

INDIA

Office of the Registrar General

Report on the population estimates of 1961
(Census of India 1961)

1820-1850



CENSUS OF INDIA 1961

REPORT ON THE POPULATION ESTIMATES OF INDIA
(1820—1830)

EDITED BY

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FOREWORD

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 planned for execution in 1872. The enthusiasm expressed by Sri Durgaprasad Bhattacharya of the Socio-Economic Research Institute of Calcutta, made the project possible. Certain suggestions made by me on the uniform presentation of data were readily accepted and the present volume represents the fruit of searches made for population estimates roughly for the decade 1820-1830. 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 ten points mentioned in para 1.5 in the editor's Preface. The Executive Council of the Socio-Economic Research Institute accepted these suggestions and the editors have presented the material, as far as possible, under the ten prescribed heads.

This first volume is primarily designed to elicit suggestions and criticisms for improvement. The Census Commission, therefore, invites comments and criticisms so that the future volumes may be enriched. A bibliography of Indian Census Publications is also ready for the press.

*New Delhi,
January 8, 1963*

*A. MITRA
Registrar General, India*

P R E F A C E

I INTRODUCTORY

1.1. This Report on the Population Estimates of India, 1820-30, is the first of a series. It is intended to publish eight volumes in all.

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 purpose of the report is primarily to compile all estimates of population for 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 retarding the growth of population have also been taken into account.

1.3. The report has been divided into three parts.

Part I— India and larger tracts

Part II— Districts or similar area

Part III—Cities and towns

All together 37 estimates have been presented.

1.4. Geographically, the present report covers tracts from Assam to Gujarat, Kashmir to Cape Comorin. The principal regions of undivided India left uncovered in the present volume are Mysore, Hyderabad, Rajasthan, Sind, Punjab, Delhi. We have already traced out certain population estimates for some of the uncovered area and these are under scrutiny. Walter Hamilton however, formed his all-India estimate taking all the area into account.

1.5. 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 entry 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/households
- (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.

2. SOURCES AND METHOD

2.1. *Sources may be broadly stated as follows* :—

- (1) *Gazetteers*.
- (2) *Hamilton, Walter*. Geographical, statistical and historical description of Hindostan, and adjacent countries, in two volumes. London, 1820.
- (3) *Martin, R. M.* Statistics of the colonies of the British Empire. London, 1839.
- (4) *Parliamentary papers*.
- (5) *Selections from Records of the Government*.
- (6) *Asiatic Researches*; Journal of the Asiatic Society of Bengal.
- (7) *Books of secondary sources*. Numerical codes within third parenthesis have been used for references, the details of which will be found at the end of the Preface.

2.2. *The following are the principal methods followed by authors of different estimates presented.*

- (1) *Census or enumeration with a view to ascertaining population* :—Madras Territory, 1823 ; Territories under the Rajah of Nagpur, 1820-21, 1825 ; Mahratta Country, 1826(a) ; Bombay Presidency 1820-28 ; The District of Southern Concan, 1821 ; Collectorate of Khandesh, 1827 ; City and District of Murshedabad, 1829 ; A District in Central India, 1831 ; Town of Allahabad, 1824 (b) ; Island of Bombay and Colabah, 1826 ; City of Benares, 1827-28 ; City of Agra, 1829 ; City of Benares, 1829 ; The Town and neighbouring Country of Anupsheher, 1830(c) ; The City of Dacca, 1830.
- (2) *Enumeration connected with revenue or statistical survey* :—Travancore State, 1820 ; Cochin State, 1821 ; Broach Collectorate, 1820 ; Pergunnahs of Southern Mahratta Country, 1820-21 ; The Town of Goracpur, 1829.
- (3) *Estimate by counting houses, etc.* :—The Province of Kumaon, 1821 ; Bengal Presidency, Lower Provinces, 1822(d) ; Lower Bengal, 1825 ; Bengal Presidency, Upper or Western Provinces, 1826 ; Bhootea Mehals of Kumaon, 1822 ; Orissa Proper or Cuttack, 1825 ; The Province of Kattywar, 1831 ; Dwaraca, 1820 ; Calcutta, 1822.

(a) In this estimate, the results of Bombay census was reproduced.

(b) and (c) Nothing mentioned, probably census.

(d) Nothing specifically mentioned.

(4) *Method not clearly stated* :—India, 1820 ; The Province of Orissa 1820(e) ; The Province of Malwa and Adjoining Districts, 1822 (partly) (f) ; Assam, 1825-28 ; Kutch, 1821 ; Bombay Presidency 1829 ; The Valley of Kashmir, 1831.

2.3. As mentioned here, population figures of some of the tracts are based on a reported complete enumeration. The detailed methodology is, however, not available for all such estimates. Mr. James Prinsep writes on the method of his Census of the City of Benares, 1827-28.

The watchmen are well acquainted with every house within their beat, and can generally tell the names and circumstances of their various inmates ; with the assistance of these men... my enquiries were continued from house to house, either addressed to the householders themselves, or to servants and neighbours. The *chumars* of the *mehala* having daily admittance to each house to remove dust and rubbish, were found to be useful auxiliaries in checking the estimates of population from other sources. ... For three days and night previous to the Eclipse of the 21st May 1826, *Chaprasis* and Bearers were stationed, in pairs, at the 5 principal approaches to the City, for the purpose of counting the passengers by means of small pebbles, which they threw into a bag as the people passed. The Ferry people had also directions to supply returns, but it is feared that they may have purposely underrated the number of persons crossing from the south of the river. [1]

2.4. Prinsep also tried a cross-check taking into account the consumption of salt. Henry Walters' Census of the City of Dacca also gives a volume of useful information, but he collected the materials through the instrumentality of Police as the Judge and Magistrate of the City aided by the heads of castes and professions, with " as great a regard to correctness as is usually attainable in such matters " ; and as such, he submits them " in the confidence of their general accuracy " . [2]

2.5. The Census of the City and District of Murshedabad (1829) by Mr. H. V. Hathorn is an equally important document on which a note published in the Journal of the Asiatic Society of Bengal reads as follows :

to the five or six accurate estimates which we possess of the population of the cities of India, we are happy to be able now to add one of *Murshedabad* both city and district, which we owe to the private or ex-official industry of Mr. H. V. Hathorn, while magistrate of that zillah in 1829. The detailed statements accompanying this officer's letter to the Government will be published without doubt in the Transactions of the Asiatic Society, to which body they have been transferred. How easy would it be for every officer in charge of a town or a zillah to employ a few of the leisure hours of his police in framing reports of a similar nature. [3]

The Report, however, was not published in the Transactions. We have not yet been able to trace out the manuscript.

(e) The original manuscript subsequently discovered at the West Bengal Archives shows that the estimate refers to the year 1815. The document will be presented in the relevant volume.

(f) A part has probably been enumerated, population is sometime based on a calculation of number of ploughs and land available for cultivation. But it is not clear, how the population of the total Province was estimated.

2.6. The second category of documents are those prepared in connection with the revenue, statistical and other surveys. The survey of the Broach Collectorate, Bombay (1820) by Mr. Monier Williams, probably tops the list. These documents throw a flood of light on the socio-economic conditions of the land and people of the day. "The Directors were so pleased with the survey of the first pargana that they urged Bengal and Madras to take up surveys on similar lines." [4] "To form a correct census...a list of the inhabitants was taken at every village during the survey and in these lists, the name of every householder was inserted with the number of men, women and children composing his family." [5]

As a result of the survey, the revenue recovered... in one small district only amounted to an annual income considerably exceeding the estimated charge of surveying the whole district. Survey of the parganas of Anklesvar and Hansoot was completed early in 1816 and...in the course of the survey, the whole population...were vaccinated against small pox.

2.7. The survey of Travancore and Cochin also belongs to this category. A glance over the voluminous materials may convince one of the correctness of opinion expressed by Mr. Montgomerie :

This was an excellent geographical, topographical and statistical survey, and the admirable manner in which it has been executed, and that too under no ordinary difficulties from the wild nature of the country, reflects great credit.* [6]

The Census of the territories of the Rajah of Nagpur was ordered by the Resident in 1819.

Under the Mahratta Government, there existed a kind of ground work for a census in the most of these districts, in what is called the Khana Shoomares, or annual enumeration of the houses of each district. A census which was ordered by the resident in 1819, was only an extension of this plan and made through the Purgunnah officers and Putels of villages, each of whom is fully competent to give an actual muster of all the inhabitants of his village..[7]

The writers of the different companies of the police corps... were instructed to go to each house of the district, or quarter, of which their respective companies had charge, and to ascertain the necessary particulars from the heads of families'. [8]

2.8. The census of Khandesh, 1827, deserves a special mention for its details. In submitting the returns to the Government prepared by the Collector, Major Sykes, Officiating Statistical Reporter to Government, said,

It did not enter into my plan to exhibit every trade or caste which met within the population of the country from the circumstance of the details necessarily swelling the returns to a most inconvenient bulk. The

* Hunter said that the method was defective.

collector of Khandesh, however, having caused all the various trades and many minute distinctions of caste in the towns and villages to be enumerated on the back of each return, I did not conceive myself at liberty to translate the return to leave out this enumeration. This explanation will account for the voluminous character of the accompanying returns—a character which did not distinguish the returns from the Poona Collectorate and from which also the returns from Dharwar will be free. [9]

2.9. The statement of the population of Bengal Presidency, Lower Provinces, 'is given on the authority of Memorandum appended to the Police Report of Mr. Henry Shakespeare, Superintendent of Police in the Lower Provinces, in the year, 1822'. But Mr. R. M. Martin placed another estimate giving a similar result to say,

I obtained it in India from Dwarakanath Tagore, a Hindoo of an enlarged mind, a most generous disposition, and a truly British spirit. Dwarakanath Tagore was then at the head of the salt and opium department at Calcutta, and had perhaps the best means of judging as to its correctness of any man in India ; he considered it as a fair estimate for 1820 or 1822. The calculations are founded on the number of villages and houses in each district, but we have no census of any part of British India on which reliance can be placed : in some places the population is estimated on the rudest data. [10]

2.10. *Madras, 1823*—The population estimate of Lower Bengal for 1825 is based on the number of villages and houses by taking 5 persons per house. The statement of population of Madras Presidency, 1822, is based on the official reports of a census taken by the collectors of several districts, and by the Superintendent of Police at the Presidency for the town of Madras, in response to a circular, dated 28th of January, 1822. A comment on this census runs as follows :

In the year 1822, after two decades of settled Government, the first attempt appears to have been made to ascertain the numbers of people. It is not certain how the census results were then obtained, but it seems probable that the village communs, with its staff of head men, accountant, and other officials, formed the groundwork of the census machinery just as it has done nearly half a century later. [11]

2.11. *Bengal Presidency, Upper or Western Provinces and Bombay Presidency, 1820-28*—The statement of population of Bengal Presidency, Upper or Western Provinces, 1826, based on a statement of Mr. Walter Ewer, contained in his police report for the year was totally rejected by the Court of Directors as absolutely unreliable and they furnished good reasons for doing so. The estimates for Bombay Presidency, 1820-28, are based on a series of census or surveys which represent, in all fairness, a very serious effort of a number of officials of the East India Company. Some of the district documents have been presented here and they speak for themselves.

2.12. *Kumaon, 1821 and Assam, 1825-28*—The estimate of population of Kumaon in 1821 is also a strenuous effort for collecting information which has undoubtedly proved useful. It was extremely difficult to obtain any reasonable information on Assam in the early part of the decade, 1820-30. Hamilton's figures for area and population are pure conjectures under the circumstances as explained editorially in this volume.

2.13. *Hamilton's All-India Estimate*, a very bold guess work, includes territories that had not been in India politically, e.g., Nepal Raj, the Cabul Sovereign.

Hamilton mentioned—

A list called *Khana Shumari*, containing a statement of number of the houses, families, tradesmen, castes, ploughs, looms, tanks, and other public works, civil and religious, within the jurisdiction of the magistrate, which is usually kept under all native governments, but which is frequently a doubtful authority. [12]

Hamilton presumably extracted the statement from Dr. Francis Buchanan's manuscript on Dinajpur available at the India Office. The statement is an exact reproduction upto the line "which is usually kept under all native Governments," but the last portion of the sentence, "but which is frequently a doubtful authority," is Hamilton's own addition. Actual line in the manuscript runs thus, "...which is usually kept under all native Governments and seems to be useful..." [13]

3. INDIA AND PROVINCES

3.1. As pointed out, Hamilton's estimate for India, 1820, is a bold guess work partially based on documents available at different points of time. We have already discovered a number of estimates for the years before 1820, some of which have been quoted by Mr. Kingsley Davis. [14] The next all-India estimate was presented by Mr. McCulloch. A statement of population for the three presidencies—Bengal, Bombay, Madras—occurs in the Report of the Select Committee of the House of Commons on the Affairs of the East India Company, 1832. Mr. Campbell consolidated the data available.

3.2. Mr. Campbell wrote—

In the British territorial possessions in the continent of India including an extent of 512,873 square miles, the permanent zamindari settlement has never extended to any portion of the provinces under the Bombay Presidency, which contains 59,438 square miles, with an estimated population of 6,251,546, and 5,500 square miles, in the Northern Concan, the population of which is unknown. By far the greater part of the Madras Territory, to the extent of 92,316 square miles, with a population of 9,567,514, has also been exempted from it; and in the territories under the Supreme Government, periodical settlements continue to prevail in the province of Cuttack, containing 9,040 square

miles, with a population of 1,984,620; in the Upper or Western Provinces, including 66,510 square miles, with a population of 32,206,806 and in the districts ceded on the Nerbudda, and by the Rajah of Berar in 1826, containing 85,700 square miles, the population of which is unknown. [15]

Mr. Campbell summarises his statement as follows where the year is mentioned as 1829.

TABLE 3-1

Place (1)	Area in Sq. miles (2)	Population (3)
<i>Bengal—</i>		
1st Permanently settled with Zamindars	149,782	35,518,645
2nd Periodically settled with Zamindars, and other contractors	161,250	34,191,426
Total	311,032	69,710,071
<i>Madras—</i>		
3rd Permanently settled with Zamindars	49,607	3,941,021
4th Periodically settled with local proprietors	92,316	9,567,514
Total	141,923	13,508,535
<i>Bombay—</i>		
5th Periodically settled with various Classes, Bombay	64,938	6,251,546
Grand Total	517,893	89,470,152*

Mr. Campbell's paper only consolidates the available data on population for the three Presidencies or roughly speaking, British India. The Report of the Select Committee of the House of Commons, 1832, also gives the same figures for area and population of the presidencies.

*The total in the text was given as 69,470,152.

3.3. The following is a summary of the estimates presented in the first part of this volume :—

TABLE 3-2

Place	Year	Area in Sq. miles	Houses	Population	Density*	Average size of house ^b
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0 India, British	1820	553,000	N.A.	83,000,000	150.1	N.A.
1 India, total	1820	1,280,000	N.A.	134,000,000	104.7	N.A.
2 Orissa	1820	N.A.	N.A.	737,922	N.A.	N.A.
3 Travancore	1820	6,730	272,289	906,587	134.7	3.32
4 Territories of the Rajah of Nagpore .	1820-21	70,000	N.A.	2,214,904	31.6	N.A.
5 Cochin	1821	1,361	59,818	223,003	163.8	3.73
6 Kumaon	1821	10,967	44,569	301,046	27.5	6.75
7 Bengal Presidency (Lower Provinces)†	1822	153,792	7,781,240	39,957,561	259.8	5.14
8 Malwa	1822	26,767	N.A.	2,642,677	98.7	N.A.
9 Madras	1823	141,923	N.A.	13,508,535	95.2	N.A.
10 Bengal Presidency (Lower Provinces)	1825	153,792‡	7,447,653	37,238,265	242.1	5.00
11 Territories of the Rajah of Nagpore .	1825	70,000	N.A.	2,470,752	35.3	N.A.
12 Bengal, Upper Provinces	1826	66,510	N.A.	32,206,806	484.2	N.A.
13 Mahratta Country	1826	102,000	N.A.	6,000,000	58.8	N.A.
14 Bombay	1820-28	59,438	N.A.	6,251,546	105.2	N.A.
15 Assam	1825-28	45,000	N.A.	301,000	6.7	N.A.
16 Bombay	1829	59,438	N.A.	4,681,735	78.8	N.A.

* Worked out by the editors.

† Martin's figures taken as they give also number of houses.

‡ Area not given, taken from Serial No. 7.

N.A.—Not available.

3.4. Omitting figures for Bengal, Upper Provinces, 1826, and Assam, 1825-28 (apparently unreliable, please see editorial comment on the relevant estimates), the regions may be arranged by density as follows :—

TABLE 3-3

Population per Sq. mile	Place
(1)	(2)
25—50	Nagpur, 1820-21, 1825; Kumaon, 1821.
51—75	Mahratta Country, 1826.
76—100	Bombay, 1829; Madras, 1823; Malwa, 1822.
101—125	India, 1820; Bombay, 1820-28.
126—150	British India, 1820; Travancore, 1820.
151—175	Cochin, 1821.
176—200	Nil.
201—250	Bengal Presidency, Lower Provinces, 1825.
251—300	Bengal Presidency, Lower Provinces, 1822.

6 Orissa, 65

3.5. Scanty data available on number of houses show that Kumaon had the largest number of inhabitants per house at 6.75 followed by Bengal 5.14 (1825) and 5.00 (1822), Cochin 3.73, Travancore 3.32. The author of the estimate of Kumaon has given an explanation about the large size of households.

3.6. It may be interesting to note some subsequent all-India estimates.

TABLE 3-4
Population of India

Year	Source	Area in Sq. mile	Population (1881)
(1)	(2)	(3)	(4)
1820	Hamilton	1,200,000	134,000 [16]
1834	McCulloch	N.A.	130,000 [17]
1844	McCulloch	1,214,483	131,752 [18]
1855	Parl. Paper	1,426,576	140,244 [19]
1865	Parl. Paper	1,463,212	*140,005 [20]
1871	Davis, Kingdly	N.A.	255,000 [21]
1874-5	Parl. Paper	1,500,500	*237,000 [22]
1881	Census	1,270,320	*250,205 [23]

* Figures for Burma omitted.

3.7. Only one point is to be mentioned about the later estimates. British rule gradually consolidated itself and coverage of the area from which population returns were received extended day by day and with it naturally, the intensity of coverage also increased.

4. DISTRICTS

4.1. A number of district reports referred to in

the Presidency estimates and elsewhere is likely to be available in the near future in a manuscript form. We are already in possession of some of the published documents in this connection spread over a number of voluminous selections from records. They are under processing and consolidation. Data relating to density, average size of houses and number of females per 100 males of the district areas are being presented below.

TABLE 4-1

Density, Average size of houses, Sex ratio

Districts (1)	Year (2)	Population per Sq. mile (3)	Average size of houses (4)	No. of female per 100 males (5)
Broach	1820	170	4.12	87.78
Southern Mahratta country	1820-21	N.A.	4.42	89.56
Cutch	1821	N.A.	N.A.	N.A.
Southern Concan	1821	91	4.87	91.16
Bhotea Mehals of Kumaon	1822	N.A.	7.55	N.A.
Orissa Proper or Cuttack	1825	144	5.07	N.A.
Khandesh	1827	32	3.96	85.15
Murshidabad*	1829	518	4.73	92.37
Valley of Kashmir	1831	N.A.	N.A.	N.A.
A district in Central India	1831	283	N.A.	N.A.
Kattywar	1831	80	N.A.	N.A.
Kaira†	N.A.	N.A.	N.A.	82.27
Poona‡	N.A.	N.A.	N.A.	88.10
Ahmednuggur‡	N.A.	N.A.	N.A.	86.00
Dharwar‡	N.A.	N.A.	N.A.	89.00

* All strangers included among males.

† Kaira and Poona—estimates of population not separately presented in this report. The sex ratio of Kaira was referred to in the estimate of Broach and that of Poona in the estimate of Khandesh.

‡ Estimates appended to Bombay Presidency, 1820-28.

N.A.—Not available.

4.2. The districts may be rearranged by a descending order of density and size of houses.

TABLE 4-2

Districts (1)	Density (2)
Murshidabad	518
A district in Central India	283
Broach	170
Orissa Proper or Cuttack	144
Southern Concan	91
Kattywar	80
Khandesh	32

4.3. The size of a house is largest in the Bhotea Mehals of Kumaon (7.55), followed by Southern Concan (4.87), Murshidabad (4.73), Southern Mahratta Country (4.42), Broach (4.12), Khandesh (3.96).

4.4. The problem of a smaller proportion of females has been widely discussed in population literature of the pre-census period.

In para 230 of the Revenue letter from Bombay, dated 6th November, 1823 it has been said, "By a comparison drawn in the 26th paragraph of the Revenue Survey of Guzerat with that of the Ceded Districts by Colonel Munro, the first point that calls for notice is the greater disproportion between the male portion [male and female—ed.] of the population in three of the Collectorates under Bombay, that prevails in the Ceded Districts". [24]

4.5. In discussing the same problem about Khandesh, the author says—

The great feature in the population of this collectorate, as in that of the Poona Collectorate, and as in England and Wales (although the contrary is usually believed to be the case), is the preponderance of the males over the females—the preponderance prevailing throughout the different castes. There are 200,597 males and 170,407 females giving an excess of males 29,790, or 8.41 females to 10 males, which closely approaches the proportion in the Poona Collectorate of 8.81 females to 10 males, the excess of males being in favour of Khandesh. In England, the population is 9.28 females to 10 males. [25]

4.6. In Cochin, however, the number of females per 100 males is 103.34 and in Travancore State, it is 98.26. In Travancore,

Polyandry is supposed to have some influence in obtaining the usual proportion of the sexes with reference to the total amount of population; this is not observable but among the Nairs, particularly in Cochin, the females are most numerous, and the circumstance can only be ascribed to the singular economy of the people; the difference varies with

locality; the excess in some instances considerable and on the whole almost inverts the usual order. [26]

5. CITIES

5.1. India is famous for her big cities. Population figures for cities are available from early seventeenth century. Old records of the East India Company give us an idea of the population of Bombay and Madras right from the seventeenth century. Fray Sebastien Manrique [27] estimated the population of Dacca (1638), Patna (1640), and Agra (1640). Thomas Bowrey [28] and John Fryer [29] mentioned about population of a number of cities in Southern and Western India. "The city of Muzadavad [Murshedabad-*ad*] is as extensive, populous, and rich as the city of London." [30]

5.2. In part III of this Report, we have presented separate estimates for a few cities and towns of India. Estimates of urban population are also available in Part I and Part II of the volume along with all-India, provincial or district estimates.

TABLE 5-1

Houses and Population of Cities and Towns of India

City	Year	Houses	Population	Average size of houses
(1)	(2)	(3)	(4)	(5)
Dwaraca	1820	2,560	10,240	4.0
Calcutta*	1822	67,519	179,917	2.7
Calcutta	1822	65,519	230,552	3.5
Allahabad	1824	6,165	38,231	6.2
Bombay	1826	20,195	112,170 (162,570)†	6.6
Benares‡	1827-28	33,073	200,450	6.1
Gorucpur	1829	7,237	40,023	5.5
Benares	1829
Murshedabad	1829	40,118	146,963	3.7
Anupshcher	1830	1,723	8,072	4.7
Dacca	1830	16,257	66,589	4.1

* Calcutta—the first estimate is that of ameer's, the second is that of Magistrate.

† Including floating population.

‡ Benares 1829 is a check on the previous census. Figures for new area covered in Ben. P. have been included with that of 1827-28.

5.3. To arrange the cities according to a descending order of population magnitude from the previous table.

TABLE 5-2

City (1)	Population (2)
Calcutta	230,000
Benares	200,000
Bombay	162,570
Murshedabad	146,000
Dacca	66,989

5.4. A number of sources indicates that population of cities was over-estimated in some cases by the authors of earlier days. Population of Dacca was estimated by Hamilton in his Gazetteer

at 150,000. Bishop Heber puts the number of houses at 90,000 and population at 300,000. In Benares,

In the year 1800, a census of the Population of this city was taken by Zulficar Ali, Kotwal, under the orders of the resident, Mr. Deane, which was published as an appendix in Lord Valentia's Travels in India... The number of houses nearly corresponds with Zulficar Ali's statement, being nearly 30,000; but there must have been a considerable increase of buildings towards the south and west of the town since 1800; as has been observable within the last few years on the side of Secrole: we can hardly, therefore, allow that the dimensions of the town have remained stationary during the last 30 years, although seemingly borne out by the above coincidence. [31]

5.5. The following table gives the estimates formed by Hamilton published in 1820 for some cities together with subsequent estimates.

TABLE 5-3
Population of Cities and Towns
(Figures in 000)

Place (1)	Population		Year of Col. (3)	Sources of Col. (3)* (5)
	Hamilton's estimate (2)	Other estimates (3)		
Benares	600	200	1827-28	Census, Prinsep
Calcutta	500	230	1822	Magistrate
Surat	450	124	1814	Magistrate [32]
Patna	312	312	1811-12	Buchanan [33]
Dacca	180	67	1830	Henry, Walters
Bombay	170	163	1826	Census, 1826
Murshedabad	150	147	1829	Census, Hathorn
Poona	120	105	1830-30	Census [34]
Nagpur	100	111	1821	Census, Richard
Agta	60	97	1832	<i>Agre Akbar</i> , 31 Oct. 1832
Burdwan	54	54	1814	In fact, Hamilton reported Mr. Bayl- ey's estimate [35]
Broach	33	98	1830	Census, Monier Willi- ams [36]

*Where sources are not given the estimate has been presented in this volume.

5.6. Data presented seem to indicate that population of most of the cities was over-estimated. There are other evidences mentioned by some of the authors. Subsequent enumerations generally tended to confirm the trend. Mr. W. R. Cornish writing on the census of Madras town based on the enumeration of 1871 said,—

"I have thought it necessary to enter into these details, in order to show that the Census of 1822 and 1863 affords no reason to believe that the enumeration of 1871 has understated the population. When analysed, their returns show that a larger population should not properly have been expected."

He continues,—

Nor has Madras been alone in finding its population so much less than was expected. The same thing has occurred in all large Indian towns. Thus Benares fell from 200,000 to 170,000, Furruckabad from 132,500 to 73,100, Calcutta fell from one million to 377,924. Bombay suffered the like fate. [37]

6. DISTRIBUTION OF POPULATION

6.1. Some indications of the distribution of population out of available data may be obtained in the Table 3.1. McCulloch's observation on the distribution appears to be interesting and to correspond to the general pattern obtained from the data already presented. He describes—

Of the whole territory of Hindostan, supposed to contain, as already mentioned, 1,300,000 square miles, the population may be estimated at about 130,000,000 or about one half the population of Europe. The ratio of population to the square miles is therefore near 100 to 1; whereas that of Europe is very little more than 63 to 1. This population is very unequally distributed. The well-watered alluvial plains and valleys are everywhere thickly, and the mountainous or hilly regions always thinly, inhabited. From the extreme South point at Cape Comorin, up to the 10th degree of latitude, the population is in some parts as low as 74 inhabitants to the square miles; at Madura, watered by the river Vay, it rises to 160; at Tanjore, watered by the Cavery, it rises to 225, being the densest population of the whole of the South portion of India. In the Carnatic, or plain lying between the East Ghats and the sea, it is about 96. On the table-land between the Ghats, and up to about the 16th degree of latitude, where the land is high and dry, with little other than artificial irrigation, the rate drops to 72. In the narrow plain between the West Ghats and the sea, and from the 10th degree of latitude up to the 20th, it is estimated at about 100. Of the whole table-land, extending from the 16th degree of latitude up to the Vindhyan range, and South border of the Gangetic plain, probably the population does not exceed 50 to the square mile. The population of the great peninsula of Guzrat rises to about 170. More than half the whole population of Hindostan is contained in the great plain of the Ganges: computing the area of this tract at 240,000 square miles, and the population at 60,000,000, the average rate per square mile exceeds 200, which is a higher ratio, than that of our own island. Within this wide range, however, there is a great difference in the rates of population. From the bottom of the Bay of Bengal up to the West confines of Bihar, which comprises, of course, the tract of inundation, a territory of

upwards of 80,000 square miles contains a population of more than 300 to the square mile. The tract of inundation itself far exceeds this. Thus the district of Burdwan has a density of 343, that of Hooghly 348; the districts of which Calcutta is the Centre, 340; and that of Murshidabad, above 400. As the country becomes mountainous to the East, the population diminishes. Thus Hattergunge has but 450; Chittagong, 234; and Tipperah, 200 to the square mile. In the low lands to the South of Bengal, including Midnapore and Cuttack, the ratio is but 225. From the W. confines of Bengal to the confluence of the Jumna with the Ganges, the country is far beyond the reach of inundation, and although very fertile, the population is only at the rate of 200 to the square mile; but in this is included the large, hilly, and wild district of Rhamgur, which has no higher ratio than 100. The whole of the plain to the West, from the confluence of the Jumna till it terminates in the Great Desert, may be computed to have a density of population not exceeding 100 to the square mile, and the proportion generally diminishes as we proceed westwards. The Punjab, or plain watered by the five alluvials of the Indus, probably does not contain a population of more than 100 to the square mile, and 50 would be a large estimate for the delta of the Indus. The extensive desert lying between the western limit of the Gangetic plain must probably does not contain 10 inhabitants to the square mile. [38]

6.2. *Travancore*—Land utilisation patterns bears some relations with a concentration of population—

Travancore contains nine hundred and six thousand five hundred and eighty-seven souls, giving one hundred and thirty-four and seven-tenths to a square mile, apparently a rather meagre population; but if we deduct the area of the lake and mountainous extent, for the inhabited parts only occupy about two thirds of the whole area; this density will be increased to two hundred and sixteen souls to the square mile.* It might perhaps support greater numbers, but regarded as to the space over which it is spread, the population is as equally dense as almost in any other part of the Peninsula, probably much more so in the maritime districts, which on the average contain three hundred and seventy-five souls to the square mile, but though here crowded, the population is not accumulated in towns; the concentration is in a great measure confined to a strip of about from nine to twelve miles in breadth running parallel to the coast; retreating from it the inhabitants are more diffusely scattered, except where attracted by rivers; they crowd along their banks. [39]

6.3. *Cochin*— In Cochin:

Kunneanur district has a highly dense population... having on the average four hundred and fifty one souls to the square mile, an intensity that does not admit of being much increased, all the cultivated lands and it may almost be said all the cultivable space, being occupied. Cochet in Cochin district has the highest density giving a population of 701.5 per square mile. [40]

* Population of Madras in 1822 is given at 462,051 signed by W. Ormsby, Superintendent of Police.

* Bengal two hundred and ten, England one hundred and twenty.

6.4. *Kumaon*—In the Province of Kumaon, out of an area of 10,967 square miles, only 2,193 square miles are under cultivation. Town population is insignificant and the average number of inhabitants per square mile is about 27.25.

As, however, one-third of the province, consisting of 4/15 snow in the north, and 1/15 turrace in the south, is almost wholly uninhabited, the proportion in the remaining part will be about 40-50 persons to the square mile. [41]

6.5. *Malwa*—In Malwa, according to the area and the population given, the density comes to about 100, but the table appended editorially to the estimate presented will show that the number of inhabited villages in Holkar's and Dher's Territories and in Bhopal is significantly small. The author of the estimate is of opinion that conditions obtained prior to 1820 were not favourable to a growth of population.

6.6. *Bhotea Mehals*—Assam was very thinly populated and Bengal, it is well known, very densely populated. Bhotea Mehals of Kumaon consists of only 59 villages and 1,325 houses giving roughly 34 houses per village. Again—

The productive and habitable portion of *Bhot*, is confined to the passes and their immediate neighbourhood, and does not exceed a sixteenth of its total extent; the remainder consists of snow or barren rocks [42].

6.7. *Orissa Province*—Hamilton writes—

At present nearly one-half of this extensive region is under the immediate jurisdiction of the British government, ... the British half is in general plain, fertile, but not well cultivated or peopled; the native section is either a barren tract or wild expanse of rock, forest, and jungle, thinly inhabited, yet producing a surplus of grain beyond the consumption of its inhabitants. The inhabitants of the first may be estimated at 100 to the square mile; of the second not more than 30 to the same area. [43]

6.8. *Orissa Proper or Cuttack*—Sterling in his account of Orissa Proper or Cuttack divides it into three parts—marshy woodland tract extending along the sea shore, the plain and open country between this and the hills.

The result of the above calculation (calculation of population as presented in the estimate—*ed.*)... gives to the open and cultivated part of Orissa a population of 135 per square mile.

Sterling mentions 'the general poverty of the people, and paucity of large towns and villages'.

6.9. *Khandesh*—In Khandesh, the pattern of land use was as follows:—

Total land (bigha)	.	.	.	5,768,892
Waste (bigha)	.	.	.	4,882,753
Cultivated (bigha)	.	.	.	883,548

Giving a density of the district at 32.33, the author of the estimate says—

This certainly exhibits a very low rate, but such as might be anticipated with reference to nearly the half of the whole of the towns and villages belonging to the Honorable Company being deserted.

6.10. *Bengal*—Dr. Buchanan covered an area of 36,784 square miles with a population of 15,443,220 souls, giving 420 persons to the square mile. [44]

The small villages from 100 to 500 are almost incredibly numerous (in Bengal) and in some parts of the country form a chain of many miles along the banks of the rivers, similar to what we find described in the most populous parts of the Chinese empire. While passing them by the inland navigation it is pleasing to view the cheerful bustle and crowded population by land and water; men, old women, children, birds and beasts, all mixed and intimate, evincing a sense of security, and appearance of happiness, seen in no part of India beyond the Company's territories. [45]

CASTE AND OCCUPATION

6.11. The traditional relation between a caste and an occupation in India is wellknown. The pattern of occupation in our period had, to a large extent, been determined by that of caste. Hierarchy of offices in land revenue administration had also sometimes created social classes. In Travancore and Cochin, several castes are mentioned with a clear hereditary occupation, e.g., oil monger, potter, washerman, barber, goldsmith, blacksmith, etc. In Maharashtra, old institutions of *Baro* (twelve) *Balowitz* or *Baro Aloitay* consisted of twelve occupational castes, each occupation-holder being granted land in lieu of their common services to the village. Enumeration of caste in details was conducted by Mr. Pelly in the district of Southern Concan mentioning the occupation followed by a particular caste. *Brahmins*, for example, were found to follow a "great variety of occupations," while *Purbhoes* were "cultivators of their own property on accounts". More than a hundred caste was thus enumerated. [46]

6.12. In Khandesh, an occupation was distinguished from a caste in course of enumeration. A broad breakdown of caste is available, while a very detailed classification of trade enables us to have a view of the occupation pattern also. Mr. James Prinsep in his census of the City of Benares gave detailed breakdown of each caste into sub-castes and also mentioned occupation followed by a caste. *Maharashtra*, a Brahmin caste is divided into 11 sections and they are "Pandits-Recluses or *Kashibasi* and a few merchants". *Nagar*, another caste, is divided into seven sections who are capitalists "lending money and jewels on interest". Similar details are also available for the town and neighbouring country of Anupsheher. The census of the city of Dacca conducted by Mr. Henry Walters gives an excellent account of caste and profession. Brahmins, for example, followed a varied profession such as *talukdar*, shopkeeper, thread-maker, merchant, broker, physician. This is an example of the institution of caste yielding to economic change.

7. CONDITIONS AFFECTING GROWTH

7.1. During the decade, 1820-30, drought famine and epidemic appeared repeatedly over a large area. According to the Famine Commission of 1880, drought occurred 9 times between 1801 and 1825 resulting in famines in a large area. [47] A brief account of the incidence of famines in India between 1811 and 1830 together with their causes and effect is being extracted below. [48] (para. 7.2 to 7.11)

7.2. 1812-13. Famine in parts of Sind and other neighbouring districts, attributed to failure of rain.

In Kach and Pahlunpore the loss was aggravated by locusts, and in Kattywar it was followed by a plague of rats. Guzerat suffered most from scarcity caused by export of grain to the famine districts; and Ahmedabad was overrun with starving immigrants. In Mahee Kanja the distress was caused by internal disturbances; whilst in Broach there was no failure of rain, but the crops, before they were reaped, were entirely devoured by locusts, which came in very large numbers, and spread all over the country. —Danvers, 1877.

7.3. 1812-14. Scarcity in Madras Presidency, following unfavourable season of 1811,

but no serious distress appears to have been generally experienced throughout the presidency on this occasion, although the districts on Madras suffered considerably. —Danvers, 1877.

7.4. 1813-14. Partial famine in many parts of Agra district, the autumn crop of 1812 failed, and the harvest of the following spring was indifferent. In 1813 the rains set in late and were then only partial.

7.5. 1819. Great scarcity in the Allahabad and neighbouring districts, under the following circumstances:—

The rains set in late, but when they did come they appear to have fallen in abundance. The land had hitherto been so dried up by the heat that sowing had to be undertaken twice without any effect, became so drenched that a third sowing was not possible till the middle of September. In Bundelkhand the Khariff of 1819 failed extensively, and frost nipped the spring crops in the beginning of 1820. —Danvers, 1877.

7.6. 1820-22. Famine in Upper Sind and neighbouring provinces, caused only partially by drought.

In 1819 there was a failure of crops in Ahmedabad, caused by unseasonable weather after the monsoon; whilst in Sawunt Warru it was occasioned by a sudden and unusual fall of rain, accompanied by a terrific storm—the former destroying the ground crops, and the latter the bagayat produce. —Danvers, 1877.

7.7. 1824-25. Famine in several districts. In Delhi and neighbouring provinces it was due to severe drought; in the Madras Presidency, and

more particularly in the Carnatic and Western Districts, the cause was failure of rains at the unusual season. In Hindustan the same.

7.8. 1825-26. Famine in North-West Provinces, occasioned by failure of rains; and scarcity in Saugor and Nerbada territories caused by blight and a succession of heavy thunder storms.

7.9. 1827-28. Famine in parts of Hindustan.

The autumn of 1827 and the following spring were marked by drought across the Jumna. In Pergunnah, Ranera, and Sara, the rain commenced, sparingly, but stopped abruptly early in July, and did not begin again till the 22nd September. It was then too late to retrieve the mischief which the drought had already caused; and to add to the general distress; there was every chance of a failure in the wheat. This was the staple rubber crop in these regions, and its success was mainly dependant on the five Ganges overflowing the banks, but on its occasion the usual inundations did not occur. —Danvers, 1877.

7.10. *Madras*—According to Mr. William Digby, the number of deaths due to famines in India between 1800 and 1825 was one million. [49] In commenting on the growth of population between 1822 and 1836-37 it was stated in the Census Report of Madras, 1871,

the population in the space of fifteen years had increased only by about 500,000. In the year 1818 epidemic cholera appeared, if not for the first time within this Presidency, certainly for the first time within the memory of the then oldest inhabitants. From the time of this invasion until 1826 or 1827 a large number of people fell victims to the disease. [50]

7.11. *Bombay*—The conditions prevailing in a large part of the Bombay Presidency appear to have been serious in all consequences. The Hon. M. Elphinstone in his report of 25 October, 1819, writes,

...the greater part of Candesh is covered with thick jungle, full of tigers and other wild beasts but scattered with the ruins of former villages. The districts north of the Tapti in particular, which were formerly very populous and yielded a large revenue, are now almost an uninhabited forest. [51]

7.12. *Ahmednuggur*—Again,

the thinness of population of the Ahmednuggur district, which had fallen into decay after the war and famine of 1801-4, and the recent effects of the epidemic, have been insurmountable obstacles to any rapid improvement of their resources. The great demand for labour had induced the Maharatta authorities to hold out unusual temptations to the cultivators, and the old rates of rent were reduced even to Meerasadars and Thackurees... [52]

7.13. *Dharwar*—

The improvement of the resources of the South-ero Mahratta country which might have been expected to result from the change of Government, has been retarded to a greater degree, perhaps, to that quarter than in any other part of the Deccan, by two causes; the prevalence of the epidemic,

*cf. "the very misery of the peasantry... creating the danger of depopulation of manors, might incline the lords to be more amenable to concessions which lessened feudal burdens..." Dobb, Maurice. *Studies in the Development of Capitalism*. London, 1946. p. 56.

and the failure of crops. In fuelles 1228 and 1229 cholera is estimated to have swept away 25,000 souls out of a computed population of less than 500,000; and of these casualties the population of Kyoto is reckoned at something short of 10,000. [53]

7.14. Thomas Marshall said about the per-gunnah of Belgaum,

the augmentation of the population which has been recently considerable since the English rule commenced, cannot be regarded as a natural increase, for which there has been no time, it is partly a restoration of many artisans as well as the more independent Inamdars who had abandoned their residences in Belgam and taken refuge in the neighbouring town of Shahpur, in order to avoid the endless oppressions and vexations they were subject to...

7.15. The Thugs, Pindarries* and Bhoels ravaged Mahratta and Malwa. The Zemindars and Patels protected and maintained the band of dacoits and had a regular share in the booty. Plundering by wild Bhoels in both Malwa and Khandesh had a serious effect on the population. As stated by Mr. J. Briggs,

property had long been insecure from the inroads of armies, military bandit, and lastly Bhoels...the village Bhoels, or watchmen, had taken to the hills, and for the last 20 years having abandoned their villages, had made the country rapine and spoil. Individuals rose from single robbers to become leaders of organised bodies, and heading bands of from fifty to a thousand men each, with which they laid waste extensive tracts.

Thomas Marshall mentioned bands plundering every house in villages, driving off the whole of cattle, firing the village, etc.

7.16 Kutch—In Kutch, the year 1815 was known as *underlu* or rat year. In 1813, came the fiercest and most destructive famine on record.

Destitute and unruly bands passing to Sind... plundered the villages. Prices (of grain) once rose to ten pounds a rupee...Many sold their children for food. A cat or dog was a delicacy and even human flesh was eaten.

In 1820, heavy rain rotted the grain... The famine of 1811 and 1812 was...followed in Kutch by an outbreak of pestilence so deadly, that it is said to have destroyed half the people of the country... [55]

7.17 Delhi—Similar conditions were obtained in Northern India. The Civil Commissioner at Delhi wrote to Mr. Holt Mackenzie, Secretary to Government in the Territorial Department, Fort William on 28 April, 1820 about villages,

the inhabitants without protection from any power and liable to pillage and murder from all, were of necessity compelled to take care of themselves. It is consequently discovered that the inhabitants of small and exposed villages, unequal to their own security from marauding wanderers, the avarice of the public officers, or the greediness of temporary rulers, were obliged to desert their own inhabitations and either to congregate so as to form a powerful body, or to abandon the country altogether in order to preserve their lives and property. [56]

7.18 Dacca—The population of Dacca fell due to a decline in the volume of trade.

That the population has fallen off very rapidly since the opening of the free trade, is apparent from the fact that, in 1814, when the Chokidari tax was first introduced...the number of houses actually assessed amounted to 21,631 and the amount collected, at an average of two annas per houses, maintained 800 Police Chokidars whereas, in the present year (1830) the number of houses actually assessed, amounted to only 10,708 and the number of Chokidars maintained to 236. Hence in 16 years, a diminution in the population of about one half may be assumed. [57]

8. VITAL STATISTICS

8.1. Scanty data on vital statistics presented in this volume relate to Nagpur. 'Tables of births and deaths have been kept in the Wyne Gunga district for the last four and in the Deogurh below the Ghats for last two years.'

TABLE 8.1
Births and Deaths

Year (1)	Total Population (2)	Births (3)	Deaths (4)	Remarks (5)
1231	660,040	25,436	14,015	Population would be double in 40 years
1232	671,117	27,692	15,642	Ditto 38 years
1233†	1,263,562	47,896	23,103	Ditto 45 years
1234†	1,263,562	47,896	29,946	Ditto 48 years

*Marx noted the following :

Rise of the Pindaris: mounted robbers, thieves by profession. [Pindaris—mountainers, people (Tribe as first met) in Malwa, in the east (Possessions) of Holkar, Sindhia, and Bhopal—Vindhya Hills—gangs (gangs) of robbers, escaped criminals, desertours adventurers; they first appeared in 1761, during battle at Panipat, on the Mahratta side.] Under Prithvi Raut Rao, they always emerged on the side which paid best.

The Pindaris: In 1815, 50,000—60,000 of these free booters ravaged Central India...

February, 1816. Nearly half the Pindary forces invaded the Guntur Circars (Company's dominion), made desert of the country, and disappeared before regular attack could be made by Madras army.

November, 1816. New Pindari brood into the Company's territory, when Nagpur force took field, they disappeared...

Marx, Karl. Notes on Indian History (664-1858) Moscow. (195—) p. 137-8, 142-5.

†The years 1231 and 1232 refer only to Wyne Gunga district; data from 1233 refer to this and Deogurh districts.

8.2. Meagre data placed on epidemic-death in this volume may give a rough idea of its incidence. The defective character of the data on vital statistics in India is too wellknown. Sir John Malcolm mentioned that a few chiefs in Malwa maintained a register of birth, marriage and death. Dr. Cuthbert Finch said that deaths were well-recorded in Calcutta from 1802 in a Bengali register but the records were untraceable...[58]

8.3. A table presented with the estimate of Calcutta (1822) relating to Armenian population only shows that 25 per cent deaths occurred within the age of five.

TABLE 8.2
*Armenian Population of Calcutta
Number of Deaths
(1827-1835)*

Age group (1)	Total death (2)	Percentage to total (3)
0-2	32	23.53
3-5	2	1.47
6-10	6	4.41
11-20	12	8.83
21-30	18	13.23
31-40	17	12.50
41-50	18	13.24
51-60	14	10.29
61-70	8	5.88
71-80	5	3.68
81-90	4	2.94
91-100
Total	136	100.00

8.4. Records of burials of protestant christians in Calcutta for the years 1820-30 place the mortality of children below the age of five at 19 per cent. [59]

TABLE 8.3

Burials of Protestant Christians in Calcutta

Year	Adults	Children under 5 years	Total	Percentage of children to total death
(1)	(2)	(3)	(4)	(5)
1820	219	47	266	17.29
1821	196	50	246	20.31
1822	275	47	322	14.60
1823	215	55	270	20.37
1824	200	61	261	23.36
1825	240	54	294	18.37
1826	214	36	250	14.41
1827	190	45	235	19.14
1828	157	77	234	32.91
1829	128	32	160	20.00
1830	180	28	208	13.46
TOTAL	2,263	530	2,793	18.98
Average	205.72	48.18	253.91	..

The compiler of the above table remarked that "without an accurate census of the Protestant population, tables such as these afford but slender information whether for the purposes of the topographer or the actuary". The total Christian population was estimated around 13,000 in 1821 or 1822 in Calcutta. Dr. Cuthbert Finch presented a table to show the total number of deaths among the Christian population in Calcutta in the years 1820-30 at 7,974 or 727 per year on an average. On the basis of a population of 13,000 in a given year, the death rate is 5.6 per cent.

8.5. A consolidated table for the army of the East India Company stationed in Bengal, Madras and Bombay for the years 1825 to 1830 shows that percentage of ordinary deaths to European army population from ordinary causes declined from 10.03 in 1825 to 3.56 in 1830, but this percentage remained constant among the Indian. The incidence of death was, however, higher among the European. The table below has been compiled from detailed figures given for each Presidency. [60]

TABLE 8.4
Bengal, Bombay, Madras Army Vital Statistics

Year (1)	Percentage of ordinary death to strength		Percentage of death by cholera to strength		Percentage of total death to strength	
	European (2)	Indian (3)	European (4)	Indian (5)	European (6)	Indian (7)
1825	10.03	1.97	0.80	0.49	10.83	2.46
1826	7.20	1.58	0.51	0.26	7.71	1.84
1827	6.39	1.34	0.42	0.19	6.81	1.53
1828	5.18	1.27	0.45	0.29	5.63	1.56
1829	3.92	1.29	0.28	0.20	4.20	1.49
1830	3.56	1.43	0.61	0.26	4.17	1.69

In writing a note on 'A Digest of Vital Statistics of the European and Native Armies in India', by Joseph

Ewart, a reviewer said about army vital statistics,

"Beyond the bare fact that in India, a given numerical strength of European and Native troops has undergone, year by year, a varying decrement by mortality and invaliding, it seems to us that we have no figured returns which may be regarded as absolutely correct. Take, for example, the rate of mortality which the earlier tabulations show to have resulted from cholera. From 1829 to 1838, of every one hundred admissions of European troops in the Madras Presidency, 27·1 died, or a little more than one in four. The present rate of mortality (1862—*ed.*), the returns show, to be rather more than 50 per cent or one in two, and this high average seems to be steadily increasing year by year. To what is this difference attributable, is cholera a really more fatal in 1862 than it was in

1818, or the difference is simply of nomenclature and classification ?

[Madras Quarterly Journal of Medical Science Vol. V. 1862. p. 344.]

8.6. A summary table compiled from detailed figures of "the sickness and mortality among the fighting men of.... the Hon'ble Company's European and Native troops of the Bombay Presidency" for 10 years from 1820-21 to 1829-30 shows the incidence of sickness and mortality by their causes among the European and the Indian separately.

TABLE 8.5

Summary table (1820-21 to 1829-30 of sickness and mortality in the army of the Bombay Presidency [61] -

Disease (1)	European			Indian		
	Admitted (2)	Died (3)	(3) as p. c. of (2) (4)	Admitted (5)	Died (6)	(6) as p. c. of (5) (7)
Dysentery	11,860	1,026	8·65	7,649	329	4·30
Diarrhoea	4,684	168	3·61	6,460	152	2·35
Fevers	30,540	1,179	3·86	115,594	2,132	1·84
Cholera	1,673	416	24·87	3,785	1,277	33·74
Phthisis	3,401	160	4·70	1,832	171	9·33
Hepatitis	6,042	295	4·88	533	65	12·19
Other diseases	54,047	623	1·15	123,422	1,509	1·22
TOTAL	112,247	3,867	3·45	259,275	5,635	2·17

Facts presented above tend to show that

(a) the incidence of mortality is higher among the European,

(b) mortality from cholera is highest at about 25 per cent of the admitted among the European and at about 34 per cent among the Indian,

(c) phthisis is more fatal among the Indian at about 10 per cent of the admitted; hepatitis also has a higher mortality at 12 per cent among the Indian against about 5 per cent among the European.

8.7. Dr. F. P. Strong, Surgeon, 24-Pergunnas, compiled a table "exhibiting the fluctuation of Mortality amongst the Life and Term prisoners in the Jails of the 24-Pergunnas...."[62]

TABLE 8.6
(1820-1830)

"During these Eighteen Years, 1820—1837, the Life Prisoners working within the Alipore Jails Walls, received 4 pice per day, and the Term Prisoners working on the Roads, 3 pice per day, both classes purchasing their own food, and cooking for themselves."

Year (1)	Grand Total of Prisoners (2)	Grand Total of deaths (3)	Daily average No. of Prisoners (4)	Total Ratio of deaths per cent per annum (5)	Daily Ratio of Sick per cent in Hospital (6)	Ratio of Cholera deaths to strength per cent per annum (7)
1820	21,887	179	1,823	9·81 [9·82]*	10·00	2·74
1821	22,080	167	1,840	9·07 [9·08]	8·33	1·46
1822	20,871	130	1,739	7·47 [7·48]	4·54	1·66
1823	18,163	118	1,513	7·79 [7·80]	3·84	1·32
1824	16,698	87	1,391	6·25	5·55	0·86
1825	15,154	140	1,262	11·09	5·55	1·50
1826	13,697	67	1,141	5·87	4·34	1·48
1827	14,641	73	1,220	5·98	3·84	1·96
1828	15,454	100	1,287	7·77	3·33	2·48
1829	17,221	87	1,435	6·06	3·03	0·55
1830	18,730	134	1,560	8·58 [8·59]	3·45	1·60

During the decade, percentage of total deaths fluctuated within a limit, while the proportion of sickness declined in latter years. There was little fluctuation in the proportion of deaths from cholera to strength. It may be mentioned that rice sold at 25 seers per rupee in 1820s. In other words, wages paid to prisoners enabled them to purchase 1·25 to 2 seers of coarse rice per day.

*A recalculation gives the figures presented in the third parenthesis.—*ed.*

8.8. *Cholera*—According to one account, cholera appeared in India in August 1817 for the first time*.

*August 1817. *First outbreak of cholera with terrible vehemence in India, at first it appeared in zillah of Gessore, near Calcutta, advanced across Asia to European continent, with it decimated, from there on to England and thence to America. In November, 1817, the army of Has-*

tings was attacked by it, the contagion having been brought by arrival of a new detachment from Calcutta, and a ragged white Hastings' army was passing through the low land of Bundickhand, and for weeks the tract was strewn with dead and dying. [63]

8.9. The following table gives an account of death from cholera among the Army in the Bengal Presidency.

TABLE 8.7
Bengal Presidency : Death from Cholera in Army [64]

Year	European Army				Indian Army			
	Strength	Total admission	Total death	Death as per cent of treated	Strength	Total admission	Total death	Death as per cent of treated
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1826 . .	10,080	592	279	47.13	104,245	475	132	27.79
1827 . .	12,095	625	191	30.56	117,930	933	212	24.87
1828 . .	12,535	729	217	29.77	112,395	540	171	31.09
1829 . .	12,751	664	152	22.89	N.A.	322	63	19.57
1830 . .	12,547	287	75	26.13	80,084	237	46	19.41

8.10. Army, it may be easily presumed, enjoyed better medical facilities than the ordinary people. Facts about the incidence of cholera after its first outbreak in 1817 are available in the documents containing replies of the medical officers to a questionnaire circulated by the Calcutta Medical Board "to discover the true nature of dire cholera epidemic which first carried terror and destruction throughout Hindustan in the autumn of 1817". They wanted to know the details about the incidence of the epidemic.

8.11. 'Ample and satisfactory replies were returned to these queries by medical officers who had gained only too full experience of the disease in every quarter of the country. These answers are embodied in Mr. Jameson's Report published in 1820,—a work of singular merit and interest, now scarcely sufficiently remembered. Nearly in the same manner in which we found the more recent pestilences of Great Britain shunning the well-cleansed and airy towns, and thinning away the extra-population of swampy, murky, and *insanitary* cities; traversing along the courses of the main sewers, passing lightly over the spacious streets, and the gardenhouses of the "court ends" of towns, and falling with tenfold malignancy upon the ill-fed, dissolute and neglectful denizens of the foetid back to back courts, rookeries and factory-rows; do we trace the original pestilence sparing the entire hill-province of Bareilly, with the exception of the town and district of Shajahanpore, where it was reported

to have swept away five thousand souls, while it was observed that—"in Muttra—a filthy and crowded city,—the disease was very virulent, and the mortality great. In Agra,—a dry and airy town,—the symptoms were mild, and the deaths few. The cantonments attached to Agra remained nearly exempt; but those at Muttra, being low, and near the banks of the river, partook of the general unhealthiness of the town, and lost many men;—so at Jyepoor, its attacks were almost confined to the most wretched class of the inhabitants. It showed a very evident unwillingness to ascend high and mountainous tracts of country, thus it wholly avoided Kumaon, the hilly districts North of Hurdwar, and the elevated stony belt which girds in the Rajpootana States to the North-west. There was found

abundant proof that, in high, dry and generally salubrious spots, it was both less frequent in its appearance, and less general and fatal in its attacks, than in those that were low and manifestly unwholesome. This, indeed, might have been previously concluded, from a general observation of the different course pursued by it in the low and stagnating climate of Bengal, where, having once gained ground, it tarried for years; and in the pure and elastic atmosphere of the Upper Provinces, in which it was slowly received, and quickly lost. [65]

8.12. No statistical data have so far been discovered about the incidence of small pox during the decade, 1820-1830. According to one account, modern vaccination was introduced in Ahmedabad in Bombay by 1817 and turned into a general practice by 1824. It was stated that small

* Another source gives an account of Cholera in India 1503 to 1817—Macpherson, John. *Annals of Cholera*, London, 1872. Appx. XXXI.

pox almost disappeared from Ahmedabad at that time. The total number of vaccination in the Bengal Presidency from 1827 to 1830 is given below. [66]

TABLE 8.8
Vaccination in Bengal

Year (1)	Number of vaccination (2)
1827	37,958
1828	60,449
1829	52,769
1830	61,910
Average	53,271

Taking the population at 65 million, only 0.08 per cent was covered per year on an average.

8.13. "Mahamutree or Indian Plague" ravaged a part of the country from 1815. An account is reproduced below to show its nature and incidence.

The Indian Plague then, for in spite of some difference of opinion with regard to its exact identity with that of the Levant, we may safely regard it as a closely approximate disease, was first noticed in Kutch and Kattywar, in the Bombay Presidency, and is thus described by Mr. McAdam, a Medical Officer of that Government:

"The origin of the disease, which has for some time raged in Wagur, and the Mucha Kanta, is involved in obscurity. It appears to have been first noticed at Kuntakota, or its neighbourhood, in May 1815. Thence it spread to Munsurra, Chitoro, Adooce, and Wandia, all towns in Wagur; and in all of which it committed great ravages during the months of January, February and March, of the

present year. In May last, after it had ceased to prevail in Wagur, it made its appearance in the town of Moorvee, on the Kattywar side of the Run; and there it has continued up to the present time to prevail with fatal effect. In August, the disease re-passed the run to Buchan, twenty-three miles distant from this place, and lately appeared, for a short time, at the village of Chiroce, ten miles nearer. It also rages at present (November 1816) in the large town of Rhadanpore, and has extended its ravages to the province of Scind, where it is said to be the cause, at this moment of great mortality."* [67]

Mr. Gilder, another Medical Officer of the Bombay Army, reporting on its appearance, origin and progress in zillah Ahmedabad, in the years 1817, 1818 and 1819, ** says—

"In tracing the origin of the disease in question, the natives agree in referring the period of its first introduction to the Hindoo year, or Sumbut 1873, A.D. 1817, three years subsequent to the dreadful famine, which raged with such destructive fury over Guzerat and Kattywar. The disease first broke out at Dollera, where it is said to have been introduced from Moorvee, a town in Kattywar Proper; but different opinions are entertained as to the precise mode of introduction; some alleging it to have been conveyed by merchants, and petty traders from Kutch, others referring it to those people who annually come, from Kutch, in the cotton season (February to May) with their wheels for separating cotton from its seed. There is coincidence, however, in the material point, of its having been imported from the westward."

8.14 A comparative series of statistics about the effects of fever, dysentery, etc. "on the health of European soldiers in the East and West Indies, as contrasted with some of the European stations" given by the Deputy Inspector General Marshall from the record of the Army Medical Board appears to be of considerable interest. Data probably refer to 1830s.

* Transaction of the Bombay Medical and Physical Society, Vol. I.

** Op. cit. Vol. I page 19.

TABLE 8.9 [68]

Out of every thousand men in the following stations, the annual ratio of mortality is as under stated, and by the following classes of diseases:

Disease (1)	Windward and Leeward Island (2)	Bengal (3)	Madras (4)	Bombay (5)	Gibraltar (6)	Scotland (7)	Jamaica (8)	Ireland (9)
Fever	37.9	16.3	11.0	15.0	2.4	2.3	112.5	
Diseases of the Bowel	18.8	20.4	20.5	16.1	1.8	0.2	4.2	
Disease of the Liver	1.8	4.0	5.0	5.0	0.2	0.2	0.5	
Disease of the Lungs	10.3	2.3	2.3	2.4	5.8	4.6	7.4	
Disease of the Head	3.1	2.0	0.6	1.2	0.2	0.2	1.6	
Cholera	0.0	14.2	8.0	10.3	0.0	0.0	0.0	
Dropsy	2.0	0.5	0.7	0.7	0.3	0.8	1.0	
Other Diseases	6.3	3.1	3.9	4.1	2.9	2.7	3.8	
Annual Mortality	80.2	63.0	52.0	54.8	13.6	11.0	131.0	15.0

8.15. In absence of any reliable series of vital statistics, facts presented in this section, it may be hoped, may serve some useful purposes.

9. CONCLUDING WORDS

9.1. The problem of population was viewed in the context of augmenting resources in the form of land revenue. For a greater revenue, a constant increase in cultivation was necessary. And, an increased cultivation required a larger population. But a very large tract of India was ravaged by war, famine, pestilence, plunderers, as facts already presented had revealed. In the Upper Provinces of Bengal Presidency, in many districts, "population was unequal to cultivation". [69]

9.2. Hamilton mentioned a "progressive increase" of population in Bengal. "The inhabitants of Bengal are numerous in population to the tillage and manufacture that employ their industry, and under the British Government," wrote Hamilton, "Population has certainly undergone a progressive increase, which still continues and surpasses that of England in the best cultivated districts, the situation of all classes being highly favourable to the propagation of the species." [70]

9.3. Answering to the Court's queries Mr. S. Davis said (28 December, 1813).

The population has increased, the agriculture has extended, and the internal commerce has augmented. These are incontestable proofs of a steady, and I may add, of a good government, but it by no means follows, that the internal government has been as it might, and ought to have been. *Extension of cultivation and increase of population would take place in India under any settled government, not absolutely vicious and destructive of its object; and we have the testimony of Mr. Shore (now Lord Teignmouth) to the increase of agriculture under many disadvantages, between the years 1770 and 1789.* [71] (italics ours—ed.)

9.4. In spite of an extension of cultivation, oppression on the peasantry appears to have continued under the new settlements conducted in this period. The permanent settlement, said Lord Hastings,

has to our painful knowledge subjected almost the whole of lower classes throughout these provinces to most grievous oppression, an oppression too, so guaranteed by our pledge, that we are unable to relieve the sufferers. [72]

9.5. "Under both systems (Zemindary and ryotwary) the condition of cultivators is very miserable; in the one they are placed at the mercy of the Zamindar's avarice and ambition, in the other they are subjected to the exactions and intrigues of the surveyors and other government revenue officers," said Ram Mohun Roy, "I deeply compassionate both..." [73]

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