

Long-term demographic trends in south Bihar: Gaya and Shahabad districts,* 1811–1921

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Demographic Zones

The greater part of South Bihar is an alluvial plain sloping gently northwards towards the Ganges. While South and Southwest Shahabad are occupied by the Kaimur Hills, which form a rocky plateau, Southern Gaya has several ridges and spurs projecting from the plateau of Chota Nagpur. Much of the southern area is broken country with a fringe of brushwood jungle; the soil is poor, it has little or no irrigation and it yields precarious crops.¹

The population density of South Bihar followed its ecological layout. It was fairly populous along the banks of the Ganges, but further away, where the surface rose and there was less cultivation, the population became more scanty. In Shahabad, as can be seen from Table 4, the population was greatest to the north and east, on the banks of the Ganges and the Sone, where much of the land was either a zone of naturally secure agriculture or was irrigated, crossing 700 persons per square mile in the thanas of Arrah, Shahpur and Dumraon. The population decreased rapidly towards the south and southeast, where the Kaimur hills afforded little space for cultivation. The Bhabhua thana, with less than 200 persons per square mile, had the scantiest population of any tract in South Bihar. In Gaya, similarly, the population was very sparse along the southern boundary of the district where, as in the south and southeast of Shahabad, a considerable area ought to have been included in the Chota Nagpur plateau.²

¹ L.S.S. O'Malley, *Bengal, Bihar, Orissa & Sikkim*, New Delhi, 1979 (first published 1927), pp. 21–22. 'Thana' was a unit of revenue administration below the district and sub-division.

² *Census of India, 1901*, Vol. 6, Bengal, by E.A. Gait, Calcutta 1902, p. 22.

* These two districts have since been subdivided into the districts of Bhojpur, Rohtas, Gaya, Nawadah, Jehanabad and Aurangabad.

Northern Gaya, which was richly served by the system of 'pyne and ahar' irrigation, was relatively thickly populated. Thus the population density in Gaya varied from under 300 per square mile in the thanas of Barachati, Sherghati, Nabinagar and Rajauli to over 600 in the thanas of Nawadah, Jehanabad and Tikari.

Demographically, therefore, the districts of Gaya and Shahabad could be divided into two distinct zones—the fertile and irrigated northern thanas, and the backward hilly southern thanas. The latter zone included Bhabhua and Sasaram, which comprised over one-third of the area of Shahabad district, and Nabinagar, Sherghati, Barachati and Rajauli thanas, which comprised over one-third of the area of Gaya district.

That population and agricultural development should have a strong positive correlation seems obvious; that the two zones should have a demographic logic distinct from each other is however less obvious; and it is on this differential logic that we shall dwell at some length later.

Pre-Census Estimates

Perhaps the earliest population estimates available for the two districts in the modern period are those transmitted to Lord Cornwallis by District Collectors in 1789. The population of Shahabad was estimated by W.A. Brooke at 1.1 million. The population of 'Bahar', which included the northern part of what was to be later the district of Gaya, was given as 1 million by Mr. Law, while the population of 'Ramgur' was indicated as 0.6 million by Mr. Leslie. 'Ramgur' included the southern part of the what was to later become Gaya district.

It is difficult to assess these estimates, particularly since it is not at all clear on what basis these were arrived at. The figures are possibly intelligent guesses. The figure for Shahabad, when compared with Buchanan's estimate of around 1.45 million some twenty years later, suggests a growth in population of around 30 per cent during this period. Since the 'Bahar' and 'Ramgur' figures cannot be disaggregated thana-wise, it is not possible to compare the 1789 estimates with those of Buchanan for Gaya district.¹

Francis Buchanan toured the two districts extensively in the years 1811-13 and penned down observations which are remarkable by any standards.² According to Buchanan the population density of Shahabad district was 347 persons per square mile, while that of the district of Behar, excluding

¹ Montgomery Martin, *History of the British Colonies*, London, 1839, Vol. I, pp. 250-54.

² *Memorandum on the Census of British India, 1871-72*, Vol. 1, *India* (London, 1875), p. 9, Vol. 3, *Bengal*, pp. 82-83. W.W. Hunter also commented on the 'surprising accuracy' of Buchanan's estimates in *A Statistical Account of Bengal, Vol. XII, Districts of Gaya and Shahabad*, London, 1877, Indian reprint 1976, pp. 28-29. Another pre-census estimate of Shahabad, the Revenue Survey of 1844-46, arrived at a density of 364 per square mile, which is quite compatible with Buchanan's figure. J.A. Hubback, *Final Report on the Survey and Settlement Operations in District of Shahabad 1907-1916*, Patna, 1928, p. 18.

Table 1

Comparative Population Densities: 1812 and 1881

Area	Thanas in 1812	Area in sq. miles	Persons sq. mile	Thanas in 1881	Area in sq. miles	Persons/ sq. mile
1. Arrah & Buxar subdivisions	Arrah, Biloti, Dumraon, Karanjya, Ekwari	1851	420	Arrah, Shahpur, Dumraon, Buxar, Piro	1571	707 (+68%)
	2. Sasaram & Bhabhua subdivisions			Baraong, Sasaram, Tilothu, Mohania, Ramgar, Sangyot		
3. North Gaya	Gaya, Nawadah, Jehanabad, Arwal, Daudnagar	2785	469	Gaya, Atari, Tikari, Jehanabad, Arwal, Daudnagar, Rajauli, Pakribarawan, Nawadah	2742	552 (+18%)

Source: Francis Buchanan. *An Account of the District of Behar and Patna in 1811-12*, New Delhi, 1986, Vol. II, p. 721, Table No. 2 and p. 723, Table No. 4, Montgomery Martin. *The History, Antiquities, Topography and Statistics of Eastern India: An Account of the Districts of Behar and Patna in 1811-12*, Vol. II, Delhi, 1976, p. 44. *Census of India, 1881, Vol. VI, Bengal*, by J.A. Bourdillon (Cal. 1883).

Patna city, was 572 persons per square mile. There are some surmountable problems however, in using the estimates of Francis Buchanan. The boundaries of the thanas, and indeed of the districts surveyed by him, are obscure. The area of Shahabad district according to him was 4087 square miles, whereas at the time of the 1881 Census the official figure was 4365 square miles. This discrepancy is probably explained partly by diluvium and addition in the Gangetic 'diara', and partly by Buchanan's inability to procure accurate information regarding the extent of the forested Bhabhua and Sasaram subdivisions.⁴ This discrepancy in area, while affecting the total population estimated by Buchanan, will not seriously affect the population densities deduced from his estimates.

Similar corrections have to be made in the demographic data available in Buchanan's Account of Behar District, which included Patna and the

⁴ D.J. Macpherson, Collector of Gaya nevertheless felt that Buchanan's estimate of area was remarkably accurate at a time no actual survey of the country had been made. Bengal Land Revenue Proceedings, December 1893, Nos. 1-5, 'A' series, p. 4.

northern thanas of Gaya district. The southern thanas, mainly the area south of the G.T. Road, were part of the old district of Ramgarh.⁵ It is therefore possible to consider only northern Gaya, comprising the thanas of Gaya, Nawadah, Jehanabad, Daudnagar and Arwal. It would appear from the size of these thanas in 1812 that they included the thanas of Tikari, Atari, Pakribarawan and Rajauli.⁶

Francis Buchanan's thana-wise estimates have been aggregated in this manner because of variations in the size of thanas in 1812 and 1881. It would appear that a portion of the sparsely populated southern subdivisions was included in the Arrah and Buxar subdivisions in 1812. If that is so, then the population density of the northern subdivisions of Shahabad district in 1812 is probably understated relative to 1881. Even so, there appears to have been a significant increase in population in the two northern subdivisions. Indeed, the average population density of northern Shahabad now exceeded that of northern Gaya. This increase appears to have been shared by all thanas, as the uncorrected data of Francis Buchanan reveals (Table 2).

There was no such sharp variation in the southern subdivisions of Sasaram and Bhabhua. It is, however, not possible to compare the thana figures of the southern subdivisions of Shahabad with those of the 1881 Census on account of the vast discrepancy in thana areas. Although there are similar discrepancies in thana areas in Gaya, the demographic history of Northern Gaya appears to resemble that of Northern Shahabad in a dampened manner. We may conclude, therefore, that while there was an increase in population in Gaya, Nawadah and Jehanabad thanas, there was a slight decrease in Daudnagar and Jehanabad. This picture is in keeping with such non-statistical data that is available, except in the case of Arwal.

It is true that precious little is known about the way Buchanan compiled his statistical tables. It is likely that Buchanan first estimated the total amount of occupied land and then, taking into account the relative difficulty of the terrain, he estimated the number of ploughs needed to cultivate that area. He then allowed five persons per plough to arrive at the total agricultural population. The second part of his calculations depended upon the opinion of 'the most intelligent men' of the area, who were asked to disclose the proportion which persons employed in agriculture bore to other classes of society, such as the Ashraf, Buklas and Jotiyas in Shahabad.

Marika Vicziany has therefore, quite rightly, pointed out the value of the population estimates derived by these means are at the very least ambiguous.⁷ On the other hand it could plausibly be argued that given the

⁵ The District of Gaya was formed out of parts of the old districts of Behar and Ramgarh in 1825. In 1865 the subdivision of Behar was transferred to Patna District. W.W. Hunter, *op. cit.*, p. 18.

⁶ Francis Buchanan, *Behar and Patna*, *op. cit.*, Vol. II, p. 721. Bengal Land Revenue Proceedings, December 1893, Nos. 1-5, 'A' series, p. 4.

⁷ Marika Vicziany, 'The De-industrialisation of India in the Nineteenth Century: A Methodological Critique of Amiya Kumar Bagchi', *Indian Economic and Social History*

Table 2
Comparative Population Densities: 1812 and 1881
Uncorrected Data
Shahabad District

Thana	1812		1881	
	Area in sq. miles	Pop./ sq. mile	Area in sq. miles	Pop./ sq. mile
1. Arrah	343	587	354	883
Biloti/ Shahpur	297	453	252	777
Dumraon	439	380	347	749
Karanjya/ Buxar	392	317	309	528
Ekwari/ Piro	380	393	309	581

Thana	1812		1881	
	Area in sq. miles	Pop./ sq. mile	Area in sq. miles	Pop./ sq. mile
Gaya	968	467	950 (incl. Gaya town, Atari and Tikari)	580
Jehanabad	276	766	402	706
Daudnagar	327	491	241	424
Arwal	261	430	204	497
Nawadah	953	389	955 (incl. Pakribarwan & Rajauli)	497

Source: Same as Table 1.

absence of any infrastructure to conduct actual Census counts in those days, such ingenious estimates are perhaps more reliable than the actual Census counts, as indicated by the two Census counts attempted between Buchanan's Survey of 1812 and the 1844-46 estimate of Shahabad alluded to earlier.

The first of these two Censuses was attempted some ten years after Buchanan and its results are available in the memorandum appended to the Report of Mr. Henry Shakespeare, Superintendent of Police in the Lower Provinces, in the year 1822.⁴ This Census was based on Reports received from various police thanas.

⁴ Review (henceforth *IESHR*), 16, 2, 1979, pp. 108-20. The author makes a good analysis of other negative aspects of Buchanan's statistical estimates as well.

⁵ *Census of India 1961. Report of the Population Estimates of India (1820-1830)*, Vol. 1., ed. Durgaprasad Bhattacharya. New Delhi, 1963, pp. 71-72 and 117-23.

The 1822 survey enumerated the number of villages and houses in each thana, and the total population was arrived at on the assumption that the average family had five members. This is far lower than Buchanan's estimate of an average of 6.5 persons/family in Shahabad, and 7 persons/family in Gaya. Even after necessary corrections are made in the 1822 estimates however, the final figures are still far lower than those of Buchanan, as can be seen from Table 3.

Table 3

*Population Estimates of 1812, 1822 and 1881
Persons per Square Mile*

	<i>Buchanan's Estimate 1812</i>	<i>1822 Survey</i>	<i>1822 Survey Corrected</i>	<i>1881 Census</i>
North Shahabad Arrah and Buxar Subdivisions	420	253	329	707
South Shahabad Sasaram and Bhabhua Subdivisions	301	177	230	287
North Gaya	469	247	346	552

Sources: A. *Census of 1881*

B. Durgaprasad Bhattacharya, *Census of India, 1961*.

The 1822 estimates, even when corrected for family size, are so low as to warrant being discounted altogether. Even if we make provision for demographic calamities such as the terrible cholera epidemic of 1817-21,⁹ it is a little difficult to imagine that the population of Northern Shahabad trebled/doubled between 1822 and 1881, while that of Northern Gaya rose by 125 or 60 per cent (Table 3).

The Census count of Jehanabad thana by William Adam in 1838 also appears to be wide of the mark. 14953 families, comprising 81480 persons, were enumerated, including 44953 males and 37094 females. Adam was unable to explain the huge deficit of women.¹⁰ Adam suspected under-reporting of women of marriageable age as there was popular doubt as to the objective of the Census. Certainly, the average number of persons per family (5.5) fell far short of Buchanan's estimate of 7 for the area. Also, of

⁹ Possibly the worst of all cholera epidemics in British India. David Arnold, 'Cholera and Colonialism in British India', *Past and Present*, No. 113, November 1986, p. 120.

¹⁰ The decennial censuses of British India beginning from the last quarter of the nineteenth century showed that the sex-ratio in South Bihar was in fact weighted in favour of females. Alok Sheel, 'Evolution of Agrarian Society in South Bihar, Gaya and Shahabad Districts, 1860-1920', Ph.D thesis, Jawaharlal Nehru University, New Delhi, Chapter 1.

the 859 villages recorded in the Collector's Office, only 803 inhabited villages could be ascertained. While it is possible that this discrepancy is partly explained by abandonment of villages on account of epidemics, diluvium by rivers, zamindari excesses, all of which Adams found to be in evidence,¹¹ this variation of 6.5% is nevertheless suspiciously large. In those times enumeration of all villages even through a fairly well-organised census was by no means an easy task, as the first census of British India in 1872 was to show.

Adam made no attempt to estimate the number of inhabitants per square mile because 'I had not the means of ascertaining the extent of the localities in which a Census of the population was taken'.¹² If we were to assume that the size of Jehanabad thana at the time of Adam's Census was roughly the same as in 1812, we arrive at a population density of 295 per square mile, compared to Buchanan's estimate of 766. Even if corrections are made by upward revision, equalising the sex ratio, we would have to explain the doubling of the population of Jehanabad thana between 1838 and 1881. Alternatively, we must altogether discount this census count also.

The intercensal period

A quick glance at Table 4 will reveal that the population of the two districts remained stagnant between 1872 and 1921, rising fairly sharply thereafter, in keeping with the trend elsewhere in the country. If the figures for 1872, generally considered unreliable,¹³ are revised upwards, then the population of Gaya remained stagnant and that of Shahabad declined slightly. 1881 has been taken as the base year in Table 4 on account of the putative inaccuracy of the 1872 Census.

Aggregates however can be deceptive as they have an inherent tendency to conceal significant shifts in the constituents. Both cyclical and secular trends can be perceived when the district figures are disaggregated thana-wise as has been done in Table 4.

Dehri, Arwal and Daudnagar thanas showed secular and sharp increases pointing to a new and higher equilibrium; the forward, densely populated thanas, such as Gaya, Arrah, Buxar and Dumraon were entering a demographic downswing as they registered sharp losses, while the backward

¹¹ William Adam, *Reports on the State of Education in Bengal (1835 and 1838). Some Account of the State of Education in Bengal and Bihar, and a Consideration of the Means Adapted to the Improvement and Extension of Public Instruction in Both Provinces*, ed. Anathnath Basu (Cal. 1941), pp. 316-22.

¹² *Ibid.*, p. 323.

¹³ The Census of 1872 catalogued only 6530 villages in Gaya, whereas the 1881 Census found 9645 villages in the district. The 1881 Census also catalogued about 45,000 more houses in the same district. There are similar discrepancies in the figures for Shahabad District.

Table 4

Population: Gaya and Shahabad Districts, 1872-1931

Subdivision/Thana	Area sq/ miles	Persons sq/mile 1881	Density of Population 1881 = 100					
			1872	1891	1901	1911	1921	1931
Sadar	1905	429	93	102	92	96	97	109
Gaya town	15	5010	87	105	93	65	88	115
Gaya muffasal	402	503	104	89	83	95	91	102
Atari	250	387	78	128	109	97	95	104
Tikari	283	625	95	104	84	94	88	94
Barachati	416	264	78	100	97	104	107	120
Sherghati	547	286	98	98	97	108	112	127
Jehanabad	606	636	92	102	100	109	107	120
Jehanabad	402	706	90	98	94	102	100	112
Arwal	204	497	98	113	117	131	127	141
Aurangabad	1246	358	88	106	105	110	112	122
Daudnagar	241	424	83	104	110	120	122	134
Nabinagar	338	290	93	110	110	103	112	118
Aurangabad	667	368	88	105	101	109	108	119
Nawadah	955	497	94	92	95	97	94	103
Nawadah	462	656	118	93	98	97	95	103
Rajauli	280	297	105	90	90	93	93	101
Pakribarawan	213	417		92	93	100	93	103
Gaya District	4712	454	91	99	96	101	101	112
Sadar	915	752	89	109	102	92	91	101
Arrah	354	883	93	112	101	88	88	98
Shahpur	252	777	87	101	96	83	78	87
Piro	309	581	85	110	113	109	111	122
Buxar	656	645	67	103	98	90	83	90
Buxar	309	528	71	102	96	91	80	86
Dumraon	347	749	65	104	100	90	85	93
Sasaram	1493	348	85	103	104	105	104	113
Bikramganj	367	490		101	104	107	105	116
Khargahar	266	393		99	92	95	91	96
Sasaram	691	225	113	105	107	103	101	113
Dehri	169	467		106	114	116	121	133
Bhabhua	1301	248	91	107	95	95	92	101
Mohania	387	389		108	93	91	88	93
Bhabhua	914	188	117	106	96	99	96	108
Shahabad District	4365	447	88	107	100	95	93	102

Source: Census of India, 1872-1931.

thanas by and large maintained their old equilibrium, which probably dated back at least to the early nineteenth century (Table 1).

On the basis of the limited data available for the pre-census period, it is therefore possible to discern some long-term demographic trends. The population of the two northern subdivisions of Shahabad—Sadar and Buxar—show an impressive increase up to 1891. Indeed the population of these subdivisions in 1891 was almost double of what Francis Buchanan estimated in 1812. The southern thanas of Shahabad do not show any significant long-term demographic trend, apart from short-term reverses in the last decade of the nineteenth and the opening decades of the twentieth centuries.

One has to be more cautious while comparing Buchanan's demographic data on Gaya with that of the censuses. We may very broadly conclude however that, like northern Shahabad, northern and northeastern Gaya, comprising the subdivisions of Gaya and Nawadah, saw a long-term increase from 1811 to 1881 although the increase was not as sharp as in northern Shahabad. Northern Gaya was more densely populated than northern Shahabad in 1812; by the turn of century, however, the order had been reversed. Daudnagar showed a slight decline during this period, but along with Arwal it was to register impressive gains throughout the Census period, while the Gaya and Nawadah subdivisions registered losses. The backward southern thanas of Gaya, like those of Shahabad, showed a remarkable long-term stability, barring short-term fluctuations.

Demographic determinants

Deindustrialisation

There was a distinct demographic logic at work in Daudnagar, Jehanabad and Arwal thanas in Gaya district. During the course of his rambles in South Bihar, Francis Buchanan described a very active cotton textile industry in Shahabad, North Gaya and Patna. Buchanan estimated an industry comprising about 32,300 looms (or about 27,000 weaving households) and almost half a million spinners (equivalent to a little over 10 per cent of the population of these districts).¹⁴

Table 5 will show that although the cotton textile industry had a wide base in the two districts, Jehanabad had a relatively developed spinning industry, while Daudnagar led the field in weaving and production of finished cotton cloth which was valued at Rs. 3 lakh.

Daudnagar thana had over 16,000 spinners of cotton 2500 looms in 2175

¹⁴ Francis Buchanan, *Shahabad*, p. 421. Montgomery Martin, *History of Antiquities*, p. 49 and p. 53. Francis Buchanan, *Behar and Parna*, p. 676, p. 755, pp. 771-74 (Tables 41 and 42).

weaver houses, 400 dhuniyas or cotton carders and 100 dyers.¹⁵ Daudnagar was situated on the Sone and was a hub of maritime commerce on that river during the rainy season. There were Aratiyas in Daudnagar who granted bills for cash on Patna and Benaras and also gave money for good bills drawn on them from these two cities.¹⁶

Table 5
Cotton Textile Industry in South Bihar in 1812

Area	Spinners as Percentage of Population	Number of Persons per Loom
1. Patna & Behar districts	9.8	138
2. Shahabad district	11.2	178
3. North Gaya	7.8	155
3a. Gaya thana	7.5	181
3b. Nawadah thana	2.5	247
3c. Jehanabad thana	15.0	176
3d. Daudnagar thana	10.0	64
3e. Arwal thana	10.0	160

Source: Calculated from Francis Buchanan, *Behar and Patna*, p. 771 (Table 49), p. 723 (Table 4). Martin Montgomery, *British Colonies*, p. 53.

Arwal was a centre of paper production. The value of paper manufactured on both sides of the Sone at Arwal was assessed at over Rs. 30,000 by Buchanan. Most of this paper was sent out of the districts and Buchanan felt that the extent of this trade was much underrated. The Kaghazi Mohalla, or paper quarter, of Arwal was once famous throughout Bihar. In the village of Sipah alone 400 families were employed in its manufacture.¹⁷ It must be kept in mind that Buchanan's figures are informed guesstimates based on deductions rather than actual counting. Given Buchanan's vast experience and reputation they are nevertheless to be taken seriously, although the figures are probably not comparable with later censuses to enable an exact quantitative analysis of the process of subsequent deindustrialisation.¹⁸ What emerges from later accounts however is that by the 1860s the weaving and paper industries, with their centres at Daudnagar and Arwal respectively, fell on hard times.

'The strip along the Sone,' remarked Trevor Grant, Collector of Gaya, in 1868,

¹⁵ Francis Buchanan, *Behar and Patna*, Vol. II, pp. 771-72 (Table 41).

¹⁶ *Ibid.*, p. 698.

¹⁷ W.W. Hunter, Vol. XII, *op. cit.*, p. 57.

¹⁸ Vicziany, 'The Deindustrialisation of India in the Nineteenth Century', pp. 106-46. J. Krishnamurty, 'Deindustrialisation in the Gangetic Bihar during the Nineteenth Century: Another look at the evidence,' *JESHR*, 22, 4, 1985, p. 401.

was at one time the richest part of the District, and it is now the poorest. It was once thickly populated, it has now very few inhabitants. It depended for its prosperity entirely on its commerce, situated on a navigable river and well supplied, as it was, with roads, it became filled with a large commercial population. But we could neither give them roads nor keep up their old ones, and we have thus choked its commerce and completely destroyed its prosperity. I think that out of Sonthalia I have never seen such poverty in India. When once one goes south from Baroon one seems to leave the first principle of civilization behind. The country has no money in it. People have to supply their wants on the merest principle of exchange and barter, and the thing chiefly bartered is rice. Ask a villager there the price of anything and he will say that it is worth so many bushels of rice..... a failure in rice there means not only an empty stomach, but an empty pocket too. The people dress in scanty rags & live in ruined hovels.¹⁹

R.C. Mangles, the Secretary of the Board of Revenue of the Lower Provinces, while reprimanding Grant for making "erroneous and uncorroborated allegations" that a part of Gaya district, which had once been very flourishing, had been ruined by the neglect of gov't, nevertheless admitted that the former prosperity was based on cotton weaving, and that the changes described were inevitable.²⁰ According to Hunter, country cloth could not be made for less than 3.75 d to 4.5 d per yard, while imported cloth sold for 3.25 d per yard.²¹ The paper industry in Arwal was similarly almost extinct by the time Hunter compiled his Statistical Account in 1877, being driven from the market by the machine-made paper of Serampur. The Kaghazi mohalla was a heap of ruined houses.²² 'Daudnagar, Arwal and Jehanabad', observed the Settlement Report of the Tikari Ward's Estate at the turn of the century, 'were at one time important centres of the sugar, paper and cloth industries... but there is at the present day no trade that is of sufficient local importance.... For general purpose it is right to regard Gaya as a district purely agricultural'.²³

It must, however, be borne in mind that the dislocating impact of deindustrialisation on the spinning sector may not have been so stark. Spinning was a part-time, albeit widespread, activity largely confined to the women of the household.²⁴ If we accept Buchanan's estimates then

¹⁹ Bengal Land Revenue Proceedings, 1868, November No. 156, 'A' Series.

²⁰ *Ibid.*, 1869, January No. 103, 'A' Series.

²¹ Hunter, *op. cit.*, p. 260.

²² *Ibid.*, pp. 57, 258.

²³ 'Final Report on the Survey and Settlement of the Tikari Ward's Estate and a Few Govt Estates and the Belkhara Mahal in Gaya' in Bengal Land Revenue Proceedings August 1900. Nos. 11-13 'A' proceedings, p. 10.

²⁴ Francis Buchanan, *Shahabad*, p. 520.

every second or third household derived a part of its income from the spinning industry. The decline of this industry must have certainly led to a decline in non-agricultural income for a very large number of families, but it may not have thrown people out of employment altogether.

Developmental Works: Canals, Roads and Railways

The Patna Canal branch of the Sone Canal system which traversed the thanas of Daudnagar and Arwal, began a queer process of transformation which was appropriately described in the Settlement Report of the Tikari Ward's Estate as a reversal of 'the natural order of civilised development'. Its inhabitants were converted from an industrial into an agricultural population.

Western Gaya was agriculturally very backward at the time of Buchanan's rambles. He described Daudnagar as neglected, the poorer lands in general waste, which in the dry season looked very dismal, being covered with stunted thorns without a pile of grass. Even some of the best land was neglected, and was chiefly occupied by lifeless weeds. Arwal was similar in appearance to Daudnagar, with a great portion neglected. Where the soil was poor, it was chiefly overgrown with thorn and stunted 'jujuk'. Where the wasteland was rich it was overgrown with harsh long grass, which in the dry season lost all vegetation.²⁵

The number of reservoirs was not at all adequate in Daudnagar.²⁶ When Trevor Grant, Collector of Gaya, toured the district during the drought of 1869 he found that the tract along the Sone 'incomparably the worst part of the district' and unfit for extended agricultural purposes. The area south of Arwal towards Daudnagar was very bad and that south of the Daudnagar-Gaya road produced very little rice in the best of times, which could only be grown in the hollows. This was the only part of the district in which Grant saw no preparations being made for the rabi on account of the failure of the rains.²⁷

The opening of the Patna Canal branch of the Sone canals in the 1870s turned the barren wastes described by Francis Buchanan into fertile rice lands. The sandy soil of this region, once unfit for 'extended agriculture', now supplied the best paddy in the district.²⁸ It is not surprising, therefore, that Arwal and Daudnagar thanas recovered and registered significant gains in each Census decade from 1872 to 1921. The Commissioner of Patna Division reported to the Board of Revenue that new villages were springing up in the vicinity of the Patna canals.²⁹

²⁵ *Tikari Settlement Report*, p. 4.

²⁶ Francis Buchanan, *Behar & Patna*, Vol. II, p. 607.

²⁷ Bengal Land Revenue Proceedings, November 1868, Nos. 143 and 156 'A' Series.

²⁸ *Tikari Settlement Report*, pp. 3-4.

²⁹ *Bengal Revenue Administration Report*, 1884-85.

The northern thanas of Shahabad were agriculturally transformed by the Sone canal network, although this part of Shahabad, unlike Gaya, was intensively cultivated and densely populated even prior to the advent of the canals. The impressive increase in population in northern Shahabad between Buchanan's time and the Censal period is at least partly attributable to the canal age.

When Buchanan toured the districts of Shahabad and Behar (the district of Gaya was formed in 1825) in 1812, he was appalled at the primitive modes of conveyance. Although the people were fully aware of the vast advantage attending the use of carts, goods were mostly conveyed by oxen in backloads on account of the condition of the roads. During the rainy season all internal commerce came to a standstill, as the roads were in no condition to admit even cattle travelling with backloads. Neither of the two great military roads—from Danapur to Buxar along the Ganges, and the G.T. road running through the heart of the districts—was usable during the rainy season. The crossroads from market to market, so crucial for overland commerce, were very poorly developed indeed, permitting neither wheeled nor heavy pack bullock traffic during the rainy season, as these roads contained no hard material. Depots therefore had to be set up between crossroads for transmitting goods during the rainy season.⁵⁶

The transformation in the communication network that occurred between the time of Buchanan's survey and the first Census in 1872 was truly remarkable. An intricate network of scientifically constructed roads—raised, metalled and bridged—now fed the one truly new, revolutionary channel of communication. The Eastern Indian Railway traversed northern Shahabad, and by 1880 the Patna–Gaya line was completed. By the end of the century, the Grand Chord line of the E.I.R. passed through Sasaram–Dehri–Gaya.⁵⁷

Canals tended to increase, and above all stabilise, average yields per acre, at a time when agricultural output fluctuated sharply from year to year on account of the near total dependence on the monsoons. According to one estimate, the Sone Canals alone resulted in an addition of a minimum of 230,000 tons to the foodgrain stock of Bihar per annum.⁵⁸ The vastly improved communication system, on the other hand, facilitated export of foodgrain during good years (thereby propping up agricultural prices), and also helped contain scarcity in times of harvest failure by enabling import and movement of foodgrain all the year round.

It was the northern thanas of Shahabad and Gaya districts that felt the impact of the communication revolution and the Sone Canal system most,

⁵⁶ Francis Buchanan, *Behar & Patna*, Vol. II, pp. 704–7, Francis Buchanan, *Shahabad*, pp. 440–43.

⁵⁷ W.W. Hunter, *op. cit.*, pp. 112, 256; *Bengal Revenue Administration Report*, 1879–80.

⁵⁸ *Census of 1901*, Vol. 6, p. 11.

and it was these thanas which gained substantially in population since Buchanan's time. While the impact of the railways and improved roads, and resultant increase in energy levels was felt in North Shahabad even prior to the Census, Dehri thana, which included the headworks of the Sone Canal system, and was an important link in the E.I.R. Grand Chord Line, felt the impact of these modernising forces a little later, in the 1870's, and therefore the demographic upswing there coincided with the Census period, and it registered relatively sharp increases in each decennial period.

Epidemics

Ira Klein has argued that by the mid-nineteenth century, several districts in northern India were so overcrowded that crisis death rates (50–80 deaths per thousand) in the form of malaria, plague, cholera, dysentery, influenza and famine occurred repeatedly to level off the population. That the aggregate population did not diminish in the period prior to 1921 was because certain backward areas gained in population, presumably on account of rising energy levels caused by the construction and extension of canals, roads, railways and other attendant benefits of Pax Britannica.³³

While it is undoubtedly true that the second half of the nineteenth and the first two decades of the twentieth centuries witnessed a series of demographic crises, which prevented any significant population growth in the aggregate, it would perhaps be a little simplistic to attribute this succession of crises to 'overcrowding'. Population densities even in Buchanan's time were very high, far surpassing levels generally attained in medieval Europe. Periodic 'crisis death rates' of 50–80 are, moreover, a recurrent and structural feature of pre-modern agrarian societies, and these crises may or may not be related to either overcrowding or famine conditions.³⁴

The overall picture is complex. Both advanced thanas (such as those in northern Shahabad) and backward ones (such as Daudnagar and Arwal in Gaya) gained in population following the impact of developmental works. Demographic crises, similarly, were experienced by regions most affected by these works, as well as those scarcely touched by them, such as the Bhabhua subdivision in southern Shahabad. The causal factors underlying these demographic trends were, however, quite different.

The demographic reverses of the second half of the nineteenth and early twentieth centuries can be traced to two sets of causes which are only partly interrelated, viz. variations in the quality of the agricultural year, and the unintended consequences of developmental works undertaken by the British Indian administration on an unprecedented vast scale.

³³ Ira Klein, 'Population and Agriculture in Northern India, 1872–1921', *Modern Asian Studies*, 8, 2, 1974.

³⁴ Carlo Cipolla, *The Economic History of World Population*, Penguin, 1962, pp. 76–77.

Subsistence Crises

That subsistence crises triggered catastrophic epidemics in pre-modern agrarian societies untouched by scientific public health schemes is well established.³⁵ These crises, deriving from sharp annual variations in the quality of the agricultural year, and resulting in fall in real wages, were of course nothing new. Their intensity, however, lessened over time with the expansion of the communication network: canals, metalled roads and the railways. The coordinated impact of these works was felt mostly after 1870, while the last of the major subsistence crises occurred in the 1860's, in 1864-66 (when the hathia failed two years in succession) and in 1868-69.³⁶

Cholera occurred in epidemic form in Gaya in 1866, affecting both town and country. It prevailed from early June till the middle of November. It first appeared in Arwal, from where it spread to Gaya, Nawada, Atri and to the subdivisions of Sherghati and Aurangabad.³⁷ Cholera raged in epidemic form once again in 1869 in both districts, its spread capricious to the extreme. In several villages 60-70 persons died, while contiguous villages

³⁵ The publication of Thomas McKeown's classic has generated an interesting, albeit inconclusive, debate on the relative weightage to be ascribed to alleviation of subsistence crises and public health measures in the decline of pre-modern mortality patterns. Thomas McKeown, *The Modern Rise of Population*, London, 1976. S. Sretzer, 'The importance of Social Intervention in Britain's Mortality Decline, c 1850-1914: A Re-interpretation of the Role of Public Health', *Social History of Medicine*, I, 1988. At another level, while Wrigley and Schofield have underscored the importance of disease as an independent variable in determining pre-modern mortality rates, John Post has reiterated the impact of real wages and subsistence crises. Anthony E. Wrigley and S. Schofield, *The Population History of England 1541-1871*, Cambridge Mass., 1981, pp. 354-65, p. 452. John D. Post, 'The Mortality Crises of the Early 1770s and European Demographic Trends', *Journal of Interdisciplinary History*, XXI, Summer 1990, pp. 42-46. The nub of the problem is that while certain diseases, especially stomach-related and fevers of various kinds, are certainly influenced by nutritional status, some others, notably smallpox, are not. Nutritional status however, is not the only variable influencing the incidence of epidemic disease and case-fatality. Social deprivation, dysfunctional behaviour, vagrancy, migration (which expose relatively isolated populations to new contagions), all associated with subsistence crises and falls in real wages, also diffuse infections and prejudice case outcomes. We may perhaps agree with Amartya Sen that famines mainly kill not by starvation but by magnifying the forces of death normally present in the pre-famine period. A.K. Sen, 'Famine Mortality: A Study of the Bengal Famine of 1943', in E.J. Hobsbawm, et al., ed., *Peasants in History*, OUP, 1980, pp. 202-5.

³⁶ Staple foodgrain prices are extremely sensitive to shortages in supply, as the demand is inelastic, and are therefore a fairly reliable index of scarcity. The average price of ordinary rice in 1865 was higher by 80 per cent in Gaya, and by 50 per cent in Shahabad, over the corresponding average in the preceding year. Ordinary rice prices registered an increase of 21 per cent in Gaya, and 16 per cent in Shahabad, in 1866 over the elevated 1865 prices. In 1869, the price of ordinary rice increased by 70 per cent in Gaya, and by 63 per cent in Shahabad, over the corresponding period in the preceding year. (Deduced from *Prices and Wages in India*, for the concerned years.)

³⁷ Hunter, *op. cit.* p. 148. *Report of the Indian Famine Commission 1879-80* (Cal. 1880) Part III, pp. 67-73.

did not have a single casualty. Thus while village Kaithi in Shahabad had 60 casualties, village Dhamakera, within three miles of Kaithi, was unaffected. Similarly while Mowna had 15 casualties, village Teraon, only 300–400 yards off, was symptom-free.³⁸ Cholera was so severe in Sasaram that no cartman would pass through it, thus cutting off the supply route of railway rice for a vast area. Similarly, smallpox also broke out at various places in the same year.³⁹

The first census of India was thus preceded by a succession of catastrophes and crisis death rates in the two districts, which, at least partly, explained the low enumeration in 1872. Logistical problems intervened, of course, as pointed out earlier, but it is difficult to see how there could have been a margin of error as high as 33 per cent in the Buxar subdivision. While the shortcomings of the 1872 Census were officially acknowledged in Bengal,⁴⁰ it was nevertheless pointed out that the census in the Patna Division was the most reliable, as a preliminary census had been done there, which provided a useful check on the regular census.⁴¹

The 1873–74 season was, once again, one of crisis as the monsoons failed in 1873.⁴² Almost predictably, cholera, smallpox and fever broke out at various places.⁴³ The premature opening of the Sone canals, however, averted serious scarcity in the districts. As a consequence, the price of ordinary rice rose modestly when compared to earlier crisis years: 35 per cent in Gaya, and 19 per cent in Shahabad,⁴⁴ where the hub of the canal network was located.

Consequent to the opening of the Sone canals and the development of the communications network, it needed much more than a serious failure of the monsoons for foodgrain availability to shrink rapidly. The first decade of the twentieth century was one of very badly distributed rainfall, but this did not result in severe scarcity as was witnessed in the 1860s.

Subsistence crises in the post-canal era were mostly limited to the agriculturally backward and sparsely populated southern tracts, where the impact of modernising forces was minimal. Yields per acre in this region, which had always been low, were unaffected by the canals, and the modern road and rail network largely bypassed the area. The efficacy of famine relief works was doubtful given the vastness and inaccessibility of terrain.⁴⁵

³⁸ Bengal Land Revenue Proceedings, September 1869, No. 130 'A' Series.

³⁹ *Ibid.*, May 1869, Nos. 161–64, June 1869, No. 157, 'A' Series.

⁴⁰ *Census of 1872*, Vol. 3, pp. 6–7.

⁴¹ *Ibid.*, pp. 30–31.

⁴² Bengal Revenue Administration Report, 1873–74.

⁴³ Hunter, *op. cit.*, pp. 287–88.

⁴⁴ *Prices and Wages in India*, 1873.

⁴⁵ It was only after 1870 that railborne foodgrain could be carried into the interior with facility even in other parts of the districts. The backward state of road communication thus hit relief operations during 1864–66 and 1868–69. Hunter, *op. cit.*, p. 111.

Relief centres were too distant to supply local relief.⁴⁶ These were the true 'famine tracts', comprising some 1204 square miles in Shahabad and 1366 square miles in Gaya.⁴⁷ People here were dependent upon forest produce in the best of times to supplement their diet. In times of scarcity, they were compelled to fall back almost exclusively on this forest produce, such as 'mahua', 'karonda', 'bel', 'bair', 'saag', and various types of jungle berries, gourds and melons. Some of this forest produce, when consumed in the uncooked form, often induced fatal forms of diarrhoea.⁴⁸

The demographic equilibrium in the southern thanas therefore remained virtually unaltered during the entire period under study, as they continued to pass through devastating subsistence crises, such as those of 1891-92 and 1896-97 in the Bhabhua subdivision of Shahabad district, which wiped out accumulated increases in population. Epidemics such as smallpox, cholera, stomach-related diseases and fevers raged in the southern subdivisions of Bhabhua and Sasaram during this period.⁴⁹ The Bhabhua subdivision lost over 10 per cent of its population between 1891 and 1901.

The abatement of subsistence crises after 1870 did not result in an abatement of demographic crises because the former constituted only one, albeit major, variable triggering elevated death rates. Rainfall patterns, which had a crucial bearing on harvest size, was an important variable in its own right. The relationship between rainfall and crisis death rates is however perplexing. Grossly deficient rainfall, particularly a failure of the crucial hathia rains in two consecutive years, resulted in scarcity, which predisposed the area to epidemics. Excessive rainfall, but well distributed from the agricultural viewpoint, while yielding excellent crops, also triggered epidemics which followed in wake with almost clockwork regularity. From the sanitary viewpoint, therefore, years of deficient rainfall, when crops were also poor, such as in 1912-13, 1914-15 and 1920-21, were exceptionally healthy, as there was a drop in death rates.⁵⁰

The rainfall-mortality relationship was complex. In 1903 and 1908, severe cholera epidemics occurred in Shahabad following the delay in the commencement of the monsoons, and diminished greatly when sufficient rainfall fell to flush and cleanse infected sources of drinking water supply.⁵¹

⁴⁶ L.S.S. O'Malley, *Bengal District Gazetteers, Shahabad* (Cal. 1906), p. 74.

⁴⁷ *Report of the Indian Famine Commission, 1879-80* (Cal. 1880), Part III, Sec III, pp. 67-73.

⁴⁸ Bengal Land Revenue Proceedings, December 1865, No. 76, 'A' Series; *Ibid.*, December 1868, Nos. 91-93; *Ibid.*, January 1869, No. 262, June 1869, No. 157, September 1869, Nos. 129-35, November 1869, Nos. 28-29, 'A' Series; Bengal Agriculture Proceedings, June 1892, Nos. 60 and 77, 'A' Series; Bengal Agriculture (Famine) Proceedings, March 1897, Nos. 194-205, 'A' Series.

⁴⁹ Bengal Agriculture (Famine) Proceedings, May 1897, Nos. 1-10, 'A' Series.

⁵⁰ *Census of 1921*, Vol. VI, p. 12.

⁵¹ L.S.S. O'Malley, *Bengal District Gazetteer, Shahabad*, p. 46, J.F.W. James, revised edition, *ibid.*, p. 60.

The rapid spread of bubonic plague in the first two decades of the twentieth century was assisted by the highly erratic nature of the monsoons in this period. In 1921, an abnormal break of five to six weeks in the monsoons after their onset in June created ideal temperature and humidity conditions for the multiplication of flies and, there being no heavy rain to wash the land clean, typhoid fevers and cholera flourished.⁵²

The Role of Developmental Works

While local harvest outturns, rainfall patterns, nutritional status and real wages continued to influence mortality trends, these cannot fully explain the demographic crises which swept the districts in the late nineteenth and early twentieth centuries, halting and even reversing the population gains of the earlier period. Their roles were increasingly marginalised by the unintended fall out of the developmental works, such as canals, roads and railways. Their demographic momentum was soon exhausted, for they facilitated the rapid spread of certain highly contagious diseases with very high morbidity rates, such as a peculiar form of fever, plague and possibly even influenza. The northern thanas, which had gained dramatically in population following the construction of these works, now showed equally dramatic demographic reverses.

Shahabad Fever

The forces of modernisation such as railways, canals and roads raised energy levels by assuring food supply and warding off famine. Their impact on mortality levels was however, double-edged, as the rapid spread of fever and bubonic plague made abundantly clear. A persistent fever, which bore little resemblance to the ordinary malarial type, but was choleraic in its symptoms and rapidly fatal, began its destructive march through the districts. It prevailed with intensity in the Gaya district for some years, particularly in the Nawadah subdivision and in the Sherghati, Barachati and Gaya thanas which registered the highest death rate in Bihar both in 1882 and 1883. The fever rapidly spread to Shahabad in 1879 where it became endemic and took a heavy toll, particularly in the Buxar subdivision, which may well have registered losses but for the continuous flow of immigrants. The Sanitary Commissioner returned Shahabad as the worst district in the whole Presidency in respect of mortality.⁵³

The local belief was that since the construction of the canals the fever had spread and increased in intensity.⁵⁴ That this belief was well-founded

⁵² *Ibid.*

⁵³ *Census of India, 1891*, Vol. III, Bengal, by C.J. O'Donnel (Cal. 1893), pp. 112-16.

⁵⁴ *Census of India, 1911*, Vol. V, Bengai, Bihar, Orissa & Sikkim, by L.S.S. O'Malley (Cal. 1913), p. 74.

may be gathered from the finding of the Committee appointed to enquire into the administration of the Sone canals in 1888.

It is a matter of notoriety that Shahabad was formerly one of the healthiest districts in Bengal... fever now appears to be more common in all the Bihar districts than it formerly was, but nowhere is the increase greater and more marked than in Shahabad. The change is attributed partly to the dampness of the subsoil occasioned by irrigation, and partly to the obstruction of the drainage occasioned by irrigation.⁵⁵

The Civil Surgeon wrote in 1890:

The general health of the district as a whole during 1889 was decidedly bad and has been so as a matter of fact for the past five years. Instead of being, as it was once, considered a healthy district, it now ranks, if statistics are to be at all relied upon, as the fifth or sixth unhealthiest in the whole province.... Fever is as usual responsible for the chief mortality. Epidemics are now a frequent occurrence. Upwards of 90% of all the villages in the district suffered from the fever... for fatality from fever is worse than the majority of districts in Bengal, and is only exceeded by the districts in the Rajshahi division. Although there was no startling epidemic like that which prevailed in the last quarter of 1883, still the disease prevailed with much severity and in an epidemic form throughout 1889. The excessive prevalence of fever in the district for the last few years is locally attributed and not without some show of reason, to the influence of canal irrigation and interference with drainage and waterlogging of the soil. I am of opinion that irrigation as carried out has no doubt injuriously affected public health.⁵⁶

Northern Shahabad, unlike northern Gaya, was relatively flat, and canal embankments consequently affected the drainage system adversely, causing waterlogging. Raised and bridged all-weather roads and railway embankments had already interfered with the natural drainage, and the canals only compounded the problem. Beginning from 1879 fever epidemics grew steadily worse until 1886, when Shahabad district was stigmatised as the worst in the Province in respect of fever mortality.⁵⁷

⁵⁵ Quoted in *ibid.*, p. 74. Elizabeth Whitcombe has drawn pointed attention to the role of canals in the spread of malaria in northern India in the nineteenth century. Elizabeth Whitcombe, *Agrarian Conditions in Northern India. Vol. I. The United Provinces Under British Rule*, University of California, 1971, pp. 81-82. See also Ira Klein, 'Malaria and Mortality in Bengal, 1840-1921', *IESHR*, 9, 1972, pp. 132-60.

⁵⁶ *Census of 1891*, Vol. III, pp. 112-13.

⁵⁷ *Census of 1901*, Vol. VI, p. 86.

Plague

Fever mortality of its own, however, could not have resulted in such sharp demographic reversal in the northern thanas of Shahabad. Dehri, a much irrigated thana, continued to show increases in each of the census periods, as did Piro, another irrigated thana. 'The explanation of the results of the last twenty years, therefore', observed the 1911 Census,

have to be sought elsewhere. It appears to be simply that the thanas in which there has been the greatest loss (all of which lie along the banks of the Ganga and are traversed by the railway) have suffered severely from plague and that this scourge has not affected those further inland and away from the railway.⁵⁶

Bubonic plague hit the districts with a bang in the first winter of the twentieth century, and had catastrophic demographic consequences which were manifest long after it disappeared around 1923, almost as suddenly as it had come. The third great plague pandemic, which began in the Yunan Province of China in 1855, reached Bombay in 1896 and Calcutta in 1898, from where it was rapidly carried to upcountry regions, including Patna, Gaya and Shahabad, via the railway network,⁵⁷ in the cold weather of 1900-1901.

Whatever may have been the source and mode of spread of contagion, since plague is primarily a disease of rodents, which only incidentally affects humans, certain fortuitous factors facilitated its rapid spread in the region, such as unfavourable meteorological conditions, the fact that the E.I.R. traversed very densely populated areas, and the clustered settlement pattern of the affected villages.

The epidemics almost invariably began after the rainy season and fell off as the hot season approached, in contrast to cholera and fever. Also, while plague remained endemic in both the districts for over two decades, severe epidemics were punctuated with years of markedly low mortality. The severe outbreaks were in 1900-1901, 1904-5 (probably the worst), 1910-11, 1914-15, 1918-19 and 1921.

The plague wrought heavy destruction in the thanas which lay along the E.I.R.: Arrah, Shahpur, Dumraon and Buxar in Shahabad and Gaya, Atari and Tikari in Gaya district. Sasaram and Jehanabad towns, which lay along the E.I.R. were also affected.⁵⁸ Heavy losses in these thanas are reflected in the 1901 and 1911 censuses.

⁵⁶ *Census of 1911*, Vol. V, p. 75.

⁵⁷ It is likely that infected rats, transported along with grain, transmitted plague to the local rodent population, who in turn transmitted plague to human communities. The heavy mortality of trading classes lends credibility to this hypothesis. *Census of 1911*, Vol. V, p. 72.

⁵⁸ *Ibid.*, p. 27.

The census enumeration of both 1901 and 1911 however are a little deceptive as both the counts were done at a time plague was raging.⁶¹ There was an exodus from Arrah Thana and over 11,000 persons fled the Tikari thana alone between the preliminary and final census in 1901.⁶² This at least partly explains the huge losses of 10 per cent and 20 per cent respectively, and the gain of 15 per cent in Nawadah thana whose population swelled on account of plague refugees. This exodus also partly explains the gain of over 10 per cent recorded by Tikari in the 1911 enumeration. Similarly, nearly all the inhabitants of Jehanabad camped in huts outside the town in 1911, and 30 per cent of the population of Gaya town fled to the Mufassal at the time of the 1911 Census.⁶³

Influenza

If the 1911 census figures cannot be taken as an index of plague mortality, the 1921 census figures are complicated by the influenza pandemic of 1918 which spread rapidly to every part of the two districts and halted the advance in practically every thana. Only Nabinagar in Gaya and Dehri in Shahabad showed any consequential increase during the decade—the former on account of immigration from across the border in Palamau,⁶⁴ and the latter because of the development of the lime industry.⁶⁵

As influenza spread rapidly in September 1918 the official mortality rates reached unprecedented levels of 73.3 per mille in Gaya and 80.9 per mille in Shahabad.⁶⁶ It quickly reduced even the most remote villages to a state of complete disorganisation. As a rule whole villages were attacked, including the little medical staff that was there in the country. Those who could take to bed were more likely to recover, so it seems possible that influenza was more fatal to the poor than to the well-to-do, especially since the crucial hathia rains also failed in 1918. For this reason the southern portions of Shahabad suffered particularly severely from influenza.⁶⁷

Migration

Long-term demographic shifts can take place either through natural propogation (that is, the difference between births and deaths) or through

⁶¹ Not surprisingly, the rather remarkable coincidence of plague with the census both in 1901 and 1911 led to a close association between the two in the popular mind. *Census of 1911*, Vol. V, p. 34.

⁶² *Census of 1911*, Vol. V, pp. 119–20.

⁶³ *Ibid.*, p. 27. This explains the increase registered in the Gaya mufassal at the time of the 1911 Census.

⁶⁴ *Census of 1921*, Vol. VI, p. 36.

⁶⁵ *Census of 1931*, Vol. VII, p. 36.

⁶⁶ *Census of 1921*, Vol. VI, pp. 37–39.

⁶⁷ *Ibid.*, p. 13.

migration, or, as is frequently the case, through both. The administration acknowledged the fact that since emigrants as a rule avoided the Emigrant office, it was not possible to obtain trustworthy statistics.⁶⁸ The census therefore classified those people born outside the district, but enumerated inside, as immigrants; while those born in the district, but enumerated outside, were classified as emigrants.

Female migration introduces a further distortion in the data, as this reflects the custom of village exogamy, the stimulus for which was non-economic. Women who were married in the intercensal period and moved to their husband's house in the neighbouring district were thus classified as migrants. Most of the immigration to Gaya was from Patna, and this included twice as many women as men. Similarly, of the emigrants from Gaya to Patna, there were three times as many women as men.⁶⁹ 'It is a somewhat surprising, but incontrovertible fact,' remarked C.J. O'Donnel, author of the report on the 1891 Census of Bengal, 'that women leave the district of their birth much more often than men the explanation of this is to be found in the marriage custom of the people.'⁷⁰

We may presume, for our purpose, that in the long run female marital emigration and immigration cancelled each other out, as each village would have taken as many women as it gave. A more accurate picture of genuine female migration is revealed in the survey of migrants from Gaya and Shahabad done at the time of the 1921 Census. This showed that the ratio of male to female migrants in Calcutta was 4:1, and that most of the woman were classified as dependents rather than as workers.⁷¹

Emigration

To what extent the census figures reflect actual migration is therefore arguable. It is also impossible to disaggregate temporary migration from permanent migration. It is quite clear that most of the emigrants were cold weather itinerants who returned in spring. This seasonal emigration spurted in times of scarcity, famine and epidemics.⁷² Most of this annual and periodic migration was eastward from south Bihar via the Grand Trunk Road, and comprised mainly labourers, about one third of whom went to Calcutta and neighbouring areas. This annual migration was further

⁶⁸ Hunter, *op. cit.*, p. 186.

⁶⁹ *Census of 1891*, Vol. II, p. 115.

⁷⁰ *Census of 1881*, Vol. VI, p. 154.

⁷¹ *Census of 1921*, Vol. VII, p. 119.

⁷² As in 1865-66 (Bengal Revenue Proceedings 'A' Series, December 1865, No. 76), 1869 (Bengal Revenue Proceedings 'A' Series, September 1869, No. 130) and 1873-75 (Hunter, *op. cit.*, pp. 187-88); during the scarcities between 1885 and 1889, especially in the Nawadah subdivision of Gaya (*Census of 1891*, Vol. III, p. 115); and in 1907-8 (Bengal Revenue Administration Report, 1907-8). Emigration also swelled to a flood with the failure of rains and the influenza epidemic in 1918 (*Census of 1921*, Vol. VII, p. 14 and p. 39).

intensified with the construction first of the E.I.R. main line, and subsequently of the Chord and Grand Chord lines of the E.I.R.⁷³

In 1891 as many as 200,375 persons born in Gaya were found in other parts of the Bengal Presidency, of which 32,412 were enumerated in Calcutta alone.⁷⁴ The 1921 Census concluded that Gaya sent more emigrants to Calcutta than any other district of Bihar. 'Bhumiyas', 'Dosadhs' and 'Julabas' also emigrated in great numbers to the collieries.⁷⁵

It is interesting to note that a significant proportion of the permanent emigrants from Shahabad were of a relatively higher class, and were pre-eminent in non-agricultural work. 'Rajputs' migrated in good numbers to occupy relatively lucrative posts in the police, or as 'darwans' and 'sardars'. The Census of 1921 found that the average of the remittances by money order to Shahabad was over Rs.19, which was higher than for any other district in the province. The average for Gaya was a modest Rs.13.50 in comparison.⁷⁶

It seems, therefore, that although push factors were predominant in the eastward migration from the region, absolute poverty was not the only stimulus for emigration, particularly from Shahabad district. George A. Grierson, a remarkable scholar-official, remarked on the adventurous spirit of the 'Bhojpuris', with each man ready to carve his fortune out of any opportunity which presented itself to him: 'As fond as an Irishman is of his stick, the long-boned stalwart 'Bhojpuri', with his staff in hand, is a familiar object striding over fields far from his house. Thousands of them have emigrated to British Colonies and have returned rich men'.⁷⁷

Overseas emigration, indeed, constitutes an interesting feature of the demographic history of the region, particularly that of Shahabad. A considerable portion of the Bengal Army was recruited in Shahabad from among the high caste Hindu population. Immediately after the 1857 Rebellion, which spread to Gaya, Patna and Shahabad (Kuar Singh was from Shahabad), several 'Bhojpuris', who constituted the disbanded native army, willingly migrated overseas to the British colonies. In 1857-58, of the 9864 adults who embarked from Calcutta, 2229 were from Shahabad, and 1388 were from Gaya; in 1858-59, 20,166 adults embarked, of which 5522 were from Shahabad, and 3378 from Gaya.⁷⁸

The two districts continued to be among the 12 main recruiting districts

⁷³ *Census of 1891*, Vol. III, p. 9 and p. 115; *Census of 1901*, Vol. VI, p. 9; *Census of 1911*, Vol. V, p. 182; *Census of 1921*, Vol. VII, p. 182.

⁷⁴ *Census of 1891*, Vol. III, p. 115.

⁷⁵ *Census of 1921*, Vol. VII, p. 106 and p. 115.

⁷⁶ *Ibid.*, p. 112.

⁷⁷ Quoted in Hugh Tinker, *A New System of Slavery. The Export of Indian Labour Overseas, 1830-1920*, Oxford, 1974, p. 74.

⁷⁸ According to Buchanan, there were at least 12,000 Bhojpuris from the old sarkar of Shahabad in the British Indian Army in 1812. Francis Buchanan, *An Account of the District of Shahabad in 1812-13*, p. 153. Hugh Tinker, *A New System of Slavery*, pp. 76-77.

for overseas migration in North India long after the Mutiny. According to the information collected by Hunter, over 10,000 persons from Shahabad district migrated between 1866 and 1874 to overseas colonies like Mauritius, Demerara, Trinidad, Jamaica, Surinam, Grenada, St. Vincent, Nevis and the French Colonies. While many of these were low caste migrants, a sizable number of high-caste men were also included.⁷⁹

A good number also went to the easternmost limit of British India. Between 1864 and 1866 over 5500 persons from Shahabad migrated to Assam and Cachar. Around 1890 two estates in the Pegu and Toungoo districts of Burma were granted to Shahabad landlords to stimulate migration. The attempt seems to have been somewhat successful, for the Shahabad-Burma nexus was still strong enough to occasion remark some 30 years later.⁸⁰

Immigration

Like outward migration, immigration into the region was also stimulated by the construction of developmental works such as the Sone canals and the railways,⁸¹ which may well have contributed at least partly to the doubling of the population in northern Shahabad since the time of Buchanan. Most of this immigration must have occurred before the 1881 Census, and we can only speculate that the net gain through migration in Shahabad in the 1891 Census was only the final spurt of a process set in motion much earlier.

The inflow came mainly from neighbouring districts in North Bihar and the Northwest provinces. As in the case of emigration, it is impossible to segregate temporary immigration from permanent immigration. It is also practically impossible to reaggregate the data thana-wise, which is a severe handicap as the geographical distribution of immigrants was obviously very skewed, largely confined to the northern thanas which registered impressive growth. Thus more than 50 per cent of the increase in Arrah thana in the decade ending 1891 was due to immigration.⁸² Immigration from Palamau similarly enabled Nabinagar to record a substantial growth between 1911 and 1921.⁸³

Most of the immigrants were cold weather reapers and farm labourers who generally arrived after the rains and left when rainy season came around again. Their wives and families often accompanied them, forming small colonies along the canals or tracks or wherever work was at hand. As work progressed they moved with it, leaving their straw huts behind.⁸⁴

⁷⁹ Hunter, *op. cit.*, pp. 187-88; Tinker, *A New System of Slavery*, p. 54.

⁸⁰ *Census of 1921*, Vol. VII, p. 111; Hunter, *op. cit.*, pp. 187-88.

⁸¹ Hunter, *op. cit.*, p. 186. *Census of 1921*, Vol. VII, pp. 38, 120.

⁸² *Census of 1891*, Vol. III, p. 112.

⁸³ *Census of 1931*, Vol. VII, p. 35.

⁸⁴ Hunter, *op. cit.*, p. 186.

Impact of Migration on Demographic Trends

Table 6 indicates that the districts registered an increasing net loss of population through migratory movements, particularly male migration, right up to 1911 (the decade ending 1891 in Shahabad excepted). Thereafter the level of net emigration remained practically constant in absolute numbers in Gaya, and fell off slightly in Shahabad, suggesting that fresh out-migration had stopped. Table 7, however, suggests that migration in itself was not sufficient to basically alter demographic trends, except perhaps in the decade ending 1891 in Gaya.⁸⁵

Table 6

Net Population Loss/Gain as a Result of Migration

Decade	Gaya		Shahabad	
	Males	Females	Males	Females
1871-1881	-51841	-42613	-42358	-1796
1881-1891	-81720	-64591	+18112	+6137
1891-1901	-77655	-49700	-55702	-20098
1901-1911	-94807	-48363	-81039	-34650
1911-1921	-95379	-49883	-74090	-24945
1921-1931	-94890	-49660	-73940	-24980

Source: *Census of India, 1881-1931*.

Conclusion

The districts of Gaya and Shahabad could be broadly divided into two demographic zones: the developed northern region, which was flat, fertile and irrigated; and the undeveloped, hilly, forested southern region of rainfed agriculture. The northern zone was thickly populated even in Buchanan's time, and showed great demographic expansion right up to the Census of 1891, before entering a phase of crisis. The thinly populated southern tract in contrast largely maintained its old equilibrium.

There were however differential local patterns within this broad demographic sweep. Some northern thanas, like Jehanabad, Daudnagar and Arwal showed a demographic decline before they were overtaken by the demographic upswing, while some northern thanas showed a sustained upward movement right up to 1921.

Deindustrialisation, epidemics, developmental works such as canals, roads and railways, and consequent stabilisation of food supply, were the major demographic determinants. The impact of developmental works

⁸⁵ The change in migratory trends nevertheless had a crucial bearing on the sex-ratio in these districts.

Table 7

Actual and Natural Population

<i>Census</i>	1881	1891	1901	1911	1921
Gaya					
Actual Population	100	99	96	101	101
Natural Population	100	101	98	103	103
Shahabad					
Actual Population	100	107	100	95	93
Natural Population	100	103	102	99	98

Source: *Census of India, 1881-1931*.

was, however, two-edged. While they helped in the abatement of subsistence crises on the one hand, they also brought demographic disaster in their wake, for they facilitated the spread of some highly contagious diseases, such as the Shahabad fever and Bubonic plague. The South, unaffected by developmental works, continued to be in the grip of repeated subsistence crises, which tended to wipe out any long-term cumulative increases in population, thereby maintaining its old demographic equilibrium.

The traditional eastward migration was intensified with the construction of all weather roads and the railways, although these also encouraged immigration initially. In the long run however, it is the increasing net outward flow, including overseas migration, which stands out. It is impossible to separate annual seasonal migratory movements from permanent migration, although the bulk of migration was in the former category. Migratory movements, while significant in number, could not basically alter long-term demographic trends, which were determined mainly by natural propagation or the difference between birth and death rates.

With the abundant monsoon of 1919 the districts began to recover, and this recovery was to mark a demographic watershed in the history of these districts as perhaps elsewhere in the country.⁵⁶ Although traditional killers such as cholera, smallpox and fevers remained endemic, they ceased to serve as equilibrating devices in the years to come. All the subdivisions showed a remarkable increase at the time of the 1931 Census and thereafter. The cyclical pattern was broken. The determinants of this demographic transition are, however, beyond the scope of this study.

⁵⁶ *Census of India, 1951*, Vol. 1, India, Part I-A, Report, by R.A. Gopataswami, New Delhi, 1953, Chap. IV.