institutional factors, vital statistics, rainfall, Buchanan's contribution to statistical survey of India, etc. The said draft volume contained about 300 tables.

2.2 In December 1965, the present editor sent his suggestions on the said draft to Shri Asok Mitra with copies to Shri A. Chandrā Sekhar (the present

Registrar General, India) and Shri K. D. Ballal (erstwhile Deputy Registrar General, India). In January 1966, Ashok Mitra sent his valuable suggestions on the editor's^{letter} regarding the revision of the draft. Asok Mitra wrote to the present editor^{4/}, "At the outset, I agree that it is very important to look for primary sources wherever available, but I am afraid you will not have many primary sources on which you can lay your hands on. Besides it will be quite as well to compile printed sources which are of course secondary sources. But even the printed sources are not always available and it is important that whatever is published should have the stamp of some authority or authenticity ... I fully agree with your comments on year, place, source, materials and methods, but in explanation ... we should limit ourselves to facts as recorded ... The explanation should be mainly restricted to what was already indicated for the first volume. I think that there is much virtue in presenting data as collected. Any interpretation or elaboration of the data may be attempted in a separate volume or in the Preface".

2.3 The present editor wrote to Mitra, "we are to present the materials as far as possible from primary sources, meaning the sources of origin of the data, mostly lying in a manuscript form. Verification of methods and discovery of gaps which are essential for future researches can be well done only when we reach the original sources of data. All sorts of reproduction of data by others should be studied carefully and their comments noted ... Under Particulars of population, derivative tables should be presented and uniformity of presentation attempted. Editors should have used statistical devices more carefully and systematically so that a reader may obtain (i) a summary of the data presented, (ii) all common ratios such as age, sex, rural-urban, etc., where preparation

of derivative table possible". As suggested by Mitra, the item no. 6 Explanation in this volume is confined to the scope indicated in the published volume. But interpretation, elaboration and critical appraisal on a preliminary basis of scrutiny have been attempted under the item no. 9 Editorial comment.

2.4 Starting a revision of the 1965 draft of 1811-1820, it was observed that (1) most of the estimates were collected from four secondary sources : (1) East India Gazetteers by Walter Hamilton (1st ed. 1815^{3/}; 2nd ed. 1828. 2 Vol.^{5/}), A Geographical, Statistical and Historical Description of Hindostan by the same author (2 Vol. 1820^{6/}), Bombay Gazetteers and Madras Manuals^{8/}. These documents generally quoted population figures omitting statistical details without often caring for a reference to the year or method. Mentioning past population in such a casual manner may be sufficient for the purpose of a compilation of gazetteers, but it is not worthwhile just to extract such casually mentioned population figures for a project designed to collect past population statistics with an ultimate view to build up statistically valid series connected with the census period.

2.5 Naturally searches of primary sources started in West Bengal Archives, National Archives of India, Maharashtra Archives, Madras Record Room, etc., in addition to searches through printed pages. At this stage, it was felt that mere presenting population figures for any past year is not very useful without defining the geography of the past, that is, the location, boundary and approximate area of the tract, and, also without identifying the tract on a map of 1961 or in relation to current political geography. Work on a map bibliography started as early as 1965.

2.6 A map of India^{9/} with provincial boundary was reproduced by Walter Hamilton in 1820. This map was superimposed on a map of 1961 and the corresponding modern territories of each old provinces of 1820 on the map of 1961 was marked out at district levels by measuring square . Area of each old province was also worked out on the modern map in the following form.

PROVINCES OF INDIA IN 1820 : CORRESPONDING
TRACT AND AREA IN 1961

states 1961	provinces 1820	1961 districts as under provinces of 1820	1961 area included under 1820 in sq. mile	1961 area excluded from 1820 in sq. mile	total 1961 area in sq. mile
(1)	(2)	(3)	(4)	(5)	(6)
West Bengal + Bangladesh + Part of Bihar	Bengal		94,473	11,387	105,860
		Sinbhum	579	4,535	5,114
		24-Parganas	5,285	-	5,285
		Bankura	2,653	-	2,653
		***	***		***

On the same method, the corresponding area of the tract of 1811-1830 was often worked out in 1872, 1881 or 1921. Thus the scheme of presentation has been modified as given below :

2.7 [I] Under item 4. Material - (a) Geographical location, an attempt was made to give indication of the boundary, etc., by extracts from contemporary documents and, after this, there is a sub-item under a sub-heading 'geographical identification' where identification was made of the location of the 1811-1830 tract in relation to the political geography of 1961 either with the help of old maps or from descriptive material giving old boundaries,

or from identification by others scholars. For example, H. Beverley broadly identified the tract surveyed by Francis Buchanan in 1807-14 on a thana basis. We have pursued this and constructed tables of area and population for 1807-14 and 1872-1961 (at each census point) for each district. No area of cities or towns has been presented in this method.

[II] Under item 4-(b), Particulars of population, all statistical tables (or specific descriptive extracts giving population figures) on population, on its characteristics and compositions, and statistical tables relating to geography, resources, material conditions, etc., have been presented from original sources with corrections of errors in third bracket. This series of tables may be called as Original Tables. It is followed by another set of tables, where necessary, prepared by us and may be called as Subsidiary Tables. These tables were necessary to recast the old data in a modern form, concept and definition. In recasting, the 1961 census concepts and concepts formulated by the National Sample Survey have been used as far as possible. All tables containing old units of measurement were recast into the latest units of measurement. Old occupational tables or occupations as indicated by caste names in old tables were also recast, subject to limitations, to Industrial Classification Scheme used in 1961 census. The basic objection raised against this transformation of "occupation" into "industry" is valid, but we may add that old "occupations" were converted into "industries" as far as indicated and this indication may even be wrong in few cases insufficient in some, totally absent in one or two cases. Subject to these limitations, we have tried to find a comparable basis between a gap of about one and half century. In this connection, reference may be made to the note by Asok Mitra on the comparability of

census economic concepts and comparative charts presented in the General Economic Tables of 1961 prepared by R. B. Karla^{10/} and also to Paper No. 1 of 1967 of the Census of India 1961 containing Subsidiary Tables B-I.6 and B-II.3.^{11/}

[III] Under 9. Editorial comment, we have presented time series of population of the geographical tract of 1811-1830 identified under "geographical identification" for the subsequent years 1872 (or 1881), 1921, 1961 (or 1971). It is well-known that the year 1921 is the Great Divide in the population history of India. Population of the tract for 1872, 1921 or 1961 has been worked out taking generally the population of whole district directly from the census reports and working out the population of any part of a district either by taking population proportionate to the area or by multiplying the relevant area by the density of the immediate larger tract. Naturally, the population in the series as worked out is somewhat approximate, but perhaps enough for the purpose. We have tried to present the adverse factors existent during the pre-census and the census period wherever possible, but there is a danger that information may be incomplete, and, may even be misleading. Asok Mitra pointed out, "unless we have complete information on the factors determining the size of population at any particular period, we may commit the mistake of over-emphasis on any aspect on which information is fortuitously available". This useful forewarning has been kept in mind. We have tried to assess, whether the population figure as given for any year in 1811-1830 is a plausible one, and in doing so, we have worked out arithmetical rates of variation per annum in the pre-census period, and, two census periods of 1872-1921, 1921-1961. The general assumption is that the pattern of fluctuations and consequent slow

increase obtained during 1872-1921 also hold good during 1801-1872 unless facts to the contrary are present, and on this assumptions, the pre-census rate is likely to be around 1872-1921 rates, and in any case, generally below 1921-1961 rates. This is a general working assumption and there may be exceptions over space and time. There may be a higher growth in certain decades, wiped out by a single epidemic, followed by a rapid recovery. In a word, fluctuations and a slow growth in the ultimate process was the key-note of the general population history upto 1921. This assumption was used in the paper, Growth of Population of India and Pakistan 1801-1961 by Professor P. C. Mahalanobis and Durgaprasad Bhattacharya in constructing the population series of the pre-census period. We have tried to present hard facts of the history as far as available.

2.8 The material compiled under this design upto 1870 was so massive that the number of estimates exceeded 200 (against 37 in the published volume) and number of tables 1,000. It was not possible to edit this vast material at a time; it was not wise to rush at the cost of accuracy and authenticity. It was therefore proposed that materials on Eastern India comprising roughly the present Assam, Nagaland, Arunachal, Manipur, Meghalaya, Tripura, Bangladesh, West Bengal, Bihar & Orissa (excluding Ganjam) be first finalised. According to the plan, the volume for the period 1811-1820 is the third, and we are considering the Eastern Region as the first part of this volume. This volume, and the part, of course, contain additional materials for the period covered by the published volume 1820-1830.

2.9 The larger tracts having independent status or status something equivalent to a modern State of the Indian Union have been presented first and are

called Provinces. Next come districts, e.g., the District of Burdwan, the District of Bhagalpur, etc. The urban tracts — cities and towns — have been placed thereafter. An appendix contains a series of Extracts on Morbidity and Mortality. A Select Bibliography at the end covers only non-census publications used in the compilation of this volume. A Preliminary Census Bibliography upto 1951 was completed two year back and work on 1961 continues.

Section III. Sources and Methods

3.1 The Eastern Zone contains only ten estimates of population of "Provinces, Kingdoms and Districts". There are estimates for the cities and towns. The following table shows in brief the places and equivalent geographical tract of 1961, area and population, method and sources of the estimates presented for "Provinces, Kingdoms and Districts".

AREA AND POPULATION OF PROVINCES, KINGDOM AND DISTRICTS,
1811-1830

srl. no.	place and reference year (and equivalent tract at present)	area in sq. mile	population (000)	method (a) and source (b)
(1)	(2)	(3)	(4)	(5)
1.	Assam, 1826-30 (= roughly 1961 districts of Kamrup, Nowgong, Darang, Lakshimpur, Sibsagar & Sadia Frontier Tract)	20,182	650	(a) estimate perhaps based on some sort of counting. (b) Parliamentary Papers, official documents at National Archives and the first scientific treatise in Bengali-Haliram Dhekial Phukan's Assam <u>Buranji</u> .

Table : contd.

(1)	(2)	(3)	(4)	(5)
2.	Bengal, Bahar, Orissa & Benares, 1812 (roughly present West Bengal except a portion of northern hill area, Bangladesh, part of Goalpara, Bihar, Cuttack, Balasore, Puri of Orissa, & Benares as stated in the report)	162,000	27,000	(a) estimate at some mid-point considering available figures furnished by Sir William Jones and Henry Thomas Colebrooke (b) Fifth Report from the Select Committee of the House of Commons, 1812.
3.	Bengal, 1815 (as in 1812)	162,000	30,000	(a) estimate by Walter Hamilton based on existing figures (b) <u>East India Gazetteer</u> by Walter Hamilton. 1st ed. 1815
4.	Provinces of Bengal 1822 (same as in 1812, Benares excluded)	149,217	37,578	(a) on the basis of a frequency distribution of villages by group of houses contained in each group, then average house per village was worked out, thereafter total houses estimated; population was worked out on the basis of an assumed average person per house (b) data extracted from Bengal Judicial Criminal Proceedings, 10th November, 1825 available at West Bengal Archives.
5.	Kachar or Heerumba, 1819	7,857	500	(a) estimates perhaps based on enumeration of families; (b) a paper in the <u>Friend of India</u>
6.	Orissa Province, 1814 (whole or part of 1961 districts of Singhbhum, Sambalpur, Puri, Balasore, Mayurbhanj, Keonjhar, Cuttack, Dehkanal, Ganjam, Baudh, Sundargarh, Midnapur)	22,500	1,462	(a) some assumptions regarding number of villages, houses per village, average persons per house based on a preliminary survey of resources; (b) report of Richardson, Member of the Board of Revenue or Deputation at Cuttack, available at West Bengal Archives

Table : contd.

(1)	(2)	(3)	(4)	(5)
<u>DISTRICTS</u>				
7. The District of Sylhet, 1813 and 1822 (= almost same as the district of 1941)	2,861 3,532	1,500 1,083		(a) data supplied by collector in 1813, basis not known, for 1822, see the estimate for provinces of Bengal, 1822. (b) Parliamentary Papers, District Gazetters.
8. Burdwan, 1813-14 (= approximately 1961 district (-) Ranigunge Sub-division, half of Ausgram; Katalpur and Indus of Bankura	2,400	1,444		(a) 98 villages and towns enumerated, average per dwelling worked out, and on this basis population estimated. (b) W.B. Bayley's paper entitled <u>Statistical View of the Population of the District of Burdwan</u> published in Asiatic Researches, Vol. 1.
9. District of Bhagalpur (= 1961 districts of Bhagalpur, part of Saharsa, greater parts of Monghyr)	8,225	1,962		(a) rejecting Khanah-Sumari results, Buchanan first estimated the number of people required to cultivate land, secondly he considered the ratio of agricultural and non-agricultural population, checked these data thoroughly and arrived at the total population. (b) survey results of Buchanan published by Bihar Orissa Research Society, tables procured from India Office Library by micro-film
10. District of Bihar & Patna (= 1961 district Patna whole, Gaya 2,785 sq. miles out of 4,786 sq. miles, and 479 sq. miles of Monghyr district)	5,358	3,364		(a) Buchanan estimated the number of ploughmen and their proportion to other classes and after several checks and scrutiny, arrived at the total population (b) same as in the District of Ekagalpur

Table : contd.

(1)	(2)	(3)	(4)	(5)
11. District of Shahabad, 1812-13 (= identical with the district of 1961 except that the Police Station of Rajpur was outside and the tehsil of Balia of U.P. was inside)	4,087	1,420		(a) Buchanan first estimated the land cultivated per plough, then the ploughmen, then the rest of the classes on a proportion basis; (b) result of the survey published by Bihar & Orissa Research Society, tables from micro-filmed version of manuscript from from the India Office Library.
12. The District of Cuttack 1818 (= Cuttack, Balasore and Puri districts as in 1941 roughly)	6,300	1,252		(a) men per tilled bigha and their portion to artisans, etc., total workers multiplied by average size of family, consumption of salt, assumed population per village, etc., were the basis of population estimates; (b) Report of William Ewer available at West Bengal Archives.

We shall briefly examine each of these estimates and discuss the sources of data and methodology of the above table as used by the original author in arriving at the given population estimate.

3.2 Assam — Assam as called in 1826-30 for which population estimates have been presented represent a small tract along the Brahmaputra river containing the modern district of Kamrup, Nowgong, Darang, Lakshimpur, Sibsagar, Sadiya Frontier Tract divided then into two political identities called the Lower Assam and the Upper Assam. Population estimates presented contained in a Foreign Department document and in the Parliamentary Paper on slavery. The most striking feature of the estimate presented is the method followed by Haliram Dhekial Phukan.^{13/} He was a celebrated father of a celebrated son Anandaram Dhekial Phukan. "In Assam, the Burmese diminished the population by half in 1816-24 partly by massacre and

partly by driving 30,000 in slave gangs to Ava", thus writes Dodwell in the Cambridge History of India^{14/}. Anandaram Dhekial Phukan also mentioned of destruction "of more than one-half" of the population.^{15/} S. K. Bhuya described in details the nature of atrocities and its consequences on the population^{16/}. Haliram Dhekial Phukan was a prominent man of his time. He built up resistance against the Burmese. David Scott appointed him as the Chief Officer for rehabilitation of persons displaced due to Burmese oppression. His work Assam Buranjil was first published in 1236 B.S., reviewed in Asiatic Journal 1830, and in Samachar Darpan, 1831 mentioned in Jame Long's Catalogue of Bengali Books in 1855, and by Sukumar Sen in his Bangla Sahitya Gadya^{17/} (prose in Bengali literature). This is the first scientific treatise in Bengali language. Haliram's keen observation as early as 1830 is surprising. He starts with Upper Assam, defines the limit of the census area with a considerable degree of accuracy, and, mentions that only males were counted. The number of males is estimated at one lakh. He estimates the number of females at more than one lakh indicating to a higher sex ratio. Thereafter he mentions the non-censused area and finally arrives at the total population. The most striking features of his observation lie in tracing the causes of errors in population figures : undercounting is quite natural in areas where a poll tax is prevalent; a violent migratory movement of the population due to an unprecedented political disturbance is a great hindrance to a count of population; his upper limit of population is 8 lakhs for the tract.

3.3 Bengal, Bihar and Benares, 1812 - The celebrated authors of the Fifth Report of 1812^{18/} reported to the House of Commons that "the enquiries of your Committee do not enable them to state with any precision, or with such confidence,

the amount of the population, even of the old territories of the Company, consisting of the provinces of Bengal, Bahar and Orissa with that of Benares, afterwards annexed to them. The Government of Bengal called for information on this head, from the collectors and judges stationed in the districts, but the returns were so imperfect, and where they were made by those of two description of officers, so contradictory, that no general conclusion could be drawn from them ...” They took a mid-point between the estimates of Sir William Jones^{19/} and of Henry Thomas Colebrooke^{20/}.

3.4 The estimate of Bengal for 1815 is one by Walter Hamilton presented in the first edition of the East India Gazetteer. Walter Hamilton's works have been frequently used and should be discussed at the very outset. As already stated, Walter Hamilton published the East India Gazetteer in one volume in 1815^{3/}, in two volumes the second edition appeared in 1828^{5/}. In 1820, he published A Geographical Statistical and Historical Description of Hindostan^{6/} in two volumes. About source materials, Hamilton wrote in the Preface to the second edition of the Gazetteer, "To form a geographical basis, Mr. Arrowsmith's six sheet map of Hindostan and his four sheet chart of the Eastern seas have been selected, but other valuable maps and charts subsequently executed have also been consulted ... The materials from which the work has been composed, consist of printed documents generally accessible to the public, and manuscript record deposited at the India Board, regarding which a few explanatory observation will be necessary. The British Government in India is one which records and reports to England its most minute transactions, furnishing a basis for accurate history beyond these of any other state. In conformity with this principle, it is the practice of each

presidency to transmit half-yearly, or according to the exigence more frequent reports in the political, financial, and judicial, military, public, legal, and ecclesiastical departments, accompanied with copies of the correspondence that has taken place with their subordinate functionaries. These official records are extremely voluminous, but their contents rarely bear directly on statistical subjects, the discussions having generally originated in some accidental irregularities, such as the robbery of treasure, disputed boundaries, the irruption of foreign tribes, deflaccation of the revenue, the pupillage of native chiefs, and other matters of difficult adjustment, brought under the notice of the India Board and Court of Directors. Where no even of the nature above alluded to has taken place, and the tranquillity of the province has continued undisturbed by war or controversy, no correspondence has resulted; and its internal condition has remained so completely unnoticed, that the circumstances of several of the Company's old districts of great wealth and population are less generally known than those of remote tracts, the very names of which are recent discoveries ... At the conclusion of the second volume a list of these and other authorities will be found comprehending a large proportion of the ablest of the Company's servants, civil, military and medical. Besides 'Public Manuscript Documents' access to which was procured by him by the late Right Honourable Mr. Canning, while President of the Board of Control, the author has been favoured with two most important private communications, which have greatly enhanced the value of the present edition. The first consists of a series of extracts from the manuscript journal of John Fullarton, Esq., of Great Stanhope-Street, Hyde Park, the only European who has ever made the complete tour of Hindostan, from the Brahmputra to Bombay, from the Himalaya Mountains to the Straights of Ceylon. These travels

occupied some portions of 1817 and 1818, the half of 1819, and the whole of 1820, were performed deliberately; and with such an establishment of horses, elephants, camels, and tents, as enabled him to encamp on any spot, and leave no worthy object of curiosity uninvestigated. It is to be regretted that the original journal from which these extracts were made has never been published, and the estimation attached to them will be proved by the frequency of reference. ... The other document, consisting of seven large folio manuscript volumes, was received from Sir John Malcolm, K. C. B., the indefatigable promoter of every measure that can either benefit or illustrate India. These contain separate description of above 6,500 towns, villages, hamlets, rivers, and mountains in Central Hindostan and the Deccan; but the imperative necessity of condensation only permitted the selection of such as were remarkable for their size, local situation, temples, public works, or any other extraordinary features". The population was mentioned casually, obviously on the basis of estimates available upto date, to vary between 28 and 30 million.

3.5 Provinces of Bengal, 1822 — Henry Shakespear spoke of the method,

"The details now submitted were obtained by a Circular addressed to the Magistrates of the Lower Provinces within the last four or five years, requesting them to call on the Police Thanahdars to furnish the details required according to a form transmitted to them. The copy of that form will be found in the first sheet of the annexed statements which will likewise serve to explain the mode which has been adopted in summing up the results". Column (1) to (6) of the form is reproduced below. Col. (7) "number containing from 2,500 to 5,000 houses", Col. (8) "number containing from 5,000 to 10,000 houses", Col. (9) "number containing more than 10,000 houses", and Cols. (10), (11), (12) and (13) have been omitted as unnecessary to understand the method.

FORM OF RETURN OF POPULATION CIRCULATED TO THE SEVERAL MAGISTRATES
OF THE LOWER PROVINCES :- RETURN FROM ZILLAH BURDWAN, THANNAH CUTWA

number of village in the thannah jurisdiction	number of village containing less than 100 houses	number containing from 100 to 250 houses	number containing from 250 to 500 houses	number containing from 500 to 1000 houses	number containing from 1000 to 2500 houses
1	2	3	4	5	6
153	104	32	13	3	1
	<u>33</u>	<u>150</u>	<u>33</u>	<u>666</u>	<u>1500</u>
	312	1600	39	1998	1500
	<u>312x</u>	<u>32xx</u>	39x		
	<u>3432</u>	<u>4800</u>	<u>39xx</u>		
			<u>4329</u>		

The Superintendent of Police of the Lower Provinces, continued, "Thus in column showing the number of villages containing less than 100 houses, the number of villages is multiplied by 33 or a fraction of less than $\frac{1}{3}$ rd to obtain the total number of houses contained in the village of that class. In the next column showing the number of villages above 100 and less than 250 houses, the number is multiplied by 150 or $\frac{1}{3}$ rd of the number of houses in excess of the class entered in the preceding column and so on in the remaining classes". For example, the total number of villages in the Thannah jurisdiction of Katwa is 153, of which, 104 villages contain less than 100 houses, and so on. The sample data given in the form may be conveniently re-arranged as follows:

DISTRIBUTION OF VILLAGES IN THANNA CUTWA
BY FREQUENCY OF HOUSES, 1822.

house group	number of villages	average house per village	total house
1	2	3	4
100 - 250	32	150	4,800
250 - 500	13	333	4,329
500 - 1000	3	666	1,998
1000 - 2500	1	1,500	1,500
2500 - 5000	-	-	-
5000 - 10000	-	-	-
more than 10000	-	-	-
total	153	-	16,059

Under row 1, the average number of houses per village is assumed at 33 or a fraction of less than $\frac{1}{3}$ rd to obtain the total number of houses contained in that class". In the next row, showing the number of villages containing above 100 and less than 250 houses, the number is multiplied by 150 or $\frac{1}{3}$ rd of the number of houses in excess of the class" entered the preceding row and so on in the remaining classes. That is, $250-100 = 150$, one third of $150 = 50$, thus the multiplier for this class is $100 + 50 = 150$. In this manner, the following results emerge :

MULTIPLIER USED IN CALCULATING TOTAL HOUSES IN
PROVINCES OF BENGAL 1822

group	multiplier or average houses per village
100 - 250	$100 + \left[\frac{(250-100)}{3} \right] = 150$
250 - 500	$250 + \left[\frac{(500-250)}{3} \right] = 333$
500 - 1000	$500 + \left[\frac{(1000-500)}{3} \right] = 666$
1000 - 2500	$1000 + \left[\frac{(2500-1000)}{3} \right] = 1500$

3.6 The estimate for Kachar or Heerumba was reproduced from an article in the Friend of India 1819. "The Kingdom of Cachar in 1818, "broadly, is somewhat equal to the United Mihir and North Cachar Hills Districts plus the present

Cachar District minus the territory annexed in Cachar from the District of Sylhet in 1947 ...". In arriving at the total population, the number of family was counted perhaps from tax records and it was multiplied by 6 being the assumed size of a family.

3.7 Orissa Province 1814 - The population estimate of Orissa Province, 1814 contained in the reports of John Richardson, Member of the Board of Revenue on Deputation to Cuttack and was extracted from unpublished manuscript at the West Bengal Archives. Richardson estimated the population on certain assumptions.

(1) The British half contains 11,250 square miles of which two-thirds are in a state of cultivation, and one-third unproductive, one villave may be given to one square mile, and 100 inhabitants to each village;

(2) the tributary half comprise an equal area of which one-eighth barely cultivated and seven-eighths unproductive, half a village in each square mile and sixty inhabitants in each village;

(3) at this estimation, the British half contains 11,250 villages with 1,125,000 people; the other half only 5,625 villages with a population of 337,500 giving a total of both portions to 1,462,500.

3.8 The District of Sylhet, 1813 and 1822. - Boileau R. Pemberton in his Report on the North Eastern Frontier of British India^{21/} and B. C. Allen in Assam District Gazetteers^{22/} (Vol. 2) quoted population figures. Allen says that figures for 1813 were given by collectors, but no basis is stated. Pemberton refers the population to the year 1829, but it should be 1822. The figure may be found in the table under the Provinces of Bengal, 1822. Naturally, for methodology, "Provinces of Bengal 1822" may be consulted.

3.9 Burdwan 1813-14 — This is one of the pioneer statistical work in this region by W. B. Bayley published in Asiatik Researches, Vol. 14, 1816^{23/}. The detailed enumeration of 98 towns and villages were obtained "through the agency of some respectable native proprietors of estates and partly by the aid and influence of European gentlemen residing in the several districts". From the data of 98 villages, Bayley ascertained average proportion of inhabitants to each dwelling. Then he tried to ascertain the number of dwelling houses in Burdwan distinguishing them as occupied by the Hindus and Mohamedans respectively. The proprietors of every mauza or village in the district or their resident agents were supplied, through police officers, with a form in the Bengali language intended to show (1) the name of village, (2) of the pergunnah, (3) of the police jurisdiction, (4) the total number of dwelling houses in each village, (5) the number occupied by Hindus and Mahomedans respectively. Thus Burdwan seemed to contain 262,634 dwelling houses and at the rate of $5\frac{1}{2}$ inhabitants to each dwelling, the total population was worked out at 1,444,487 in an area of 2,400 square miles. We shall discuss the three districts of Bihar surveyed by Francis Buchanan in a separate section and, finish the discussion of districts with Cuttack, 1818.

3.10 The District of Cuttack, 1818 — William Ewer was appointed as a Commissioner to enquire into the general state of the Cuttack District then comprising the later regulation districts of Cuttack, Balasore and Puri. The enquiry was necessary following a rebellion of the paiks in 1817^{24/}. Ewer tried to estimate the population on certain assumptions. Colobrooke's methodology of estimating the population of Bengal was used by Ewer after some modification

of Colebrooke's assumptions to suit conditions in Orissa. Ewer used three methods in computing the population and the results led to a total varying between ten and a half lakhs and twelve and a half lakhs. Ewer estimated the area by square method from Sackville's map. Ewer estimated "occupied" land meaning perhaps paying revenue plus lakheraj, and, assumed 20 bigha for one ryot; he assumed non-agricultural workers at one-fourth of ryots; then he arrived at a population of rural area; with this he added the estimated population of three towns, Cuttack, Balasore and Puri. This led to a figure of nearly 12 lakhs. Secondly, Ewer worked out the number of villages at 11,000 excluding Khoordah. Same was the number of mauzas at 11,000. He assumed 20 houses per mauza and 5 persons per house. Adding Khoordah, this also leads to a population of nearly 12 lakhs. Thirdly, Ewer also tried to estimate the population through consumption of salt supplied by official white market and private black market. All the methods have been presented in the volume in a tabular form.

Section IV. Survey of Three Bihar Districts
By. Francis Buchanan

4.1 The place of pride of this volume is occupied by Dr. Francis Buchanan.

R. M. Martin wrote in the Eastern India^{25/}:

The survey of the district of Behar and Patna, of Shahabad, Bhagalpoor, Dinajpoor, Goruckpoor, Puraniah, Rungpoor, and Assam, forming the Eastern territories of British India and containing upwards of 60,000 square miles and nearly 15,000,000 of British subjects, was executed by the Supreme Government of Bengal, under orders from the Court of Directors of the Honourable East India Company, dated the 7th of January, 1801, wherein the Honourable Court observes, "We are of opinion that a statistical survey of the country, under the immediate authority of your Presidency, would be attended with much utility, we therefore recommend proper steps for carrying the same into execution" ... The Governor-General in Council in conformity

with these orders, nominated Dr. F. Buchanan for this important duty, with an allowance of 1500 sicca rupees monthly, exclusive of pay and batta of his rank, and efficient learned assistants, draftsman &c., were appointed to execute his instructions. The extent of the investigation will be seen from the directions issued for the guidance of the survey by the Supreme Government under date 11th Sept. 1807, which were as follows :

Your inquiries are to extend throughout the whole of the territories subject to the immediate authority of the Presidency of Fort William.

The Governor General in Council is of opinion that these inquiries should commence in the district of Rungpur, and that from thence you should proceed to the westward through each district on the north side of the Ganges, until you reach the western boundary of the Honourable Company's provinces. You will then proceed towards the south and east, until you have examined all the districts on the south side of the great river, and afterwards proceed to Dacca, and the other districts towards the eastern frontier.

It is also desirable, that you should extend your inquiries to the adjacent countries, and to those petty states with which the British Government has no regular intercourse. In performing this duty, however, you are prohibited from quitting the Company's territories, and are directed to confine your inquiries to consulting such of the natives of those countries as you may meet with, or natives of the British territories who have visited the countries in question.

Your inquiries should be particularly directed to the following subjects, which you are to examine with as much accuracy as local circumstances will admit.

I. A Topographical account of each district, including the extent, soil, plains, mountains, rivers harbours, towns, and subdivisions; together with an account of the air and weather, and whatever you may discover worthy of remark concerning the history and antiquities of the country.

II. The Condition of the Inhabitants : their number, the state of their food, clothing, and habitations; the peculiar diseases to which they are liable; together with the means that have been taken or may be proposed to remove them; the education of youth; and the provision or resources for the indigent.

III. Religion : the number, progress, and most remarkable customs of each different sect or tribe of which the population consists; together with the emoluments and power which their priests and chiefs enjoy; and what circumstances exist or may probably arise that might attach them to Government, or render them disaffected.

IV. The Natural Productions of the Country : animal, vegetable, and mineral; especially such as are made use of in diet, in medicine, in commerce, or in arts and manufactures...

V. Agriculture : under which head your inquiries are to be directed to the following points :

1st. The different kinds of vegetables cultivated, ...

2nd. The implements of husbandry employed, with the defects and advantages of each, and suggestions for the introduction of new ones, that may be more effectual.

3rd. The manure employed for the soil, especially the means used for irrigation.

4th. The means used for excluding floods and inundations, with such remarks as may occur to you on the defects in their management, and the remedies that might be employed.

5th. The different breeds of the cattle, poultry, and other domestic animals reared by the natives,...

6th. Fences, the various kinds that are used, or that might be introduced, ...

7th. The state of farms; their usual size, the stock required, with the manner in which it is procured; the expense of management; the rent, whether paid in specie or in kind; the wages and condition of farming servants and labourers employed in husbandry; tenures by which farms are held, with their comparative advantages, and the means which, in your opinion, may be employed to extend and improve the cultivation of the country.

8th. The state of the landed property, and of the tenures by which it is held, in so far as these seem to affect agriculture.

VI. The progress made by the natives in the fine arts, in the common arts, and the state of the manufactures; you will describe their architecture, sculptures, and paintings, and inquire into the different processes and machinery used by their workmen, and procure and account of the various kinds and amount of goods manufactured in each district. It should also be an object of your attention to ascertain the ability of the country to produce the raw materials used in them; and what proportion, if any, is necessary to be imported from other countries, and under what advantages or disadvantages such importation now is, or might be made; you will also ascertain how the necessary capital is procured, the situation of the artists and manufactures, the mode of providing their goods, the usual

rates of their labour; any particular advantages they may enjoy, their comparative affluence with respect to the cultivators of the land, their domestic usages, the nature of their sales, and the regulations respecting their markets. Should it appear to you that any new art of or manufacture might be introduced with advantage into any district, you are to point out in what manner you think it may be accomplished.

VII. Commerce; the quantity of goods exported and imported in each district; the manner of conducting sales, especially at fairs and markets; the regulation of money, weights, and measures; the nature of the conveyance of goods by land and water, and the means by which this may be facilitated, especially by making or repairing roads.

In addition to the foregoing objects of inquiry, you will take every opportunity of forwarding to the Company's Botanical Garden at this Presidency, whatever useful or rare and curious plants and seeds you may be enabled to acquire in the progress of your researches, with such observations as may be necessary for their culture.

4.2 "Buchanan started his work in the cold season of 1807-8, commencing with the eastern districts and then moving westwards to Purnea, Bhagalpur, Monghyr, Patna, Gaya and Shahabad, and ultimately Gorackpur, which was the last district surveyed by him in the season 1813-14. The extent of country over which Buchanan had already completed his survey is not always realised from the heading given in Martin's publication, owing to subsequent readjustments of boundaries and the subdivision of old districts. Buchanan had finished the survey of Assam Valley area, now included in several districts, of Rangpur, Jalpaiguri, Dinajpur, part of Bogra, Malda, Purnea, Bhagalpur, the Santal Parganas, Monghyr, Patna and Gaya districts. A fine feat for one man, having regard for the mass of detailed information comprised in each report. For a true appreciation of the magnitude of Buchanan's task it is essential to remember that his work throughout the area was pioneer work ; he had no previous accounts to guide or assist him; he had to formulate the methods of collecting

the details required under each head of enquiry, sift, classify and check the information obtained, and finally compile and write out the voluminous reports, the manuscript of which filled twenty-five folio volumes. He was seriously handicapped by having no map on a scale suited to such work, or even maps showing accurately the physical features of each area and the roads available. He had only Rennel's Bengal Atlas sheets to work upon, and these on a scale of 11 to 12 miles to an inch... he lived till 1829. It was not till nine years after his death that the three volumes of what has all along been known as "Martin's Eastern India" were published by Robert Montgomery Martin. These volumes are simply a publications of such portions of Buchanan's MS. as appeared to Martin to be a 'judicious selection'. It is astonishing that the officials of the India House should have permitted these volumes to be printed without Buchanan Hamilton's name appearing anywhere on the title page. It is hardly necessary to discuss the question whether Martin omitted matter of material value. He obviously had neither the experience of the country nor the knowledge of the subjects dealt with to decide what was or was not of material value". Thus writes C. E. A. W. Oldam in his introduction to Shahabad journal of Buchanan^{23/}. "... when the cold weather of 1801-11 began, Buchanan took up the survey of the adjacent district of Bhagalpur which lies partly to the north, partly to the south of the Ganges. Having finished his work for the season in the southern part of the district, Buchanan fixed his headquarters for the monsoon of 1811 at Monghyr. When the rains were over he undertook the survey of the two districts of Gaya and Patna, which lie to the South of the Ganges, finishing up his work for the season at Patna which became his headquarters during the rains of 1812. Quitting Patna on the advent of the cold weather, Buchanan devoted

the dry season of 1812-13 to the survey of Shahabad, the next district to the West, still south of the Ganges". Thus stood the time schedule of the survey of three districts of Bihar was given by David Prain.^{37/}

4.3 A Banerji-Sastri writes in the Introduction to Bhagalpur report published by the Bihar and Orissa Research Society, "The defects of Montgomery Martin's abridgement of the Reports have been pointed out by W. W. Hunter, Beveridge, Jackson, Oldham and James and readers may be referred to the Introduction to Jackson's edition of the Journal (1923), James edition of the Report (1936) for the districts of Patna and Gaya ... The journals published so far are —Bhagalpur (1810-11), Patna Gaya (1811-12), Shahabad (1812-13); unfortunately no MS. of the Purnea Journal is available ...".^{38/} The Bihar and Orissa Research Society published the reports of several districts. But unfortunately, reports were incomplete. Tables of Cultivation of Grain were printed in the Patna-Gaya reports, but thana tables were missing except for two thanas. The other reports contained no tables.

4.4 Professor P. C. Mahalanobis considered the statistical survey of Buchanan as a very important document of our history and procured micro-film copies of the entire manuscript from the India Office Library. Professor Mahalanobis desired this humble editor of the present volume to undertake the task of editing the manuscript, with his help and guidance, with a view to publishing them in several volumes. He approved of a design and started looking into the manuscript of Gorackpur when death unfortunately took him away. On a scrutiny of the manuscript, it was found that even micro-film version was incomplete. Several gaps have been filled up, but still gaps exist.

4.5 For the present report, only three districts — Bhagalpur, Bihar & Patna and Shahabad — comes within the scope of this volume. Purniya and Rangpur reports will be presented in the volume for the period 1801-1810, the Gorackpur will be taken up with the Northern zone.

4.6 We shall presently confine our discussion on Francis Buchanan in this Guide, firstly, to the three districts, secondly, to the material presented in the volume, and thirdly to the trend revealed taking the results of all the districts together surveyed in 1807-14 when we consider the pattern of population history of the Eastern Regions of India and Bangladesh. We shall briefly discuss the methods by which Buchanan constructed population estimates.

4.7 District of Bhagalpur 1810-1811 - In forming an estimate of population, Buchanan did not "rely much on any general statements procured from the natives, because I often found them unwilling, and not unfrequently unable to give me such information as I have wanted. I have proceeded in the first place by estimating the number of people required to cultivate the extent of land occupied in every division, having taken into consideration the various natures of the soil and crop, the different quantities of stock, and the various degrees of industry among the people. I have compared the proportion between the agricultural population and the other classes of society, as given by the natives; but with this I have seldom found occasion to be satisfied, and have endeavoured to correct the numbers in these classes from the very minute enquiries made by the Pandit of the survey; because I think his enquiries concerning the various castes occasioned less suspicion than those respecting the number of houses occupied by cultivators, artificers, and idlers such as being immediately and evidently connected with value of each estate".

4.8 The District of Bihar & Patna, 1811-1812 - For the population of town, Buchanan partly depended on official agency, in other parts he has followed "the same procedure of Bhagalpur and Purniya", "from various statements and considerations I have conjectured the number of men required to cultivate each division, and then made an allowance for the other classes of society according to estimates given by the most intelligent persons that I could procure. In doing this, however, I experienced much difficulty. In the districts hitherto surveyed, the distinctions of Sukbas, Koshbash, and Chasas, are pretty clearly marked, the latter giving the whole agricultural population, but in this district, this division is unknown, and the people are divided into Ashraf, Pouniyas, and Jotiyas. In order, from the total number of ploughmen required in each division, to be able to calculate other classes of society, it was necessary to construct the Fifth Statistical Table in which an estimate has been made of the proportion of different classes of society actually engaged in agricultural pursuits". Buchanan also stated the method of constructing other statistical tables. Domestic servants, day labourers, porters, servants and other labouring classes were classed under Jotiyas; and a very small portion of this class is engaged in agriculture. Buchanan also estimated the labour force. His elaborate enquiry was mostly checked personally, whether data obtained through Pandits of the survey or through official agency or through wealthy people.

4.9 District of Shahabad, 1812-13 - Francis Buchanan ascertained the area by tracing boundaries on Major Rennel's map. The boundary was well defined and "unless the map" was defective, the error in the area could not be great. Buchanan traversed the country in all directions and formulated his estimate by

direct observation, interviews and calculation regarding soil and cultivation. Regarding population, he estimated the land cultivated per plough, then the ploughmen, then the rest of the classes on a proportion basis.

Section V. Material on Geography of the Tract, Characteristics,
Composition and Material Condition of the People

5.1 We have presented population statistics and also statistics on resources of the tract, on the characteristics, composition and material condition of the people in original wherever produced by the author with the population statistics. We have presented under explanation the descriptive material on these items. All such materials also perhaps are some of the real components of the history of India as Rabindranath says "The history of India that we read ... is only a nightmare of the dark period of our country. There ^{are} / all sorts of people who fight and annihilate one another; father and son, brother and brother, **struggle** for the possession of a throne; if one group disappears, another occupies the place - it is a madmelee of Pathans, Moguls, Portuguese, French and English, that makes the nightmare more and more complicated. But we miss the real India behind this blood-stained curtain of nightmare. These history books never tell us where to find the people of India as if there had never been Indians but only those who have fought and slaughtered. But even in those dark days, shrife and bloodshed were not the most important events in India. When the storm raises, it is certainly not the most important event in spite of its sound and fury ; far more important is the ceaseless flow of birth and death, happenings and sorrow in village homes ..." (translation and italics ours).

5.2 We are giving a summary of material presented in the volume in a tabular form below under three column heads : I. Place and year; II. material - (1) geography, (2) population statistics (includes also an account of allied statistical material presented), (3) explanation - matter presented under item 6 in population estimates, (4) editorial - matter presented under item 9; III. remarks.

MATERIALS OF POPULATION ESTIMATES OF EASTERN INDIA 1811-1830

place & year	material	remarks
1	2	3
<u>Provinces</u>		
Assam, 1826-30	(1) <u>geography</u> - information as given by Francis Buchanan, Dr. Wade, identification of contemporary tract by S. K. Bhuan, Haliram's account, <u>table</u> showing area of districts in 1826-30, 1872, 1921, 1961 (2) <u>population statistics</u> - area and population (3) <u>explanation</u> - factors leading to depopulation of Assam during 1814-1820 (4) <u>editorial comment</u> - table of area and population of 1826-1830 tract in 1872, 1921 and 1961	on the basis of facts it appears, population hardly recovered in 1872 to the level of 1810-1813 so severe was the depopulation in 1814-1826, the increase recorded in 1872 includes immigrant population.
Bengal, Bahar, Orissa and Benares, 1812	(1) <u>geography</u> - referred to estimates 1815 & 1822 (2) <u>population statistics</u> - only area and estimated population (3) <u>explanation</u> - deficiencies of existing estimates (4) <u>editorial</u> - extract from the census report of Bengal 1872	the estimate is an average between that of Sir William Jones & H. T. Colebrooke.

Table : contd.

(1)	(2)	(3)
Bengal, 1815	(1) <u>geography</u> - location and area, <u>tables</u> of land use and topographical statistics of Bengal and Bihar separately (2) <u>population - statistics</u> - area and population only (3) <u>explanation</u> - pattern of habitation, land per capita, agricultural produce, absent ^t division of labour, agricultural labour and wages, other occupation, cattle population, density, share of crops, religion to total population, size and number of cities, towns and villages, ethnic characteristics of people, socio-economic classes slavery etc. (4) <u>editorial</u> - referred to the estimate for 1822	the population figure is casually mentioned to vary between 28 and 30 million; information given as presented under <u>explanation</u> contains statistical ratios on land use and composition and characteristics of population
Provinces of Bengal, 1822	(1) <u>geography</u> - table of identification made by superimposing Hamilton's Map of Hindostan 1820 on a map of 1861 showing area of 1961 districts that fall under 1822 provinces and also <u>table</u> of area of each province in 1822, 1881, 1921, 1941, 1961, (2) <u>population statistics</u> - villages, houses and population, (3) <u>explanation</u> - referred to the estimate of Bengal 1815 (4) <u>editorial</u> - methodology of Henry Thomas Colebrook's population estimates presented in <u>tabular</u> form, <u>table</u> showing ten estimates of area and population of Dewani Bengal during 1768-1872, history of depopulation and population in 1822 in relation to census period discussed, <u>table</u> containing area and population of six districts surveyed by Buchanan for the years 1807-14 and 1872, <u>table</u> showing adverse factors affecting movement of population in Bengal 1771-1872 and 1872-1921, population history 1790-1951; <u>table</u> showing variation and factors affecting variation in regions of Bengal 1872-1921, <u>various tables</u> showing variations between 1822, 1881, 1921, 1941, 1961 for three provinces together and separately, <u>tables</u> showing average size of villages in square mile, average number of houses per village, average persons per house, and population per square mile in all those years, micro-regional evidences of population trend.	the Inspector General of Registration H. Beverley showed that in the tract surveyed by Francis Buchanan in 1807-14 containing six districts of Bengal & Bihar with an area of 37,000 sq. miles, population remained stationary in 1872 and it is plausible; Asok Mitra examined adverse factors and counter-vailing factors that operated in hundred thirty years (1790-1921), and thought that the natural growth of population was only 12 per cent on the estimated population of 1794, our preliminary assessment is backed by evidences presented also agrees

Table : contd.

1	2	3
Kachar or Heerumba, 1819	(1) <u>geography</u> - identification was made from various maps and natural boundaries, survey of India top ^o -sheets were used and boundary indicated by treatise was also examined (2) <u>population statistics</u> - families and total population (3) <u>explanation</u> - the state of capital, declining economy, physical features, fiscal divisions, production, characteristics of population, religion (4) <u>editorial</u> - population history, <u>table</u> of estimated area and population of components subdivision 1819, 1891, 1921, 1961, and <u>table</u> of variation of population for these years, <u>tables</u> of variation of Cachar District & North Cachar Hills 1901-1961, discussion on the trend	in 1819, mention is made of a declining economy and population due to "unsettled state of the country and incursions of the predatory neighbours", on the basis of estimates, population declined by 11 per cent between 1819 and 1891 and increased by 39 per cent between 1891 and 1921.
Orissa Province, 1814	(1) <u>geography</u> - boundary, topography political geography and area, <u>table</u> showing changes in political geography of Princely States of Orissa 1814-1961, <u>table</u> of identification of territory showing area of districts in 1961 corresponding to 1820 province (2) <u>population statistics</u> - area, villages, houses and population of the British and non-British half (3) <u>explanation</u> - production and consumption, level of life and means of livelihood, <u>table</u> of annual tribute, revenue and production of each Princely State in 1814, characteristics of people (4) <u>editorial</u> - the assumptions of Richardson verified and (1) <u>table</u> of area, villages, houses and population on the basis of given ratios reconstructed for 1814, 1881, 1921 & 1961 showing percentage variation of population, data on factors retarding a population growth such as natural calamities, famines, epidemics, floods, diseases presented for British districts 1814-1900, <u>table</u> showing the variation of population of the province of 1814 shown by districts of 1961 for the period 1872-1971 followed by data on adverse factors for the period 1871-1951 for each district and discussion on population trend	the assumption of Richardson seem to be inaccurate and results do not agree with the facts of history, adverse factors were very predominant in British districts, but Princely States were somewhat immune, growth might be a little large in pre-census days than the census period, but not as shown on the basis of Richardson's estimate.

Table : contd.

1	2	3
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Districts

The District of Sylhet, 1813 and 1822

(1) geography - political and topographical features (2) population statistics - area and population (3) explanation - migration, prosperous past, declining economy, population history since 1789, cowrie currency (4) editorial - table of movement of population 1822, 1872, 1921 & 1961 on the basis 1822 area; table of movement of population on unadjusted area 1813, 1822 ... 1961; population trend

it was noted in the Board of Revenue (30-1-1939); "the district during last forty years has been subject to a gradual deterioration; and has at length, reached the point of wretchedness ..." The rate of annual increase between 1822 and 1872 was 0.3 and 0.6 per cent between 1872 and 1921

Burdwan, 1813-14

(1) geography - identification at thana level on a 1961 map following description by Beverley in the Bengal census report of 1872, table of changes in the police stations of Burdwan district 1813-14 to 1961 (2) population statistics - area, houses, population, males and females, contains seven original statistical table (a) houses, population by sex and average persons per house in 98 villages (b) mauzas, occupied houses by religion for each thana, and the estimate of total population (c) caste or professional classification of Hindus in 26 villages (d) to (g) statistics of prices of articles of common consumption through the years 1753-54 and 1814-15 in Calcutta, Gural, Elambazar, Maneur, etc.; A series of subsidiary tables have been prepared converting original tables into industrial classification of 1961 and converting old units into modern (3) explanation - notes of Bayley on the tables (4) editorial - writings on population history of the district by Walter Hamilton, H. Beverley, W.W. Hunter, comparative table of Culna for 1832 and 1872, table of population changes 1814, 1872, 1921 and 1961, table of area,

from the writings of eminent authors and micro-regional evidences it appears that the district declined from the beginning of the 19th century to 1921 as population declined by 10 per cent between 1814 and 1872 and 20 per cent between 1872 and 1921; the district however shows an increase of 86 per cent between 1921 and 1961, malaria and epidemics retarding the growth of Burdwan was also generally prevalent throughout Bengal during 1801-1921

Table: contd.

1	2	3
Burdwan, 1813-14 (contd.)	villages, houses, population of the tract of 1813-14 for years 1872, 1921, and 1961, <u>table</u> of size of villages, houses in pre-census and census, years, micro-regional history of village Kanchanpur 1825-1961; <u>table of common villages</u> 1813-14 and 1961 showing houses and population by sex, population trend discussed	
The District of Cuttack, 1818	(1) <u>geography</u> - location and boundary, area of British districts in 1881, <u>table</u> of political geography 1784-1872 (2) <u>population statistics</u> - <u>table</u> of area, population, villages and houses by three methods (3) <u>explanation</u> - salt consumption, population, density, land-man ratio, population per village, town population, material condition of people, oppression and exaction, flourished and civilised past, poverty or peasantry, worsening of conditions under British rule (3) <u>editorial</u> - <u>table</u> of area, villages, houses and population 1818, 1881, 1921, <u>table</u> of movement of population, material condition and population growth	the Cuttack District was on a decline for centuries, it was "at the time of Mogul conquest vastly flourishing and civilised conditions, peasants were wretched with oppressive assessment, ... Under the British rule the ryots have been subject to burdens and impositions before unknown to them ..." The annual rate of population increase was 0.25 during 1881-1921 and 2.94 during 1818 and 1881 which does not seem to be plausible
<u>Districts of Bhagalpur, Bihar & Patna, Shahabad 1810-1814</u>		
District of Bhagalpur, 1810-11	(1) <u>geography</u> - extent and boundaries, geographical identification on 1961 tract, soil and elevation, administrative jurisdiction of each division (2) <u>population statistics</u> - the scope of the enquiry has already been stated under the Section Sources and Methods, <u>table 1*</u> shows type of soil and manner of use thana <u>table 2</u>	only a small portion of material of Buchanan's survey has been presented as appeared to be relevant to understand the history, composition, characteristics,

* number given in the tables may not be exact, table headings as such has not been reproduced, figures given upto thana

Table : contd.

1	2	3
District of Bhagalpur, 1810-11 (contd.)	shows the estimated population by thana and incidence of morbidity and mortality, <u>table 3</u> distribution of families by type of monthly expenditure, <u>table 4</u> distribution of families according to habitation in types of houses by material of wall and roof, <u>table 5</u> distribution of families by type of clothing, <u>table 6</u> distribution of families by items of consumption showing the level of living, <u>table 7</u> distribution of persons by type of intoxicant used, <u>table 8</u> distribution of families by types of fuel and light used, <u>table 9</u> table showing the number of various types of conveyance and the number of domestic servants, <u>table 10</u> distribution of educated persons by employment in professions and services, <u>table 11</u> details of land utilisation by each type of crop and other uses, <u>table 12 to 33</u> (one table for each thana) being a calendar of each type of crops showing total quantity of produce, total value, availability for consumption, number of ploughs, etc., <u>table 34</u> value and produce of land occupied by farmers for each crop, <u>table 35</u> estimate of the number of each class of livestock, <u>table 36</u> estimate of the quantity of milk and total value, <u>table 37</u> estimates of proportion of rent paid by high castes, tradesman, ploughman and proportion of ploughs held by owner cultivators, share-croppers, agricultural labourers and slaves, <u>table 38</u> estimate of ploughs by type to be wrought by single, double to eight cattles, <u>table 39</u> incidence of indebtedness by type of rent payers (a) able to pay without borrowing, (b) able to repay during crop-season and (c) unable to repay in full with increasing debt, <u>table 40</u> estimate of the number of artists (artisans), <u>table 41</u> value of goods exported and imported	and material condition of the people during the time of survey; Buchanan throws a flood of light on agrarian relations and shows that the peasants were subject to all sorts of exaction, oppression, chicanery, forgery, and cheating; his method of investigation is noble because he traversed the country from one end to the other; he directly investigated at all crucial factors, he checked and rechecked the data obtained through various agencies; his scope of enquiry was so comprehensive and vast as only comparable to an epic or <u>Mahakavya</u> , it involved an investigation of almost the entire socio-economic system, since the dates of survey, all scholars have utilised the data to write on historical socio-economic subjects of Bengal, the district of Bhagalpur showed a declining population, he enumerated all factors that led to a declining population and said that the bad management of landlords was

Table : contd.

1	2	3
District of Bhagalpur 1810-11 (contd.)	<u>subsidiary tables</u>	responsible to a great extent; he enumerated industries and arts; by converting them into modern concepts, we have tried to build up a statistical basis of comparable studies of socio-economic system and conditions.
	<p>Out of data contained in these <u>41 tables</u>, <u>52 subsidiary tables</u> have been prepared (1) converting all old units of measurement into the latest units prevailing, (2) converting caste/occupational classification into industrial classification of 1961 and (3) arranging the data in a form conforming to up-to-date methods (3) <u>explanation</u> - plants, housing pattern in the district as a whole, general description, housing pattern and urban centres of each topographical division, temporary assemblage of people at places of worship for each division, declining population and reasons of declining population such as premature marriage, prevalence of diseases, plunder by military, non-migratory character of people and bad management of landlords, <u>table</u> of socio-economic characteristics of Muslim population has been prepared by the editor from description giving (a) profession and caste (2) number of families and (3) occupation and other particulars, <u>table</u> of socio-economic characteristics of Hindu population consists of (a) caste (b) number of families/houses and (c) occupation, migration (indication of wherefrom they came and where they had settled), general description of employment and occupation, land relations, marriage and sex, tribes, social classes based on agriculture such as high caste, tradesman and artists, ploughmen or chasas, under-tenants, etc., number of fishermen, arts in Bhagalpur, <u>table</u> of state of arisans in the district of Bhagalpur prepared from description under columns (1) designation of artists (2) type and nature of work by industry, description of other classes such as domestic servants and slaves, beggars, prostitutes, economic conditions</p>	

Table : contd.

1	2	3
District of Bhagalpur 1810-11 (contd.)	under the heads of land use, stock of farms share of produce, pasture, animal husbandry, level of living, consumer expenditure etc., explaining the statistical tables mentioned under population statistics, (4) <u>editorial table</u> of area and population by thanas as in the district in 1810-11 for the years 1872 to 1961 for each census point, <u>table</u> of movement of population of the district 1810-11, 1872, 1921 and 1961	
Districts of Bihar & Patna, 1811-12	almost same as Bhagalpur district	
District of Shahabad, 1813-14	almost same as Bhagalpur district	

Section VI. Cities and Towns

6.1 Very little information is available on cities and towns. We tabulated all cities and towns from Hamilton's East India Gazetteers giving (1) name, (2) location, i.e., latitude and longitude, (3) province or state, (4)(a) indication of its character whether a court or political centre, or a commercial centre or fort and a place of military importance, or a religious place; (b) also indication of whether it was growing, stagnant or declining, and finally whether information on (a) or (b) is absent. The work of tabulation of the first edition of the Gazetteer was done mainly by Sm. Swapna Sen Gupta under the guidance of Sm. Anima Bhattacharya. It was completed by 1963 when

Asok Mitra saw it and desired to publish separately. Tabulation of the second edition of 1828 has also now been completed. We have a list of about 300 towns for the Eastern India during 1815-1828. A 'town' was nowhere defined in any contemporary documents. Perhaps overgrown localities having urban elements were indiscriminately called towns. We have produced population estimates for 19 cities and towns in this volume for the period 1811-1830. The following table shows the towns and population in 1811-1830, 1872, 1921 and 1971.

POPULATION OF 19 TOWNS OF EASTERN ZONE, 1811-1830, 1872, 1921 and 1971

name of towns with reference year	population			
	1811-1830	1872	1921	1971
1	2	3	4	5
Sylhet 1813	30,000	16,846	16,912	37,740*
Burdwan 1813-14	53,927	32,321	34,616	144,970
Calcutta 1810	1,000,000			
" 1810	450,000			
" 1814	700,000			
" 1815	500,000			
" 1819	750,000			
" 1821	179,917	428,328(a)		
" 1822	230,552	704,290(b)	1,053,334	3,141,180
Chamdrakoma 1814	18,145	21,311	6,470	9,805
Chandernagore 1814	41,377	24,000	25,423	75,960
Chinsura 1814	18,679	34,761	29,938	105,341
Cossimbazar 1829	3,538	-	-	6,306
Dacca 1815	150,000	68,595	119,456	556,712*
Keerpoy 1814	10,525	8,046	3,756	7,227
Moorshidabad 1814	150,000	24,534	10,669	16,618
Serampore 1814	11,445	24,440	56,456	159,499*
Arah 1812-13	22,200	39,386	40,769	92,670
Bhagalpur 1810-11	30,000	65,377	68,878	172,700
Chupra 1817	43,500	46,287	42,415	83,166
Mungger 1810-11	30,000	56,698	46,825	103,462
Patna 1811-12	312,000	158,900	119,976	472,051
Patna 1815	50,000(c)	-	-	-
Rajmahal 1810-11	27,500	-	3,454	8,185
Cuttack 1818	40,000	42,667	51,087	194,036

* figures are for 1961

(a) area unadjusted i.e., as in 1872 and generally comparable to 1821;

(b) area refers to that of 1971; (c) does not appear to be reliable at all.

6.2 The population of the towns with 1814 as reference year is based on an enumeration by W. B. Bayley. Population of three Bihar districts (1810-14) is based on Buchanan's survey. Patna's population for 1815 and Dacca's population for the same year are subject to question. The City of Dacca was enumerated in the year 1830 Henry Walters. The full report was published in the Report on the Population Estimates of India, 1820-1830. Perhaps in the absence of any standard definition, Francis Buchanan treated some of the places even with 100 houses as towns. Buchanan mentioned 232 towns in three districts of which 138 had 100 to 250 houses.

6.3 It will be seen that most of towns declined between 1811-1830 and 1872, only Monghyr doubled, some remained constant and few of them grew. Burdwan declined by 40 per cent, Moorshedabad by 84 per cent, Dacca stagnated (1830 census population was 67,000 against 69,000 in 1872). We shall briefly discuss Dacca and Calcutta. The decline of Dacca represents a political and economic decline of the country and the rise of Calcutta represents the new forces. Dacca as censused in 1830 contained 16,257 houses and a population of 67,000. "In 1680, the capital was shifted from Rajmahal to Dacca It appears to have attained its great splendour during the reign of Aurengzeb and judging from the magnificence of the ruins ... now overspread with jungle, it must have vied in extent and riches with the greatest cities, Gour perhaps excepted." Thus writes Walton Hamilton in 1828 (East India Gazetteer), "the permanent decline appeared to have commenced with the trouble and destruction of the Mogul Empire." The process of decay was slow primarily due to its supremacy in cotton weaving, mainly world-famous maslin. But the series of

famines of 1770's and 1780's struck blows. With the speedy decline of Court, the manufacture of fine maslins gradually disappeared accelerated by the policy of the East India Company as noted by Henry Walters.

6.4 Calcutta gradually emerged following the decline of Saptagram, Sabar, Kirat, and Dhipars were early settlers. It is not a great city "hoary with age and rich in history". We have briefly traced the growth up to 1972. Suniti Kumar Chatterjee^{31/} brilliantly traced the socio-cultural history of Calcutta from the days when it was frequented by Sabar, Kirat and Dhibars (hunters and fisherman). The Bhadroloks first began to assemble around 1840's from districts being scared by Mahratta terror and gradually became the junior partners of British Merchants as documented at National Archives and Parliamentary Papers. They shared the compensation from the Nawab. Harihar Seth^{32/}, Harisadhan Mukhopadhyay^{33/} and Benoy Ghose^{34/} wrote in Bengali on the history of Calcutta. The history can be traced on a factual and statistical basis from three census documents - Beverley in 1876^{35/}, A. K. Ray in 1901^{36/} and Asok Mitra^{37/} in 1951. Mitra's own book^{38/} (1963) tells of the latest situation. Burce's^{39/} and Wilson's^{40/} Annals Mesrob's^{41/} Armenians, Walter Hamilton's Gazetteers, Halwell's survey in 1752^{42/} are some of the source material of history utilised to trace a quantitative growth of the City.

6.5 In the pre-census year, Calcutta perhaps doubled between 1821 and 1871. During the 50 years, 1872-1921, the growth of population was around 50 per cent and in the next 50 years, 1921-1971, the growth was to the extent of 198 per cent. Taking the first sixty years, 1901-1961, the total urban population of Indian Union increased by 205 per cent (annual rate 3.5 per cent);

the population of class I cities of India increased during these sixty years by 517 per cent (annual rate 8.6 per cent), the population of Calcutta Municipality increased by 213 per cent (annual rate 3.5 per cent), of Delhi Municipality by 853 per cent (annual rate 13.5 per cent), of Madras Municipality 219 per cent (annual rate 3.5 per cent). The growth rate of West Bengal in the decade 1961-1971 was 24.6 per cent, of Calcutta 7.3 per cent. The Calcutta Urban Agglomeration consisting of 74 constituent units increased by 21.11 per cent in 1961-1971 against 25.01 per cent in 1951-1961 when the Greater Bombay grew by 43.75 per cent in 1961-1971 and 39.95 per cent in 1951-1961.

Section VII. Morbidity and Mortality

7.1 "The great epidemic of cholera that overran India and Ceylon in 1817-19"^{43/} swept away large number of people. Jame Jameson's Report^{44/} published in 1820 - "a work of singular merit and interest, now scarcely sufficiently remembered —"^{45/} has been extracted and presented in the volume. "In attempting to write a description of the epidemic, which has of late so severely afflicted the continent of India ...", Jameson discussed the weather for relevant years and factually described the serious incidence of morbidity due to vagaries of seasons in Lower and Upper Bengal.

7.2 The disease was endemic in Bengal, but was more present in the first six months of 1817. "On the 28th of that month (August) it was reported to Government, that the disease has suddenly appeared epidemically in Jessore, a populous town situated at the Delta of the Ganges; and that it was attacking all classes indiscriminately; and was cutting off from twenty to thirty persons

daily, that the inhabitants, astonished and terrified at the unaccountable and very destructive nature of the attacks, were flying in crowds from the place, as the only means of escaping impending death. So, little was the nature of the new pestilence understood; and such was the extreme consternation produced by it, that the Civil Courts of the District were shut; and a stop put for a time to business of every description ... such was the energy of the disease ... so fatally destructive was it of human life, that in this district alone, it is reported to have, within a space of few weeks, cut off more than six thousands of the inhabitants". Writing these lines, Jamesons mentioned that a month previous to attack in Jessore, the disease began to prevail epidemically in the distant Provinces of Bihar and Dacca; and before the expiration of the first week in August, it had firmly established itself in many other parts of Bengal.

7.3 It arrived in Calcutta by the beginning of August, "before the end of the month had widely spread its ravages, in a manner threatening to sweep off a large portion of the Native population; that in the early part of September, even the European portion of the community was no longer secure ... soon after the middle of September, the disease, now strictly epidemical, extended itself in every direction; within a short space of a few weeks stretching from the most easterly parts of Poornea, Dinagepore, and Sylhet, to the extreme borders of Balasore and Cuttack; and reaching from the mouth of the Ganges nearly as high as its junction with the Jumna ..."

7.4 "Within the area of several thousand miles, thus in so short a period brought under its influence; few towns or villages of any considerable size

wholly escaped its attacks; almost every spot being, notwithstanding the great irregularity of its course, and the waywardness of approach, sooner or later, in a greater or lesser degree, subjected to its dreadful visitations. "The cities of Dacca and Patna, the towns of Balassore, Burrisaul, Burdwan, Rangpore, Malda, Bhatgulpore, Chupra, and Mozufforpore, with the Military Stations of Monghyr, Buxar and Ghazeeppore, all suffered severely and throughout whole extent of Delta of the Ganges, and more especially in the tracts bordering on the Hooghly and Jollinghy Rivers, so great was the mortality, that the bulk of whole population was sensibly diminished by the dreadful ravages of the distemper ..." These excerpts and summaries are sufficient to show the

ravages, mortality being estimated sometimes around 10 per cent of the total population. Jameson also presented statistical tables. We have also reproduced in the volume excerpts from Sir Rogers' chapter on "the spread of cholera in India in former epidemics" as well as excerpts from Bryden^{46/} and Macnamara^{47/}.

7.5 Malaria is the most notorious disease of Bengal prevailing up to date. At one time in 1930's, so a large portion of working force was attacked that crops rotted in the field in a large area of rural Bengal. Malaria in Bengal in the 19th century is well treated in a number of books, such as, Westland's Gazetteer of the Jessore district, Dr. Elliot's Report on Epidemic Remittent and Intermittent Fever in Burdwan and Nadia, 1863, Major French's Enemy Fever in Lower Bengal 1874, and Report of the Burdwan Fever Enquiry 1874. A. B. Fry wrote^{48/}, "The early records of the East India Company prove that Calcutta and Bengal were malarious from the very commencement

In the
of British occupation". Extracts from the Topography and Vital Statistics of Calcutta, by F. P. Strong, it was noted that malaria prevailed in all parts of Bengal not cleared of jungle, and, jungles, lakes, marshes, filthy pools, stagnant water were responsible for Malaria in Calcutta in 1820's or in 1830's. It was recognised that mortality in Bengal was high and this mortality was attributed to frequent inundations or unnatural moisture followed by great heat.

7.6 Inundation in Bengal (1822-1823) was well described by Henry Piddington^{49/} W. B. Henderson's essay on the results of an enquiry into the law of mortality of British India has been reproduced^{50/}. The report contains a table showing statement of burials of Europeans and East Indians at Part Street Protestant Burial Ground for the years 1814 to 1853 by single years of age. Cuthbert Finch published vital statistics of Calcutta^{51/}. It contains mortality statistics for 1817-1836 (statistics for Hindu & Muslims for last 5 years only). We have prepared a series of comparative tables for 1817-1840 and 1950-1960. To summarise, incidents of morbidity was high and mortality quite large.

VIII. Conclusion

8.1 The population trend revealed by documents of Buchanan's survey of Bihar, Bayley's survey of Burdwan, survey notes on Assam by Dhekial Phukans pointed out to a deteriorating situation. Asok Mitra observed in 1951, "... It is a matter of no little instruction that between 1790 and 1872, the population remained almost stationary and even declined ... the natural growth of population was only 12 per cent on the estimated population of 1794^{upto 1921.} The birth rates were high, death rates perhaps never fell far behind. Rammohun Roy pointed out after the great calamity of 1817-19^{52/}, "It (population) increases considerably

from the early marriages of the people and from the males seldom leaving their families, and almost never going abroad. But there are occasionally strong natural checks to this super abundance. The vast number carried off of late years, by cholera morbus, having greatly relieved the pressure of surplus population, the condition of labours has since much improved in comparison with what it was before the people were thinned by that melancholy scourge". It speaks of firstly, the fatality of Malthusian checks in Bengal and secondly, reminds of a depopulated England after the Black Death described by Thorold Rogers. The slow rate obtained for 1872-1921 was also pointed out by Rabindranath Tagore^{53/}.

8.2. The present editor was most fortunate in having a scope to work under Professor P. C. Mahalanobis in building a series of decennial estimates contained in the paper-"Growth of Population in India and Pakistan". Professor Mahalanobis devoted a considerable time to look into a significant portion of pre-census raw data and left his illuminating guidance for pre-census studies. A series of decennial estimates for the decades of the 19th century was made by using "data of regional enumerations, where available making suitable adjustments for under enumeration and under coverage, as far as possible. For regions for which such data were not available, it was assumed that the normal growth rate was the same as the average rate based on two census decades of good seasons, 1881-1891, and 1901-1911. Growth rates were worked out for each decade, taking a notional view of deviations from a good or bad census decade. Finally, an all-India series was constructed from the different regional series, starting with a population of 207 million".

POPULATION OF INDIA AND PAKISTAN 1801-1961

year	population* (million)	percentage change	year	population (million)	percentage change
1	2	3	1	2	3
1801	207	-	1881	258	+ 0.78
1811	215	+ 3.86	1891	283	+ 9.69
1821	205	- 4.65	1901	286	+ 1.06
1831	216	+ 5.37	1911	304	+ 6.29
1841	212	- 1.85	1921	307	+ 0.99
1851	232	+ 9.43	1931	339	+10.42
1861	244	+ 5.17	1941	383	+12.98
1871	256	+ 4.92	1951	438	+14.36
			1961	534	+21.92

* Note by PCM - The construction of the table of estimated population, 1800-1871, was the work mainly of D.P.Bhattacharya; the senior author suggested some guide line and criteria for adjustments from fragmentary data or indirect informations. An alternative series of increasing (+) and decreasing(-) population is somewhat suspicious and is possibly indicative of some kind of unconscious bias in making adjustments.

8.3 In conclusion, mention should be made that the project survived because of Shri Asok Mitra's massive support to it in heavy odds followed by the generous help extended by the present Registrar General Shri A. Chandra Sekhar. The project survived because Dr. C. R. Rao accommodated it at the Indian Statistical Institute and did everything in his power to strengthen it. The project was able to maintain its existence because Bibhavati Bhattacharya worked as honorary wholetimer to complete the work of the published volume and Anima Bhattacharya worked practically without any remuneration upto April 1966 to build up the massive bibliographical base of the project. Shri K. D. Ballal and Shri R. C. Nigam of the Registrar General's office helped the organisation. Dr. B. K. Roy, Map Officer of the Registrar General's office, is extending guidance to prepare the pre-census atlas. The editor is indebted to all his colleagues in the Registrar General's office and in the Indian Statistical Institute.

kcn/25.12.72.

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