Deccan Queen
A Spatial Analysis of Poona in the Nineteenth and Early Twentieth Centuries

Wayne Mullen

Volume 1
Part 1: Contexts
‘The insight this had given him into the possibly important part played in Anglo-Indian history by an incipient, intermittent or chronic diarrhoea in the bowels of the raj was one of the few definite academic advantages he felt he had gained by coming to India.’

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Note on Terminology

In this dissertation the term ‘Anglo-Indian’ has been used to refer to members of British metropolitan society resident (on a temporary basis) in India. *Domiciled European* is the term used to refer to ethnic Britons who settled on a permanent basis in India. *Anglo-Indian* (sans inverted commas) has been used to refer to members of what was once termed the ‘Eurasian’ community.

In the post-colonial period many of the place-names used by the British have been ‘indianised’ - Bombay to Mumbai and Madras to Chennai for example. The city the British knew as Poona has since been renamed ‘Pune’. In order to remain consistent the city is referred to as ‘Poona’ during the era of British rule (to 1947). After Independence the city is referred to as ‘Pune’ (despite the fact that the change of spelling did not occur in 1947 itself). Similarly the nearby British era settlement of Kirkee is termed Khadki post-1947 and Indo-British Bombay is termed Mumbai from the same year.
Introduction

The central concern of this dissertation is segregation; the form of segregation the British imposed upon the urban environment of its Indian possessions, and in particular how this system functioned in the British culture areas of the city of Poona. The vast documentary record of the British Indian Empire reveals much about the manner in which the British social and urban system operated. That the British sought to impose a social segregation reflected in the urban environment is not questioned, after all even the names of the enclaves that composed mofussil Indo-British settlements, the ‘military cantonment’, the ‘civil lines’ and the ‘native city’ indicate the division of the urban environment on both racial and functional lines.

Although the urban and architectural remnants of the Indian Empire obviously demarcate between that which was ostensibly ‘Indian’ and that which was perceived as ‘British’, the manner in which the system of social segregation was imposed upon both populations and the rationale behind racial and functional segregation is no longer explicit long after the dissolution of the Imperial system. Unlike South Africa, where racial segregation was mediated and imposed by legislation, in the subcontinent the division of the population into racial and functional communities was achieved by less formal means.

The major aim of this thesis is therefore to explore the physical organisation and demography of Poona (representing in this case an exemplar of a mofussil Indo-British settlement) utilising primary sources that have hitherto not been rigorously analysed. A traditional exploration of issues concerning segregation would likely depend upon the Census of India, the most logical and easily accessible comprehensive source of demographic data concerning settlements in India. The published statistics available in the Census cannot, however, be utilised to investigate spatial structure of Poona, (or any city for that matter) in a fine-grained way; at the scale of the street or block, since census tables compare settlements to other settlements, districts to districts or province to province and do not normally break down individual cities into their constituent suburbs or streets. Despite this drawback the Census is useful in exploring the demography of the total population of a

\[1\] An inland or plain area.
city-site, and also for comparing the demography of one settlement to another.

In order to provide a fine ‘resolution’ the analysis in this thesis is based upon uniting selected cartographic resources describing Poona with the demographic resources represented by selected, extant address directories for three target years (1876-9, 1905 and 1924) via a Geographical Information System (GIS).

This methodology originally derives from the ‘neighbourhood archaeology’ approach developed within the discipline of Historical Archaeology, and the specific design of the databases and GIS model utilised in this dissertation has already been applied in an (earlier) project undertaken by this author to the Rocks locality in the city of Sydney\(^2\). The analysis of the city operates at the macro urban scale (in contrast with the more usual down-scale archaeological intervention represented by the ‘houselot’ excavation), utilising the historical maps incorporated into the GIS models as a defacto ‘archaeological’ record that describes the up-scale physical organisation of the case-study city to an adequate degree of accuracy. The process of model creation and the theoretical adaptation of the methodology from its original form have been extensively discussed in Chapter 4.

This suite of three models has been designed to detect correspondence (or non-correspondence) between the historically defined ‘tripartite’ plan model (the outline of which discussed in Chapter 1) that has traditionally been used to describe the spatial organisation of Indo-British settlements in the mofussil and the actual demographic and spatial nature of a specific settlement - in this instance the case-study site of Poona. The segregative qualities of the tripartite plan (that divided cities into ‘native city’, civil lines and military cantonment) could not have been applied in an absolute or inflexible fashion without destabilising British colonial society. The continued governance of the Indian Empire, the smooth operation of British residential enclaves and even the functioning of the bungalow-compounds of individual elite British households depended upon Indian soldiers, Indian clerks, Indian traders and Indian domestic staff, rendering interaction between racial and (occupationally based) functional groups essential.

There are therefore broad grounds to suggest that although the tripartite-plan template might have been broadly imposed upon Indo-British settlement sites in the mofussil, that

spatial or demographic solutions had to be found that would foster interaction between the groups ostensibly separated by the urban plan, while maintaining the overall pattern and therefore symbolic meaning of segregation. Interesting areas of non-correspondence between the historically defined abstract tripartite plan and the actual socio-spatial organisation of Poona has been revealed by analysis of the GIS models.

Another issue concerning the degree of correspondence or non-correspondence between qualitative and quantitative historical data-sets arises in addition to the aim discussed above. The British authorities engaged in a process of sanitary reform, particularly from the mid-nineteenth century after the ‘Mutiny’ revealed that the poor health and high mortality rates among British soldiers stationed in India resulted in the poor operational effectiveness of European regiments. Due to the environmental theories of disease causation and control prevalent at the time, environmental solutions were sought for perceived environmental problems and public health reaction to this crisis primarily involved architecture and town planning.

Planning and architectural design conventions were developed and legislation enacted that sought to improve the health, prevent disease and reduce high mortality rates of the British population resident in India. It is relatively easy to distil from the relevant legislation, royal commissions and medical reports the manner in which governmental authorities hoped that the built environment would be altered by application of contemporary public health theories. The degree to which public health theories or legislation actually impacted upon the fabric and attendant demography of tripartite plan cities has not, however, been clear.

The central and provincial governments had enormous power to dictate the location and appearance of the British sectors of Indo-British settlements, yet this power was not absolute, given that government did not possess limitless financial resources. The channelling of bureaucratic power into matters of actual planning and design (as compared to more amorphous area of regulation) was strong where the bureaucracy maintained budgetary control over architectural or town planning projects. Government could, consequently, most strongly intervene in the public sphere; the design of public buildings or in the design of military accommodation (barracks) for the British other ranks. The government did not attempt to assume overall construction responsibility for the residential accommodation of the majority of the British population, preferring the more economical measure of allowing Indian
developers to construct rental accommodation for officers and administrators.

The GIS models of Poona have been used to assess, where possible and appropriate (given the nature of the data collected), the influence on the urban environment of the various public health Acts, regulations and planning/design conventions informed by the then dominant miasmatic theory. The analysis demonstrates that although miasmatic theories of disease causation did influence several scales and areas of urban development within the city, this influence was not evenly observable across the British culture area of the settlement. There was consequently noticeable non-correspondence between the intention of contemporary public health theories and appropriate design covenants and the socio-spatial organisation of the city.

Although the three models have been used to generate the results of the spatial and demographic ‘survey’ of the city, they also represent independent research tools that exist to be used by those interested in the research of the urban environment of colonial India, or those examining issues of inter or intra-imperial urban study.

Historiography of the Built Environment of Colonial India

The history of the British presence in India is a subject that has attracted far more academic attention than the history of what the British built in India or the material remains that they left behind in the subcontinent once the Raj was dissolved.

British colonial architecture, whether despised or liked has always occupied an equivocal position in India as an architecture of colonialism and therefore an architecture of the coloniser. Even amongst the British, Indian colonial architecture was never conceived or perceived of as ‘great’, was often dismissed as merely competent, and at worst was denounced as derivative or confused in its identity (a criticism particularly made of the indo-saracenic style). In addition, some of the more humble and utilitarian constructions were hardly considered architecture at all by those who promoted the discipline as an art-form as distinct from the more prosaic act of mere ‘building’. Thankfully as the reality and memory of empire have faded, efforts have been made to protect the significant architectural legacy of the British in India.
Introduction

Literature Review

Perhaps the first real attempt at a critical ‘analysis’ of British colonial architecture in India aimed at the wider metropolitan public comprised the final chapter in the History of the Modern Styles of Architecture written by James Fergusson in 1873, a book published over two centuries after the first permanent British presence in the subcontinent.3

Until recently no extensive body of literature concerning Indo-British4 architecture or the spatial morphology of Indo-British city-sites existed. Indeed for a long period after Fergusson’s effort very little was written pertaining to Indo-British architecture or town planning excepting those professional articles that appeared in British and Indian journals such as The Bombay Builder, The Transactions of the Royal Institute of British Architects or internal papers originating from the Indian PWD or similar bureaucracies.

This paucity existed for a number of reasons. Although the British were present in India from the seventeenth until the mid-twentieth century, the British originally had little faith in the tenure of their territorial rule in the subcontinent. Consequently, many of the structures and settlements that they built were of a somewhat transient nature and were termed cutcha (neither constructed out of the most durable of materials or with posterity in mind). The apparent transience of the built environment was mirrored by the equal transience of the local British population. India was never a settler colony in the manner of British territories with temperate climates, and British residents usually only remained in India for limited tours of duty. In addition much colonial architecture in India was utilitarian in nature, and its design was mostly in the hands of British amateurs, Indian builders, or most commonly military engineers. Professional architects were rare, and those who did establish practices in India were mostly confined to the Presidency Towns of Bombay, Calcutta and Madras.

If the history colonial Indian architecture has only made a belated impact upon academic discourse, the history and archaeology of colonial town planning in India has excited even less interest until the very recent past. With the decay of the European colonial empires it was perhaps inevitable that academic interest would eventually focus upon the physical remnants of European imperialism in the subcontinent. Thankfully the ongoing development of colonial and post-colonial studies has eventuated in a relative explosion of

4 The terms ‘Indo-British’ and ‘Anglo-Indian’ have been used interchangeably in this text.
Breaking the long silence after Fergusson’s chapter on Indian colonial architecture Sten Nilsson helped push the study of European architecture and settlements in India into the mainstream of academia with his, *European Architecture in India 1750-1850*. This work covers the development of colonial architectural styles and includes an interesting case study of one of the (often forgotten) Danish settlements in India, in this case ‘Tranquebar’. In the period between Fergusson and Nilsson the silence was not absolute with regard to ‘Anglo-Indian’ architecture and town planning. It was only academia that had not as yet brought the subject to prominence and there had always existed a degree of interest concerning British India that emanated from the those persons in Britain who had had careers there (many of whom published their memoirs) or their families. It was from such interested amateur historians that books such as *Ooty Preserved*, a monograph describing a British hill station in the Nilgiris, were published.

**Historical Sources**

The Census of India and the regional censuses form a solid statistical base from which to draw data for a study concerning urbanisation in India. *The Imperial Census of India* has been utilised for those Census deciles that come closest to the period under examination. The target years for this thesis, (1876-)1879, 1905 and 1924 sit relatively close to the census years 1871, 1901 and 1921 respectively. Reference to census data has always been made with care, bearing in mind that the Census, although thorough, and purportedly an exercise in the objective enumeration of the population incorporates its own biases and ambiguities. Papers such as *Age and Empire in the Indian Census* admirably describe the systems utilised by actuaries to ‘smooth’ unruly data derived from questions posed to a semi-literate populace.

In addition to the comprehensive and indispensable *Census of India*, the major

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7 Here praise should be given to the British Library and Albertine Gaur for the excellent collection of papers published as *South Asian Studies*, that discuss categories of South Asian materials available in the British Library in particular and in the UK in general. (Gaur, Albertine, *South Asian Studies*, British Library Occasional Papers 7, British Library, London, 1986).
primary sources underpinning this analysis are demographic and cartographic in nature. Two maps form the basis of the GIS models of Poona as developed; *D11:34 Poona 1 1879 (British Library)*, and *D11: 34 Poona 2 1905-6*, both of which are held within the collections of the India Office Library and Records in London. The demographic primary data incorporated into the GIS models upon is derived from address directories; the *Guide to Poona and Kirkee for the Season 1876*, *Thacker’s Indian Directory 1905, Embracing the Whole of British India and Native States*…\(^9\) and *The Times of India Calendar and Directory for 1924*.\(^{11}\)

A number of other historical sources proved indispensable. *Parliamentary Paper XIX, 1863, (Report of Commissioners inquiring into the Sanitary State of the Army in India)* with its brief to describe in detail the conditions of military life in the British Indian Empire is probably the most comprehensive and important of these.\(^{12}\) The Report comprises a treasure-trove of architectural and planning data and incorporates abstracts describing physical conditions in every operational military station in India at that time in addition to publishing plans of a range of structures built therein.

The *Gazetteers of India* (provincial and Imperial) are another important source of useful data, providing historical information describing virtually every aspect of British possessions in India, including the populace, economy, climate, aspects of ecology and history. In particular the, *Bombay Presidency Gazetteer*\(^{13}\) from 1885, and the 1886 and 1909 editions of the *Imperial Gazetteer of India*\(^{14}\) have been utilised for data concerning the history of the population of the Poona City and District.

The Indian Medical Department published many reports containing statistics quantifying the health of the British and military populations, as well as the physical

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\(^{10}\) Thacker, Spink and Co., *Thacker’s Indian Directory 1905, Embracing the Whole of British India and Native States*…, Thacker, Spink and Co., Calcutta, 1905.

\(^{11}\) The Times of India, *The Times of India Calendar and Directory for 1924*, The Times of India, Bombay, 1924.


conditions within specific military cantonments. The most useful of the many IMD publications that concentrate upon the city of Poona are Leith’s *Report on the Sanitary Condition of the Bombay Army*[^15], and the *Report on the Sanitary State of the City of Poona*.[^16] Both documents describe in detail conditions in the lines in Poona and the regimental health of both British Other Ranks and the Officer class resident in the military cantonment.

A valuable documentary survival from the early colonial period prior to the conquest of Poona by British forces are the extant records from the British Residency in Poona. A portion of the correspondence from the Residency has been published as part of *English Records of Maratha History*.[^17] Correspondence and dispatches originating higher-up in the administrative hierarchy concerning the British position in Poona have also survived and are accessible and these include despatches to (and from) the Governor General.[^18]

Documents of state, including treaties and legislation were of particular interest. Aitchison’s, *A Collection of Treaties, Engagements and Sanads Relating to India and Neighbouring Countries*[^19] represents a useful compilation of the treaties ratified between the British and indigenous Indian powers, including those Anglo-Maratha treaties that illuminate the changing relationship between the Maratha and British polities. On the legislative front several *Acts* explicitly sought to regulate public health and consequently the Indo-British built environment (*see Chapter 3*) in particular the *Cantonment and Contagious Diseases Acts*[^20] which established a regulatory public health framework for military cantonments. Legislation derived from ‘central’ Indian sources can be located in the *All India Reports*.

*Hansard* transcripts from the Houses of Commons and Lords at the Imperial Parliament at Westminster represent an important source that can be used to examine

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metropolitan attitudes concerning the British Imperial expansion in India. Although British Parliamentary interest in the Empire has been described as lacklustre, there was often opposition in the Imperial Parliament to expansions of British interests and possessions overseas. Debates were recorded in *Hansard* that are of particular interest, especially those concerning conflicts such as the Anglo-Maratha Wars, and the ratification of treaties undertaken by the British in India.

Less formal historical sources also survive, including the recorded oral histories of certain (ex-)members of ‘Anglo-Indian’ community. The Imperial War Museum in London holds a collection of such recordings, and a similar sequence of recordings formed the basis of Allen’s excellent populist book *Plain Tales From the Raj*.\(^{21}\) Oral histories (which of course only describe the terminal portion of British rule in the subcontinent) remain valuable since they not only record the recollections of the elite, but cover (in the cases listed above at least) an entire cross section of ‘Anglo-Indian’ society. Furthermore, some researchers pose questions to interviewees regarding personal or contentious matters including homosexuality and prostitution, matters that remain difficult to research utilising more formal and traditional historical documents.

### Contextual Sources

#### Architecture

Although there is no scope to describe in a few paragraphs all of the recently published works concerning the colonial architecture of India, a short summary has been attempted. One of the works of great utility with respect to this study is Peter Scriver’s doctoral thesis, *Rationalisation, Standardisation and Control in Design*\(^{22}\), in which he attempts to trace the drive toward architectural standardisation developed by the British bureaucracy in India. As part of his effort the researcher accessed the records of the Indian Public Works Department, and has published many maps and plans that would not otherwise be readily accessible.

Another indispensable text is Samita Gupta’s *Architecture and the Raj*\(^{23}\) which

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particularly concerns itself with the regional styles of architecture developed in Western India and the Deccan, the region that encompasses the case-study site for this dissertation. Although Maratha architectural styles in Poona form a minor (descriptive) part of this thesis, the subject has been examined, and here reference to Mate’s *Maratha Architecture*\(^24\) should be made.

Unlike many British publications of the era, the *Journal of the Royal Institute of British Architects* and in addition the same organisation’s *Transactions* paid due attention to the works of Indian colleagues, publishing papers such as ‘Architecture in India’\(^25\) and ‘The Modern Barrack, Its Plan and Construction’.\(^26\) Another British publication, *The Builder* also sought to cover architectural issues of the day that were of concern in British India including ‘the question’ of Barracks and Health in India. The equivalent publication produced within ‘Anglo-Indian’ professional architectural circles, *The Bombay Builder* proved highly useful. The journal’s base in Bombay and its Indian focus meant that British architectural additions to Poona were well covered.

*Town Planning/ Colonial Cities /Urbanisation*

The category of ‘colonial city’ is one that has only recently been perceived as of theoretical interest; constructed and analysed by academia despite the fact that urban agglomerations influenced or founded as part of the European imperial expansion have existed for over half a millennium. Even as late as 1980 an academic could quite baldly state;

‘The history of urbanisation in India: Has such a field even developed yet? Experts have asserted it has not-or, at least, nearly not.’\(^27\)

Starting from Redfield and Singer’s attempt to define the colonial city in the 50s\(^28\) there has since been a great deal of academic debate concerning the role, function and ordering of the colonial urban environment. Pertinent to this study, Anthony King in *Urbanism, Colonialism*

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\(^24\) Mate, M.S., *Maratha Architecture: 1650-1850AD*, University of Poona, Poona, 1959.


and the World Economy makes an attempt to clarify the concept of colonial city and synthesise and summarise the many definitions and characteristics of this broad category of city.

Mudbiri’s *The Town and the Raj* is one of the few monographs that takes as its explicit subject urbanisation in Colonial India. *The City in Indian History* is another that seeks to address the subject of Indian urbanisation during the colonial period, although its true brief is wider, its contributors dealing with earlier and purely indigenous forms of urbanisation. Grewal’s *Urban Morphology Under Colonial Rule* is a paper that provides a good summary of the ‘tripartite’ town plan propagated by the British in India.

As a rule much of the research concerning colonial urbanisation in India concentrates upon the ‘Presidency Towns’; the cities of Bombay, Madras and Calcutta, which, due to their dominance in terms of size and economic importance, tend to eclipse or obscure the role and nature of smaller settlements. *The Indian Metropolis* for example focuses upon these three pre-eminent mercantile cities along with New Delhi, later the capital of British India. The available research papers demonstrate a similar focus upon the major port cities; *Discovering the Mercantile City in South Asia* uses Calcutta as an example, whilst *Colonial Urbanism* takes Madras as its exemplar.

Chattopadhyay’s paper *Blurring Boundaries* presents an analysis of residence and street plans in Calcutta that is of particular interest. She asserts that racial divisions within Calcutta between the “White” and “Black” Towns were fluid in character and that the divisions themselves “…rest upon scant evidence, [and] on a static reading of urban..."
plans (a reluctance to move between the city scale and the architectural scale)...”37 Her analysis suggests that the city and residential scale boundaries imposed by the British that were designed to separate races were significantly porous, conclusions potentially applicable to settlements in the mofussil as well as in the Presidency Towns.

The morphology of those mofussil sites where British ‘suburban’ enclaves were appended to pre-existing Indian settlements was very different to the urban environment in the older Presidency capitals, where British settlement was concentrated in a (once) fortified core that was surrounded by an expansive (and expanding) indigenous hinterland. One of course cannot discuss the study of the Indo-British urban environment and particularly study of mofussil sites without paying further tribute to the research of Anthony King. Above all it is King’s work that provided a coherent theoretical basis from which investigation of the Indo-British urban environment could proceed away from a solely descriptive historiography through his attempts to explain spatial patterning within Indo-British cities. It was King, for example, who extensively analysed the British attempt to reduce morbidity and mortality rates by modifying the man-environment relationship in their stations. His efforts have in particular stressed the connection of abstract public health theories to settlement and architectural forms in British India.38

In Colonial Urban Development: Culture Social Power and Environment,39 King includes a detailed case study of the development of Delhi as capital of British India. Since this particular case-study provided much of the inspiration for this dissertation it is worthwhile making a slight digression and quoting from the relevant points in his text;

‘Because of the inter-locking of racial, social and occupation indices of stratification, a clear pattern of social and racial segregation was established throughout the city [Delhi]. Beginning at Government House, this followed an anti-clockwise direction running around the centre and finishing on the boundaries of Paharganj. It began as white (or pink) at Government House, continued - with the addition of some acculturated, senior Indians - as white round the south side of

39 King, Anthony D., Colonial Urban Development: Culture Social Power and Environment, Routledge (Continued Overleaf)
Kingsway, became increasingly brown on the north side of the city until, with the addition of European and Anglo-Indian clerks in the north-west, it shaded fully into brown in the Indian clerks’ quarters, and into darker shades with the peons’ and sweepers section to their north. Symbolically, the Anglo-Indians...were located outside the walls of the indigenous city and on the perimeter of the imperial capital.40

The above quote primarily addresses the matter of race, however, more is stated concerning occupation and status below.

‘Taking the numbered ranks [of occupation] indicated in the “Warrant of Precedence” and plotting these against residential allocation, some insight can be gained into the relative social status of each road in the new imperial city...In this way the roads can be ranked, with reasonable accuracy, throughout most of the capital area...

In many cases persons of equivalent rank, working in the same department, lived in the same block of accommodation. Status consciousness and the symbols by which it was known were as visible as in the traditional caste-community of the indigenous village.41

Delhi can be interpreted as a distillation of the long-established British settlement system in India of cantonment, civil lines and ‘native city’. The new Imperial capital had to serve, and was populated administrators used to this system which categorised, stratified and segregated residents in terms of race and occupation.

In (New) Delhi - a settlement planned by government fiat and quickly constructed - ‘rules’ reifying patterns of status and race were rigidly hard-wired into the built-environment and applied to residential allocation. In the older and technically unplanned stations of mofussil India, were similarly stark patterns of status and race equally visible? One would expect the enclaves of ‘tripartite’ settlements to be strongly segregated and stratified but does this presumption represent a demographic and physical reality or not?


41 King, Anthony D., Colonial Urban Development: Culture Social Power and Environment, Routledge (Continued Overleaf)
These were the questions that originally formed the basis for this study of the city of Poona.

King has analysed the Indo-British built environment at scales smaller than that of the holistic settlement. *The Bungalow* for example takes this example of Indo-British residential architectural innovation and traces its development, its dissemination throughout the world, and its consequent impact as a global residential archetype. Another strand of his research investigates the westernisation of indigenous Indian architectural domestic forms, a process that led to the increasing specialisation of residential spaces.\(^{43}\)

**Military History**

There has never been a shortage of military histories written about the British Empire in India. The Empire was itself a military construct, and the majority of British residents in India were consequently members of the armed forces, many of whom wrote memoirs of their careers in the subcontinent. The shelves of many (older) libraries are crowded with tales of adventure (many best forgotten) written by senior officers reminiscing about their subaltern years (Churchill was one such author, describing his life as an officer in India, including time spent in Poona in his *Early Life*\(^{44}\)). Much of the military history that is has been written could be categorised as regimental history, personal remembrance, or even as battles or campaigns history. Histories of this kind can of course be of use, and campaign and battle histories have been referred to in order to garner an understanding of the various Anglo-Maratha Wars and of the battles, (such as the Battle of Kirkee) that took place as part of those campaigns. *A Local History of Poona and its Battlefields*\(^{45}\), represents perhaps the best mechanical and graphic descriptions of the battles that took place in and around the case-study city.

Several thorough histories of the Indian Army, the Company Army and the British Army in India have been written including *The Military System of India*\(^{46}\), *The Indian Army*:

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The Garrison of British Imperial India and Mollo’s The Indian Army. These three monographs are primarily administrative or institutional histories. Social histories of the Indian and British Armies that take a less formal approach and concentrate on the lifestyle of British soldiers and officers and upon the role of the army as a social organisation include For Queen and Country, although descriptions or analyses of the lifeways of the (unglamorous) British other rank in India remain a rarity.

Maratha History and the History of Poona

Ironically, probably the best English language history of the Maratha peoples remains Grant Duff’s A History of the Mahrattas written in 1826. This statement intends no insult to contemporary students of Maratha history, merely that as author Grant Duff had access to documents no longer extant that chronicle British-Maratha relations, including those lost in the destruction of the Poona Residency. Furthermore Duff was present at the Residency with Mountstuart Elphinstone during the Third Anglo-Maratha War and the author of this particular chronicle was therefore an eyewitness to at least some of the events described therein. His History bears the impact of this experience. Elphinstone himself, as Resident and later Commissioner in Poona, was a major political figure of the period and has been the subject of a number of studies including Choksey’s Mountstuart Elphinstone, and Varma’s Mountstuart Elphinstone in Maharashtra. Another monograph, The Military System of the Marathas includes an interesting chapter concerning the role of (non-official and official) British officers and European trained soldiers as part of indigenous Maratha armies.

Very few works deal explicitly with the urban history of the city of Poona alone. Meera Kosambi has written an (unpublished) comparative study of the cities of Bombay and

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Poona (entitled *Bombay and Poona: A Socio-Ecological Study of Two Indian Cities, 1650-1900*)\(^{54}\). Although her work represents a thorough analysis of the colonial city of Poona, her data is primarily derived from the *Census of India*, in comparison with the methodology utilised in this dissertation which depends upon demographic data primarily derived from address directories. Another, earlier study of Poona is Gadgil’s *Poona, A Socioeconomic Survey*.\(^{55}\) Published in two parts this work comprises a thorough analysis of the historical demography of the historical core of the city of Poona, and it is to this work that reference was made in order to confirm the Peth boundaries of the late nineteenth and early twentieth century city. Gokhale’s, *Poona in the Eighteenth Century*\(^{56}\) is another indispensable aid to the study of Poona, it focusing particularly upon historical Poona prior to the British conquest of the city.

Although there is perhaps a shortage of academic history that takes Poona as its subject, a number of publications including travel guides and amateur histories fill the vacuum. The *History of Poona Cantonment*\(^{57}\) published by Molendina (with the assistance and at the suggestion of members of the ‘Poona and Kirkee Cantonments Citizens’ Association’) is the best of these ‘amateur’ histories. *A Handbook of Poona*\(^{58}\), an early travel guide designed for visitors to the city, *Poona in Bygone Days*\(^{59}\), the 1930s souvenir conference travel guide *Bombay-Poona*\(^{60}\), and even parts of the hagiographic *The Life of Sir Jamsetjee Jeejeebhoy*\(^{61}\) (useful for descriptions of the public infrastructure that the baronet sponsored or donated) all prove useful as ‘municipal’ histories of the city that deal with the past at the scale of the street and of the individual building. All of these publications provide small details concerning local myths, localities and landmarks, data not available from traditional academic sources.

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\(^{60}\) Indian Science Congress, *Bombay-Poona- A Souvenir of the 21\textsuperscript{st} Meeting of the Indian Science Congress....*, The Aryabhushan Press, Poona, 1934.

Case Studies

Many case studies of Indo-British settlements have been written, although most of these are histories of the Presidency Towns of Bombay Calcutta and Madras such as Tindall’s *City of Gold*\(^\text{62}\) which concentrates upon Bombay. Outside of this triumvirate several important case studies or city histories have been published. One of the most interesting of these is Oldenburg’s *The Making of Colonial Lucknow* a case-study that traces the development of this major Indian city with firm reference to British attempts to impose a sanitary regime. A more recent contribution has been a city history of colonial Karachi. *The Dual City*\(^\text{63}\) traces the history of Karachi during the colonial period, but it remains quite a traditional city history being primarily descriptive in nature and running no particular theoretical line, although it does publish a number of very interesting and detailed historical maps.

Whilst not case studies in the sense of the other works listed above, Dane Kennedy’s *The Magic Mountains*\(^\text{64}\) and Vikram Bhatt’s *Resorts of the Raj*\(^\text{65}\) both deal with the history of British Hill Stations in India, another of the ‘categories’ of settlement (the military cantonment is one other) developed in India by the British. The Hill Station is a subject that deserves further exploration by academicians. The British did not merely build Hill Stations; residential retreats built high in the mountains in India alone. British Hill Stations appeared in African colonies and even in China, although little research has been carried out upon similarities between widely dispersed colonial Hill Stations and their Indian progenitors.

Very few publications deal with other categories of settlement, although Jacobs’ *Cantonments in India*\(^\text{66}\) focuses upon the military cantonment, even though the author takes a legalistic rather than a social or architectural approach to the analysis of their growth.

Medical Geography

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Several additional fields of research have direct impact upon the issues addressed in this thesis. One such nexus concerns the medical geography of colonial India, a field that has attracted increasing interest. Harrison is an important researcher in this field and his, *Public Health and British India: Anglo Indian Preventative Medicine 1859-1914*\(^{67}\), is essential to understand the impact of public health in the later imperial period upon ‘Anglo Indian’ society and the urban environments that the British created in the subcontinent. A later publication by the same author *Climates and Constitutions*\(^{68}\) covers the same topic for the earlier colonial period; from the seventeenth century to the mid-nineteenth century. Both of these works are important for an understanding of the links that nineteenth century medicine made between environment, race and disease.

In her research papers *Imperial Health in British India*\(^{69}\) and *Public Health and Medical Research in India*\(^{70}\) Ramasubban presents the view that British (Western) medicine concentrated only on the British community housed in the Presidency Towns, cantonments, civil lines and hill stations and had little impact on the wider Indian populace. The size of the army consequently gave it a central position with respect to health policy in the Indian Empire. Arnold, in *Colonizing the Body*,\(^{71}\) takes a more cautious position. While he concedes that prior to 1914 Western medicine impacted most on the European population and the army, he also warns that “…this enclavism can easily be overstated.”\(^{72}\) Like Chattopadhyay, Arnold sees the boundaries between the Indian and British communities as permeable and flexible, that the “colonial process” could not be divided neatly and depended upon interaction between the rulers and the ruled.

Kumar is also concerned with the subject of the medical establishment in India during the colonial period. In *Medicine and the Raj*\(^{73}\) he does not concentrate upon the

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Introduction

nexus of climate/environment, race and disease as does Harrison, examining instead the
development of the medical bureaucracy, the education of medical specialists and the
treatments developed for different afflictions.

Ballhatchet and Hyams are two authors who have produced innovative and sometimes
controversial research pertaining to the study of British stations in India. Both move beyond a
narrow and particularist history of architecture and planning in India, and are also concerned
with medical geography, although that interest in not expressed in the more literal approach of
Harrison. Ballhatchet, in Race, Sex and Class under the Raj\(^74\), presents an exploration of
British sexuality in India, with reference of course to the Cantonments and Contagious
Diseases Acts and importantly to prostitution and the strange institution of the lock hospital.
Hyam’s approach in Empire and Sexuality: The British Experience\(^75\), is similar although
the treatment in this case covers the British Empire as an entity rather focusing entirely
upon British possessions in India. It should not be forgotten that the Indian experience of
the local Cantonment and Contagious Diseases Acts was prefigured and mirrored in the
metropole where similar Contagious Diseases Acts were passed in the 1860s. Papers such
as A Private Contagious Diseases Act\(^76\) deal with the British application of laws that
sought to regulate public health and prostitution.

Social Life

Metropolitan and provincial newspapers from both the nineteenth and early twentieth
century form a strong basis for the exploration of social attitudes to political events, as well as
insight into the colonial Indian social life. Important publications from the London such as
The Times or even the Illustrated London News would certainly publish articles and
commentaries upon major political Indian events in particular durbars or wars. The major
colonial papers such as The Times of India provide a more consistent window into the general
nature of British (colonial) social life and the important political events of the day. The
newspapers of the Bombay Presidency and the minor provincial papers provide the most

\(^74\) Ballhatchet, Kenneth, Race, Sex and Class under the Raj, Weidenfeld and Nicolson, London, 1980.
\(^75\) Hyam, Ronald, Empire and Sexuality: The British Experience, Manchester University Press, Manchester,
1990.
interesting insights into Poona itself, not solely because of journalistic content, but also because of print-advertising which represents an historical resource in its own right. The main newspapers that covered Poona affairs in detail included the *Maharatta* and particularly The *Poona Observer*.

Satirical publications, particularly Atkinson’s *Curry and Rice*, provide another view of British society in India. Such satires were usually written by ‘insiders’ who possessed intimate knowledge of the ‘Anglo-Indian’ way of life and could therefore self-criticise the social system of which they were once a part. *Curry and Rice* criticises in a humorous fashion virtually every facet of the British lifestyle in India, and represents but one example of the genre of ‘Anglo-Indian’ satirical literature (the ‘Nabobs’ were often the early subjects of such ridicule).  

The memoirs written by ‘Old India Hands’; ex-Governors and officials, memsahibs, soldiers, tourists and even those persons with memories of an ‘Indian’ childhood come into their own as records of the British social milieu in India as it was experienced by individuals. The number of such autobiographical works written is incalculable, yet no matter how evocative or execrable such works are, all reveal something of the ‘Anglo-Indian’ way of life. One hard task has been to review available unindexed memoirs for those that discuss Poona in particular. The memoirs and ‘travelogues’ that have proved most useful include *Camp and Cantonment*; a record of the recollections of Mrs Leopold Paget concerning her stay in the Military Cantonment of Poona. Similarly, the renowned Bishop Reginald Heber wrote extensive reports concerning his travels and the portion of his diary that deals with his visit to Poona has been published in *Bishop Heber in Northern India*.

The role played by women in British India has not been ignored by researchers. *Women of the Regiment* is a monograph of some importance, for, although it does not address India specifically, it does deal with an area often ignored; the role of women and marriage in the British Army during the Victorian period. Many other works deal more specifically with the role women played in ‘Anglo-Indian’ society including *The Dust in*
Chapter Structure

Part 1 of this thesis examines the town-planning, architectural and the legislative and medical contexts within which British military and civil stations in India operated. This section primarily represents a discussion of the issues pertinent to questions raised in the subsequent case-study of the city of Poona presented in Part 2. Part 1 in addition serves a more general role. The GIS system that models the ‘British culture area’ and part of the old city of Poona (the Civil Lines, the Military Cantonment the Sadr Bazar and part of the ‘Native City’) represents a stand-alone research tool that exists to be used - not only to address those questions posed in this dissertation, but also by other researchers analysing the urban environment of colonial India, or more generally by those interested in issues concerning inter or intra-imperial urban comparisons. A major function of Part 1 is consequently to provide a contextual base for those (disregarding the specifics of the case study presented in this volume) who wish to use the GIS model of Poona for their own purpose and who may not therefore have intensive knowledge of the Indian colonial urban environment. Chapter 1 describes the spatial morphology of Indo-British settlements in the mofussil and Chapter 2 the architecture of the Raj with specific reference to the development of the military barrack and to that of the residential form of the bungalow. Chapter 3 discusses theories of public health and the impact of such theories upon legislated public health interventions, settlement morphology and architectural design.

As alluded to above, Part 2 comprises a case-study; an analysis of the city of Poona in the 19th and early 20th centuries, that concentrates particularly upon demography and spatial organisation of the ‘British culture area’ of the station. The first chapter of this section, Chapter 4, describes the theory and methodology of the case study with particular reference to the design of the GIS models that form the basis of the analysis. This also provides a review of archaeological literature not addressed in this Introduction. The succeeding two

83 Jayawardena, Kumari, The White Woman’s Other Burden: Western Women and South Asia During British (Continued Overleaf)
chapters (Chapter 5 and Chapter 6) comprise a specific site history of Poona; the former a
history of the city prior to the British conquest, the latter dealing with the post-conquest
period to Indian Independence in 1947.

Chapter 7 provides a short history of the structure of British society and the ‘Anglo-
Indian’ way of life. It could initially appear that this discussion would be more appropriately
placed in Part 1 (the section designed to provide general context for the analytical models
analysed in Part 2) however, this social history has been especially tailored utilising primary
historical documents that specifically describe British life in the city of Poona itself, and
therefore the chapter properly takes its place as part of the site specific ‘case-study’.

The final two chapters (Chapter 8 and Chapter 9) present the results of the analysis of
the data compiled for this dissertation. Chapter 8 represents an analysis of the compiled
address directory data considered separately from the cartographic-spatial data encoded in the
GIS models and compared (where appropriate) with Census material. The last chapter
represents the analysis of the three target-year GIS models (for the years 1876-9, 1905 and
1924) of the city of Poona along with the conclusions that can be drawn from both analyses.

The first two appendices to Volume 1 assist in the description and explication of the
rationale behind the database utilised to store data drawn from address directories. Appendix 1
provides definitions of the variables utilised in the database. Appendix 2 concentrates
specifically upon the variable of ‘socioeconomic status’ and the scaling system utilised to
describe the relative status of household heads resident in the city. Appendix 3 represents a
glossary of useful terms.

Volume 2 (Appendix 4) is the last part of this thesis and takes the form of a catalogue
in which are listed and described most of the major architectural landmarks and British era
buildings in the Military Cantonment and the Civil Lines of Poona. Several structures on the
outskirts of the Poona conurbation and in the ‘Native City’ have also been described. Volume
2 is designed as an aid for the reader. Where any major British-era structure in Poona is
mentioned in the text of Volume 1, an in-text reference is given to that structure’s catalogue
entry, to which the reader may refer for further information and images.

Contexts

Morphological
Architectural
Legislative
Medical
Chapter 1

Indo-British Town Planning

1.1 Categories of Settlement

The urban category of ‘colonial city’ has been attracting theoretical interest since the Second World War and its aftermath precipitated the rapid decolonisation of Europe’s overseas possessions. Early theories concerning colonial urbanisation dealt with the impact of the ‘West’ upon the colonised culture and explored the manner in which the colonial or hybrid city functioned in the expansion of mercantile or monopoly capitalism, facilitating the extraction of resources from the imperial hinterland and focusing this surplus into the metropolitan centre.\(^1\) Although a range of definitions of the colonial city have been constructed, a simple description is that a ‘colonial’ city was one founded at a distance from the metropolitan culture and that maintained an extended rule through a over a distinct and subordinate population.\(^2\) & \(^3\)

Several varieties of urban settlement were developed by the British in India, and can therefore be described as ‘colonial’ in nature. However the first urban impact of the English in India predated any territorial acquisition. After the founding in 1600 of their East India Company, the English voyaged to the subcontinent in order to trade, residing and engaging in commercial activities within indigenous cities under the auspices of the Company and with the permission of the local Indian ruler. In a similar manner to the other European powers trading in India, the British constructed ‘factories’ comprising small, walled compounds within an indigenous town. These acted as a centre of mercantile operations for the area and incorporated residential space, offices and ‘godowns’.\(^4\) The first British factory on the western coast of India was founded in 1612 at Surat,\(^5\) a city where the Portuguese, Dutch, and French were also present.\(^6\) (Figure I.1)

\(^4\) Warehouses.
\(^5\) The first factory was a Masulipatam near Madras, and was founded in 1611. Surat remained the Headquarters of the Company in Western India until transference of operations to Bombay.
These factories did not however represent a truly *colonial* urban environment. They were not settlements or extensive enclaves within a settlement and were maintained and fortified only via the consent of the local indigenous authorities. It was not long, however, before the British like their Portuguese precursors sought territory that could be directly administered. At first territory was acquired through the cession of land from indigenous regimes, but in later times the direct conquest of lands was also undertaken. Three major centres of trade during the European colonial period; Bombay7, Calcutta and Madras, were founded on sites where the British had acquired direct administrative power under the purview of the British East India Company. Each city formed the nucleus for further territorial aggrandisement through military conquest.

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7 Bombay was ceded to the British by the Portuguese. The islands formed part of the dowry of Catherine of Braganza when she married Charles II in 1642.
These three Indo-British sites were termed the ‘Presidency’ towns; each being the capital of a colony or ‘Presidency’. The three cities held a special place within the urban hierarchy of British India; they were coastal and dated to the earliest period of British territorial acquisition and influence on the subcontinent; they were founded by Europeans; their expansion was due to British patronage; they were dominated by a British constructed fort or protected ethnic-administrative enclave. Finally, they among the largest urban and commercial centres in British and in independent India.

From these coastal urban bases, and as the Company acquired additional territory and influence in mofussil regions, indigenous settlements had to be assimilated into the nascent British imperial administrative structure in India. The process of expansion required a military and administrative British presence in the Indian interior to control newly acquired territories. The accommodation of necessary British personnel in the embryonic Indian Empire could not simply be achieved via the replication of the urban environments evolved in the Presidency capitals. Bombay, Madras and Calcutta were cities of primarily British foundation and had not been major population centres prior to British development; however, in expanding the hinterlands of the Presidency Towns and in the conquest of new territories the British had to decide with how to accommodate and administer the many major and minor indigenous settlements brought under their power.

Many of the smaller indigenous sites were not interfered with and no major British presence was imposed. Similarly, those cities within the ‘Native States’ were not subject to major British urban intervention.

Away from the coastal conurbations dedicated to trade and naval defence the British created two major categories of settlement. The first and less common category comprised the ‘hill stations’, which were founded as centres of retreat for the European elite during the ‘Hot Weather’.

This study however is concerned with the second category of settlement; those larger cities of the plain, the regional centres, or capitals of subsumed states that warranted a major British civil and administrative presence. This category of colonial urban environment was

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8 Each Presidency was administered by a council headed by a President; the colonial Governor.
9 With Delhi/New Delhi, whose resurgence as a political centre was due to British intervention.
10 An inland or plain area.
11 Semi-independent realms whose rulers had negotiated treaties with, and were protected by the British paramount power.
usually created from and appended to an existing pre-industrial Indian city, and therefore represented what amounted to an enforced Anglicisation of the indigenous urban tradition.¹²

Indo-British city-sites of this type manifested a hybrid urban pattern that integrated aspects of both Indian and British urban morphology. Whilst the entire city-site could be termed hybrid, there was no true integration or assimilation of culturally divergent settlement patterns, and, rather than presenting a coterminous whole, such settlements was segregated and segmented in nature. The urban morphology that eventually stabilised in the early nineteenth century was a unique development, alien to both the metropolitan and indigenous cultures, a purely colonial artefact.

In morphological terms the ‘Anglicised’ town was tripartite in form, being broadly composed of the ‘native city’ which represented the original indigenous settlement; the ‘civil lines’, or residential enclave for the British administrative elite; and the ‘military cantonment’, the area set aside for the garrison as a permanent military camp. This tripartite form was not unique in the European colonial empires, although it was a pattern characteristically absent in the urban morphology of the Metropolitan society, and one that took a distinctive and highly standardised form in Britain’s Indian territories.¹³

The cantonment-civil lines enclaves considered as a totality were called the ‘station’, the European sector or British culture area of the city-site, an area that sought a degree of self-sufficiency, due to the reluctance of the British population to enter into or reside within the ‘native’ dominated areas of the settlement. The station represented the imposition of an alien settlement pattern upon the Indian urban environment, one that was contrived to present to the British a broadly familiar environment in which to live that furnished the cultural indicators of the Metropolitan urban society. The station provided churches, clubs, cemeteries and gardens, all the religious and social institutions required by colonial society, (no matter how different those institutions were to their metropolitan archetypes), as well as military and administrative infrastructure. The difference and distance between ruling and the subordinate indigenous population were clearly marked since in terms of both morphology and architectural design the urban traditions of the station and the ‘native city’ were completely divergent.

¹³ King includes ‘Tripartite division between indigenous, civil and military zone’, as a ‘suggested characteristic’ of a colonial city.
A variety of spatial sub-units were embedded within this broad tripartite structure, usually settlement areas, ‘colonies’ or ‘lines’ developed for the accommodation of particular segments of the populace. Two such sub-units were however notable for existing semi-independently from the tripartite division. Both the civil lines and cantonment were serviced by another entity, the ‘sadr bazar’, a business area external to the ‘native city’, which was also technically independent from both European enclaves, (although time brought such bazars increasingly under the control of the British administration on the grounds of sanitary management). This area grew out of the regimental bazar tradition whereby indigenous traders provided goods and services to the military populace and in addition provided a range of goods for the European inhabitant (that could otherwise be difficult to obtain) often through ‘Europe Shops’ that sold goods imported from Britain. The bazars tended to build up their own growing and diverse communities, usually in excess of the population necessary to service either the cantonment or civil lines. (Figure 1.2: The tripartite plan of Poona).

Another sub-unit usually appeared with the construction of the railway through a settlement. This, the ‘railway colony’, was designed to house the employees of the railway company, who were usually members of the pro-Western, ‘Eurasian’, (designated in the twentieth century as ‘Anglo-Indian’), community. The area developed as another culturally distinct ‘suburb’, distinct from and marginal to both the Indian and European settlement areas. Usually the colony was based upon the model provided by the British in the civil lines, and the colony usually consisted of a number of quarters and bungalows, built within a low density stratified and ordered urban environment that provided the ‘clubs’, institutes and social facilities necessary for community cohesion.

1.2 Description of the Enclaves

The ‘Native City’

The indigenous city that formed the core of the Indo-British city was, to generalise, usually a pre-industrial, unplanned, and often walled settlement\(^\text{14}\) with a high density of population and development. Within the core a mixed land usage, (the combination of both residential and work space), was common,\(^\text{15}\) unlike the neighbouring station where a highly differentiated land usage was evident, derived from the metropolitan culture’s increasingly

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\(^{14}\) Although in the case of Poona the city was unwalled.
Figure 1.2
The Tripartite plan as expressed in the plan of the city of Poona (in addition to the three major enclaves, the Cantonment, the Civil Lines and the ‘Native City’, this map also includes the Sadr Bazar).
Image: Author
industrialised urban tradition. The pattern of mixed land utilisation in the indigenous core, did encompass specialisation within certain locales, for example market functions were settled in a region termed the chowk or qasba in the Muslim urban lexicon, and streets where particular categories of merchant resided and traded were also observable.16

The majority of the city however was divided into mixed use residential areas, ‘mohallas’ or ‘peths’17 that were differentiated and stratified in terms of caste and/or occupational groupings. Residences within the ‘native city’ were usually of the ‘courtyard’ type, multi-storied, attached structures that looked inward to a central void,18 in contrast to the British sectors which were dominated by detached single-storied bungalows that ‘looked’ outwards onto an external compound.

The British expended the majority of their resources upon their exclusive residential precincts whilst ignoring the improvement and development of the older indigenous settlement. An ostensible excuse for this negligence, particularly after the mid-nineteenth century ‘Mutiny’ was that interference with Indian cultural traditions could incite further revolt. The authorities did not ignore the ‘native city’ completely; some standard ‘improvements’ were often attempted, for example the cutting of wide thoroughfares through across the old city to improve access to the dense interior was common,19 as was the construction of market buildings (usually on sanitary grounds), or the provision of rail access (an innovation that could necessitate partial demolition of ancient city defences).

The annexation of a city by the British often had a detrimental influence upon the urban fabric of an indigenous settlement. A population collapse could ensue, perhaps as the result of an uncertain political climate, or because of the demotion of a previously important political centre to regional status. The removal of an indigenous dynasty could lead to the collapse of a local economy as the economic impetus provided by a court was withdrawn and local skills lost. Under colonial administration power and capital accrued to the British regional centres at the expense of the Presidential hinterlands.20

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17 A word broadly analogous to ‘neighbourhood’ or even ‘ward’.
18 This system provided privacy for sequestered members of the household.
19 A development which paid a certain strategic dividend, just as the development of the boulevard system did in Hausmann’s Paris.
20 See Kidwai, A.H., ‘Urban Atrophy in Colonial India: Some Demographic Indicators,’ in Banga, I., (ed.), *The (Continued Overleaf)*
Imperial power enabled the British to resume the land necessary for the construction of their settlements, and administrative perceptions of British land requirements were far in excess of the size of the British population. The construction of British enclaves external to pre-existing indigenous cities delineated that cantonment-civil-lines complexes were in a prime position for expansion. The British dominated enclaves of a city had the potential to expand and encircle the indigenous city\(^\text{21}\), excising arable or otherwise productive lands peripheral to the ‘native city’ and utilising them for low density residential or military functions. Lands on the urban periphery could even be reserved for totally unproductive purposes such as buffer zones isolating the British from Indian populations. The imposition of the cantonment-civil lines enclaves had the consequent effect of restricting the expansion of the indigenous city, confining population growth a finite area unless new settlement areas could in some way ‘leap’ the cantonment ring, (a process that, in fact, rapidly occurred in the post-colonial era).

Perhaps the most insidious effect of the developing colonial urban environment was the decay of the administrative and ceremonial functions of the indigenous city. Whilst religious functions were untouched, the British left no doubt that real power lay with their administration, and government offices, the courts and most of the administrative infrastructure was transferred to the civil lines which functioned as the civic centre of the city, one alien to the populace it was designed to administer. Some residual functions were left to the indigenous city, with outposts of the bureaucracy such as the post office, a garrison or the city magistrate often being based, within the city fort\(^\text{22}\) (to neutralise its ‘tactical utility’)\(^\text{23}\) a symbolic colonisation of the usurped focal centre of the indigenous core.

Certain sectors of the Indian elites engaged in a process of westernisation and sought to emulate their British rulers. The shift in administrative power from the indigenous city to the civil lines and increasing westernisation also led to the relocation of parts of the pro-British indigenous elite from the ‘native city’ to the civil lines, where ‘bungalow’ housing


was adopted in preference to the traditional high-density urban model extant in the ‘native city’. Although the British intended that the civil lines ‘suburb’ be an enclave of administrators, there was no complete racial bar to residence in the area, although inhabitants of whatever race were expected to adhere to the behavioural norms of the colonial society. The adoption of British residences with their functional division of domestic space by Indian households led to a further adoption by those households of Western material culture, introducing dining tables, tablewares, and an entire range of artefacts unnecessary within a traditional Indian context.24

_Cantonment_

The primary function of the network of military cantonments established across India was to provide a permanent military force throughout the British sphere of influence in the subcontinent that could be deployed to subdue insurrection in either the urban or rural areas. Since cantonments existed independently from the indigenous cities that served as their host, they could be established or relocated with relative ease as strategic imperatives altered.25 Locating a military force outside an established city had several benefits. A force thus situated could not be easily trapped within the dense urban core of a ‘native city’ (a fate that befell the British during the infamous siege of the Lucknow Residency), and could establish a stranglehold over the lines of supply into a rebellious settlement. Similarly a force externally based could easily march out of station (or travel via the rail system the British rapidly fostered and constructed in the later nineteenth century) to engage the enemy, reinforce British operations elsewhere, or subordinate rural revolt.

The Indian Empire, whatever its beneficial utilitarian justification, was a territory that had been acquired through conquest rather than established with the informed consent of the populace. The administration of the Empire was undertaken by a foreign minority who possessed often arbitrary power, whose decisions were supported by the threat of military compulsion. The military therefore served as the primary enforcer and protector of British interests in India. The army’s highly visible residential cantonments served as symbols of British power and prestige, marking the urban landscape out of all proportion to the actual

size of the ‘Anglo-Indian’ population and firmly establishing the difference between colonial and indigenous cultures.

By the middle of the nineteenth century 114 military cantonments had been established across India accommodating 85,000 European troops out of the colonial total of 227,000 (sixty-two military cantonments remain operational within the independent Republic of India, still administered under the legislative framework originally developed by the British). The cantonments of British India were not distributed evenly across the subcontinent. The majority were located in the north and north east of the Indian Empire; areas representing territory where there had long been a British presence or where there had been strong resistance to British expansionism by the Mughal Empire and its tributaries. The north west frontier was another area that required a military presence whereas in the south of the subcontinent there were fewer cantonments.

Strategic factors were of course considered in the placement of many cantonments, however in some cases practical factors were less important than historical circumstance. Many cantonments were built for example upon the sites where battles had been won over indigenous foes and represented an architectural reification of the temporary camp used to house the army during a campaign. These ‘tent cities’ or camps have been compared with Roman precedents, or even to the royal encampments utilised by the preceding Mughal emperors.

British tent encampments were constructed upon a grid pattern and highly organised in terms of spatial organisation; numerous rules produced a standardised form determined by both status, (the military of course incorporating a rigid caste-like status hierarchy), and military function. (See figure 1.3: Example of a tent encampment in the Khyber Pass).

‘An encampment embraces the entire space of ground covered with canvas, of which the tents are constructed. The leading object of this arrangement is, that every

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29 In the later nineteenth and early twentieth century the British combined their practice of constructing rigidly status-based temporary [military] encampments with the older Mughal tradition of Imperial progresses by the monarch in temporary cities of shamianas (tents) leading to the transient cities constructed at Delhi for the various British Imperial Durbars.
Figure 1.3
A British tent encampment in the Khyber Pass, 1898.
battalion or squadron may be able to form with ease and expedition at any given moment. The extent of a camp is generally equal to the length of line occupied by the troops when drawn out in order of battle, and is usually calculated at the rate of two paces for every file of cavalry. The tents, both of cavalry and of infantry, are arranged in rows perpendicular to the front of the encampment with intervals between them called streets; each row containing the tents of a troop or company. The companies are encamped in the order which they occupy when paraded in line...³⁰

The tent encampment was in effect a static representation of troop parade, and the cantonment a permanent form of the tent encampment. Cantonment organisation, especially with respect to the organisation of barrack complexes, reflected the same interest in organising accommodation for the ranks in regimental, battalion and company or troop groupings in order to underscore lines of authority and promote operational readiness.

In the late nineteenth century the perceived environmental ‘healthiness’ of a locale was a further consideration applied in the assessment of potential sites for new cantonments. One of the most important positive environmental variables when choosing the site for a cantonment was elevation;

‘Carefully chosen sites, with settlements situated away from the wet, windward side of mountain slopes, where the air was cool and dry and vegetation scanty, at heights between 2000 and 4000 feet were thought to be healthier.’³¹

Stations that were considered unhealthy due to their locality were sometimes downgraded in importance or even relocated to a healthier area.

Due to the belief that the more temperate climates found at higher altitudes were objectively healthier than the environment of the plains, an increasing importance was placed upon the role of ‘hill stations’ in the colonial urban system. Hill stations were settlements for Europeans established at high elevation in mountainous regions, and had originally been founded as recreational retreats for officers and colonial administrators homesick for the climate of ‘Home’. They achieved a greater importance once the central and provincial administrations of British India officially acknowledged their utility and relocated government to specific hill stations (Simla being the most famous example) for part of each

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year allowing a proportion of the administration to escape the rigours of the hot weather.

With the advent of health reforms undertaken in the 1860s it was decreed that a third of all European troops should be stationed within hill stations on a rotating basis in order to ensure optimal health. This was a curious decision when considered solely in strategic terms. Post-Mutiny army reforms had sought to increase the proportion of European troops within the army in India to reduce any chance of Sepoys subverting British rule. However the British ironically decided to house a third of those loyalist forces in remote and poorly accessible high-altitude stations that would generate serious logistical problems if the necessity of a quick deployment eventuated.

The size of military cantonments varied, the smallest housed a minor garrison whilst the largest could occupy an area of over 8 square miles and could house many British and Indian regiments. Development of the lands within the cantonment boundaries was non-intensive in comparison with the indigenous city. This resulted in a low density settlement pattern dominated by detached, single storied structures (primarily bungalows), combined with a high proportion of open space.

The internal spatial organisation of the cantonment reflected its principal role as a residential enclave dedicated to the accommodation of European troops and officers and of Indian Sepoys. European soldiers, (the British other ranks, non-commissioned officers and many commissioned officers), were quartered in purposely constructed complexes called ‘lines’, in effect sub-enclaves within the cantonment that were specifically designed to accommodate a regiment or operational part of a regiment. Different categories of barrack or ‘pendall’ were constructed for single and married British other ranks, for the various grades of non commissioned officer and for the different functional categories of regiment, battalion or company (the cavalry had divergent accommodation requirements to the infantry for example). Service structures were constructed in association with individual barracks or

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32 Complex arrangements of caste and race intermixtures were also applied to Indian regiments within the army to ensure that caste or race solidarity would not lead to mutiny. This ‘divide and conquer’ strategy meant that in the case of a revolt the British could use both the European troops and heterogeneous components of the indigenous forces to quell the uprising. Another strategy was the restriction of artillery to British regiments.

33 Poona, being a large cantonment, accommodated a number of regiments and also served as headquarters for the Bombay Presidency Army.

pendalls to cater for the physical needs of the resident soldiers, and these included detached lavatories, urinals, privies and cookhouses.

Commissioned officers did not reside with British other ranks or NCOs, and lived instead in bungalow-compound dominated residential streets within the cantonment boundaries. (Although many of the bungalows were constructed in streets associated with barracks and therefore considered an integral part of a lines complex, many larger cantonments also had ‘general’ residential streets not considered part of any lines complex). Officer residences were sometimes constructed by the Public Works Department although Indian speculators or investors often built the necessary European-style housing stock in a cantonment and rented the bungalows for profit to the officers.

Generally each officer resided with his family (if he was married and they were present in India) within an individual bungalow-compound complex along with the household’s servant establishment. Unmarried officers of low rank sometimes shared a commonly rented bungalow ‘chummery’ in order to save costs.34 The size of the bungalow rented by an officer and the area of its compound was linked to his rank, with officers of higher status occupying large bungalows set within generous compounds that could extend over several acres. This status based system was gradually systematised over time and became modular in nature, with regulations set out that allocated a set number of units of standard area per rank.35

Beside the bungalow-compounds of the officers and the residential barracks, a lines complex would incorporate a parade ground of considerable area that was often the focal point of its spatial layout. Each of the lines complexes also incorporated a range of other institutions deemed necessary for military operations including for example a regimental hospital, a quarter guard and prison room, or extensive stables36 in the case where the lines were intended for a regiment of cavalry. A chapel or a prayer room catering for the spiritual well-being of the lines’ population was another common feature of the lines as was a cemetery for the burial of the regimental dead.

34 Single officers would sometimes live together in share-bungalows called ‘chummeries’.
35 In Bengal the basic ‘unit’ was one room 24x18ft, one room 18x12ft, two rooms 11ftx10ft and a proportion of verandah space. Quartermaster General’s Office, Bengal Barrack Regulations, Office of the Superintendent of Government Printing, Simla, 1878, Sec. II, Para. 133.
36 Stables were also ‘scientifically improved’ during this period in concordance with the recommendations pertaining to barracks in order to lower the mortality amongst horses.

(Continued Overleaf)
A major recommendation of the *Royal Commission into the Sanitary State of the Army in India* was that more outlets for recreation be provided for the soldier, and hence in the 1860s facilities designed to occupy the leisure hours of the soldier became an increasingly visible part of the lines. Such facilities included reading rooms, gymnasiums and sporting courts including skittles alleys, racquet courts, and later, tennis courts. Further recommendations advised the establishment of soldiers’ gardens that, watered with barrack waste, would serve to both occupy the soldiers' spare hours and supplement their diet. ‘Wet’ canteens that served an alcohol ration to the other ranks had long been a feature of the lines and a focus of military social life, although as the 19th century progressed these were also joined by ‘soldiers’ rooms’ in or out of lines that stressed temperance.

British other ranks were denied admission to the indigenous city or even to the sadr bazar that provided services to the general cantonment and civil lines populations without permission. This interdiction was partially justified as essential for protecting soldiers from the temptation of intemperance and as preventing them access to ‘unclean’ Indian prostitutes. Each regimental line therefore aimed for a high degree of self sufficiency and incorporated an area set aside for its own market or ‘regimental bazar’ where traders providing services to the military population could reside and set up their businesses. This population of traders was considered part of the large establishment of ‘camp followers’ that usually were associated with every regiment.

The ‘followers’ also included the wives and children of the small proportion of British other ranks married with regimental approval, permitted to bring their families with them to India and have them ‘taken onto the strength.’ In addition to traders, wives and children the remainder of the camp follower population comprised a motley collection of associated hangers-on including servants and often prostitutes where a regimental brothel was approved (see *Chapter 3*).

Unlike the wives and children of the other ranks who were provided with barrack or pendall accommodation, the indigenous camp followers were not provided housing, and of necessity constructed their own within the reserved bazar area. The followers were attached to the regiment rather than to the lines complex or the cantonment itself and the entire

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establishment followed the regiment whenever it went on campaign, or relocated. The size and ethnic composition of the regimental bazaar was therefore quite distinct, and usually reflected the regiment’s previous postings and length of tenure in India.

In addition to the chapel or prayer rooms of the British lines, military cantonments also incorporated several churches for Christian worship, with the primary of these being the official, invariably Anglican ‘garrison’ church. Anglican churches and cemeteries within or near cantonment and civil lines boundaries were built and maintained at the expense of the civil establishment which provided ‘...a plain substantial building of the simplest ecclesiastical design together with such plain furniture as is essentially necessary’.39

Churches for other denominations including the Roman Catholics and non-conformist Protestant congregations were also permitted and encouraged, although their houses of worship were as a rule not so favourably located. British or perhaps more properly Christian cemeteries formed another part of the religious infrastructure of the cantonment. Cemeteries were divided by denomination, and often by race and were sometimes located in association with a lines complex, a church or a hospital. Cemeteries were usually located safely inside the European culture area of the cantonment, although the increased regulation of environmental factors that might lead to disease led to increasing restrictions upon where cemeteries could be sited and the manner in which graves could be dug.40

Christian religious organisations were also permitted to operate a range of other institutions often from within cantonment lands mirroring their metropolitan activities and interests and these included schools, homes for widows and orphans, hospitals and dispensaries and of course missions engaged in the conversion of the local population.

In contrast to their British compatriots Indian Sepoys were not generally allocated specifically constructed barrack accommodation and were instead granted a set sum of money as a ‘hutting allowance’ with which they had to construct their own residences within an area if the military cantonment designated the ‘native lines’.41

‘The grant of hutting money by the state is to be viewed only as an assistance

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40 Later cemeteries were located away from areas of population with graves being at least 6 feet deep with only a single occupant per ‘vault’.
41 This practice leads to certain problems for the archaeologist attempting to utilise maps as an archaeological
(Continued Overleaf)
conceded by the government to aid Native soldiers in the building and repair of their lines. It is in no way contemplated to relieve them altogether from the obligation of providing their own shelter..."42

This system of course led to the construction in the native lines of a range of vernacular structures. Each hut was generally made of mud on a framework of bamboo, in area was on average 10 feet by 7 1/2 feet with a height of seven feet, and 500 cubic feet in volume, this structure housing the Sepoy along with his family, (the Sepoy was far more likely to be married than the British other ranker).43

Figure 1.4

Pendalls constructed in the Native Lines of Poona for the accommodation of Indian Other Ranks and Indian Non-Commissioned Officers.

Image: Author

The native lines incorporated a similar range of structures to British lines but on a more modest scale. (Figure 1.4). Although non-Christian religions were not officially

42 QMG, Bengal Barrack Regulations, Office of the Super’t of Gov’t Printing, Simla, 1878, Sec II Para 96.
supported with great enthusiasm by the British administration, the maintenance of some temple establishments had fallen to them with their assumption of the powers of deposed indigenous rulers. The British furthermore clearly understood that they should not disrupt or interfere with the cultural practices of their Sepoys unless they wished to risk rebellion. Hindu temples, Islamic mosques and Sikh Gurudwaras were therefore provided for the Sepoys where necessary as part of their lines, along with burial areas for Muslims Hindu burning ghats, although these were often on the periphery or located outside cantonment limits.

Unfortunately little has been specifically written upon the subject of life within the native lines, with few published sources existing based upon the recollections of the Sepoys themselves. British observations of Sepoy life were also rare, since it was accepted practice that the (British) commissioned officer class did not commonly frequent the Sepoy lines. Official sources are also unfortunately rare, for while the British bureaucracy was deeply interested in the politically sensitive matter of the health of the British other rank, there was little matching interest in the well being of the Indian Sepoy.

With the number of Sepoys far outnumbering the strength of British troops on rotation in India, military cantonments therefore incorporated a high proportion of Indian inhabitants especially when in addition to Sepoy numbers, servants and camp followers are considered and together compared to the size of the European populace. Nevertheless the station sought to define itself in opposition to indigenous township. The station was represented as ‘clean’, ‘uncrowded’, ‘European’ and contrasted strongly with British opinions of the ‘native cities’ which were thought of as ‘unsanitary’, ‘congested’ and ‘Indian’. The station was therefore conceived as being the province of the ‘Sahib’, and this alien environment often provoked discomfort amongst a settlement’s Indian inhabitants.44 As Anand (an Indian author of fiction) remarked of the cantonment;

‘...within a cantonment...they lived and moved and had their being, in a seemingly grim, awe-inspiring, exalted silence...the sentries at every half mile, insisted, in hush-hush voices, especially to the children that we should be seen and not heard in the vicinity of the Sahib's bungalows...’

The last major sub-enclave within the military cantonment to be discussed is the sadr

bazar. This was the area set aside for traders to offer goods and services to the resident European population. Although the sadr bazar grew out of the military cantonment and was considered part of it, the administrative relationship between the two areas was ambiguous. In larger stations the bazar could grow to such size that it could be easily considered an independent enclave in its own right.

The sadr bazar was normally located in the zone between the ‘native city’ and the military cantonment, a zone which in some settlements served as a ‘no-man’s land’ dividing the civilian from the military zone. As a primarily indigenous quarter proximate to but not of the ‘native city’ the bazar served as an interface between the British and Indian sectors of the city. Given its position and role the sadr bazar tended to be a heterogeneous area expressing its hybrid nature in both its demography and spatial organisation.

The built environment of the sadr bazar incorporated both Indian and British characteristics. The area was densely developed and populated. Although a large bazar population squeezed into a small area usually led to a much higher population and building density than in the cantonment proper, the sadr bazar was seldom as congested as the ‘native city’. The enclave therefore might comprise a range of structures drawn from both British and Indian urban traditions so that bungalows and other detached single storey buildings co-existed with multi-storied detached structures.

The population was equally varied. In addition to the large Indian population British or European traders often lived in the sadr bazar since there was little space in either the cantonment or the civil lines otherwise officially set aside for commercial enterprise. Given its hybrid nature other European and British groups also found it an appropriate zone as a location for institutions that sought contact with the Indian population. Religious organisations including missionaries groups or religious communities operating schools or homes found the bazar a convenient base for their institutions and places of worship. The major shopping streets of the larger bazars also attracted major European, British and American commercial enterprises such as banks or insurance houses.

In many respects therefore the sadr bazar remains the most intriguing area within the tripartite city given that in a broadly segregated spatial organisation it was encouraged (with official ill grace) to retain a varied character in terms of population and function. Sadr bazars existed on sufferance. They were considered a necessary evil that allowed the British limited contact with the Indian population for the transaction of certain essential commercial
functions. The existence of the sadr bazar determined that the imperial rulers almost never had to enter into ‘native city’ urban areas wholly dominated by the local ruled population unless they expressly chose to do so. The sadr bazar maintained what was a distance between racial communities that was perceived by the British as essential to the maintenance of British rule. The ruling ‘caste’ should appear aloof and incorruptible a stance rendered impossible if ruler and ruled were in constant view and contact.

As the nineteenth century progressed however authorities began to increasingly perceive the bazar lands as a threat. They were part of the cantonment and yet not under complete British control, representing an element of disorder within the highly ordered British enclaves. The bazar represented temptation since the sub-enclave invariably incorporated a red-light district. The sadar bazars were also considered a source of disease due in particular to the lack of sanitary arrangements and the high density of the area. The problem of population density worsened with time since the bazars tended to attract larger and larger populations unconnected with the sub-enclave’s technical role of trade. Although the British attempted to impose various regulatory structures to control the sadr bazar (see Chapter 3) the administration never found a solution whereby the bazar was rendered obsolete.

**Civil Lines**

The civil lines, or ‘civil station’ was the residential enclave set aside for the British civilian population of administrators. The non-military British population was mostly although not completely composed of the colonial bureaucracy. Although European settlers were not encouraged, a proportion of Britons residing in India were neither engaged in the military or the administration and were instead employed in running British business interests in India. Some of the wealthier members of this private European business community, (often pejoratively known as box-wallahs), and a leavening of westernised and wealthy Indian households also chose to reside in the civil lines.

The name of the enclave implied that its role was as civilian counterpart to the military lines constructed in the cantonment itself. Although this was very generally true, the spatial organisation of the civil lines diverged strongly from the military lines which after all sought to accommodate and provide a series of highly specific military and services to a regiment. In contrast the civil lines were primarily a residential area, dominated by housing of a similar mode to that of British commissioned officers with its households accommodated
within bungalow-compound complexes. The organisation of the residences were not as (literally) regimental as in the military lines and therefore many of the civil lines possessed a less formal and more organic atmosphere than the cantonment.

This enclave also served as the administrative centre for both the conurbation and the provincial area over which the civil station had possessed jurisdiction. Therefore in addition to providing residential facilities, civil lines contained the administrative offices of the bureaucracy, law courts, in short all the machinery of British administration appropriate to that settlement. Furthermore, social and religious facilities were provided that were suitable for the local British population. These usually including public parks, clubs, sporting facilities such as a gymkhana and of course churches of various Christian denominations.

The civil lines, being a primarily residential area, therefore developed as a low density suburb external to and independent from the indigenous population centre it was designed to administer. It did not however seek the degree of self-sufficiency found in the military where a large proportion of the population (the other ranks) had severe restrictions placed upon their freedom of residence and movement. The civil lines therefore, did not seek to incorporate within its limits a significant market area in similar fashion to the cantonment and its constituent military lines.46

46 By the twentieth century industrial metropolitan British elites had developed their own fear of congested and ‘unsanitary’ urban areas and were experimenting with low density suburban residential enclaves typified by the ‘garden city’. The garden city, with its lack of hard industry, its expansive gardens, public open spaces and detached housing bore some similarity in design and purpose to the Indo-British colonial urban tradition where civil lines had for generations incorporated these features.

The congruity between the ‘garden city’ model and the civil station was particularly apparent in Lutyen’s design for New Delhi. Lutyens was a metropolitan architect of some fame and talent and of course had professional knowledge of the development of the garden city. The transfer of the Indian capital from Calcutta to (New) Delhi was a gigantic project and one where the architect could not merely apply a urban design appropriate to the metropolitan culture alone, since the Indian capital had to serve the peculiar political and social requirements of the Indian Empire.

In his solution Lutyens distilled and reinterpreted the settlement patterns of the civil and military lines. The new capital reified the traditional power relationships between different sectors of the population merging the British tripartite city plan with the social Warrant of Precedence. New Delhi included the equivalents of a civil lines, a cantonment and a ‘native city’, with street upon residential street dedicated to particular categories of administrative and military officer arranged in declining rings of status from the central point of the Viceroy’s residence upon Raisina Hill. (Figure 1.5: Status Map of New Delhi).

Lutyens added to the recognisable tripartite format a formal design element (often lacking in the urban plans of colonial India where trained architects were a rarity) drawing upon his knowledge of contemporary and traditional metropolitan planning. The garden city was undoubtedly a source of inspiration, however his plan was also very strongly influenced by the regimentation of the cantonment and the tradition of Baroque axial planning. Rome, Paris and later Washington were all urban precursors with long axial vistas and the consequent urban form emphasised order, discipline, and the imperial scale and power of the state.
Figure 1.5
Racial and Functional spatial divisions in the plan of New Delhi.
1.3 Conclusion

The British in developing an appropriate urban environment for their Indian possessions incorporated strong racial and functional segregative tendencies into their urban enclaves. At the gross (settlement-wide) urban scale these tendencies were reflected with respect to race in the ‘native city’-station division, whereby the small British population of the station was deliberately sequestered from the vast indigenous population of the ‘native city’. Functional differentiation was exhibited in the demographic splitting of the population along ‘civilian’, ‘military’ and ‘administrative’ matched by the spatial division of the Indo-British conurbation into the ‘native city’, civil lines and military cantonment.

Racial and functional segmentation was also replicated at the intra-enclave scale of analysis. Examination of the military cantonment in particular reveals that embedded within the cantonment itself were further racially or functionally exclusivist sub-enclaves. Such sub-enclaves included entities such as the sadr bazar or various ‘lines’ complexes that were designed to accommodate particular sectors of the military populace.

The segregated tripartite plan settlement represented a distortion of urban space created through the power of the British Imperial state. Social relations between the component racial and functional groupings within the Indian Empire were no less distorted through the application of a power which based its legitimacy upon a theory of both military and racial superiority. Given that complete segregation between the ruling elite and those who were ruled was an impossibility, solutions had to be found to subvert the broadly segregated nature of the settlement in order to allow interaction between groups thought best separated. One such ‘solution’ was the sadr bazar, which developed into a hybrid zone where the British could procure goods and services (and therefore ‘safely’ interact) with the local Indian population, another was represented by the native lines, which allowed the British to keep the Indian Sepoys under their charge within the British cultural zone of the military cantonment. As will be seen in Chapter 2 other solutions were created at the scale of the individual compound and residence that were architectural in character and permitted interaction between Britons and Indians individuals within the individual household.

Architectural style was another solution to the internal contradictions of the
tripartite plan, and was used to impose an appearance of ‘Britishness’ to the station. Although the military cantonment and civil lines incorporated large indigenous populations, the impact of the numerical dominance of this indigenous population was lessened by the ‘symbolic’ dominance of the British population whereby architectural style and town planning were explicitly utilised to stress the British hegemony in the settlement enclaves (and over the Empire). The local Indian residents were pushed into the background; accommodated in sub-enclaves such as the native lines and in hidden compound outhouses, or by the adoption by wealthy Indian households in the station of British modes of dress or housing.

This chapter has quite deliberately sought to abstract the morphology of over 100 colonial settlements scattered across India, segmenting and analysing the organisation of India's civil and military stations in a mode that replicates the research of many urban historians. The morphology described above would be instantly recognisable not only to the academic but also to the average ‘Anglo-Indian’ of the Raj (after all the degree of standardisation and the similarity of many military cantonments and civil lines was often lampooned by the colonial British themselves).47 The fact that an abstract description of an Indo-British station can so easily be written is testament to the highly planned and regulated nature of these settlements. A later chapter (Chapter 6: History of Poona in the British Era) describes the specific spatial organisation of a military and civil station analysed as a case study, and this reveals a distinctive settlement morphology that nonetheless matches and confirms the abstract description presented above.

In the process of constructing a standardised morphology however, the variability and eccentricity of site morphology of individual settlements has of necessity been suppressed. It is this variability that remains central to the analysis of the station of Poona presented in Part 2 of this dissertation. As an abstract examination of settlement morphology this chapter consequently presents non-site-specific arguments concerning the manner in which colonial enclaves divided upon functional and racial lines. That these spatial and demographic cleavages existed in all stations can be confirmed through reference to historical records, oral history and direct observation of extant settlement remains.

47 Note Atkinson, Capt. George F., Curry and Rice (On Forty Plates): The Ingredients of Social Life at (Continued Overleaf)
All such assumptions are however also open to hypothetical testing and confirmation through spatial and archaeological analysis, based upon non-subjective demographic and cartographic historical data. Although it could not be credibly hypothesised that strong demographic and spatial segregative tendencies were not woven into the colonial urban environment of British India, further analysis of the Indo-British urban environment could potentially reveal a greater degree of complexity in the urban demography of Indo-British settlement sites that has hitherto been described.

‗Our‘ Station in India, Day and Son, London, 1859.
Chapter 2

The Ordered Environment: Architecture of the Raj

2.1 Introduction

There is a large although not comprehensive literature concerning British colonial architecture in India that focuses primarily upon landmark public structures built either in the Presidency towns or in the major provincial centres. These buildings (and one need only think here of the clichés of ‘Anglo-Indian’ architecture; Victoria Memorial in Calcutta, the Viceroy’s House in New Delhi, or Victoria Terminus in Bombay) all sought to project a sense of British imperial power, and thus served as the public face the Raj sought to project to the world.

Given that a architecturally-based oeuvre exists, this chapter does not attempt a general précis of Indian colonial architecture. Instead it tries (as did Chapter 1) to describe in the abstract the urban environment of an Indo-British mofussil station. Unlike Chapter 1 it endeavours to explore the station at the scale below that of holistic site or enclave organisation, concentrating upon the intra-enclave urban scale that encompasses the residential street and the individual structure.

Two categories of residential architecture are consequently discussed within this chapter that were integral (if seldom analysed) elements of the urban environments of the military cantonment and the civil lines.

The first category is the barrack, a form of military communal residential architecture and a category almost completely ignored by architectural historians. Barracks have been selected for particular attention because of their importance within the colonial urban environment of the military cantonment. As the focus of lines complexes and as residential structures that housed the imperial forces that represented the final recourse of British rule, barracks were a visible symbol of the Empire’s coercive force. In addition, their structural simplicity renders them appropriate candidates for spatial analysis.

Barracks were based upon plans that bore ‘... no pretensions to architectural character’¹ and described in the most schematic fashion were composed of a detached barrack room where the British other ranks slept, that was usually surrounded by a peripheral
verandah. This simple system of organisation can be described via a range of simple variables, including the length breadth and height of the barrack room, its floor area, the room volume and the width of the verandah. With such variables in hand it is an easy matter to mathematically trace changes in barrack design over time, a difficult prospect for many more complex categories of structure.

The second category of structure described in this chapter is the bungalow, the residential form favoured by Britons of status in India, and an architectural type that was later exported from India to become a global residential archetype. The bungalow has attracted a degree of interest from academics and a thorough study of this category of structure and the numerous forms it takes across the world has been undertaken by Anthony King².

The remainder of the chapter discusses issues that concern all forms of Indo-British architecture. Standardisation of architectural types is addressed as is architectural style and construction materials and techniques. Of particular concern are ‘elements of environmental control’; those intrinsic components of architectural design incorporated into structures, and devices such as the ubiquitous punkah, which the British utilised to ameliorate the micro-climate of their residences and places of work.

### 2.2 Standardisation

Analysis of both barracks and bungalows is essential to understand the daily operation of British enclaves in mofussil India which were after all dominated by residential lands. A common feature of both architectural categories was a tendency towards the standardisation of the residential environment that accommodated the British. This tendency was no doubt due to the unique non-settler status of the majority of the British population in India. With a highly mobile and transient administrative and military populations British enclaves did not possess large populations of ‘owner occupier’ households nor could they subsequently operate as a true real estate free market. Each enclave had to possess enough residential stock to accommodate necessary administrators and soldiers all of whom would expect to eventually return to Britain, and all of whom would require the short, medium or long term accommodation appropriate to their status.

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The administration was therefore the power that commissioned and maintained the necessary enclaves and the real estate therein on behalf of those who were in effect its employees. Maintenance of an alien ordered environment on such a vast scale would not have been possible without a regulatory structure to manage town planning and architectural design. Standardisation was consequently a necessary tool in the administration of the Indo-British built environment, for it was through standardisation that the British could match its responsibilities and funds with its strategic aims and the requirements of those it employed.

At the scale of the settlement the military or civil station served to provide the British with a modular and standardised urban environment that reflected the cultural norms of colonial society, an environment that was recognisable and familiar throughout the subcontinent to any member of the ruling ethnic group. The unique and instantly recognisable environment of the station was also a marker to the indigenous culture clearly locating in space the symbolic division between ruler and ruled;

‘In the distance, on the other side of the maidan he could see the spire of St. Mary’s...Half-closing his eyes he could almost imagine himself on the common, near Didbury...The maidan was the preserve of the sahib-log.’

A bureaucracy developed in British India that sought to apply normative and standardising controls upon the cantonments and civil lines environments. The (military) Engineers and later the (Indian) Public Works Department (constituted in 1854-5) formed the major part of this bureaucracy and their success in developing a normative ‘Anglo-Indian’ settlement format was evident in the familiarity (and sometimes contempt) with which the British regarded their colonial environments, and the ease with which mofussil sites throughout British India could be distilled into a single archetype;

‘Beyond the railway station there might be an area of no man’s land, perhaps a maidan...partially enclosed by European style offices and public buildings. From here a broad mall would lead into the civil lines, with carefully laid out roads, neat shady verges and very often a ‘Company bagh’, (public garden) complete with bandstand. Nearby would be the church, (C of E), the station club and most of the senior official’s bungalows. Further down the mall there might be the police lines and beyond that

again the military cantonment with its own lines, its garrison church, its bazaars and parade ground.\textsuperscript{5} (Figure 2.1: ‘Our Station’).

Similar systems of control were applied to the design of individual structures. In the 1860s serious exploration was undertaken into the connection between architecture and the health of the British in India. The most serious of these investigations was the 1863 \textit{Royal Commission into the Sanitary State of the Army in India}\textsuperscript{6} and in line with its recommendations the PWD developed design standards to be applied to many of the vast range of structures under its purview. Plans for the standardisation of British enclaves and structures across India were increasingly refined so that even a system of identical street numbering for all cantonments and civil lines was developed.\textsuperscript{7}

This standardised system of site replication reflected the rigidity of a social system whereby status was strictly linked to race, position and seniority, and reflected in the area and position of residential space inhabited. Official residences were rented at a fixed percentage of salary, and a modular system was developed that provided a certain number of rooms of a particular area and finish per grade of position or rank. For example in Bengal in 1878 a Lieutenant Colonel could expect to be furnished with a residence that consisted of:

- 2 Rooms 24 x 16 ft
- 4 Rooms 16 x 16 ft
- 2 Rooms 16 x 8 ft
- 4 Bathrooms
- 12 Servants houses
- 4 One horse stables,

for which a rent of 100 Rupees a month was charged, whilst a second lieutenant would expect for a quarter of that rent:

- 2 Rooms 16 x 16 ft
- 1 Bathroom
- 3 Servants houses


Figure 2.1
‘Our Station’
Similar scales were developed for a vast range of occupations, within both the civil and military arms of the administration.

Barrack and hospital accommodation was similarly treated;

‘All military buildings must be constructed according to the standard designs fixed by the Government of India’. with designs standards being developed by the Public Works and Military Departments from the 1860s. In the period post-dating the 1863 Royal Commission, the Government of India proposed to outlay 10 million pounds until the end of the 1860s to upgrade its military building stock in line with sanitary recommendations, dispensed through the new office of ‘Inspector General of Military Works.’ These projected funds were all exceeded in actual expenditure, a vast monetary outlay upon the infrastructure of the British culture area of India’s military cantonments, that stimulated a construction boom that lasted until 1870, after which construction budgets were reduced.

2.3 Structural Types

Barracks

The British standing army was an institution of the Restoration and consequently the necessity for permanent troop accommodation in the British architectural tradition only dates to a relatively recent period. Despite the existence of a standing force in the seventeenth century no regular program of barrack construction was undertaken in Britain until the mid-eighteenth century for fear that;

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8 Quartermaster General’s Office, Bengal Barrack Regulations, Office of the Superintendent of Gov’t Printing, Simla, 1878, Para. 131.
13 Relatively late in European terms.
‘If...the soldiers were kept [isolated] in barracks the people would be insensible of their numbers and might not think of reducing...[the number of soldiers]...until the army was strong enough to support itself against the law.’

It was therefore deemed appropriate that ‘...soldiers should live intermixed with the people.’

In 1740 the first metropolitan barracks began to appear (the first of these were constructed at the Palace of Whitehall), and in 1786 the Military Department was established to oversee barrack construction.

The suspicion with which Britons viewed barracks was therefore due in part to the temptation to despotic power that a permanent armed force sequestered away from the general populace in barracks could represent. The non-settler British overseas territories, however, were authoritarian administrations imposed by the British upon other cultures without local consent. There was little objection or opposition from metropolitan society to the construction of barracks in these non-settler imperial possessions and the opinion of indigenous subjects was, of course, not canvassed.

Figure 2.2 a

Plan of the 1st storey of Dalhousie Barracks, Fort William. There were three stories in total over a basement.


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Early ‘Anglo-Indian’ barrack styles reflected their origins as copies of British barracks imported into the Indian environment. It was however realised through experience that the architectural solutions developed for housing soldiers in Britain would not work efficiently in India. British barracks were functionally designed to keep occupants warm in Britain’s temperate climate with its cold winters. In contrast the Indian climate was tropical and determined that the barracks should be designed so that barrack rooms remained at a cool, even temperature. Indo-British architecture developed numerous elements designed to ameliorate the hot, wet climates, many adopted from indigenous practice. (See Technologies of Environmental Control below).

In the eighteenth century Indian barracks tended to be long, multi-storied structures that incorporated multiple barrack rooms and were composed about a parade ground. (Figure 2.2 a: and Figure 2.2 b: Cantonment of Berhampur). This style of barrack was commonly constructed in Britain (figure 2.3: 1716 Hyde Park Barrack). Certain concessions in design were made to the British archetype, the most obvious being the addition of verandahs to shade the external walls from the sun, an innovation not required in metropolitan circumstances.

Indian barrack styles began to diverge from this eighteenth century design as new sanitary theories came to be applied to British military architecture in India in an attempt to improve troop health. Continental armies generally maintained older barrack forms and did not follow the British example.

Under the British sanitary reforms the ‘square’ format was deconstructed, each barrack room that had formed part of the composite whole being allocated to a separate structure. The 18th century monolithic barrack was therefore deconstructed in India into a complex, comprised of free-standing structures which were usually based upon the design archetype of an enlarged and adapted bungalow. The whole complex would normally accommodate an entire battalion or regiment with each individual barrack room being of an

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19 Note that this barrack was designed to house 7000 soldiers.
20 Except for the French.
adequate size to house one of the smaller operational ‘units’\textsuperscript{22} of force, be that a company, half company or troop.\textsuperscript{23}

\textit{Figure 2.2 b}

\textit{Cantonment of Berhampur} This plan depicts the strict organisation of barracks around the parade square common in earlier nineteenth century barracks.


\textsuperscript{22} Not used here in the military sense.
\textsuperscript{23} As has been noted previously the original rationale for the spatial organisation of cantonments was to enable rapid formation into an active body.
Figure 2.3
Barracks Proposed to be built in Hyde Park for the reception of His Majestie's (sic) three Regiments of foot Guards
The tendency as the century progressed was to accommodate fewer troops per barrack room, and eventual policy was to house the men in barracks rooms of 16 men, a number that represented a quarter company;24

‘...all new barracks be constructed to hold no more than a quarter company in each building, or at most half a company in one building in separate rooms having no direct communication with each other’25

The sequence of small barracks remained oriented around a notional square, which formed the parade ground, whilst the linear organisation of the barracks and support structures about this open space, so similar to a tent encampment, led to acceptance of the term ‘lines’ when describing the entire complex. With the progression of the nineteenth century, organisation of the lines were shifted so that they did not necessarily orient to either the parade ground or service roads, but were rotated to take the greatest advantage of the prevailing winds in a style termed ‘en echelon’;26

‘...future Barracks and Hospital [should] be arranged en echelon to receive the benefit of prevailing winds.’27 (Figure 2.4: En echelon planning in barracks).

A central concern in barrack design was that of ventilation, and the Indian barrack was cooled and ventilated with a range of devices designed to promote air flow.28 Smaller barrack rooms were designed to minimise the effect of ‘unhealthy’ human exhalations, (carbonic acid) and to maximise ventilation, whilst the separation of barracks into separate structures allowed for the free circulation of air into each barrack room.

The accumulation of gases associated with human respiration due to the absence of circulating fresh air to dissipate them was believed to be a primary causative element of disease; particularly of malaria and cholera.29 These exhalations were considered extremely contaminating to both the troops and even to the architecture;

28 Access to air, through structure placement and ventilation was preferred to insulation when cooling interiors.
Figure 2.4
Plan of Wanowree Barracks (24th Nov 1876).
This plan shows an example of en echelon planning in the military cantonment of Poona. Note how barracks have been rotated and do not orientate with the mail road (along which bungalow-compounds have been constructed), and are off-set from one another to maximise access to airflow.

from Indian Medical Department, *Sketch of the Medical History of the Native Army of Bombay*, Indian Medical Department, Government Press, Bombay, 1870-76.
'For eighty years the walls floors and ceilings have been subject to and have absorbed the emanations from the bodies of the men, and those arising from the exigencies and usages of barrack life, and the fabric has become incurable impregnated with filth.'

Furthermore, since unhealthy, gaseous miasmas were believed to arise from ‘fermentation’ in the earth, barracks were raised up away from ground level to avoid these emanations or malarial mists;

‘...all future Barracks and Hospitals [should] be erected on raised basements, with the air circulating under the floors...’

Thorough ventilation was encouraged via the inclusion of an adequate number of windows and doors that were usually placed opposite one another in the long walls of a barrack in order to promote through-flow of air. Internal barrack room arrangements were also studied with the relation of beds to windows or doors being taken into consideration. Beds were recommended to be three feet apart and more than two rows of beds per barrack room was considered unhealthy.

The 1859-1863 Royal Commission advised that airflow be further encouraged through the inclusion of clerestories, fanlights, louvred doors, and ventilators, the last being considered especially efficacious when placed high on the walls and in the roof as;

‘Some barracks in addition to ventilators on the roofs have air holes flush with the floors. These we believe to be injurious to the health of the men, bringing on violent colds settling into confirmed diseases of the lungs, rheumatic complaints &c. If ventilators were placed in each side wall, about eight feet from the ground in addition to properly constructed ones on the roofs...a sufficient current of pure air would be kept constantly up in all the rooms without running the risk of causing diseases , which air holes flush with the floor are almost certain to engender.'

Another important design factor was the area and volume available per soldier within a barrack room, an indicator that determined individual access to air;

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‘...48 cubic metres of fresh air, equal to 1440 cubic feet are...necessary to the health of each soldier, and proves that only about 1/16th of this quantity is all that is allowed and affirms that the great disproportion in the deaths of soldiers ...is wholly owing to this fact.’

The overcrowding of barrack rooms was considered a serious problem since the benefits accruing from good barrack design was rendered negligible if due to insufficient accommodation rooms were overcrowded with men and their polluting ‘exhalations’. The broad recommendation of the Royal Commission was that the minimum volume and area to be provided per man in barracks be set by regulation;

‘...on high ground with a free circulation of air 1000 cubic feet and 80 square feet per man are enough...’

The suggestion of the first holder of the post of Inspector General of Military Works (Lieutenant Colonel W.A. Crommelin was appointed to this position in 1865) was to increase barrack dimensions beyond those recommended by the Royal Commission providing a generous;

‘...90 superficial feet per man in double-loaded wards of 24 feet in width with a wall height (to the base of the roof structure...) of 20 feet. This was to give 1800 cubic feet per man.’

Another cause championed by Crommelin was the construction of ‘Upper Storied Barracks’, where the ground level of the structure was reserved for storage and day-time activities whilst the barrack (sleeping) rooms were reserved for the upper areas, an arrangement specifically designed to isolate the sleeping troops from bad air (again see Chapter 3). Despite the increased expense this system represented it was duly adopted by the authorities, although many later complained that the older single storey system was preferable. In a corruption of Crommelin’s good intentions soldiers were even quartered in the ‘unhealthy’ lower storey, daytime recreation spaces were under-utilised and the upper storey barrack rooms were reportedly hot and draughty. (Figure 2.5 a: Wanowrie Upper Storied Barracks, figure 2.5 b: Cavalry Barracks and also Volume 2 II.46).

Figure 2.5 a
Plan of the Wanowri Barracks, and example of upper storied barracks in Poona Military Cantonment.
from Hewlett, T.G, Report on Military Cantonments inspected, Indian Medical Department, 1875-76.
Figure 2.5 b
Plan of the Lower floor of Cavalry Barracks, showing the functions that were assigned to ground storey rooms.

In the introduction to this chapter it was suggested that the barrack could be understood as a room (the barrack room) surrounded by a peripheral verandah. Barracks were of course in practice more complex in design than this simple description suggests since in addition to the basic requirement of nightly shelter they had to accommodate the daily needs of soldiers. Consequently a number of rooms and services in addition to the primary barrack room were included in barrack designs.

Usually an apartment consisting of two chambers\(^{39}\) was appended to the barrack room that was designed to accommodate a sergeant (and his wife and family where appropriate). Each barrack was also provided with external lavatories and privies, and a detached cookhouse within which the troops could cook their rations, (especially in the era after the 1860s sanitary reforms).

The provision of services to meet the bodily needs of soldiers drew increasing attention as medical specialists sought to identify and reform systems that might increase the risk of disease.

**Water Supply**

One such system viewed with suspicion was the supply of water to European barracks. The traditional method of water supply within Indian settlements was through the raising of water from wells with bullocks and the transference of this water to where it was required manually via ‘bheesties,’ or water carriers, who transported the water in leather skins. This indigenous system had been adopted in the military lines but with the new focus upon sanitation was considered too unhealthy to continue. Systems of filtration were introduced with varying success for drinking water, these including patented methods such as ‘Macnamara’s’ or the more usual filtration of water through sand and charcoal.\(^{40}\)

In the 1880s with the first wave of barrack reconstruction attention turned to the provision of improved water supplies to cantonments dams, bunds, reservoirs and tanks were constructed and water pipes installed, innovations that eventually replaced the ‘unsanitary’ bheesties.

Waste removal was another problem faced by barrack designers, since accumulations of ‘filth’ were regarded as a major causative factor of disease. Barracks were increasingly

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\(^{39}\) In the post Royal Commission standardised plans these rooms were of 18 x 12 feet and 12 x 12 feet.

\(^{40}\) QMG, *Bengal Barrack Regulations*, Office of the Super’t of Gov’t Printing, Simla, 1878, Section V. Para 750.
provided with outhouses to where urinals, lavatories, cookrooms and privies for the soldiers, were located removing activities regarded as unhealthy away from the living space of the barrack rooms;

**Privies**

The removal of solid human waste was basic and primitive involving the laborious manual removal of faecal matter from privy pans to cesspits. This task was undertaken by sweepers⁴¹, low status individuals who would empty the contents of privies and urinals. New systems were developed to replace the unhealthy cesspits which, including the ‘dry earth system of conservancy,’ which was designed to aid the treatment of ordure by the addition of earth to each privy pan. As with many reforms the new system did not operate efficiently since the soldiers, ‘...[would] not use the earth.’⁴² The reform of the system of removal and treatment of human waste remained a substantial problem for cantonment authorities and in general elaborations upon the existing method that manually relocated faecal matter continued although improved ‘hygienic’ technologies such as sealed waste carts were introduced. *(Figure 2.6: Privy).*

**Urinals**

Urinals were usually provided on barrack verandahs, and took the form of iron or glazed stoneware vessels. These were designed to collect urine until the urinal cistern was later relocated and emptied by hand.⁴³

**Cookhouses**

British other ranks were required to cook their daily rations within a ‘cookhouse’ or ‘cookroom’, although in India the actual task of cooking was generally delegated to servants. The cookroom took the form of;

‘...a small square outhouse, sometimes without a chimney, often far from clean...A few holes to put the fire in, and moveable utensils to hold over them are all that India thinks it wants. There is of course no water laid on and no drainage. Here as elsewhere is the inevitable cesspit...’⁴⁴ *(Figure 2.7).*

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⁴¹ In some areas termed ‘Dome’.
Figure 2.6
Privy
Figure 2.7
Plans of two varieties of cookroom.
Liquid waste from the cookhouses was collected or led by pipes to the barrack gardens, whilst solid wastes were once again collected and manually relocated.

**Lavatories**

Lavatory accommodation was similarly rudimentary prior to the 1860s with a number of military stations possessing no formal bathing facilities whatsoever. More often bathing usually took place within the barrack room or a special place set aside on the verandah, although specially constructed ‘plunge baths’ were sometimes available. (*Figure 2.8: Plunge Bath*). Reform led to the construction of separate lavatories where soldiers could bathe.

‘The usual arrangement [was]...to have stone benches along the wall; water is carried by bheesties and iron basins are used for washing.’45 (*Figure 2.9: Wash Room*)

In both cases the removal of waste water was a problem, this usually being directed to the barrack gardens or channelled into to a cesspool.

The dormitory style of barrack design was appropriate for unmarried soldiers, however, a number of the British other ranks in India were not only married, but were allowed to reside with their wives and children. Separate quarters for married troops were therefore constructed although the inadequate number of apartments provided for families in regimental lines led to the housing of families within ‘single men’s barracks,’ where privacy could only be provided with blankets strung up as temporary walls.

Sanitary reformers viewed the available stock of accommodation provided for families of British other ranks as unsatisfactory and married quarters were therefore targeted for redesign in a similar fashion to dormitory barracks for single men. The following quote from the *Poona Observer* reflects the disquiet felt by many in the colonial British community about the conditions in which many families resided;

‘Is there no philanthropist amongst the educated well-paid and comfortably housed Sahib logue here, to visit and take cognizance of the miserable huts in which the wives and families of European soldiers are forced to reside?...We hear of several most respectable families in some instances numbering seven individuals being crowded into a small room, with earthen floors lower than the surface of the neighbouring ground... about 12 feet square without a floor, with an opening often not
**Figure 2.8**

*Plunge Bath, Belgaum.*


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**Figure 2.9**

'Washing Room’ Neemuch.

more than 12 inches for a window-no partition to divide the parents from their grown up children of both sexes-no accommodation for cleanliness in the form of a bathroom-this is the den occupied by each married European soldier by his family..."

One standard advocated by reformers as possessing particular moral advantages was a ‘cottage’ system where each family was accommodated within a detached apartment or cottage isolated from the ‘corrupting influence’ of the families of degenerate colleagues. Eventually however this concept was discarded and barrack-like structures (figure 2.10: Married Quarters) composed of several apartments and designed in the same mode as the barracks-outhouse system were adopted as the ideal.

The unit allocated for a British other ranks family was an apartment of two rooms of 16 x 14 feet and 14 x 10 feet respectively, eight to ten units being clustered within a single structure. The apartment-barrack was in addition provided with a verandah in front and behind, and constructed with complete partitions to ensure privacy. Outhouses were provided in a similar fashion to the dormitory barracks of single soldiers, and these were used as privies, lavatories and cookhouses.

Barracks for British soldiers stationed in India were at first designed merely as places of rest for soldiers, being in effect the tents of military encampments rendered in more permanent materials. As an architectural form they were deceptive in their simplicity, since as the nineteenth century progressed more time was put into their design.

After the Mutiny of the late 1850s shook British rule and revealed deficits in the health and preparedness of the European component of their army in India, a new strategic imperative was the protection of the health of the British armed forces stationed in India. Contemporary theories of disease causation posited that disease was caused by adverse environmental factors (as will be discussed in the next chapter) and the humble barrack represented the residential environment accommodating the British soldiery. A deterministic nexus therefore developed whereby it was believed that altering the physical parameters of barracks would result in improvements in the health (and moral tenor) of the soldiery.

Figure 2.10
Married Quarters at Malligaum
A 'barrack' for married Other Ranks composed of several small but independent apartments. Note that although structure was designed prior to the reforms discussed.
Additional design elements (for example the punkah or thermantidote) were introduced into barracks that were fashioned to ameliorate negative environmental factors. These are discussed below in section 2.6 where the ubiquitous elements of environmental control incorporated into most forms of ‘Anglo-Indian’ architecture are described.

2.4 Bungalows

The bungalow was the domestic habitat of most British households resident in India. Although the exact originator of this type of residence is unknown, it is thought to be an indigenous Indian architectural form adapted for use by the colonial population. The word bungalow itself derives from the Bengali word, bangla meaning ‘from Bengal’. The design possible derives from either the Bengali banggolo, a hut with a curvilinear roof or another Bengali vernacular hut type, the pyramid-roofed chauyari.47 (Figure 2.11: The Chauyari and Banggolo).

Early bungalows have been aptly described as, ‘...stationary tents, which have run aground on low brick platforms...’48 and were often constructed in a ‘cutcha’ manner (particularly in the early period of British expansion in the subcontinent) whereby structures were erected quickly utilising readily available components such as bamboo, thatch and mud-brick with little thought for their permanence.

In its simplest and oldest form the Indo-British bungalow was a single storey free-standing hut constructed upon a plinth and set within a spacious compound. The structure was surmounted by a highly pitched and often thatched roof that sloped down beyond the external walls. These large overhanging eaves were supported by a colonnade the space accommodated beneath them forming the ‘verandah’ that protected the external walls from direct sunlight.49 The verandah also served as a transitional space between external (public) and internal (private) zones; a semi-public living space often partitioned into additional ‘rooms’. (Figure 2.12).

The internal plan remained simple, and often reflected a formal symmetry. Bungalows were usually ‘shallow’ in design with all rooms having access to the verandah and/or a central

Figure 2.11
In this image are depicted the ‘chauyari’ (left) and the ‘banggolo’ (right).
Figure 2.12
Many of the major features of the early British bungalow are evident in this image of a residence in Pune Military Cantonment. Note the sharply pitched roof, the overhanging roof eaves supported by a (wooden) colonnade (right) that form the verandah. The residence is constructed upon a stone plinth.
Image: Courtesy, The Bishops School, Pune.
hall. This external ambulatory rendered internal passageways superfluous and rooms therefore opened directly onto their neighbours. Chattopadhyay suggests that this arrangement in colonial house design was an attempt to adapt the plan of the Indian courtyard house for use by ‘Anglo-Indian’ society.

Bedrooms with their associated dressing room and bathroom were located near the corners of the structure since bathrooms were often constructed within the partitioned corners of the verandah. The position of the bathrooms at the very periphery of the house allowed waste waters to be drained easily away and provided access for sweepers to empty the ‘thunderbox’ privy pans from the outside of the residence. A drawing room and a dining room were also essential elements of the house plan. (Figure 2.13: Plan of No.8 Queen’s Garden Road).

The design of the bungalow with its highly pitched pyramid-roof (and consequent large attic airspace) its high ceilings, thick walls and verandah was designed to create an equable internal micro-climate. Each room within the residence was also provided with a surfeit of doors (or windows) to promote thorough through ventilation and lower internal temperatures. In the later nineteenth century clerestories were also used to ventilate and illuminate areas in the centre of the structure, which, due to the shading qualities of the peripheral verandah, were often gloomy.

The principles of healthy residential design were similar to those of barrack design, seeking to provide a dry site, to prevent ‘stagnation of the air,’ allow ‘speedy removal of refuse’, and a construction that provided a dry foundation in addition to a heat retentive roof that minimised temperature fluctuations. To keep the interior of the dwelling ‘in perfect cleanliness’ was also considered essential, although interior cleanliness could not be secured by architectural designers and instead necessitated behavioural changes within the household whereby inhabitants were educated that it was in their interests to behave in a fashion considered ‘hygienic’.

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Figure 2.13
Plan of Bungalow (no. 8 Queen’s Garden Road), Poona, 31 Oct 1905.
Note the lack of connecting hallways in the plan. Passage through through the house is achieved directly room to room, or via the verandah.
Image: MSA3415
Each bungalow was centrally located within a generous compound. The openness of bungalow plans minimised the possibility of closing off rooms and blurred the boundary between interior and exterior spaces. The compound was therefore more than mere passive space marking out the territory of the household head and was essential to the functional operation of the residence. The bungalow itself, the ‘core’ of the bungalow-compound complex might have encompassed the private residential zone of the British household (the raison d’être of the complex) but it remained a zone which comprised only a small subset of the functions that took place within the complex as a whole.

The servant establishment that supported British householders resident in the bungalow were isolated from the primary residence and accommodated in a set of detached structures located away and to the rear of the bungalow proper. In addition to the residential servants’ quarters other outhouses included a cookhouse, storeroom, a stable and coach house (or a garage in the twentieth century) whilst in the early colonial period a ‘bibi-khana’ was often provided as a residence for Indian mistresses. The kitchen, servants quarters and stable were usually placed to the windward side of the bungalow in order to prevent odours reaching the inhabitants of the bungalow proper. If practicable a well would also be included as a water supply. Given that the bungalow could not operate without its proper retinue of servants, their accommodation and the outhouses that contained and facilitated their activities, each bungalow should therefore be considered along with its associated compound as a single entity.

The surrounding compound was generally spacious and could stretch to several acres in extent if the resident household was of high status. The bungalow itself usually occupied less than a tenth of the site its central location within the compound was designed to maximise air flows and to maximise status display (since the central location of the residence rendered it immediately and impressively visible) to any visitor to the compound. (Figure 2.14: Cantonment Vista). Usually the compound was walled or surrounded another form of boundary marker such as a hedge, with egress provided by a gate (with the name of the resident upon the gate posts). (Figure 2.15: Compound gate post). For those who could afford

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Figure 2.14
Officers’ bungalows c.1860s
This vista expresses well the vast size of bungalow-compounds and the sense of space that this form of town plan generated.
Figure 2.15
A compound gate in the Pune military cantonment. Note the Parsi name on the plate. The name of this bungalow is ‘Iron Gates’. Image: Author

Figure 2.16
Porte Cochere, bungalow on Stavely Road Pune. (Used as St. Margaret’s Girls’ School). Image” Author, courtesy of Bishops School.
one, access to the bungalow-compound was regulated by a servant (a ‘chowkidar’). A driveway ran from the street and gate to the primary household entrance. Later bungalows incorporated a porte cochere to protect visitors arriving in carriages or motor vehicles from the elements. (*Figure 2.16: Bungalow porte cochere*).

The open space within the compound boundaries was used to create gardens and expansive lawns. Considerable resources were expended cultivating plants unsuitable to the Indian climate in attempts to emulate the temperate gardens of ‘Home’. Compound gardens fulfilled several functions; exhibiting status to other members of the colonial society, evoking the nostalgically remembered metropolitan environment, beautifying the settlement, and were considered healthy since trees were thought to reduce the malarial miasmas that might compromise the health of householders (although the trees were usually planted near the compound boundaries since rotting foliage was thought to produce bad air, or in the early twentieth century to harbour disease transmitting insects).

Over time the bungalow moved away from its hut-like and ephemeral cutcha origins, since with increasing confidence and sense of the continuity of their rule, and with greater and more secure resources the British began to construct *pukka* or permanent residences that were considerably more substantial and variable in their appearance. Later bungalows, although they usually maintained their single storey elevation and free-standing aspect, were less defined by formal attributes, than by the fact that the ‘bungalow’ was regarded to be the form of housing utilised by Europeans in India, a definition that later degraded further to merely connote a form of free standing suburban residence. The newer category of residence tended to possess more complex floor plans and stylistic detailing, (usually classical or gothic derived from the prevailing modes in metropolitan society), and were usually freed from the overbearing additions of the large timber pyramid-roof.

The bungalow as a residential system replicated in microcosm the racial and functional divisions in Indo-British settlement morphology discussed in *Chapter 1*. Bungalow-compounds did not perhaps easily divide into a ‘tripartite model’ as did mofussil settlements, nonetheless similarities between the two scales are apparent.

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57 Gatekeeper.
Studying the bungalow-compound as a single entity reveals a distinct racial division within the complex. British householders were accommodated within the primary residence (bungalow), whereas the servant establishment was housed in a smaller detached and subsidiary structure to the rear of the compound. Although servant establishment usually outnumbered British householders numerically, the British household appropriated and dominated the majority of available compound and residential space. This mimicked broadly the relationship of the British station to the ‘Native City’ where the British similarly dominated space and harnessed it to serve as a formidable cultural and status display that symbolically marginalised the Indian population.

As has already been discussed, Indo-British settlements divided into functional enclaves that ostensibly housed administrative, military and civilian populations. The bungalow-compound also divided along similar although not identical functional grounds splitting between residential (private), administrative (semi-public) and service zones.

The primary residence (bungalow) not only served the purpose of private space dedicated to a residential role. An ‘official’ or administrative function was in many cases also apparent in bungalow design, particularly in smaller settlements or in the large residences of high status household heads. One need only examine a Collector’s or District Officer’s bungalow to see that such residences functionally divided between residential (private/civilian) and administrative (semi-public-official) spaces. The bungalows of administrative officers often incorporated offices and therefore served as spaces to transact official business. The verandah, a transitional space between the ‘outside’ and the ‘inside’ played an important role within the bungalow-office system, serving as a semi-public area where non-householders could be met or addressed without allowing them access to the more private spaces of the interior. Any administrative (office) functions that existed were focused upon the bungalow and therefore exclusively upon the British zone of the compound.

Residential space was of course distributed throughout the compound and existed in both the bungalow and its compound outhouses. The British utilised the primary residence (bungalow) as ‘home’; as a private space for sleep and leisure. Residential space was also incorporated into the outhouses that accommodated the households of the Indian servant establishment.

In comparison the ‘service’ zone focused exclusively upon the outhouses and therefore the Indian sector of the compound. The primary residence, the bungalow that
accommodated the British household was generally shorn of service apparatus and could not properly function without the subsidiary structures (primarily the kitchens and the stables or garage) that were distributed through the compound. Even the compound open space, often symbolically British was maintained by Indian servants. Racial and functional divisions in settlement morphology and in the British bungalow-compound are displayed in figure 2.17 a & b.

2.5 Architectural Style

Architectural style was a symbolic medium via which the British could easily mark their difference and distance from the indigenous community. A wide range of European architectural styles are observable in India, ranging from severely utilitarian structures designed by British military engineers to the extraordinary and almost indescribable mode of La Martiniere. Despite this decorative range colonial Indo-British architecture in general followed the architectural fashions of metropolitan society. The built environment of the Raj was therefore broadly influenced by either the classical or gothic revivalist styles.

In late eighteenth and early nineteenth century Britain neo-classicism was the predominant architectural influence. By the mid-nineteenth century however the dominance of the neo-classicism had been contested by a number of architects who claimed the style inappropriate for the regional climatic conditions of northern Europe. The gothic style was championed by many as a northern European architectural mode suitable for cold and wet climates that could be ‘revived’ and adapted to secular as well as religious uses. (Figure 2.18: The battle of the styles in Poona).

It was realised that the classical orders were,

‘...first used in Climates where it was desirable to exclude the too powerful rays of the Sun, and to produce Shade and fresh air about the building."^60

and therefore perhaps better suited to the Indian climate than the gothic style. Both modes of design however maintained their popularity in an Indian context since classically styled structures alluded to the continuity of pan-European civilisation and power whilst the gothic revival projected a more particularly British nationalist symbolism. It was not long before some were complaining that:
Figure 2.17 b

Bungalow-Compound
Racial Schematic

Compound

Indian
British

Functional Schematic

Compound

Service
Residential
Administrative (Semi-Public)
Although most of the public buildings in Poona were influenced by the neo-Gothic, a number were built in a Classicising style. Compare the gothic Reay Market (above) in the ‘Native City’ with the Classically influenced Legislative Council chamber in the Civil Lines (below).

Image: Author
‘...the engineers of the PWD have gone clean crazed over extremely pointed windows and gables. To them it seems that Gothic architecture means pointed arches in stones of alternate colours, bands, and gables with finials. The public we should think, are by this time quite sick at the sight or even mention of lancet arches...’

Although the classical orders provided elements that broke strong sunlight from the walls and interior of a structure, (generally redundant features when in place in Britain), the style was not perfectly suited for the Indian climate since it provided little protection from the monsoon rains. Within India, locally developed architectural styles provided successful strategies to combat the effects of a tropical climate, yet the British were loathe to adopt in a holistic fashion indigenous architectural stylistic conventions. Instead individual indigenous elements of design (the verandah or the punkah for example) were woven into European architectural traditions with varying degrees of success, creating hybrid, colonial and peculiarly Indian versions of the classical and gothic styles. The lack of trained architectural practitioners in India and the consequent dominance of Engineers in the design of structures led to additional eccentricities in the classical and gothic variants extant in the Raj. Such idiosyncrasy led metropolitan commentators criticising colonial architecture as being of ‘questionable purity’.

Despite the hybrid status and questionable pedigree of colonial architectural design a ‘battle of the styles’ was waged in India just as fiercely as amongst the metropolitan architectural profession. In this battle the classical canon (with its Mediterranean origins) was challenged by more ‘nationalistic’ regional gothic architectural styles such as the British local variant of the gothic, (usually the perpendicular or ‘Tudor’ Gothic style). The stylistic ‘battle’ was never resolved, and both classicism and the gothic remained strong influences upon British architecture until the old styles were eventually swept away by the advancing architectural revolution of Modernism.

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63 Generally the perpendicular sub-style rather than the flamboyant which was perceived as more ‘French’ in nature. Neo-Gothic became particularly popular with the reconstruction of the Palace of Westminster in London in this style.
Colonial calls for the development of an ‘Imperial’ architecture that could reflect British power and prestige to the Indian population\textsuperscript{64} complicated metropolitan arguments for the respective use of each style. It was never determined which of the gothic or classical modes could best reflect the imperial pretensions of the British in India, however, different regions or cities developed their own stylistic variants and preferences.

Calcutta and Madras were regarded as primarily neo-classical settlements, the clusters of classical buildings along the Hoogly in Calcutta earning it the title of the ‘City of Palaces’.\textsuperscript{65} Bombay, by contrast, had been rather a backwater in comparison with the other two Presidency capitals. The city experienced an economic boom in the 1860s when the United States Civil War cut the supply of cotton from the southern American states to the world market, a demand which Bombay filled. The profits generated led to a general reconstruction (during the Governorship of Sir Bartle Frere) of the central Fort area of the city in the neo-Gothic style. Even after the speculative boom ended the importance of the city was maintained since the opening of the Suez Canal rendered Bombay the first subcontinental port of call for British shipping. Poona, close to Bombay and one of the triumvirate of capitals of the Presidency, felt the impact of the cotton boom and similarly the city’s preferred architectural style was the neo-Gothic (interpreted however in a more sombre mode than in its larger neighbour).\textsuperscript{66}

Other local variations of the two stylistic orders developed with time. Simla for example was renowned for its strange Indian-Tudor variant, whereas in Bangalore the local gothic style included ‘Monkey Tops’, ‘...pointed hoods over windows, projecting about 18 inches from the wall, or canopies along the front and sides of porches.’\textsuperscript{67} One common classical stylistic variant was that derisively termed, ‘Engineering Vernacular’ or ‘Military Vernacular’, a stylised mode that represented the standard architectural designs of the Indian Public Works Department. (\textit{Figure 2.19: The Military Board Style}).

Concessions were eventually made to vernacular styles, and within the eclectic stylistic milieu of late Victorian architecture, indigenous elements (usually of Mughal rather than Hindu origin) were incorporated into British structures in an attempt at syncretic Imperial style. Termed ‘Indo-Saracenic’, this style remained influential, and was particularly used in


Figure 2.19  
The Public Works Department style also known as the Military Board Style.  
public buildings in an attempt to demonstrate the unity of the ruling elite with the ruled (New Delhi for example was constructed in this mode). The Indo-Saracenic style was however criticised as being merely the addition of minor Mughal details such as *chattris* upon what were in essence neo-classical buildings.\(^{68}\)

In terms of the ‘function’ of style and fashion, in many respects the ‘battle of the styles’ remains a general irrelevancy since European architecture of every mode served the identical symbolic role; to represent and to mark that which was British and was ‘not Indian’. European architectural forms were immediately noticeable within the Indian built environment and were associated with ‘a conquering militarism and a culture and race which considered themselves superior.’\(^{69}\) Within the world of the military cantonments and civil lines therefore European architectural styles marked British territory; the limits of their perceived culture area, and their isolation and separation from the indigenous populace.

### 2.6 Technologies of Environmental Control

Ventilation and amelioration of the Indian climate in order to maintain the health and comfort of inhabitants were major functional aims of British colonial architecture in India. The manner in which these were achieved were twofold. In the first case household structures incorporated intrinsic elements that provided ventilation and maintained an adequate range of temperature within residential habitats. In the second supplementary mechanisms were commonly utilised to further promote ventilation and cooling.

*Intrinsic Elements of Design*

The following design strategies were developed in order to maximise the environmental benefits of a residential site through helping to lower internal temperatures, raising domestic areas away from low-lying miasmatic phenomena, and promoting thorough ventilation.

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\(^{68}\) See Glossary.

* Bungalows and barracks were constructed upon a plinth in order to raise room height above low lying miasmic phenomena.

* Dual storey residences were (rarely) built, with the upper storey reserved for domestic purposes, this system serving the same purpose as a plinth. (Upper storied barracks were constructed in the 1860s for the single men). (See Vol. 2 II.46).

* Large thermal retaining roofs were incorporated into structure designs to maintain a stable temperature. (Figure 2.20).

**Figure 2.20**

_A large Bungalow on Stavely Road, Pune. Note the large roof, and the overhanging eaves that shelter the verandah._

Image: Author

* Bungalow roofs were often double, or even quadruple layer-tiled, and sometimes provided with an underlay of thatch in order to provide heat insulation and protection from the heavy rains.
* An excessive number of openings (windows and/or doors), redundant for the functional necessities of actual entrance and egress, were provided for each room in order to promote a flow of fresh air throughout the structure.

* Openings (windows and/or doors) in rooms were situated where possible opposite one another in a symmetrical pattern in order to promote flow-through ventilation.

* Doors were often preferred to windows as a method of ventilation, particularly in early structures.

* Verandahs screened the outer walls of the house from the sun and provided an external domestic retreat during monsoon. They provided a semi-private semi-open space upon which many household functions could be undertaken, where guests could be greeted, or business with hawkers transacted.

* In the later nineteenth century clerestories provided light and ventilation into the usually dark centre area of the bungalow. (*Figure 2.21: Clerestorey*).

* Thick walls of mud, double brick or rubble fill provided insulation from the heat.

* High ceilings provided a cooling space and allowed space for the addition of supplementary systems of temperature control such as the punkah (see below).

* A layer of white chunam (stucco) was applied to the external walls in order to emulate marble and effectively reflect away the sun’s heat.

* Floors were often flagged stone that remain cool during the heat of the day, rather than relying upon wooden floorboards which were susceptible to termites.

* Roof ventilators allowed hot air to escape from the attic space.
Figure 2.21
The small clerestorey in the break between the verandah and roof admits additional light into badly lit rooms.
Bungalow, Stavely Road, Pune Cantonment
Image: Author
Figure 2.22
This entry into St. Mary’s Church in the Military Cantonment of Pune has retained its wooden-louvred door.
Image: Author
Figure 2.23
Jalousies above the windows on an derelict mansion near Fergusson College (Fergusson Road) Pune.
Image: Author
Figure 2.24
Behind the household staff of this British householder one can see the verandah lined with raised jhaumps that would have been lowered to shade the verandah during the heat of the day.
Supplementary Mechanisms

Jalousies

Windows (or doors) were often unglazed and provided instead with louvred shutters that promoted ventilation and shut out the sun. (*Figure 2.22: St. Mary’s Church, Pune*).

Jhilmils

A form of sun-breaking and projecting gable these were placed over window openings to prevent direct sunlight from entering the interior of a structure. (*Figure 2.23: House near Fergusson College, Pune*).\(^70\)

Jhaumps

A framework of bamboo covered with grass or another form of matting. The Jhaump could be used as a shutter or even as a door. They served a similar function to ‘tatties’ (described below). (*Figure 2.24: Jhaumps*).

Tatties

Removable *Khus* grass mats (*figure 2.25*) were affixed to the external openings of the verandah in the hot weather, or doors, and kept wet by a servant in order to cool air passing into the interior of the residence.

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\(^70\) Hobson Jobson reverses the definitions for Jhilmill and Jalousie, however current the usage of the word ‘Jalousie’ is the definition outlined above.
Chicks

Where tatties were not utilised, chicks (a form of rolling blind constructing of split bamboo) were placed over windows, doors or the gaps between the verandah posts in order to shade the interior of the structure.\(^7\) (Figure 2.26: Chicks in Government House, Triplicane).

Punkahs

Before the advent of the rotating ceiling fan the punkah (figure 2.27) was used to promote the internal movement of air. The punkah was made of a fringed cloth stretched upon a wooden frame and hung from the ceiling so that it could swing freely, the system was operated manually by a servant, the ‘punkah-wallah’ located outside on the verandah. New ‘automated’ forms of punkah driven by steam or by bullocks were developed in order to facilitate barrack or household ventilation. The introduction of the electric ceiling fan led to the eventual obsolescence of this device. The more efficient design and operation of the ceiling fan, led to the reduction of ceiling heights in buildings, an effect particularly noted in the design of New Delhi.

Figure 2.26
Chicks in use in the verandah of Government House, Triplicane, Madras.
**Thermantidotes**

The thermantidote (figure 2.28) was a rotary fan device used to cool the air in buildings within the hottest of stations, and was operated either mechanically or by an animal power;
‘These are merely a copy of the ordinary winnowing machine, in which the air entering to supply the fan is made to pass through a wetted mat.’

The thermantidote could be large, for it was advised that a Company Barrack housing 100 men could be cooled with fan 6 foot in diameter that rotated at 60 revolutions per minute.

**Figure 2.28**

The Thermantidote


2.7 Construction Techniques

Despite the rhetoric of later nineteenth century jingoistic imperialism which alluded to the permanence of the British Raj, the urban fabric of the British Empire in India was not by and large one written in durable materials such as stone. In the earliest phase of British

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expansionism the role of the Raj was to secure stability in order to promote trade, rather than
the creation of durable imperial monuments. During this period vast fortunes were made by
British officials though gross exploitation of the subordinate population.\textsuperscript{74} It was only in
the nineteenth century that the concept of the enduring ‘civilising mission’ of the British, or the
‘white man’s burden’ developed and with them the perception of the British as a natural
ruling race, dominant by moral right rather than through military force.

The majority of British buildings were constructed of brick and plaster, with stone
structures being a relative rarity. The British sought to imbue their architectural creations with
a sense of permanence, as well as to conform with neo-classical stylistic norms, through the
widespread use of chunam\textsuperscript{75} to mimic stone. If facades were left unmaintained after the
monsoon the illusion would be broken, revealing,

‘...the apparent instability of the splendour...Churches, and public buildings are all of
plastered (sic) brick; and a portico worthy of a Grecian Temple is often disfigured by
the falling of the stucco, and the bad, rotten bricks peeping through.’\textsuperscript{76}

The early conviction of the transience of the Raj led to two distinct types of
construction; ‘pukka’ and ‘cutcha’. The pukka structure was not designed for permanence and
was built upon a shallow foundation and constructed of readily available materials usually
grass matting, bamboo, mud plaster, sun-dried brick and thatch.\textsuperscript{77}

‘Pukka’ or proper structures were conversely built with durability in mind, utilising
stone, or more frequently kiln fired bricks, with the timber-work being of more robust woods
rather than the less resilient components of cutcha building. At their establishment many
cantonments were transformed from tent encampments to permanent camps by utilising
cutcha constructions which were only slowly transformed into pukka buildings.

\textit{Structural Members}
\textbf{Roofing}

\textbf{Bamboo:} Bamboo was often utilised for rafters in cutcha bungalows,\textsuperscript{78} but otherwise a
formwork of bamboo matting, (chatai) was placed onto wooden rafters,

\begin{footnotesize}
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\item \textsuperscript{74} A process and period chronicled by Spear., in \textit{The Nabobs}; Spear, Percival, \textit{The Nabobs: A Study of the
\item \textsuperscript{75} A polished stucco.
Architecture in India}, Faber and Faber, London, 1968, p.27.
\end{itemize}
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‘...this was weighted down with strips of bamboo, laid across horizontally, and over this the country tiles were fitted lengthwise from roof-ridge to eaves.’\textsuperscript{79} (Figure 2.29: Bamboo formwork).

Bamboo was also used for scaffolding.

**Thatch:** Utilised as a roofing material, (along with coconut leaves in the earliest period)\textsuperscript{80}, thatch gave way to tiles in *pukka* bungalows from the mid nineteenth century. as part of a fire prevention strategy, particularly after the Mutiny during which many bungalows had been set alight.\textsuperscript{81}

‘Last night...there were two fires near. I walked with my maid a little way up the hill at the back of the house to see where the fires were. One was the guard room of a group of cells close to the hospital. The other was an old bungalow,...empty, formerly used as a Roman Catholic chapel.’\textsuperscript{82}

In certain cases to increase insulation a layer of thatch or teak leaves was retained beneath the tiling.

**Tiles:** ‘Country tiling’ was the norm for roof covering. These tiles were made of;

‘...a hollow cylinder about twelve inches long, and four in diameter; this is cut into two equal parts lengthways, and burn in little kilns. They tile here by single rows, and when one row of tiles is laid so that the concave part comes uppermost, the next is inverted and so covers the ridges.’\textsuperscript{83} (Figure 2.30 a: Single tile).

Often two layers of tiles were provided upon roofs in order to provide extra insulation (figure 2.30 b: Multiple tile layers) and protection against the monsoon rains, and the tile cavities were at times filled with mud for the same purpose. (Figure 2.30 c: Filled tile).

European style flat tiles were increasingly made through the nineteenth century to replace the light and porous ‘country’ tiles, which required considerable maintenance.


Figure 2.29
This roof collapse has revealed bamboo structural members used in its construction. 
Bungalow on Stavely Road, Pune.
Image: Courtesy, The Bishops School, Pune.
Figure 2.30 a
Country Tiles from a bungalow on Stavely Road, Pune.
Image: Author

Figure 2.30 b
‘Country Tiling’. The tiles on this roof have been laid in up to four layers.
Bungalow on Stavely Road, Pune.
Image: Author

Figure 2.30 c
‘Country Tiling’. Note that the spaces between tile layers have been filled, in this case with cement, to aid with waterproofing.
Bungalow on Stavely Road, Pune.
Image: Author
**Corrugated Iron:** Corrugated Iron was utilised as a roofing material, particularly upon public buildings, although the monsoonal conditions made the material rapidly decay.\(^{84}\)

**Wood:** Teak (Burmese) or Mahogany (Indian), were commonly utilised for rafters which were often left exposed in order to prevent the spread of termites or vermin in the roof cavity. Teak was often preferred due to its termite proof nature, but in less robust structure palmwood was used. (*Figure 2.31: Wooden roof elements*).

**Mango Wood:** an easily available although not particularly durable material was utilised for the inner timberwork, generally in cutcha bungalows.

**Fabric:** Since rafters needed to be inspected often for vermin, instead of solid ceilings, coarse cloths, often of jute were stretched at ceiling height across the room above a cornice. (*Figure 2.32 a: ceiling cloth, and figure 2.32 b: cornice*). These cloths were often whitewashed, or, as in the case of Government House Calcutta, elaborately painted.

**Flat Roofing:** Where a terraced roof was provided this was constructed of wooden beams, often palm trunks, laid across the breadth of the room walls, and then sealed with clay.\(^{85}\)

**Guttering:** Prior to formal metal guttering a later of stone flags was placed along the drip line of the eaves to carry rainwater away.

**Detailing**

**Terracotta:** Rather than being carved of stone the decorative balustrades on many Indo-British structures were actually made of fired terracotta, that had been thrown like a pot, and, being hollow, were filled with mortar in order to impart weight (*figure 2.33*).\(^{86}\)

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Figure 2.31
A roof collapse in a bungalow room reveals a variety of wooden structural members including trusses constructed of sawn beams and branches or small trunks used as rafters. In addition note the bamboo structural elements and the grass matting that underlies the tiled roof. In the background a ceiling cloth has come loose and hangs against the wall.
Bungalow on Stavely Road, Pune.
Image: Courtesy, The Bishops School, Pune.
Figure 2.32 a
Ceiling Cloth
This photograph, looking up into the bungalow roof. The arrow marks out the remnants of a ceiling cloth that has become detached from the rafters. Note also the clerestorey windows above the ceiling cloth.
Bungalow on Stavely Road, Pune.
Image: Author

Figure 2.32 b
Cornice
The arrow marks out the cornice above which the ceiling cloth was fixed.
Bungalow on Stavely Road, Pune.
Image: Author
Iron: As the nineteenth century progressed, the importation of prefabricated iron structural and decorative members became more common. Iron or steel reinforcements were utilised to support the upper floors in some barracks, whilst even quite early structures incorporated iron girders - one such example being such as St. James’ Church, Delhi, which used iron as supports for the roof supports and dome. As the gothic style became more prevalent in India the use of iron finials and crests was more common, while in the Bombay Presidency wrought iron spiral staircases were often incorporated into designs. (Figure 2.34: Iron spiral staircase).

Walls

Brick Types

Western: Even by the middle of the eighteenth century Indians were being trained to produce European style brick with a proportion of 11 x 5 1/2 x 2 1/2 inches when fired (still
Figure 2.34
This spiral iron staircase incorporated into a bungalow extension was prefabricated in England and shipped to India.
Bungalow on Stavely Road, Pune.
Image: Courtesy, The Bishops School, Pune.
Sun-Dried Brick: Sun-dried ‘Mughal’ mud-bricks were commonly used for the walls in cutcha bungalows, or for the internal wall linings in cutcha bungalows. The bricks were generally flat and square in profile; a little reminiscent of Roman examples, with proportions of about a foot in length, 6 inches in breadth and 3 inches in thickness.88 (Figure 2.35: Mud brick) Some mud built cutcha structures did not have walls of brick at all, but of smoothed kneaded mud that was later plastered.89

Mortar: The mortar used to bind the bricks in pukka structures mortar was made of brick dust, water, and and hemp.90 Janet Pott describes another ‘recipe’ for mortar common in Bangalore; a mixture of sand and chunam in the proportion of 8:1 to which a mixture of ‘karkai seeds and jaggery’, (coarse sugar), was added.91

Stone: Stone was only rarely used extensively in domestic structures. It was however commonly utilised in the plinths and foundations of pukka constructions. Public buildings were more commonly constructed of stone, the local varieties used in Poona being granite and basalt.

Mud Plaster: Mud plaster, sometimes with a temper of straw was overlaid brickwork, to be later covered with whitewash or chunam. Internal walls were whitewashed rather than papered.

Stucco: Chunam, a distinctive form of lime plaster-stucco was used to finish many of masonry British buildings and provide the illusion of stone. The polished surface of the stucco

Figure 2.35
Examples of sun-dried mud brick from a ‘cutcha’ bungalow.
Bungalow on Stavely Road, Pune.
Image: Author
also served as a solar radiator. Chunam was polished by rubbing a layer of plaster with a polishing stone and then finally with a quartered coconut shell. 

Flooring

Floors were often constructed of stone or earth rather than of wood, which was always in danger of succumbing to termites or warping. Early structures sometimes used the indigenous methods of flooring of beaten earth or in which a ‘...brick base was coated with a solution of cow dung and mud.’ More expensive structures incorporated floors covered with stone flagstones. The flags were often supported by timber flooring joists in order to provide an airspace between the floor and the earth. (Figure 2.36: Stone Flagging).

2.8 Conclusions

British architecture in India exhibited a tension derived from its attempt to synthesise two distinct cultural and architectural traditions; the Indian and the British. Outwardly, in terms of style and its consequent symbolic effect British colonial architecture remained part of the European tradition. Discounting the often derided attempt of the Indo-Saracenic style (or more subtle synthetic architectural efforts such as Lutyen’s palatial Viceroy’s House in New Delhi) to successfully unite Oriental architectural styles with an expression of Occidential imperial power, British Indian architecture tended to reflect the stylistic traditions of the metropolitan architectural profession with its obsession with the (neo) classical and the (neo) gothic stylistic conventions. In the mofussil these styles were however usually interpreted by military engineers (or other amateur architects) and restricted by administrative parsimony to produce a certain austere and utilitarian aesthetic.

Although often submerged in an attempt by the architect or designer to proclaim a building’s European heritage through the application of stylistic decoration, Indian architectural influences in Indo-British architecture were also strong. In terms of construction material and technique, plan and design, in the design of elements of environmental control and via the labour utilised in their construction the bungalow was of Indian rather than British or European derivation.

Figure 2.36
Stone flagstones removed for reuse from the floor of a bungalow in Stavely Road Poona, prior to its demolition.
Image: Author
‘Anglo Indian’ residential architectural forms served as shelter, as places of work and leisure, as zones for the amelioration of the Indian climate and as spaces that could preserve health. Above all they were a setting for the British (domestic) mode of life in India. This mode of life, and consequently the spatial organisation of individual residential structures were very different from those of British metropolitan society. British architecture in India incorporated colonial concerns:- architectural style was used to mirror the architecture of ‘Home’ and to express a sense of the British wealth, hegemony and cultural superiority. Furthermore, just as British settlements divided along functional and racial fault-lines, the spatial organisation of the bungalow-compound in particular replicated the morphology of mofussil settlements in microcosm, distributing race and functional spaces in specific patterns across the residential compound.

The bungalow-compounds and barracks of India were in some ways primitive structures, constructed of traditional materials and utilitarian in nature. Despite their pre-modern form, as the nineteenth century progressed these residential categories attracted attention from the medical and scientific establishment, which attempted to alter residential forms for the benefit (particularly in terms of health) of those accommodated within. (The impact of medical theories upon town planning and architectural design is discussed in Chapter 3). Given the amount of analytical effort invested in bungalow and barrack design these forms became increasingly theoretical and mechanistic spaces; ‘machines’ that were believed to reverse the ill-effects of the hostile tropical environment, and perhaps even precursors of later modernist forms.

A major symbolic role of British architecture in India was to hide British dependence upon the Indian population. After all, the British regime relied upon the loyalty of its Indian armies for the maintenance of its rule; relied upon Indian staff for the support of their administration; and relied (intimately) upon Indian servants for the support of their households. If British architectural forms were the ‘sets’ upon which British lifeways in India were enacted, then no hint is given by outward forms or facades of this dependence upon the local Indian population. British architecture and settlements (as seen from afar, from India’s ‘native cities’) were sprawling, unfortified and self-confident in nature, broadcasting the permanence of European Imperial Rule. The military cantonments, the civil lines, bungalows and barracks were primarily designed for the British life and in such enclaves and compounds demographic reality could be subjugated to colonial appearances. Indians were often relegated
to roles of support literally behind the scenes, obscuring British dependence and their position as tiny ruling minority within the vast indigenous population.
Chapter 3

Legislation and Public Health Policy

It may seem curious to follow chapters describing settlement morphology and architectural design with another dedicated to theories of public health in India. In order to understand the legislative context within which the cantonment ‘system’ functioned it is, however, essential to examine British theories concerning disease causation and prevention and manner in which these theories influenced settlement and residential design.

3.1 Theories of Disease

Nineteenth century conceptions of disease causation and prevention were not based upon current scientifically tested theories which affirm that certain diseases are communicated between individuals through the transmission of microbial pathogens. Accepted medical hypotheses of the period instead asserted that many infectious diseases were in fact caused by ‘miasmas’, gaseous emanations that were thought to originate from the earth, that arose from rotting vegetation, excreta, or other decomposing organic matter, and were detectable as the odours associated with decay.

Physical contact was also known to communicate certain diseases, especially those of a sexually transmitted nature, while another category of disease was believed to have cause in certain risk behaviours which included excessive consumption of alcohol or poor dietary habits.\(^1\) It was therefore generally understood that some agent needed to be passed to a person from the environment, or from another infected person in order to cause disease, but, since the nature of these disease causing agents was poorly understood, it was theorised these were environmental rather than biological origin.

The majority of diseases were believed to be transmitted wherever ‘filth’ accumulated or organic decay was prevalent. Medical authorities delineated the negative environmental factors that were thought to categorise localities susceptible to miasmas and therefore disease. Low-lying swampy land, for example, being saturated with water and an ideal environment for the decomposition of organic matter was thought particularly hazardous, producing fevers

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via malaria'-inducing miasmas that specifically arose from decaying vegetable matter. Conversely, positive environmental factors, the most significant of which were access to fresh air, light, and clean water were thought to reduce the risk of contagion.

The intrinsic link drawn between ‘filth’, location, and the causation of infectious disease led to the development of preventative strategies that were similarly ‘environmental’ in nature, seeking through architectural design or town planning to maximise the healthiness of a given site. Hygienic or sanitary movements were established in Britain (and to a lesser degree in India) whose primary aim were to cut high urban mortality rates through the application of these strategies, which in the urban context primarily involved the provision of fresh water to communities and adequate facilities for the removal of sewage.

3.2 The Indian Environment

Although abstract medical theories proposed the existence of miasmas as a causative agent for disease, British medical specialists had also to explain the high mortality rate amongst Britons posted to India. The physical nature of India itself was considered to be the cause, since the distinctive tropical environment was believed to produce unique maladies to which the British were particularly susceptible and that required specialist approaches to treatment. Although it was theorised that the European populace might in some minor way acclimatise to the Indian environment to over time, the persistently high mortality rates of Europeans in India throughout the nineteenth century fostered the idea that Europeans were constitutionally unsuited to life in the tropics. (See Chapter 8 section 8.3 for statistical data).

India never attracted an extensive permanent population of British settlers not only due to the degree of development and density of settlement of the indigenous population, but also due to the perceived incompatibility of British bodies with the local Indian climate and environment. British settlers were directed instead to areas (typified by Britain’s North American and Australian territories) with temperate climates thought to be better suited to their constitutions.

Early settlement restrictions were even placed upon the British populace, restricting and regulating direct British ownership of land in India, and requiring a license to reside

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2 Mal = bad aria = air.
4 British East India Company 1813 Charter Act. These provisions began to be relaxed from 1824 when the
within Britain’s Indian territories. Although persons in certain civilian employment categories were eventually granted right of residence, (teachers and missionaries for example rather than farmers), the majority of the ‘Anglo-Indian’ population of India was transient in nature. Most Britons were either part of the military or the civil administration and were consequently Indian residents only for a finite tour of duty.

Since minimal acclimatisation to the Indian environment was expected to take place amongst British residents, it was considered imperative to discover the healthiest locales in which to locate essential European settlement. The most appropriate regions for European habitation were believed to be the temperate areas of India located in regions of high altitude. ‘Hill stations’ were consequently founded in mountainous locales where the climate most resembled that of Europe, and these settlements, designed for the accommodation of the British during the ‘hot weather’, were highly valued for their perceived regenerative qualities. An accepted procedure also developed whereby the administration was shifted between different ‘capital’ cities during the year to maintain the most equable climate for Europeans. The central administration shifted from Calcutta (and later New Delhi) to Simla during the hot weather, whereas the provincial administration of the Bombay Presidency relocated from Bombay to Poona during the monsoon.

The logical extension of concepts that categorised areas as healthy or unhealthy according to climate was a form of ‘climatic determinism’, whereby it was believed that ‘healthy’ (meaning temperate and consequently European) climates produced ‘healthy races’ and vice versa. Indians as a racial group were thence consigned automatically to an inferior position in relation to Europeans merely by virtue of having originated within a tropical climate (an idea that of course buttressed the image the British held of themselves as natural rulers).

There was a tendency for the British to paradoxically conceive of themselves as both
strong and virile conquerors of an magnificent empire, and also as strangely fragile. British strength was a faculty that needed to be guarded and protection was required to protect British strength against alien environments. ‘A thorough and scientific protection of the body’\textsuperscript{9} was believed essential to protect the European body from tropical disease, and levels of protection were applied to the British that were thought redundant for the indigenous population.

Comprehensive preventative medical strategies related to the environment were developed that were appropriate for several nested physical scales and designed to protect the European body from disease. The most personal of the scales were represented by diet and clothing, but also included greater environmental interventions and included the ‘healthy’ design and internal arrangement of structures, the appropriate town planning regulations for settlements, as well as the placement of settlements.

3.3 The Indian Medical Service

Responsibility for European health in India was the responsibility of the Indian Medical Service (IMS), a bureaucracy established in 1764 by the British East India Company.\textsuperscript{10} The IMS ran civilian and military hospitals, field hospitals accompanying army expeditions, and provided medical officers for Company ships. Personnel for its institutions were drawn from training colleges based in India, the first of which were founded in Calcutta and Madras in 1835.\textsuperscript{11} Preserving public health (of the British population) and the institution and monitoring of sanitary practice(s) were additional roles that became increasingly important for the organisation from the early nineteenth century. Under the administration of the Service by Sir James Ranald Martin a series of proposals dating from 1835 led to the systematic collection of sanitary statistics for cantonments and to the development of strategies for the sanitary improvement of areas under IMS purview. The latter undertaking in particular had implications for the physical fabric of both the British and Indian sectors of hybrid cities.

In the late eighteenth and early part of the nineteenth centuries the Service built-up an

\footnotesize{\begin{itemize}
\end{itemize}}
authoritative reputation within the imperial medical establishment. By the later part of the
nineteenth century however the IMS had retreated into stagnation and introspection and was
consequently regarded as a bastion of conservatism that withheld credit for innovation or new
medical theories (particularly to those originating from ‘outsiders’). Even after the veracity
of miasmatic theory had been diminished with the discovery of the organism causing cholera,
many IMS officials were stubborn in their refutation of any causal link between microbes and
disease. A number IMS reputations had been founded upon support for miasmatic theories
of disease transmission, and high ranking proponents of those theories were not about to
quickly abandon their convictions.

There is evidence that as late as 1894 important bacteriological discoveries were in
some cases being ignored in India (as in the case of Laveran’s discovery of *Plasmodium*, the
organism causing Malaria) whilst Cunningham, director of the Calcutta laboratory
investigating Cholera on behalf of the Government of India, was in that year still arguing that
the Cholera bacillus could not be described as the sole cause of the disease. He still professed
that local environment, and specifically humidity caused the disease if the bacillus was
present.

The continuing conservatism of the Indian bureaucracy and Army led to the continued
application of medical practices and preventative strategies considered obsolete in
metropolitan British society and slow uptake of new theories and practices that originated in
Europe. Since the Indian medical establishment persevered in its conviction that the Indian
environment was essentially pathogenic to the European, the principles of settlement and
structure design developed to ensure the health of the populace by maximising beneficial
environmental factors were still applied into the twentieth century.

### 3.4 Cholera

Research concerning the causation and transmission of the disease Cholera proved

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16 1894 was the year after the analysis of the Hamburg Cholera epidemic of 1892 by Gaffky, that proved the role of
drinking-water in the epidemic.
17 The use of the ‘Solar Topi’ and ‘Cholera Belt’ by British troops in India is a case in point, for their usage
continued until the Second World War despite their doubtful benefit.
crucially important in shaping debate regarding the sanitary policies of the Indian Medical Service and the Government of India. Cholera was a relatively new menace to the health of the British in India unlike the army’s intractable medical problems involving the control of sexually transmitted diseases amongst the soldiery. Originally endemic within its natural range of Lower Bengal, cholera spread outside this territory after 1817 in successive epidemics. During this period the disease became the greatest cause of mortality amongst European troops, and after the upheaval caused by the Mutiny of 1857-8 the drive for greater operational efficiency in the army through reduced European troop mortality eventuated in a search for more effective preventative strategies to utilise against the illness.

The transmission of cholera was originally thought to be linked to excessive changes in temperature or humidity, or to ‘choleric miasmas’. In 1848 however, John Snow published the results of a study that closely linked individuals in a London epidemic to the users of a particular pump in Broad Street, revealing water to be a contentious, new variable in disease causation.

Although this study demonstrated the water borne transmission of cholera, the transmitted agent itself was not known. The theory that disease was caused by microscopic pathogens had been conceived by the late 1830s and was advanced through such discoveries as the fungal cause of the skin disease *favus* by Schonlein, in 1839. The evidence supporting this theory was not however considered conclusive, and so environmental theories retained their dominance.

Various new hypotheses circulated during the succeeding decades to account for disease transmission and contagion. In the 1860s and 1870s the theories of Justus Liebig gained some acceptance. These proposed that each disease was caused by a specific poison that caused changes within infected blood via a process analogous to fermentation (that he termed zymosis) that was due to a deficiency of ozone in the atmosphere. This hypothesis was generally consistent with extant miasmatic theory and cholera therefore began to be

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18 Cholera belts, a form of flannel cummerbund were worn in India to prevent chills and thus cholera.
Chapter 3

67

categorised as a ‘zymotic’ disease. 22

In a similar theory the German scientist Pettenkoffer proposed that cholera was caused by a ‘poison’ developing within alluvial soils containing salts and organic matter. These interacted with the air creating an agent of infection that rose from the ground and penetrated and infected the body. 23 In India this theory was popular and was propagated by Cunningham and Lewis, two medical officers (who had been sent to Germany for training) engaged as assistants to Sanitary Commissioners to investigate the cause and spread of cholera. 24 Their prejudices became accepted as the dominant theoretical standpoint of the Government of India concerning this aspect of public health.

Even without conclusive proof that biological pathogens were the cause of disease, the medical establishment (particularly in Britain itself) began generating and accepting contagionist theories. William Budd, for instance, surmised that both cholera and typhoid (also known at that time as enteric fever) were water transmitted and caused by living organisms that multiplied in the intestines of contaminated persons, a theory susceptible to confirmation by searching for the proposed causative organism.

It was only in 1883 that the cholera pathogen, \( \text{Vibrio cholerae} \) was discovered in tissue and later cultured, by Koch and the German Cholera Commission. 25 Despite the confirmation this provided to theorists such as Budd, environmental factors and miasmas were still perceived to be significant agents in disease causation, not least due to vociferous advocacy by conservative medical authorities.

A form of theoretical compromise was achieved which attempted to synthesise the two positions into a single theory of disease transmission and contagion. This synthetic or ‘contingent-contagionist’ hypothesis had in fact existed for a relatively extended period of time. In 1840 Jacob Henle had divided diseases into three groups; malaria, (thought to be

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24 From the 1860s to the 1880s a standard text medicine was Parkes’ \( \text{Practical Hygiene} \) that supported both the ‘waterborne’ theory of Snow and Liebig’s zymotic theory. Parkes suggested that a specific poisons formed by putrefying matter caused different diseases, and that these poisons or infected matter could be present in water or in food.
caused by miasma); a second grouping, (that included parasitic infestations such as scabies),
that were attributable to direct contagion alone; whilst a third was attributable to miasma but
was spread by living parasites.26

The long period between the discovery of the water-borne nature of cholera and the
actual isolation of the causative organism concerned aided the ready acceptance of the
contingent-contagionist theory. Without direct evidence of a pathogen, adherents to miasmatic
theories could interpret the evidence of the waterborne transmission of the disease as
circumstantial or as another miasma-producing environmental variable. Similarly contingent-
contagionists could claim that whilst a microscopic water borne organism might have a role to
play in the causation of disease, in the first instance miasmas predisposed a person to
contagion.27

Miasmatic theories therefore proved tenacious in the face of growing evidence that
would lead to their eventual rejection. Although scientifically suspect, these theories
nonetheless led to the establishment of the hygienic movements which advocated the removal
of ‘filth’ from around human habitations. Basic tenets of public health, hygiene and sanitation,
and preventative strategies based upon increasing environmental salubrity through
architectural design and urban planning would have a profound influence upon the urban
environment of nineteenth century British India.

3.5 The Royal Commission

The ‘Great Mutiny’, 28 was the catalyst that led to public health legislation becoming a
more prominent element of spatial design in Indo-British settlement sites, and particularly the
military sectors of those sites. In the aftermath of the revolt it was perceived that the
operational efficiency of European troops had been hindered by the proportion of the soldiery
rendered non-combatant, due to disease.

Within the army;
‘...only six percent [of deaths] were due to military conflict. The rest were caused by
four major diseases- fevers, causing 40 per cent of all deaths and three quarters of all
hospital admissions; dysentery and diarrhoea; liver diseases; and cholera, the greatest

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p.119.
killer, particularly when troops were on the march."\textsuperscript{29}

The upheaval led to a wholesale reassessment of British Imperial policy and to the foundation of a Royal Commission in 1859 that was instructed to investigate the health of European troops in India,\textsuperscript{30} and that followed a similar commission set up in 1857 that dealt with the Sanitary State of the Army in Britain.\textsuperscript{31} The earlier commission found that the high mortality rates amongst metropolitan troops, (at 17.11 per thousand amongst troops compared to 9.8 amongst the male civil population between 20 and 40);\textsuperscript{32}

‘...was traceable to specific diseases directly induced by the unhealthiness of barrack rooms; by overcrowding, by want of ventilation, by defective water supply and sewerage, and by neglect of sanitary provisions generally.’\textsuperscript{33}

The Indian Commission’s official brief was to;

‘...inquire...into the rate of Sickness and Mortality and Invaliding among our Troops...the causes of such sickness...to indicate how such Unhealthiness be removed...and the nature of Sanitary Improvements required.’\textsuperscript{34}

Under its terms of reference consideration was given to all aspects of military life within India, including cantonment planning, conservancy and sanitation, the important factor of barrack design and in addition physical and cognitive scales including the diet, dress and education of troops. Establishment of the Commission was not so much made in the spirit of altruism toward the soldier, but to ensure the security of the Indian Empire in the event of a repetition of the events of 1857-8. A healthy European fighting force would serve as formidable deterrent against future insurrection.\textsuperscript{35}

\textsuperscript{28} Alternatively known as the Indian First War of Independence.
\textsuperscript{31} During this period the efficiency of the troops was investigated along with the sanitary condition of the troops after poor performance in the Crimean War.
\textsuperscript{34} Herbert, Sidney, (British Parliamentary Papers, XIX, 1863), \textit{Report of Commissioners inquiring into the Sanitary State of the Army in India}, House of Commons, London,1863, Vol. 1, p.3.
\textsuperscript{35} J.Jeffries, \textit{The British Army in India}, p.15, quoted in Mark Harrison, \textit{Public Health and British India}, (Continued Overleaf)
The Commission’s findings were generally unfavourable to the Indian administration, revealing an unacceptably high rate of mortality amongst British troops quartered in India, a rate that was once again blamed in part upon the state of barracks;

‘...many of the quarters deserve...no other name than ‘Charnel Houses.’”

The mortality rates amongst British troops in India stood at 69 per thousand (per annum), an alarming proportion in comparison to the mortality rate of members of the officer class who expired at the rate of 38 per thousand or that of the civil European population which stood at per 20 per thousand per annum.

In light of such damning evidence, recommendations were framed that would influence or reform almost every aspect of military life in India. The most immediate recommendations influenced the broad structure of the army altering the racial ratio of troops, increasing of the proportion of Europeans to a fixed third of armed British controlled armed forces in India (as a safeguard against further revolt) and to cycle a third of the enhanced European forces through hill stations established at healthy, high elevations. This ratio adjustment represented a sixty percent expansion in the European troop strength in India (82156 men in 1864) an expansion which necessitated the construction of new barrack stock to accommodate the increase.

In 1864, and in line with the Royal Commission’s recommendations three additional sanitary commissions were established (one for each of the Presidencies) whose tasks included the transferral of British medical expertise to India, and the institution of new systems of disease control and prevention. The provincial commissions were dissolved after two years and their functions replaced by a Sanitary Commissioner appointed as advisor to each of the Presidencies. The reports of these Commissioners provide a detailed and site specific historical resource dealing with sanitary matters concerning settlements within the areas under their jurisdiction.

3.6 Indian Cantonments and Contagious Diseases Acts

Enactment of legislation designed to regulate the sanitary environment of the cantonment-civil lines sectors of Indo-British cities was seen as the logical way in which to implement the recommendations of the Royal Commission. Once a legislative and regulatory system had been established, increasing British fear of disease, and perception of the indigenous populace as forming part of the sanitary ‘problem’ led to an ever increasing degree of control by British authorities over the sanitary affairs of the indigenous community, not for the benefit of that community, but for the protection of the European populace.\(^{40}\)

A first step was taken with the passage of ‘Act XXII of 1864: An Act to Make Provisions for the Administration of Military Cantonments’.\(^{41}\) Based upon the British ‘Public Health Act of 1848’, and the [British] ‘Contagious Diseases Act’ 1862 (a later law that sought to control prostitution)\(^{42}\) the Indian Act represented the first significant legislative British health policy intervention in the subcontinent.\(^{43}\) The primary influence of the Act was to provide the legal framework under which the British could regularise and bring under Governmental supervision pre-existent environmental control systems, exemplified by the informal segregation of races and the old lock hospital system.

*Act XXII* allowed for the creation of regulations enforceable within the limits of military cantonments;

‘For the maintenance generally of the Cantonment in a proper sanitary condition; for the prevention and cure of disease...of conservancy and drainage; for the regulation and inspection of...all places in which filth or rubbish is deposited’\(^{44}\)

The fact that the *Act* only provided a framework for the provision of regulations, the exact sanitary regime within each cantonment according to what was considered appropriate by the newly instituted ‘Cantonment Committees’, which administered cantonments under the *Act’s* authority.

Despite regional variance in the enforcement of the *Act* due to the settlement-specific


regulatory system, several essential elements of policy were uniformly instituted via legislation. These included the registration of births and deaths (through which process it was hoped to collect extensive statistics concerning trends in mortality) and the authority of medical officers to establish policing of sanitary regulations.

Under the auspices of the Act and assisted by the increasing momentum of sanitary reform the government and cantonment authorities instituted a program of barrack construction that sought to replace substandard accommodation for British troops and provide for post-Mutiny troop strength increases. Based upon a developing standardised plan, these sought to provide 80 to 100 square feet of superficial floor area, at least 1000 cubic feet of space per soldier and separate wash rooms and latrines.

The 1864 Act also represented a first step in an increasing system of control that attempted to administer all aspects of cantonment and civil lines life, establishing the framework that would maintain them in a sanitary state. In addition, the regulations created under the Act maintained the cantonment as a culturally exclusive space, if not in terms of racial exclusivity, then by regulating the physical appearance of the cantonment-civil lines sector, maintaining construction standards, the low density of development, and the pre-eminence of ‘bungaloid’ domestic residences. Regulations therefore sought to modify the behaviour of the Indian populace through a punitive system that forced those Indians residing with the cantonment or civil lines to conform to normative behaviours defined by the British.

Once sanitary regulation had been adequately established over the European sectors of settlement, the tendency was for authorities to increase the territorial area covered by (sanitary) regulatory control, firstly over the ‘native’ enclaves within their immediate cantonment environment (represented by the native lines where the Sepoys were quartered) and then to the sadar and regimental bazars that provided the European communities with goods and services and were within the cantonment-civil line borders. The last step was to extend this sanitary regime beyond the actual boundaries of the British culture area and into the surrounding buffer zones, villages, and the ‘native city’ itself.

The varieties of bazar scattered throughout the cantonment were considered particularly problematic since these placed large Indian populations in proximity to British

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residential areas. The suburban municipalities or committees that administered civil lines and cantonments were granted authority to intervene within bazar Lands (which were often not technically integral to cantonment territory), making it,

‘...lawful for the government to extend, to extend to any place outside...and in the vicinity of such cantonments the rules made for such cantonments under...[the Act].’

In 1877 a more invasive power was granted to routinely, ‘...inspect all villages within a five mile radius,’ of the cantonments included by the legislation.

The rationale for incorporating increasing territory under the direct sanitary management of the British was to provide for the perceived health of British troops. The environmental phenomena that caused disease were not static and therefore the activities of those outside of the cantonment boundaries needed to be regulated and monitored in order to prevent the spread of miasmatic phenomena into British enclaves with the water or prevailing winds;

‘The air may be contaminated by the actions over persons over whom...[we]...have no control. The health of the community is thus dependent upon a proper supervision being maintained over the proceedings of the several members constituting it.’

Florence Nightingale specifically noted in the Royal Commission evidence that, ‘The “disagreeable emanations” from the bazaar are felt in barracks’ within the cantonment at Neemuch.

The 1864 Act was followed by amendments as well as further central and provincial legislation, notably ‘Act XIV, 1868: An Act for the Prevention of Certain Contagious Diseases,’ which strengthened the provisions regulating prostitution within cantonments. Further legislation included Acts passed in 1884 [The Cantonments Act],1889, 1924, and 1936.

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53 Where ‘Certain Contagious Disease’ denoted ‘...any contagious venereal disease’, Indian Central Act, No. XIV, 1868, [17th April], para 2.
54 All acts from 1888 had the sections relating to Sexually Transmitted Diseases and the Lock Hospital system.
The final Act in this lineage, ‘Act 15 of 1983’, is the legislation under which cantonments are administered in the present. Wide powers are granted over all aspects of health which are again treated as aspects of town planning. It is remarkable that the current Cantonment Act under which the military cantonments of the Indian Republic are administered does not largely differ from the original nineteenth century progenitor. The Act and the regulations that accompany it still place the stamp of nineteenth century British conceptions of public health and the appropriate utilisation of space upon new developments within the Indian military cantonments of the present.

3.7 Sexually Transmitted Diseases

Sexually Transmitted Disease was a category of illness that was specifically targeted by the sanitary legislation discussed above. Due to the intimate physical contact required for transmission, these diseases required a different system of control from the, ‘sun, water, and air,’ solution of the sanitary movement. The rate of STD infection amongst the soldiery proved a significant drain upon the manpower resources of the British Army in India, representing a major cause of hospital admission (another major cause of admission were the ubiquitous ‘malarial fevers’). Although this was a problem also prevalent amongst metropolitan troops (and indeed a military problem across the Empire as a whole), the situation was considered to be particularly acute in India.

The high proportion of unmarried men in the ranks, low proportion of European women in colonial society, the long tours of duty in India and lack of recreational activities were all factors considered to tempt the soldier into liaisons with ‘native’ women. Given that the (usually) lower class British other ranks were seen as not being naturally predisposed to celibacy, it was thought that special provisions should be made for their sexual requirements.

A major aim therefore of public health policy in India was to prevent or more usually to control relations between British soldiers and Indian women. The 1864 Act made particular provision for example;

‘For inspecting and controlling houses of ill-fame and for preventing the spread of

diluted, for reasons of political expediency.

V.D. 58

Whilst the attempts to restrict contact between the BORs and indigenous women were ostensibly made to minimise the effect of STDs upon soldiers and army readiness, they also reflected a growing disapproval on the part of the imperial authorities of inter-racial sexual contact. This represented a sharp divergence of policy from the eighteenth and earlier nineteenth centuries when it was almost accepted practise that British troops and officers take indigenous, or Eurasian mistresses for their term of duty in India.

For officers (in this earlier period) these women were referred to as the ‘bibi’ - literally a high class woman - who often lived in a small house, the ‘bibi-khana’ reserved for her in the officer’s bungalow compound. Intermarriage was deliberately encouraged in the eighteenth century, as a method of providing troops for the Company army and the administration provided;

‘…a christening present of five rupees for every child of a rank soldier baptised.’ 59

An established way to deal with venereal disease had been the ‘lock hospital’ system that registered prostitutes and confined any exhibiting symptoms of disease until a course of treatment was completed. 60 The East India Company had officially discontinued this practice in 1835, although the system of ‘regimental brothels’, known as ‘rags’ amongst the men, 61 in many cases continued. The Royal Commission recommended a reintroduction and strict control of the lock hospital system;

‘After considering various plans...we have arrived at the conclusion that none are so likely to diminish this great scourge of the soldier in India as the reorganisation of the measures [lock hospitals] formerly adopted in the three Presidencies.’ 62

Operating funds for the hospitals were in part to be provided by the prostitutes themselves who paid, ‘...monthly to the Lock Hospital Fund a sum not exceeding one

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60 The mercury based system of treatment was hazardous and unpleasant, prompting a certain amount of coercion in its administration.
Rupee...’63 and during the confinement a; ‘...subsistence allowance...[was]...given to each patient from the Lock Hospital Fund.’64

The British attempted to control the place of residence, and movements of sex-workers by granting them a ‘license’ to conduct their trade in a regulated manner. Legislation decreed that;

‘No woman known to be a public prostitute shall reside or practice her trade within the limits of the Cantonment unless she shall first have her name registered.’65

The registration system, which only included ‘public prostitutes frequented by Europeans’,66 involved an agreement for the prostitute to, ‘...present herself67...at the Lock Hospital once per fortnight...’68 for medical examination, as well as to maintain within her household ‘...for the purposes of ablution...’ gharras of water, tin pots and soap.69

Prostitutes were allowed to live in the ‘Lal Bazaar’, (Red Bazaar) areas of the cantonment or lines within their own housing, under the watch of a paid superintendent, (the dhais),70 after being examined and registered and agreeing to successive regular examinations.71 Number of prostitutes seems to have been left to supply and demand, although Hyams has calculated an average of one prostitute per 44 men.72

This official sanctioning of prostitution at an extensive number of military sites (figure 3.1 a: Regimental Brothels in India & 3.1 b: ‘Licensed Harlotry’) did not conform with an increasingly censorious Victorian moral code. The various Contagious Disease Acts, (both

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67 The pertinent acts were couched in gender specific language that presumed prostitutes to be female. The position of male prostitution in respects to officialdom is unclear.
Indian and British), attracted increasing criticism from religious groups, who saw the state sanctioning and legitimisation of prostitution as providing an insupportable moral example, whatever the perceived health benefits of the system might have been. There was further resistance from the Indian community who did not approve of the oppression that the act could cause, fearing that its enforcement could lead to extortion by the police. There was also anxiety that the provision of the act that allowed, ‘...special authority [to be given] to any Police Officer to inspect each house inhabited by any registered prostitute,’ could be abused, leading to examinations of women in purdah, or lead to a loss of caste amongst innocent women.

Due to popular pressure the Indian Cantonments and Contagious Disease Act was repealed in 1888, and with it a new act and rules to accompany it had to be drafted. The new law, (the Cantonments Act, 1889), that replaced it included a generalist clause that could maintain the utilisation of Lock Hospitals as ‘voluntary venereal hospitals’. In 1895 the Government of India was persuaded to close this loophole, but in 1897 new rules re-allowing medical inspections were instituted, although there was no longer to be registration for prostitutes, and technically they had to live in the sadar bazaar. Despite the lapse of official authority for the regimental brothel, the institution seemed to survive well into the twentieth century as has been attested to in memoirs and oral histories;

‘Those of us who could not restrain ourselves were lectured...regarding the evils of venereal disease. He would beg us, if we were unable to withstand our desires to go to our [military] brothels, saying that “if you go trundling off into the village fields it will bring you calamitous results.”

Rates of disease fell with the introduction of the new cantonment rules, a result that

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73 Ballhatchet, Kenneth, Race, Sex and Class under the Raj, Weidenfeld and Nicolson, London, 1980, p.56. The ‘Gospel Purity Association’ was particularly vociferous in their opposition.
76 Successor to the 1864 Act.
77 Between 1871-1880 the Contagious Diseases Acts lapsed within the Bombay Presidency due to financial restrictions that were caused by the Bench of Justices refusing to contribute anything towards the administration of the Act. Harrison, Mark, Public Health and British India, Cambridge University Press, Cambridge, 1994, p.74.
Figure 3.1 a
‘Regimental Brothels in India c. 1888’
Image: Hyam, Ronald,
Empire and Sexuality: The British Experience,

Figure 3.1 b
Tents of the Licensed Harlots...
probably derived from an increased ordering and cleanliness with the cantonments and their surroundings. However the 1870s saw an increase, particularly in the STD rates, a factor attributed by contemporaries to the short service system that enabled soldiers to enlist for 6 years with the colours whereas previously tenure had been for 10-12 years or for life prior to 1847.  

The new practice led to an increasing proportion of young soldiers in India - usually unmarried - who were presumed to be at a greater risk of contagion. By the 1880s when the acts themselves were in doubt due to controversy within both Britain and India, the increase in STD rates was more marked within cantonments where lock hospitals had been experimentally closed in Bengal and Bombay. (Figure 3.2).

**Figure 3.2**

STD Transmissions Bombay and Bengal Presidencies


200 250 300 350 400 450 500 550 600

200 250 300 350 400 450 500 550 600

Bengal where hospitals closed
Bengal where hospitals remained open
Bombay Presidency where hospitals closed
Bombay Presidency where hospitals remained open

3.8 Spatial Influence

The initiation of military sanitary reforms from the 1860s had a profound impact upon

the utilisation of space within cantonments. The Royal Commission’s recommendations declared that henceforward the placement and design of new settlements, and improvements in older enclaves should be undertaken utilising principles drawn from developed metropolitan sanitary theory. The strategic and military concerns that had previously influenced cantonment site selection were now to a large extent subordinated to sanitary concerns derived from the necessity to maintain troop health. Even in the twentieth century it was stated:

‘...the cardinal principle underlying the administration of cantonments in India is that cantonments exist primarily for the health of British troops...’

Environment was believed to determine contagion rates, and therefore the way to improved healthiness was seen as a matter of environmental control. Architects and settlement planners were the professionals with responsibility for control of the urban environment and were tasked along with the medical establishment with reducing sickness and mortality via the institution of properly sanitary planning procedures. Since ‘…nature prescribes that stagnation breeds putrefaction and that health depends on the absence of stagnation...’ successful settlement and building plans sought to reduce putrefaction and therefore miasmas.

Miasmatic risk reduction promoted an improvement in standards of hygiene, as well as an improvement in environment or locality for settlements or domestic habitations. The perfect solution given unlimited resources would have been to close and relocate all British settlement enclaves and relocate them in more appropriate locales. Not only would this have been prohibitively expensive, but would have eventuated in all Britons residing at high elevations, a strategic absurdity. As it was the system of barracking one third of European forces in the hills proved problematic since it removed vital troops from population centres. Since this solution was clearly impossible (although several of the least healthy stations were closed and relocated) architects, engineers and planners instead redesigned certain aspects of settlements or incorporated features into Indo-British structures to minimise the risk of disease.

The different categories of disease as conceived in the mid nineteenth century

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82 1909 Cantonments Code.
themselves suggest possible spatial solutions. The major categories were;

‘1. Fevers arising from the surface condition of the earth including...malarial fevers; 2. Colds and rheumatism arising from insufficient protection; 3. Diarrhoea and dysentery. from insufficient drainage, and lastly, under certain conditions of filth and crowding fevers of new type, destroying all within their reach...[cholera]’

Each of these factors; miasmas, insufficient protection, poor drainage and overcrowding, were all liable to correction through appropriate site selection, town planning or architectural design. The basic ‘rules’ utilised to maximise environmental advantage when constructing a ‘healthy’ dwelling or settlement are summarised below;

‘A site is healthy according to:- the quantity of light and sunshine, (variable with climate). Rapidity of horizontal movement of air, Rapidity with which water flows over and through soil; absence of organic emanations...In an undulating country the most unhealthy site is that which is surrounded by higher ground...for in such places the air is always loaded with organic exhalations. In plains the most unhealthy spot is at the foot of a hill on account of the drainage...Of soils the most unhealthy are those which are impermeable to moisture and have no slope, as an aggregation of water is a natural consequence...The amount of vegetation effects the salubrity of a site, as it influences the movement of the air...’

Sunshine was seen as particularly important as a purifier of the air and therefore as a dissipater of miasmatic phenomena. In summary structures, and where possible, settlements were designed to maximise access to;

1. Clean Air
2. Clean Water
3. (Sun)Light;

and where possible to be isolated from;

1. Accretions of filth or decay
2. Sources of odour
3. The residential areas of the ‘native’ populace.

At the scale of the enclave or settlement, and given the generally clear principles listed

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1874, p.67.
above a number of logical and relatively simple alterations could be applied to existing or new enclave designs to minimise the perceived risk of miasmas.

Common areas for the disposal of organic waste (dumps), industrial processes (such as tanneries, brick kilns etc.) or cemeteries could be relocated on or external to the boundary of an enclave (cantonment) and consequently away from the residential centre. In general it could be arranged that industrial or human wastes not be disposed of or removed to an area near or in a water course, or in areas of poor drainage. Sites for dumps or factories could be located so that it was impossible for miasmatic emanations deriving from the activities of industry or of waste disposal to be blown by prevailing winds toward residences. No polluting industrial or rural activities should be situated in such a way that they could either contaminate the water or the air of residents.

New areas opened to residential development should be located upon high ground. Similarly, although residential areas should have access to clean water this did not necessarily mean that they should be located close to water unless that water was permanently flowing and not at all stagnant (stagnant water could of course produce miasmas). Access to sunlight should be maintained by high elevation. In addition structures should not be above two storeys and should be free standing, these design criteria allowing the free-flow of air access to light.

At the scale of the residence (the bungalow-compound) a strong tradition of environmental amelioration already existed (and has been discussed in Chapter 2). The increasingly standardised architectural designs of the PWD were strongly influenced by these miasmatic medical theories and official buildings were created and settlements planned based upon a long tradition of environmental control in the name of disease control. The innate conservatism of the Indian authorities prioritised local experience rather than adopting architectural and medical innovations from Europe, and therefore strategies designed to reduce miasmatic influence continued to manifest in structures built by the British in India even in the late 19th and early 20th centuries.

Clothing and diet represented the most intimate spatial scale used to protect the physical person. With clothing, keeping the sun off the head with a ‘solar topi’ was considered essential, and a number of different types of helmet were designed to provide

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85 ‘Notes on Sites for Buildings and Ventilation,’ *Bombay Builder*, Nov 6, 1865, Volume 1, Number 5, p.86.
protection and ventilation. (Figure 3.3). It was also advised that chills be avoided, and therefore ‘cholera belts’, a type of flannel waistband, were worn to prevent the abdominal complaints thought causative of cholera, as well as spinal pads that were designed to protect the back from the sun. These elements of clothing were retained as part of the European soldier's uniform well into the twentieth century long after their efficacy had been disproven.86

Each soldier was provided with a standard daily ration throughout the year that consisted of a pound of meat, a pound of bread, a pound of vegetables and 4 ounces of rice, tea, coffee and sugar87 as well as a wet ration of alcohol. The constant diet, high in meat content was considered unhealthy in a hot climate; ‘...overfeeding and the too free use of animal diet [produces] much disease, including dysentery...’88 and it was thought prudent to, ‘‘induce the men, by varying the ration with reference to hot or cold weather, ‘to take more to a vegetable diet.’’89 in line with Hindu practice.

An additional weapon in the British public health arsenal was quarantine, although this was usually seen as a method of disease control by the contagionists. The cantonment system in effect represented a form of quarantine, whereby European troops were stationed within enclaves external to indigenous settlement sites, isolating the soldiery from the pathogenic forces believed rampant within the Indian residential population. The Indian Government, cautious in the aftermath of the Mutiny, never instituted a strong, formal policy of quarantine or cordon sanitaire, fearful of the impact of this upon pilgrimages or Imperial trade and the movement of troops. This reluctance continued despite pressure from the international sanitary conferences, designed to prevent the spread of cholera and the first of which was established in 1866, following the major epidemics of 1861 and 1865.90

Figure 3.3

Image of a helmet design investigated by the Royal Commission for use in India.

‘...the peculiar form of the helmet...has been selected, with a large calibre around the

90 Ramasubban, R., ‘Imperial Health...’, in Lewis, M., et.al., (eds.), Disease, Medicine and Empire, Routledge, (Continued Overleaf)
head, but receding in steps, that it may not have what sailors term top-hamper to be acted on by wind.’


A major premise, therefore, underpinning British policies for disease prevention was the segregation or separation of the European component of the population from an indigenous population increasingly thought ‘pathogenic’. The insanitary state of many Indian settlements led to a fear of miasmas generated by accreted waste, and thus promoted an increasing conviction that the indigenous population was in effect as pathogenic as the tropical climate itself. The eventual acceptance of the bacteriological cause for disease caused further stigmatisation of the Indian populace. The British already assumed the indigenous settlements were filthy, but now considered them as ‘saturated with infection’91

This separation was entirely compatible with the mentality of the ‘Anglo-Indian’ population, for in the mid to late nineteenth century it was thought that a certain isolation and aloofness was required to retain the mystique of the ruling race. The perception of a sector of the populace being in effect a ‘reservoir’ of disease mirrored the metropolitan attitude which

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conceived the working classes in Britain as a similar endemic source.\textsuperscript{92}

In India there was no \textit{specific} legislation enacted to enforce this increasing separation of the races. The more extreme racist attitudes developed only later within the Indian Empire, and within the eighteenth century it was common for officers to live within the indigenous community, a practice regarded with suspicion in later years. However, the increasing tendency from the eighteenth to nineteenth centuries was for the British resident in mofussil sites to reside within racially exclusive cantonment enclaves appended to pre-existent indigenous cities, entrenching a broad segregation of the races. Of course this segregation could never be total. The British in no way wished to give up the comforts to which they had become accustomed in the Indian Empire. The residential enclaves in which they resided were also occupied by a huge number of servants and support staff, who in total usually outnumbered the British.

Despite their pseudo-scientific nature miasmatic theories managed to explain (however imperfectly and inaccurately) the causes of disease, fit some of the available data concerning disease causation and transmission, to be predictive (suggesting where disease outbreaks would occur) and also advise of solutions for the prevention of disease (usually involving improved sanitary conditions) that could actually lead to improved public health. These theories were therefore considered credible by the medical practitioners and scientists of the time and the influence of their proponents determined that their strategies for improved (particularly British) public health were incorporated into legislation and regulation.

Given good-quality spatial data (of a cartographic and demographic nature) it should be possible to analyse whether miasmatic measures for disease amelioration were applied to any given Indo-British settlement, and to assess their physical impact upon the built environment. Relevant analyses that could illustrate the application of such nineteenth century public health systems include studying differential settlement elevation, the respective locations of industry compared to residences in a settlement, the respective location of the British and Indian residential areas, and the comparison of prevailing wind-patterns with the respective locations of ‘polluting’ activities and residences. Other analyses could include contrasting prevailing wind-patterns with the orientation of barracks, or examining changes in

barrack room sizes over time.

Analyses exemplified by those briefly described above have the potential to reveal whether miasmatic theories were applied to architectural designs and the planning of settlements, and consequently whether the appropriate legislative and regulatory public health frameworks operated as their framers expected. It is of course entirely possible that abstract theory, legislation, regulation and (anti-miasma) design criteria were not applied rigorously ‘on the ground’.

The potential that legislative public health provisions were not well-policied does not necessarily mean that the enacted laws or the medical theories behind them served no function. The consequences of a major tenet of the theories under scrutiny; that the indigenous urban environment and by implication the indigenes resident within that environment were unhealthy and should be avoided by the expatriate colonial population, are intriguing. Here was ‘proof’ for the British that their racial prejudices were warranted. Science unequivocally proclaimed that to remain a viable and healthy ruling population that the British had to isolate themselves from the unhealthy Indian population and climate, and that retreat into their own regulated spaces was fully warranted. Perhaps only the proclamation was sufficient in itself to justify a racist utilisation of space and British administrators in the field found public health proscription irrelevant and ignored the actual operation and management of the law. These issues are further explored in Chapter 4 (Theory and Methodology) and in Chapters 8 and 9 where the appropriate available data has been analysed to ascertain the possible impact of public health intervention upon the built environment of the city of Poona.
Deccan Queen
A Spatial Analysis of Poona in the Nineteenth and Early Twentieth Centuries
Wayne Mullen

Volume 1
Part 2: Case-Study
Case Study

The City of Poona
Chapter 4

Theory and Methodology

4.1 Introduction

The case-study presented in this, the second section of *Deccan Queen* seeks to analyse the demography and the spatial organisation of the British enclaves of a single station of mofussil British India, in this case the city of Poona, which was chosen as a general representative of the many similar ‘tripartite’ settlements scattered across the subcontinent.

Data for the analysis has been drawn from several sources, including the *Census of India*, address directories, and historical maps. The core analytical tool presented in *Part 2* is composed of the latter two sources, the address directories and maps, which have been digitised and united utilising a Geographical Information System. This ‘model’ of the British culture area or station of Poona links demographic to spatial and material data for three target years and has been designed to serve a number of purposes. The first, and most obvious reason for its creation is to address the research questions posed in this dissertation (see section 4.6) that explore the correspondence or non correspondence between abstract theories that attempt to describe the organisation of mofussil Indo-British cities and the spatial and demographic actuality of one particular settlement. The second purpose is to assist in the exploration of the many questions that lie beyond the scope of this thesis regarding the spatial organisation and demography of the cantonments and civil lines of the case-study site (or the station urban environment of British India in general). The models represent a powerful system to promote additional independent research. It is envisaged that other academics will be able to eventually access the GIS models presented in the thesis over the internet via the systems developed by organisation such as *ECAI* (the Electronic Cultural Atlas Initiative).

4.2 Site Selection

The British culture area of the city of Poona in western India was selected as an appropriate settlement for analysis. In general terms Poona was a tripartite-plan settlement where a British station was appended in the nineteenth century to a pre-existing Indian city. It was specifically chosen, however, for the following reasons;
1. The Maratha Confederacy, of which Poona was the ‘capital’ represented a major centre of 18th and early 19th century resistance to British domination of the subcontinent.

2. The Anglo-Maratha Wars [c.1780-1819] diverted a considerable portion of British political effort and available military resources in India in the eighteenth and early nineteenth centuries. The scale and cost of Anglo-Maratha contact and hostilities led to reportage concerning political and military proceedings in Poona within the British Parliament and in contemporary gazetteers, travelogues and journals.

3. Prior to the conquest of Poona by the British, the Peshwa’s rule was supported by the British via the placement of a ‘Subsidiary Force’, or Company garrison in Poona that was ostensibly present to assist in the defence of the Peshwa. The physical trace of this Subsidiary Alliance System represented the prototypical form of the cantonment-civil line urban enclaves that the British imposed upon mofussil India.

4. Between the stationing of the Subsidiary Force, and the 1818 conquest of the city a Resident was delegated to the Peshwa’s Durbar, the records of whose office survive.

5. The records of the government of the Peshwa survive and are archived at Poona.

6. Under British governance Poona was developed as the Headquarters of the army of the Bombay Presidency.

7. Under British rule Poona was developed as one of the triad of administrative capitals of the Bombay Presidency, and was designated the monsoon capital.

8. Poona is the site of several universities which have encouraged and published research concerning the geography, history and sociology of the city.

4.3 Process

Part 2 is structured as follows: - After the discussion of theoretical and methodological issues presented in this chapter (Chapter 4), the history of the city of Poona prior to the British conquest (Chapter 5) and during the era of British rule (Chapter 6) is examined. Chapter 6 particularly concentrates upon the spatial organisation of Poona, as a specific example of the urban system described in the first two chapters of this dissertation. Chapter 7 represents a chronicle of British social life and society in India that draws wherever possible upon primary documents that describe British life in Poona itself. This chapter provides social context for the urban environment of the station describing the social activities
that took place within the settlement.

The last two chapters, Chapter 8 and Chapter 9 present the spatial and demographic analysis of the station of Poona. The first section (Chapter 8) is an essentially simple and broad analysis of the aggregate (household specific) historical address directory data that has been compiled within a database for three chosen target years. Where appropriate this data has been compared with demographic data drawn from other sources, most notably the Census of India.

The second section, presented in Chapter 9, comprises the analysis of the three GIS models of Poona. These models link historical maps with the compiled address directory data analysed independently in Chapter 8, enabling spatial distributions of different households categories to be plotted and tracked through time.

1. Demographic Data

The demographic data utilised in the analysis and model are derived from nineteenth and early twentieth century address directories. These directories, typified by Thacker and Spinks\textsuperscript{1} compiled name, address, occupational information, and (less regularly) supplementary information describing a proportion of the residents of a range of Indian cities (Poona of course included) for each year they were published, fulfilling a role similar to that of the contemporary telephone directory. Households recorded in these directories were usually arranged in sequential street address order rather than alphabetically sorted by household head surname as would be the current practice.

Address directories therefore supply a standard range of simple data describing individual household heads and institutions distributed over a wide geographic area, and identify the location of the recorded households in both space and time. These simple and standard raw data (name, address, occupation) can be expanded into a suite of variables recording the geographic and temporal location of a household, the gender of the household head, the occupation of the household head, the socioeconomic status and social category of the household head (extrapolated from job description), a general and a specific measure of land usage (derived from business or institutional names), and the broad ethnic and religious identification of the household (derived from household head.

\textsuperscript{1} Thacker, Spink and Co., Thacker’s Indian Directory 1905, Embracing the Whole of British India and

(Continued Overleaf)
Details of approximately 3400 historical households have been recorded for three target years, 1876(1876-1879), 1905 and 1924 and recorded in a database for analysis. 1876, 1905 and 1924 were chosen as targets due to the survival of directories and adequate matching cartographic data for those years (see below). Complete definitions of the constituent variables of the database are listed in Appendix 1: The Database Structure and Definitions.

Directory data compiled for the target year(s) 1876-1879 was drawn from Guide to Poona and Kirkee for the year 1876. Data for 1905 was compiled from Thacker’s Indian Directory 1905. Data for the last target year, 1924, was derived from the Times of India Calendar and Directory of that year.

Although directories represent a source of often under-utilised historical demographic data, caution has to be exercised in using this information to study the socio-spatial organisation of a settlement. Address directories make no attempt or claim to be a comprehensive register of population. Directories did not strive to record details all of the households in a given settlement, unlike that another major source of demographic information describing the historical population of Poona, the Census of India.

The aim of the Census was to comprehensively enumerate the populations of the census districts of India as accurately as possible. In contrast to the Census, address directories were compiled primarily for use by the British community resident in given settlements and were therefore biased toward this particular socioeconomic and racial grouping; a bias that is particularly obvious in the earlier years of their production. Directories are useful for targeting British household heads, the heads of households of members of the indigenous Indian elites resident within the British culture area, and

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2 All household heads surnames were compared to the racially organised lists of Bombay residents (in The Times of India Calendar and Directory for 1924 - see footnote 5) to derive ethnic affiliation. Mis-assignation of household head ethnicity therefore records a bias, British perception of ethnicity, within this historical record.


4 Thacker, Spink and Co., Thacker’s Indian Directory 1905, Embracing the Whole of British India and Native States..., Thacker, Spink and Co., Calcutta, 1905.

5 The Times of India, The Times of India Calendar and Directory for 1924, The Times of India, Bombay, 1924.

6 Particularly those household heads of higher socioeconomic status. Those of lower status for example British other ranks housed in barracks are of course not listed in directories individually.
Figure 4.1
Example of Database/GIS entry showing processed Address Directory Data

| ID: 451 |
| BuildingArea: 888.30 |
| Height: 1,855.0 |
| Cantonment: Poona Cantonment |
| Complex Name: Lothian Lodge |
| Building Number: 3 |
| Address or block location: Lothian Road |
| Building Type: Private Residence |
| General Use: Residential |
| Specific Use: Rental |
| Data Year: 1905 |
| Household Head Institution: Westropp, Maj. G.R. |
| Gender HH: M |
| Other Householder Listed: None |
| Occupation HH: Major |
| Category HH: Military |
| Category Status: 4 |
| Ethnic HH: British |
| Religion HH: Christian |
businesses that the British were likely to patronise.

British areas of the city are subsequently well described by the Poona directories utilised, although major sectors of the populace are nonetheless omitted from the lists. The old Indian city was either ignored by such publications or sketchily covered in the address records. The majority of the British in Poona similarly do not appear within the directories, since these only listed heads of household and provided little or no information about their co-residents. Furthermore, the majority of Britons in the city were British other ranks quartered in barracks and too low in status to warrant individual address directory entries. Indian soldiers (Indian other ranks) resident in the Cantonment were similarly omitted from the records and neither did Indian domestic staff appear in the address directory records, an important omission since each British household would have employed a number of servants.

Despite these obvious biases address directories remain an invaluable resource, allowing the researcher to pinpoint with a high degree of spatial accuracy the residential location of the majority of the mid to high status British households in Poona. The directories map the broad social milieu (at the scale of the settlement) of these households, they cannot however allow one to accurately surmise internal household composition.

2. Map Resources

The theory and methodology presented in this chapter (see section 4.5) ultimately derive from the discipline of historical archaeology. The case-study of Poona concentrates upon the whole settlement, what has been called the ‘city-site’, an area that is beyond the scale of traditional archaeological intervention. It is of course impossible and unnecessary to excavate a city the size of contemporary Pune, where in any case the British-era built environment remains largely extant. The maps described below have been utilised in lieu of excavated archaeological data. Each provides a reasonably secure\(^7\) record of the spatial organisation of the settlement and the extant structures of the city and station for the years in which the maps were published.

\(^7\) The maps admit bias, as do all historical documents, and only differentially record detail of the built environment in Poona, no doubt omitting the ‘transient’ in favour of the ‘permanent’. The archaeological record is no less biased, being fragmentary in nature and reflecting differential survival of material culture.
In order to meaningfully unite and supplement address directory data (as described in the section above) with historically accurate spatial information, it was necessary to locate a range of ‘base-maps’ that depicted the settlement of Poona for those years for which directory data was available. One major selection criterion was that maps had to record the settlement in sufficient detail so that historical households listed in a directory could be assigned an accurate spatial locality. Unfortunately the extant map base of Poona was not as comprehensive as originally hoped. Although many maps exist that record the nineteenth and early twentieth century city and station of Poona, most of these proved inappropriate; being too simple and schematic in nature. Eventually only two maps of Poona could be accessed that adequately recorded the requisite areas of the city in sufficient detail, depicting individual residential structures and a comprehensive street-grid.

In one sense none of the extant maps of the city were ideal for the purposes of this study, since none survived with a complete cartesian grid. Two maps were however eventually selected, the later dating to 1905, the earlier to 1879. Due to poor grid-data it consequently proved difficult to create electronic (GIS) copies from the archival originals.

The 1905 map (D11:34 Poona 2) from the British Library (India Office Library and Records) collections had been commissioned by the military, was drawn in the period 1905-6, and had in the 1920s, been part of the ‘Geographical Secretary General Staff Map Room’. When a facsimile was taken of the map by this author for analysis, it was a recent acquisition of the India Office and not officially catalogued as a part of its collections.

The map depicts the Cantonment (and Sadr Bazar) of Poona in great detail, being composed of 14 map sheets that are A1 in size (figure 4.2 shows a sample of sheet 3 of the map). At this scale compounds, structures and outhouses were all well mapped, and one feature of particular benefit was that the street numbers of individual structures were recorded by the cartographers rendering the spatial positioning of 1905 directory data upon the 1905 map base relatively easy.

Despite the size of the map only two of the constituent fourteen sheets included a (partial) latitude-longitude grid. A consistent grid therefore had to be extrapolated from the available points and applied to all sheets before the map could be digitised, a process that no
Figure 4.2
Sample of map D11:34 Poona 2, 1905-06 in 14 sheets (British Library)
Detail of Sheet 3
Image: India Office Library and Records
Figure 4.3 a
Detail of map D11:34 Poona 1 1879 (British Library)
The 'Native City'
Figure 4.3 b
Detail of Map D11:34 Poona 1 1879 (British Library)
The British Station
doubt introduced a degree of inaccuracy into the facsimile digital version. In order to ascertain the accuracy of the new map, the dimensions of structures recorded upon the digital facsimile were checked against independent measurements of extant British era structures in Pune that were taken in the field. The results of this process revealed that the digital copy was of sufficient precision.

The second map utilised dates from 1879 (D11:34 Poona 1 1879 (British Library)) and is currently also stored in the India Office Library and Records. Originally the map had been commissioned by the Quartermaster General’s Office and printed in the Poona Photozincographic Office. D11:34 Poona 1 1879 is much smaller in physical size than D11:34 Poona 2 1905-6 and consists of only 2 sheets of A1 size, even though the map depicts a greater proportion of the settlement, including the Cantonment, Sadr Bazar, the ‘Native City’, the Civil Lines and some of the surrounding landscape (figure 4.3a and figure 4.3b). Unfortunately a grid was totally absent from this map and consequently one was imposed derived from D11: 34 Poona 2 1905-6. Again this process no doubt introduced a further level of inaccuracy to the facsimile digital map, but to a degree that was deemed acceptable for the purposes of this study.

Once grids had been extrapolated for the 1879 and 1905 maps (allowing the necessary selection of accurate control points) both were digitised. Allotments, individual primary structures, the street grid, and where available outhouses and contours lines; each of these categories of feature were incorporated into separate electronic map-layers. Where appropriate the area of the primary structures, allotments and outhouses were also calculated and recorded within the electronic facsimiles.

3. Model Creation

As described above (in section 4.3.1) address directory data for the city of Poona was compiled for the years 1876 and 1905 and stored in a database. The stored datasets for these two target years were then each matched with historical maps (4.3.2, above). Data drawn from the Guide to Poona and Kirkee for the Season 1876 was therefore matched with the map

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8 It was originally hoped that the historic maps of Poona could be keyed to modern maps from the late twentieth century, however, fine-scale modern maps of the Cantonment of Pune were not readily available, the Indian Army considering the area a sensitive site.

whereas data derived from *Thacker’s Indian Directory 1905* was matched with the map *D11: 34 Poona 2 1905-6*. Although it is unfortunately that demographic and cartographic data for the late 1870s could not be sourced from the same year, the temporal incongruity between cartographic and address directory data was limited to only a three year difference.

The aim of creating such a close temporal match between cartographic and demographic evidence for specific target years was to enable the accurate linkage of individual structures in the British-era city with specific historical households or institutions. The marriage of these disparate historical sources could be achieved with relative ease using GIS software. The resultant models of the city for 1879 and 1905 link demographic and cartographic resources and represent ‘snapshots’ of the city of Poona for the selected target years. These ‘snapshots’ capture the intersection of the physical (built) and the social (demographic) environments. Permutations and combinations of database variables (see *Appendix 1* and *Chapter 9*) can be selected for analysis and geographically plotted and displayed enabling a researcher to explore socio-spatial patterning in the British-era city. By utilising a series of target years socio-spatial patterns and city-growth can be traced over time.

With an initial match between maps and directories made, the physical association of individual structures and localities on the electronic map facsimiles with households and institutions recorded in the address directory databases was undertaken. As has been noted in section 4.3.1, address directories incorporate information that describe settlement spatial organisation within their written structure, particularly where household head names within the address lists are organised by relative street (address) order rather than alphabetically by surname. Since the households in the 1876 and 1905 directories were listed by address, households recorded within them could therefore be linked to the digitised maps with a high degree of accuracy.

Maps are of course not only spatial documents and often record social data of various types. Although the two maps utilised in this study did not incorporate information describing the greater majority of *households* in the city, their cartographers procedurally transcribed the names of important institutions and landmarks within Poona and its environs. Where appropriate this historical data was added to the existing demographic databases and used to
supplement household and institution descriptions derived from address directories. A notable example of highly useful data transcribed onto the 1905 map (D11: 34 Poona 2 1905-6) was the inclusion by its designers of street numbers for all structures in the Military Cantonment. This data allowed a particularly accurate linkage between households and structures to be established for this target year.

In addition to the 1876 and 1905 address directory data from the *Times of India Calendar and Directory* was available for the year 1924, the third and last case-study target year. Unfortunately no useable historical base-map of Poona was located for this year. Rather than not create a model for 1924, an ‘artificial’ street grid of Poona was extrapolated from a combination of the 1879 and 1905 base-maps upon which household data could be plotted.

The constructed base map for 1924 was schematic in nature, included only streets (which remain generally stable in terms of placement over time) and no individual structures. The construct did not of course aim for the same accuracy as the two historical maps that had been already been digitised. It was however possible to use this grid it to assign households positions on block street frontages. Due to this lack of an historic base-map, Poona households for 1924 could not be linked to individual structures. Enough spatial data could however be derived from the address directory itself to ensure that the position of households to relative to one another was accurate. Assigning households reliable relative positions on individual street block-frontages rather than to individual structures, is an approach that preserves socio-spatial patterning in the settlement.

Although the choice of the three target years was largely determined by the survival of appropriate historical data, fortuitously, the separation of target years is broadly generational (between 20 and 30 years). This separation permits the researcher to look for changes within the urban environment over time.

**4.4 Description of the Individual Models**

Even though the three GIS models of Poona were broadly standardised with respect to the others, each has its own level of physical accuracy, geographic coverage and complexity determined by the historical sources that were utilised in their creation.

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*Native States..., Thacker, Spink and Co., Calcutta, 1905.*

*The Times of India, The Times of India Calendar and Directory for 1924, The Times of India, Bombay, 1924.*
Each of the models is described in greater detail below.

1. Year 1876(1876-1879)

The 1876 model of Poona reflects the wide geographical coverage of its base-map (D11:34 Poona 1 1879 (British Library)) and records the entirety of the settlement of Poona in 1879 including the ‘Native City’, Civil Lines, Military Cantonment and Sadr Bazar. Unfortunately although its geographic coverage is wide, the available demographic data derived from its allied address directory, *Guide to Poona and Kirkee for the Season 1876*\(^\text{12}\) is more restrictive in nature, since this directory’s editor omitted households or businesses located in the ‘Native City’. The directory concentrates only upon the British culture area (the Civil Lines and Military Cantonment - including the Sadr Bazar, and in addition several outlying British-dominated ‘suburbs’ such as Bamburda).

The map-component of the model records the settlement street ‘grid’, written information (street names, landmark names and institution names) surviving on *D11:34 Poona 1 1879 (British Library)*, geographic features such as rivers, allotments and the primary structures within the allotments. Allotments, primary structures and the names of streets and landmarks are each recorded in a separate map-layers in order to reduce the number of extraneous features that need to be displayed in analyses. (This protocol has been followed for all three models). Due to the physical size of the map (only two A1 sheets) it was difficult to accurately transcribe small outhouses and so these were omitted from the digital facsimile. It was furthermore decided not to calculate and record the areas of either allotments or primary structures since inaccuracies in these indices (due to the low accuracy of the applied map-grid derived from *D11: 34 Poona 2 1905-6*) could prove misleading. *D11:34 Poona 1 1879 (British Library)* was not drawn with contour lines and so no topographical information was incorporated into the model.

The address lists in *Guide to Poona and Kirkee for the Season 1876*\(^\text{13}\) were highly structured, and listed with great care the relative position of each residence/household with respect to one another, the side of the street on which households were located and also to

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Figure 4.4
Detail of the address directory; Treacher and Co. Ltd., Guide to Poona and Kirkee for the Season 1876, Treacher and Co. Ltd. Poona, 1876.
This detail demonstrates the high level of organisation and the spatial quality of earlier address directories where households are organised by location rather than by household head surname.

List of Residents of Poona.

ROAD DIRECTORY.

ARSENAL ROAD.

From Arsenal to Sassoon Hospital.

LEFT HAND.

Staveley Road.

Surgeon Major J. Mennie, Staff Sur.

East Street.


Mrs. Ritter and family.

Main Street.

Major J. B. Fenwick.

Mrs. Sorabjee, Victoria Girls’ School.

James Davidson, M.B., Civil Surgeon.
John Riding, Barrack Dept.
Lieut. C. F. Fuller.
Treacher & Co., Ltd., Chemists, Wine
and General Merchants.
E. Beynon, Manager; R. W. Steid,
M. Renard, Assistants.

Treacher’s Road.

Mrs. W. Webbe and family;
C. T. Richardson.
Bangla.

Jew’s Synagogue.

Synagogue Road.

W. F. Sinclair, C.S.
Capt. H. S. Hutchinson, R. S., & family.

Gharpeer Road.

Babajee Manager, Coach Builder.

Hospital for the Insane.

Rustia’s Lane.

Bangla.

Sungum Road.

Right Hand.

Crossroad to Lothian Road.

Surgeon Major J. Mennie, Staff Sur.

East Street.


Mrs. Ritter and family.

Main Street.

Major J. B. Fenwick.

Mrs. Sorabjee, Victoria Girls’ School.

James Davidson, M.B., Civil Surgeon.
John Riding, Barrack Dept.
Lieut. C. F. Fuller.
Treacher & Co., Ltd., Chemists, Wine
and General Merchants.
E. Beynon, Manager; R. W. Steid,
M. Renard, Assistants.

Treacher’s Road.

Mrs. W. Webbe and family;
C. T. Richardson.
Bangla.

Jew’s Synagogue.

Synagogue Road.

W. F. Sinclair, C.S.
Capt. H. S. Hutchinson, R. S., & family.

Gharpeer Road.

Babajee Manager, Coach Builder.

Hospital for the Insane.

Rustia’s Lane.

Bangla.

Sungum Road.

Lieuts. J. H. C. Clarke, G. F. Thunder,
and J. H. Dive, Royal Fusiliers.

Napier Hotel—Dadabhoy Cowasjee and
Sons.

Crossroad to Lothian Road.

Captain G. A. Jacob, Superintendent
Army Schools.

Major H. Waring, Assistant Adjutant
General for Musketry.

Major T. Candy,

Adjutant General’s Office.

Bund Gardens Road.

B. Phillips, Chemist and Druggist.

Hon. Sir Jamsetjee Jeejeebhoy, Bart., and
family.

Station Road.

Gerard Norman, C.S., Senior Collector
and Magistrate, and Mrs. Norman,
Major General M. K. Kennedy and family,
C. B. Pritchard, C.S.

Revenue Com. Office S. D., Fox Hall.
Bangla.

Lothian Road.

J. De Souza, Baker.
Collector’s Office.
Branch New Bank of Bombay.
H. I. M. Treasury.

Ghorpuri Road.

Sassoon Hospital.
nearby cross-streets. (*Figure 4.4:* Detail of the 1876 address directory). Given the degree of detail it was relatively easy to associate structures depicted on D11:34 Poona 1 1879 (*British Library*) with the listed households recorded in the directory. Where a high degree of ambiguity existed with regard to the association of a household with any particular structure (due to the lack of a street number or where the map and directory data did not conform) the household was instead assigned an accurate relative position along a block face and identified with a symbolic identifier.

2. Year 1905

The 1905 model of Poona is the most detailed and accurate of the set of three, although it is unfortunately the smallest in terms of geographic coverage; recording only the Military Cantonment and the Sadr Bazar areas. The physical accuracy of the model is based upon the fact that the grid generated from this map underlies the other two year-surveys. In addition map D11: 34 Poona 2 1905-6’s relatively small geographic coverage and large physical size (14 A1 sheets) determined that a high level of detail was inherently part of the original; the map is of such a scale that it depicts structures including outhouses of only a few meters square.

In a similar fashion to the 1879 model this model of the Cantonment and Sadr Bazar incorporates individual map-layers that record the street grid, primary structures, the names of streets and landmarks and allotment boundaries. An additional separate map-layer also records subsidiary structures (outhouses) within the allotments. The areas of all primary structures outhouses and allotments have been calculated and incorporated into the GIS model. D11: 34 Poona 2 1905-6 was originally drawn with contour lines, therefore the height above sea level of all primary structures has been encoded in the model.

Demographic data derived from *Thacker’s Indian Directory 1905*¹⁴ (the address directory allied to the map D11: 34 Poona 2 1905-6) could be linked with ease to the base map. Although in this case the organisation of address lists in the directory was not as thorough as in 1876 directory, the 1905 lists still organised names by street address, but also included street numbers (omitted in the 1876 directory) that could quickly be matched to the street numbers that cartographers had included on map D11: 34 Poona 2 1905-6.

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¹⁴ Thacker, Spink and Co., *Thacker’s Indian Directory 1905, Embracing the Whole of British India and (Continued Overleaf)*
Once again, where a high degree of ambiguity existed, and a household could not be easily associated with any particular structure, the household in question was instead assigned an accurate relative position along a block face and identified with a symbolic identifier.

3. Year 1924

The model describing Poona in the year 1924 was the most problematic of the three created. As has already be discussed (above, in 4.3.3) no historical base-map was located for this target year and one was instead constructed from the merged street-grids derived from the 1905 and 1879 models. In the synthetic 1924 map, ‘Native City’ and Civil Lines streets derive from D11:34 Poona 1 1879 (British Library), whereas streets in the Military Cantonment and Sadr Bazar derive from D11: 34 Poona 2 1905-6.

It was considered inappropriate to overlay this synthetic base-map with data describing physical allotment divisions or individual structures. The temporal gap between the first and last surveys represents a period of approximately 45 years. During this time-period although the street grid of the British culture area of Poona remained stable, the individual structures on those streets experienced a far greater rate of change as old housing stock was replaced, new stock built and as large allotments were subdivided. A layer including individual structures extrapolated from what was extant in 1879 and 1905 would have not have necessarily represented the physical reality of the enclaves in 1924.

One further complication was the fact that demographic data was derived from The Times of India Calendar and Directory for 1924\textsuperscript{15}. In this particular address directory households heads were not organised by street address, as was the case in the Guide to Poona and Kirkee for the Season 1876\textsuperscript{16} or Thacker’s Indian Directory 1905\textsuperscript{17}. Names in the 1924 directory were instead listed in alphabetical order by household head surname, in a similar manner to modern residential telephone directories. Much of the spatial information embedded in household head lists ordered via address rather than surname was therefore not available for this survey year.

\textsuperscript{15} The Times of India, \textit{The Times of India Calendar and Directory for 1924}, The Times of India, Bombay, 1924.


\textsuperscript{17} Thacker, Spink and Co., \textit{Thacker’s Indian Directory 1905, Embracing the Whole of British India and (Continued Overleaf)
Despite these problems the 1924 survey of Poona remains extremely important. Although the organisation of the available household head surnames and addresses was less complex than in the 1876 and 1905 address directories, the number of households listed in The Times of India Calendar and Directory for 1924 was much larger than in the previous years. In this case the Directory described households in and beyond the British culture area, and was the only target year analysed where a significant proportion of ‘Native City’ households were described. The 1924 model therefore comprises the largest geographic and demographic coverage although it is inherently the least accurate of the three.

Due to the lack of a completely accurate base-map, and the poor quality of the spatial data embedded in the household head - address lists, it was difficult in this case to assign an exact spatial locality in Poona to any listed household.

The problem of assigning appropriate spatial localities was most difficult in the ‘Native City’ and for the outlying suburban areas such as Bamburda, Yeravda, and even the Vice-regal enclave of Ganeshkhind. The addresses of households resident in these areas were only the most schematic in nature, usually omitted both street number and street name and only provided a broad locality (such as a peth or suburb) as an address reference. Households with highly ambiguous addresses such as this were assigned a symbolic identifier and a random position within a circumscribed area (usually a square) delineating the border of either a peth, a ‘suburb’ or other residential sub-enclave.

Spatial data was more precise for households located in the British culture areas. Addresses in these localities and published in the Directory were listed with both street name and street number, in the standard fashion. The 1924 synthetic base-map was not however designed as a record of individual structures within the settlement of Poona and only depicts streets and blocks. Households were consequently aligned in accurate relative street number order along the appropriate streets and linked to block faces as accurately as possible. In order to ensure the maximum possible degree of accuracy, reference was made to the street numbering system of 1905 in order to ascertain the likely street number running-order along block faces.

Native States…, Thacker, Spink and Co., Calcutta, 1905.

The Times of India, The Times of India Calendar and Directory for 1924, The Times of India, Bombay, 1924.
4.5 Methodological and Theoretical Context - Neighbourhood Archaeology

The three GIS models of Poona described above represent an adaptation of the theory and methodology of ‘neighbourhood’ archaeology. It is appropriate therefore to describe within this section the development of an archaeology of the ‘neighbourhood’ and its potential for application within the Indo-British urban context.

In the late 1980s a debate within the discipline of historical archaeology developed whereby the neighbourhood was conceived of as a city sub-unit of appropriate scale to provide context for archaeologically excavated material derived from urban excavations. Utilising the neighbourhood in this way was posited as a potential solution to a number perceived problems with excavations undertaken at the most common scale utilised for urban sites; that of the houselot/household. At this relatively fine or small scale the (historical) archaeologist traditionally attempts to historically and materially target the sequence of occupations within a particular ‘houselot.’ Often a comprehensive documentary record does not survive pertinent to a particular houselot (or to the households that once occupied it) that could provide historical context for an excavation. Excavated archaeological data have at times presented equally frustrating problems since;

‘...most urban sites are not miniature Pompeiis and instead reflect diachronic site formation processes. This means that data attributable to individual households become indistinct due to successive occupation horizons and consequent disorganisation.’¹⁹

A solution was sought whereby, if detailed documentary-archaeological linkages could not be provided at the scale of the houselot/household, such context could be furnished at a larger scale of urban organisation. In the urban setting this ‘larger’ scale is the local city sub-unit within which a houselot exists; that area defined in the urban lexicon of the United States as a ‘neighbourhood.’

The possible benefits of undertaking urban archaeological research at this scale cannot be doubted since analyses ‘up-scale’ from the houselot can address historical and archaeological contexts in terms of the city-site as a whole rather than being restricted to the

¹⁹ Honerkamp, N., Households or Neighbourhoods: Finding Appropriate Levels of Research in Urban (Continued Overleaf)
more particularistic unit of the houselot. ‘Up-scale’ archaeological research also raises the possibility of synergies between archaeology and other established disciplines (such as geography and town planning) where analyses are routinely undertaken that investigate the holistic fabric of the city. It is, however, one thing to propose that archaeologists should operate at a neighbourhood scale, and another to develop theory, methodology and practice that has the potential to unite historical data concerning a large scale city sub-unit with the small scale household generated material culture that represents the primary analytical focus of the majority of archaeological investigations.

There is an abundance of documentary data concerning city sub-units larger than the houselot, and of a similar scale to the neighbourhood that can potentially be utilised to provide historical context for archaeological investigations at this scale. Bureaucratic localities including wards, suburbs or local government represent a major scale of governmental intervention upon the urban fabric. Terms, however, need to be defined. Are bureaucratic units such as suburbs, postal districts or wards (which can be demographically varied areas) actually synonymous with the neighbourhood, or, is the neighbourhood (a term which can suggest community, and therefore a commonality between residents) different from the formalised urban sub-unit of the suburb? How should an amorphous spatial term such as ‘neighbourhood’ be archaeologically defined?

In the United States ‘neighbourhood’ is a commonly used colloquialism that does not necessarily lend itself to academic definition. The flexibility of the term poses problems since in different contexts ‘neighbourhood’ can encompass a range of scales from a single street frontage within a block, to an entire district comprising a number of suburbs within a city.\(^{20}\) This conceptual ambiguity has seen some archaeologists indiscriminately utilising the word within their analyses in an unsophisticated manner, without rigorously considering the nature of the term.

The key concept behind most definitions of the neighbourhood seems sound; namely that any large urban agglomeration is too extensive to allow intimate contact between all individuals on a regular basis.\(^{21}\) Being too large to consist of a single social unit the urban population fragments into a number of subdivisions based on a number of similarities. In

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effect these *spatial* units represent the social or work territories of various *social* units, As Keller states:

‘[the neighbourhood is], a distinct territorial group distinct by virtue of specific physical characteristics of the area and the specific social characteristics of the inhabitants.’

The use of the neighbourhood as an analytical tool is of course not an innovation developed recently by the archaeologist. Just as a conception of the household as an appropriate scale of analysis was in some respects imported into archaeology via social anthropology, the concept of the neighbourhood was imported into archaeology from sociology.

Ernest Watson Burgess, a ‘Chicago School’ sociologist active in the 1920s, was a central figure in the development of neighbourhood scale urban research. Burgess was fervently pro-neighbourhood, refuting a prevalent belief of the time, that the urban neighbourhood was in terminal decline due to increased population mobility, the rise of urban anonymity, and due to the increasingly bureaucratic nature of society.

Burgess proposed a methodology for detecting neighbourhoods within the city. He considered that the gross urban environment naturally divided into a nested series of sub-entities that moved in scale (in descending order) from the city (or city-site), down to local districts, or communities, which in turn divided into neighbourhoods. The technique he proposed for discerning the urban neighbourhood seems a trifle simplistic in today’s terms. Burgess defined the centre of the local community as the cross-section of the two business streets for the area, this intersection also representing the area of highest land value. Each of the four areas bounded by these intersecting streets could be considered a separate neighbourhood. Burgess’ system seems to categorise the neighbourhood as a spatial rather than a social entity and implicitly depends upon the city ‘gridiron’ commonly utilised in American urban planning.

Archaeology, Special Publication No. 5., (Living in Cities), 1987, p.29.


25 In his article, ‘Can Neighbourhood Work Have a Scientific Basis?’

Urban sociologists have of course since developed more sophisticated methodologies designed to define the neighbourhood. They have, however, often seen little benefit in developing truly comprehensive neighbourhood definitions, since most sociologists are engaged in research that concerns populations that not only form part of their own culturally specific urban environment, but also that exist in the present. Needless to relate, the boundaries and population characteristics of contemporary ‘sociological’ neighbourhoods do not usually have to be extrapolated from material traces and historical records.

In order to successfully study the archaeological and historical neighbourhood (an entity potentially different in scale and function to its modern counterpart) it is crucial to develop a theory of how the neighbourhood would manifest in the historical and archaeological record. Pertinent issues for the researcher attempting to accurately define archaeological neighbourhoods include the following:

1. Does the urban environment under investigation subdivide into smaller socio-spatial units?
2. What indicators in the extant documentary record could mark the existence of historical neighbourhoods?
3. What are the potential material-culture correlates of ‘neighbourhood’ behaviour?

A further and important consideration is one of terminology. If this form of archaeology is applied outside of the context of the urban environment of the United States, perhaps the term ‘neighbourhood’ with its culturally specific connotations should be avoided. (Since this section represents a précis of an existing academic debate, use of the term continues below).

The range and variation of behaviour immediately observable in contemporary neighbourhood interaction does not perhaps lend itself to rigid definition. Nor is it immediately clear what social or economic function (if any) the neighbourhood performs today or performed in the past. Perhaps it is consequently inappropriate for the archaeologist to attempt to provide a hard and all-inclusive definition of the neighbourhood.

The imposition of a rigidly circumscribed methodology presents the danger of artificially reducing the ‘neighbourhood’ to a dogmatic, academic definition which does not adequately engage with past settlement organisation or the human behaviour encompassed within it. More research has to be undertaken in order to isolate the crucial variables that

generate settlement heterogeneity or homogeneity within the urban environment. A rigid
definition regulating the analysis of urban patterning could deny the fluidity of human
behaviour through time and obscure variability or ‘idiosyncrasies’ in the historical or
archaeological record through the unproven notion that neighbourhoods were (or have to be)
‘homogenous’ in character.

The ‘city-site’ approach, as expressed by Cressey and Stephens is an appropriate
starting point for a discussion concerning the practical, archaeological application of the
neighbourhood as an analytical scale. Cressey and Stephens, proposed a methodology which
attempted to provide a more holistic approach in the study of cities. Under its terms the whole
city was regarded as the site under investigation, and any research was to be carried within
this context.\textsuperscript{28} The city-site approach aimed to allow a site to be understood in relationship to
the entire city without the necessity to excavate the entire city.

‘The whole city-site is the object of investigation. Yet the parts associated with
different status groups need to be delineated, surveyed and archaeologically excavated
to determine urban group material patterns.’\textsuperscript{29}

Cressey and Stephens consequently presented the neighbourhood as an important unit
for archaeological investigation in the urban environment. In one of their projects, the
Alexandria Program, their city-site methodology was constructed around a nested hierarchy
of scales which could be used to define the structure of the city. The smallest of these was the
‘domestic zone’ (which formed part of a household), whereas a larger was the street face (a
component of the neighbourhood). All were part of the city-site which itself divided into the
‘traditional’ zones of periphery, semi-periphery and core. These macro-scale divisions of the
city into functional zones represented an adaptation of a pre-developed model, in this case
that of Gideon Sjoberg.\textsuperscript{30}

An archival survey was the primary historiographical research tool used.\textsuperscript{31} Households

\textsuperscript{27} Certainly a key, and as yet unresolved question remains how the neighbourhood functions economically.
\textsuperscript{29} Cressey, P.J., and Stephens, J.F., ‘The City-Site Approach to Urban Archaeology’, in Dickens, R.S., (ed.),
\textsuperscript{31} Cressey, P.J., and Stephens, J.F., ‘The City-Site Approach...’, in Dickens, R.S., (ed.), \textit{The Archaeology of
were archivally located for a given year and attempts were made to anchor specific households to specific structures within the city, or at least to associate households with particular street frontages in an urban block. This linkage gave ‘abstract’ households defined from the historical record a spatial location.

Rather than intensively studying the occupational history of every structure or allotment under consideration, (as would normally be undertaken at the household-houselot scale of archaeological investigation), the archival survey in question was broad in nature; involving only a restricted number of standardised social variables (primarily defining class [socio-economic status], ethnicity and religious affiliation) that schematically described the households within large area of territory. In the case of the Alexandria Program the territory concerned was the entire city. Cressey and Stephens did not however strive to collect details concerning all household/structures within this area and considered that a fifteen percent sample of household heads was sufficient to adequately predict settlement patterning.32

The data collected was analysed in an attempt to pinpoint areas of settlement homogeneity in terms of the key variables of class, ethnicity and religion. The eventual purpose of the analysis was to provide general historical context for artefacts drawn from excavations within the city. In this case intensive historical contextualisation was not undertaken for the individual allotments under excavation. The excavated refuse deposits within the allotments from which individual artefacts were drawn were not referenced to the occupational tenure of individual families or households, but were studied within the context of the ‘homogenous’ residential areas revealed by the archival survey. Such areas of residential homogeneity were defined as:

‘Neighbourhoods associated with homogenous residential patterns at one or more time phases.’33

Cressey and Stephens mapped residential homogeneity or heterogeneity in the population of Alexandria without engaging in substantial interpretation of the spatial patterns or ‘neighbourhoods’ revealed by their research. Being essentially descriptive rather than explanatory in nature it could therefore be considered a settlement pattern methodology34. An

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34 The geographic and physiographic relationships of a contemporaneous group of sites within a single culture: (Continued Overleaf)
alternate approach to the investigation of the neighbourhood would be to accept that this urban sub-unit represents a functional entity based upon the provision of certain (economic and social) services rather than existing as a static demographic pattern. Accepting that the neighbourhood is a settlement system that has explanatory value means that the concept can be used to model human residential behaviour rather than passively mapping demographic patterns in the urban environment or providing historical context for artefacts. Site or culture specific hypotheses can consequently be posed as to why demographic sub-units of a society settled into discrete spatial localities.

Nan A. Rothschild was another archaeological theorist who developed neighbourhood models in the late 1980s to assist in research that investigated the expansion of the New York City. Rothschild was one of the few researchers who published a serviceable neighbourhood definition, one that has since received some tentative acceptance. She stated of neighbourhoods:

‘1. They are places where groups of people spend a significant amount of time, either at work or at home.
2. They are places that have a sense of identity, usually both self defined and externally defined.
3. They are often occupied by people with some common characteristics such as ethnic origin, religion or socio-economic status.
4. They are places which provide certain common services necessary to modern urban life.’

In keeping with this definition she sought to delineate discrete spatial units (neighbourhoods) in eighteenth century New York. One difference to the city-site approach as advocated by Cressey and Stephens is the emphasis she gave to historic maps, which she put forward as an archaeological resource themselves, and :-

‘...invaluable not only in determining the location of specific sites, but also in delineating settlement patterns and, where relevant, topographic changes.’


Rothschild isolated several key variables that described the urban population and were commonly associated with residential clustering. These variables included ethnicity, religion, and socioeconomic status, and were generally synonymous to those used by Cressey and Stephens to detect homogenous settlement patterning in their study.

Her methodology concentrated upon the (fourth) point of her definition, that ‘[neighbourhoods] are places which provide certain common services necessary to modern urban life…’ and therefore represent a service base for the population encompassed by their boundaries. Rothschild consequently mapped structures (including institutions such as churches, schools and markets) that delivered services to definable sectors of the past New York community. The structures were plotted upon historical maps contemporary with the population sectors/service structures under investigation. The results of this analysis revealed that service structures did in fact cluster in meaningful fashion, enabling her to define fourteen spatial units, or neighbourhoods in the survey area.

A third important contribution to ‘neighbourhood’ archaeology encompasses the work of Honerkamp whose theoretical approach was generally complementary to those of both Cressey and Stephens, and to that of Rothschild. He focused disciplinary debate regarding the relative merits of household and neighbourhood methodologies upon the central question of scale.

Honerkamp had problematic personal experience as an excavator with the ‘post-depositional forces’ that he considered ‘disturbed’ the material record in urban archaeological contexts. His hope was that neighbourhood archaeology could be used as an alternate method for inter-linking the archaeological and documentary records other than through the direct and intensive correlation often utilised in household-houselot scale research. Honerkamp noted


\[\text{Rothschild, N.A., ‘On the Existence of Neighborhoods…’, in Historical Archaeology, Special Publication No. 5., (Living in Cities), 1987, pp.31-2.}\]

\[\text{Through reference to her variables.}\]

\[\text{Defined mostly by ‘breaks’ in the street grids of the city.}\]

\[\text{Adoption, since he commenced his career as a keen pro-householder, castigating proponents of neighbourhood archaeology as possessing little faith, switched to a neighbourhood approach necessitated by the ‘post-depositional’ forces that precluded household archaeology being successfully completed on his later sites.}\]


\[\text{Honerkamp, N., Households or Neighbourhoods..., Unpublished Conference Paper, 1987, p.2.}\]
that little or no pertinent documentary material remains extant describing the majority of historic households within urban areas. However, house lots and the households resident within them exist within larger spatial units, ‘neighbourhoods’, that are discernible through reference to appropriate definitions, such as that developed by Rothschild and quoted above.

Corporate actions influencing the social and material circumstances of households or groups of households within the neighbourhood unit were far more likely to have been recorded (as part of the operations of governmental bureaucracy) than the actions of individual households or residents. This supposition relates to the ideas of Burgess who sometimes chose to equate the neighbourhood with Local Government Areas.

One particularly important statement of Honerkamp’s is transcribed below;

‘With neighbourhood parameters firmly in hand it becomes possible to meaningfully interpret household artefact assemblages derived from the ‘known’ neighbourhood, even when the household in question is undocumented. The converse of this statement is not true. Thus, even for archaeologists who have a household fixation, scaling up provides a valuable and useful tool for making sense of any site’s particulars.”

Honerkamp understood that ‘neighbourhood’ archaeology could potentially answer a spectrum of questions differing from those originating through household research and dispels the notion that neighbourhood and household methodologies have to exist in opposition to one another. The neighbourhood exists as an interpretative urban scale that can provide valuable (and often ignored) historical context that can be used to interpret household artefact assemblages.

The ideas discussed briefly above summarise theoretical and methodological debate concerning neighbourhood archaeology. No one researcher provided an exhaustive methodology to apply to the historical urban environment and the documentary and archaeological records. It is through a synthesis of the compatible concepts from each theorist’s approach that a systematic strategy for the detection of historical urban patterning at the city-wide scale can be developed that avoids the weaknesses of the individual methodologies considered in isolation.

These are Honerkamp’s words. ‘Post-depositional forces’ may not in fact exist, since ‘disturbances’ cannot in reality be disassociated with processes of deposition. From the moment of artefact deposition a number of ‘disturbances’ contribute to the formation of an archaeological deposit.
Together, these provide a generally workable definition of the neighbourhood (via Rothschild) and two major useful methodological techniques. The first (drawn from Cressey and Stephens) is a broad demographic survey of historical households that covers a wide geographical area and is organised around a small number of standardised variables. The second (derived from Rothschild once again and also from Seasholes44) is the utilisation of the historical map-base of a city as a de facto archaeological resource that records the general physical parameters of the past urban environment.

Data collected regarding individual households in the course of the demographic survey of course include spatial locators (street addresses). The compiled settlement data can consequently be spatially displayed; overlaid upon historical base maps. Where data is of sufficient accuracy a close linkage can be made between ‘social’ households and individual structures displayed on the base-map. This procedure allows the researcher to analyse settlement demography and plot the results spatially, revealing patterns of heterogeneity or homogeneity amongst groupings of households and structures in the historical urban environment. As is immediately apparent, the system described above is the one utilised in this study and described in sections 4.3 and 4.4 of Chapter 4.

**Criticisms of the Neighbourhood Approach**

Due to equivocal results in the practical application of neighbourhood archaeology in analyses dealing with excavated material, and also perhaps to a certain confusion in theoretical aims and expectations, large ‘up-scale’ studies at the explicit scale of the neighbourhood have remained rare in historical archaeology.

The significant criticisms have levelled at the methodology centre about a number of issues including the following;
1. Traditional household/houselot scale documentary contextualisation requires rigorous historical research, whereas neighbourhood archaeology practice could potentially be ‘misused’, leading to reduced historical contextualisation for well documented archaeological sites.
2. Utilising a methodology that proposes that each demographically defined ‘neighbourhood’

represents a ‘homogenous’ population of similar households utilising material culture in similar ways could depress indicators of settlement heterogeneity, variability and eccentricity in the urban environment.

3. That low sampling proportions in the demographic survey component of neighbourhood studies (Cressey and Stephens for example surveyed only 15 percent of the population of their city-site) could further depress indications of population heterogeneity.

4. That positive identification of historical neighbourhoods through documentary research does not necessarily determine that neighbourhoods manifest in the material record. The manner in which neighbourhoods are connected with functional economic behaviour or how such behaviour exhibits in artefactual patterning has not been adequately proven.

5. It is possible that neighbourhoods do not manifest as areas of settlement ‘homogeneity’ in the urban environment and that in fact several neighbourhoods could co-exist in a heterogeneous settlement area. Neighbourhoods could consequently represent notional, dispersed social networks of households that are mapped in the minds and memories of neighbourhood residents.45

These five criticisms essentially concern problems with neighbourhood definitions, and the further expectation that the approach be utilised to provide historical context for down-scale material culture. A methodology has therefore been described that can model the historical urban environment, but is perhaps badly served by the theory put forward to substantiate its uses.

Disentangling theoretical and methodological issues

Theoretical debate and the methodological development described above took place prior to the widespread use of Geographical Information Systems (GIS) to organise spatial information, and the adoption of such software systems by archaeologists. Before the development of GIS and attendant data management systems, the task of compiling demographic data covering an extensive urban population and overlaying that data upon historical base maps with city-wide coverage, would have been a gargantuan, labour intensive and often impractical proposition.

However, with the proliferation of relatively inexpensive GIS software packages, the

45 Mullen, W., Just Who are the People in Your Neighbourhood?, Unpublished Honours Thesis, University
difficulties facing the archaeologist attempting to efficiently model settlements, suburbs or entire cities (even at a population ‘sample’ of 100%) have greatly decreased. Given that GIS presents to the archaeologist the opportunity to practically engage in ‘up-scale’ analyses of the urban environment, it is perhaps prudent to reassess the methodology in light of technological developments and attempt to highlight its strengths and to define the questions it can address.

Disregarding for a moment the proposed function of the methodology - to identify historical ‘neighbourhoods’ and to consequently provide context for material culture drawn from household/houselot scale archaeological sites a crucial question must be asked. What can, and does a ‘neighbourhood’ model designed with a GIS system actually do?

In essence models created utilising this methodology organise artefacts at the scale of the city-site or city site sub-unit (suburb/locality). The ‘artefact’ under consideration can be conceived of as the structure or the delimited area within which a structure exists (the houselot/allotment/compound). In short the technique takes the artefacts - structures that are described via several variables\(^{46}\) - and creates linkages between these and the household/s or institution/s\(^{47}\) (also described via several standardised variables\(^{48}\)) that occupied the structures/compounds. Structures or compounds and their associated households or institutions are plotted upon historical base maps (that serve as a de facto archaeological record) and are consequently distributed through space and in time. In this way spatial patterns of material culture and social organisation are mapped at a coarse level.

It is essentially irrelevant whether the methodology detects ‘neighbourhoods’ or not. Rather than simply locating the presence or absence of historical neighbourhoods, the methodology defines the degree of population homogeneity or heterogeneity within the city-site or its enclaves, and can isolate complex and diffuse spatial and demographic patterning within an urban agglomeration. The absence of socio-spatial patterning - the existence of heterogeneity - remains as informative a discovery as urban patterns that display the tendency in a city toward homogeneity and social segregation.

There are definite advantages for the researcher in removing the methodology from the realm of conventionally defined neighbourhood theory and consequently the necessity of

\(^{46}\) These variables notably include structure area, allotment area and height above sea level, all of which are easily be derived from historical maps.

\(^{47}\) Expressions of human behaviour and social organisation as compared to the physical artefact.

\(^{48}\) Notably including indicators of ethnicity, religious affiliation and socioeconomic status.
providing context for down-scale excavated material culture. By explicitly dissolving the link between this form of GIS urban modelling and a specifically neighbourhood approach, the researcher is given far greater flexibility to investigate the historical urban environment. Permutations and combinations of available variables, both physical and social can be easily analysed and plotted spatially. Hypotheses regarding the potential organisational modes of a settlement can be framed and tested against the collected demographic and spatial data.

The data incorporated into a city model of this structure could, for example, be utilised to explore the question of whether neighbourhoods existed or not in that particular urban milieu, to discern what the social parameters of any detected neighbourhoods were, their change over time, or even to begin to explore the relationship between socio-spatial patterning at the city-site scale and how such patterns relate to down-scale material culture. These data could just as easily be used to explore segregation in the urban environment (a task which this study in part attempts), the link between socio-economic status and household (or even house) size or the correspondence / non-correspondence between material and social settlement organisation. With the models of several cities in hand (and a number do exist) analyses comparing urban environments in different parts of the world could be undertaken.

GIS models of this nature are not restricted to addressing the single research question in isolation, the data and model can easily be reapplied to additional projects or question- by academics from any academic discipline concerned with the historical built environment. The internet represents a particularly powerful potential mode of data delivery in this case, making the data incorporated in city models available to the academic community via initiatives such as the Electronic Cultural Atlas Initiative (ECAI).

4.6 Method and Theory: Indian Application

Since the subject of this study is an Indian city, some consideration should be given to defining the specific issues concerning the Indo-British built environment that the GIS models of the case-study site can address. In this case the city and station of Poona have been put

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49 The design of the model created in this dissertation and the structure of the database recording address directory data is derivative of an earlier project undertaken by this author that developed three similar models for ‘The Rocks’, a locality within the city of Sydney. The models of Poona have greater geographic coverage and incorporate greater detail General continuity of design was intentional, with the hope that as more models of historical cities are created using GIS, the inter-comparison of cities of the European colonial empires could be more easily facilitated. Mullen, W., Just Who are the People in Your (Continued Overleaf)
forward as generally representative of the many other ‘tripartite’ plan cities that existed across mofussil India. As has been explained in section 4.5, in common with other models of this design, the Poona city models primarily serve to detect demographic and material homogeneity or heterogeneity in the historical urban environment of the city using the selected physical and social indicators outlined in Appendix 1. The term ‘neighbourhood’ can at least be discarded from this point onward and it should be noted here that while the analysis presented in Chapter 8 and Chapter 9 deals with matters of urban (social and material) heterogeneity and homogeneity, it does not seek to locate ‘neighbourhoods’ within the urban environment of Poona.

It is still possible to discern in many Indian cities that were developed by the British as military or civil stations the ‘tripartite’ plan of military cantonment, civil lines and ‘native city’. The perceived function and demography of these spatial enclaves are also known from surviving qualitative historical records describing such settlements. The traditional view is that the civil lines and cantonments of British India should exhibit quite specific demographic and spatial patterns (see Chapter 1). British India is of course historically well-documented as a segregated society that divided along several social cleavages, including race, religion, socioeconomic status and of course caste. To a certain degree these presumptions are based in demographic reality. In British India after all there is clear evidence that the military did indeed reside in the cantonments of the empire, the administrators within civil lines and the majority Indian populace within the ‘native city’.

No attempt is being made to seriously dispute the overall organisation of such cities, however, there is a scope within the dominant demographic patterns for more complex modes of human behaviour to be revealed. The specific aim of the Poona models is consequently to test the degree to which the perceived demography and spatial organisation of the enclaves within Poona city-site as traditionally revealed through qualitative historical data match the actual spatial organisation and demography as revealed through an analysis of the appropriate surviving quantitative demographic and spatial historical data.

This aim can be investigated through the application of the following questions:

* Do the GIS models support the concept that Poona was ‘racially’ segregated - with Indian households living in the ‘Native City’ and British inhabitants limited to the station? What anomalies are apparent?
* Do the models also provide evidence that Poona was occupationally segregated? Was the Military Cantonment occupied by military personnel, the Civil Lines occupied by administrators and the Sadr Bazar by traders? What anomalies to this pattern are apparent?
* Do the available health statistics confirm British concerns about the health of their troops based in India?
* Do the available data concerning public structures and settlement organisation indicate that design criteria were utilised to reduce the perceived effects of miasmas? Is there any indication that British efforts to reduce the influence of miasmas had any impact upon the actual health of the British in India?
* Can public health design conventions and race be used as tools to explain residential choice in this station?
* Does demographic and spatial patterning in the city alter over time?

The questions listed above are addressed in Chapters 8 and 9. Chapter 8 analyses the demography of Poona drawing upon various historical sources including the Census of India and 19th century address directory data. Chapter 9 presents a spatial analysis of the city and station of Poona using the three GIS models developed to describe the late nineteenth and early twentieth century city.

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50 See Chapters 1, 2 and 3.
Chapter 5

A History of Poona under the Peshwas

5.1 Introduction

This exposition of the history of the indigenous city ‘core’\textsuperscript{1} of Poona, its culture, and symbolic role, aims to assist in understanding the transformation of the city from a major focus of resistance to British expansionism, into an element of the British Indian Empire. Although this dissertation concerns itself primarily with the development and utilisation of space within the \textit{British} sectors of Poona city-site, the extensive British station was primarily ‘appended’ to Poona due to the political and symbolic importance of the ‘Native City’, an importance that long pre-dated British influence in the region. This account of the pre-British core of Poona is therefore presented to provide historical context for the eventual location, development and morphology of the British civil and military stations of the city.

Although the subject of Maratha history is a well-researched area, few published historical records or studies exist that describe the \textit{urban} development of Poona prior to British contact.\textsuperscript{2} Unfortunately there is a consequent dependence upon the many descriptions of the city written by the British throughout the nineteenth century. For this particular history, primary historical records deriving from the British polity have, wherever possible, been used that date to the era post-dating the First Anglo-Maratha War;\textsuperscript{3} to that period when from 1786 a Company representative or ‘Resident’ was stationed at the Court of the Peshwa. Failing this records have been used that date as closely as possible to the conquest of the city by the British in 1818.

5.2 Pune: An Introduction

Pune city-site is a settlement located at 18 degrees 30' 41'' North and 73 degrees 55' 21'' East, close to the western coast of the Republic of India. It is situated inland from the

\textsuperscript{1} The ‘native city’ as the British termed it.
\textsuperscript{2} A crucial monograph dealing with the eighteenth century urban history of Poona, based upon actual Maratha rather than British administrative records and censuses is Gokhale’s invaluable \textit{Poona in the Eighteenth Century}, Gokhale, B.G., \textit{Poona in the Eighteenth Century}, Oxford University Press, Delhi, 1988.
\textsuperscript{3} Hostilities of which terminated in 1782.
Konkan Coast on the elevated Deccan Plain, and is thus some 1850 feet above sea level. The city is 119 miles, (in a direct line), from Bombay (Mumbai), the capital of Maharashtra, and is divided from the Konkan by the Sahyadri Hills, or Ghats, a mountain range to the west of Pune that rises to a height between 2000 and 4000 feet, and which in the early nineteenth century could only be traversed by a small number of difficult passes. The ‘Borghat’, (the major of these passes), was the single route considered to be usable by wheeled traffic, and therefore was utilised as the corridor connecting Bombay and Poona by road and later rail. The first British road through the Borghat connected Panvel, (in Thana District), with Poona, the section from the head of the pass to Poona being completed by Major General Wellesley in 1804. With the conquest of the city by the British in 1817-18 a primary goal of the Presidency Government was to upgrade the road link between the two cities, the vastly improved connection being opened by Sir John Malcolm (Governor of Bombay) in 1830.

The subsequent rail link, completed as part of the Great India Peninsula Railway, reaches its high point at 2000 feet in the Borghat with a station at Khandala, 40 miles from Poona; the section from Khandala to Poona being opened in June 1858. (Figure 5.1).

Poona itself was and remains a major station on this line which extended as far as Raichur to the south east, and formed a junction between the Great Indian Peninsula, and the more recent Southern Maratha Railway, work upon which was commenced in March 1884.

The historic core of Poona is located on the eastern bank of the Mutha River, and is located just to the south of the confluence, (the ‘Sungum’), of the Mutha and Mula Rivers, whereupon their combined course is named the Mutha-Mula River. The river is wide and

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4 The Plain received its name from the ‘Dakshinapatha’ or southern trade route which provided the only route inland from the Konkan coast.
6 All structural measurements are in imperial units.
7 Forrest, G.W., (ed.), *Selections from the Minutes and Other Official Writings of... Mountstuart Elphinstone...*, Richard Bentley and Son, London, 1884, p.253.
11 The Southern Maratha Railway was under construction in 1885.
13 An alternate spelling predominant in the nineteenth century was ‘Moola’ and ‘Mootha’.
shallow, spreading to a width of 500 to 600 feet in the rainy season;¹²

**Figure 5.1**

*The difficulties of constructing a railway steeply inclined railway from the Konkan coast over the Ghats to the Deccan Plateau and Poona are apparent in this zig-zag descent near the city. Trains that were travelling too fast down the track were brought to a halt on the (centre) catch-siding*


‘...but is full only for a short time after heavy rains. The last few months before the South West monsoon, it lies mostly in pools.’¹³

The seasonal Mutha-Mula River flows into a tributary of the Krishna river called the Beema; the Krishna flowing eventually to the Bay of Bengal. Both the Mula and Mutha Rivers have their origins in the Sahyadri ranges.¹⁴ (*Figure 5.2 ‘View of Poona with River in foreground’*).

To the east of the city lies the expanse of the Deccan Plain. Bishop Reginald Heber wrote a description of the landscape in 1824-5;

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Figure 5.2.
‘View of Poona (Bombay) with River in the foreground’.
Image: Henry Salt, October 1804, Wash, 41.8 x 60.4cm, India Office Library and Records (WD 1306).
‘The plain of Poona is very bare of trees, and though there are some gardens immediately around the city, yet as both these and the city lie within a small hollow on the banks of the River Moolah, they are not sufficiently conspicuous to interrupt the general character of nakedness in the picture, any more than the few young trees, and ornamental shrubs with which the bungalows of the cantonment are mingled.’15

The Mughal historian Khafi Khan had written a similar description a short time prior to the death of the Emperor Aurangzeb describing Poona as ‘...situated upon a treeless plain’.16 To the south of the city lies the Parvati Hill which rises to a height of 250 feet and upon which is built a major temple to Parvati along with smaller temples dedicated to a variety other Hindu deities.17

There are three major seasons; the cold falling between November to February, the hot stretching from March to May, and the wet season from June to October. Rainfall for the city averages 25-30 inches for the year with a maximum recorded rainfall of 51 inches in a year, 75% of rainfall being distributed over the monsoon period.18 The transition months to the monsoon of May and October represent a period of strong thunderstorm activity. Temperatures rise in April to over 100 degrees Fahrenheit, compared to a mean temperature of 69 degrees Fahrenheit in December.19 The climate of Poona is cooler than that of Bombay, and was under British occupation considered to be healthier for European troops.20

5.3 Poona Site History, AD 738-1818

‘For in truth the Peshwas, had never done anything for the advancement of mankind. To have large feet and long arms and not to be able to sign your name were qualities among the first mark among the Peshwas’21

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17 The major temple at Parvati was photographed in the early century by the Archaeological Survey of India.
20 Poona's climate was sometimes described in the nineteenth century as 'Continental'.
'The Marathas produced rulers and statesmen, soldiers and generals, judges and financiers, poets and writers; among them not a few women also have distinguished themselves. They fought and conquered, and often suffered terrible reverses which they bore coolly and patiently. Their careers have not stained by black deeds of cruelty or treachery. They treated their opponents like true warriors with consideration and respect.'

One of the earliest references to ‘Poona’ was discovered upon an inscribed copper plate dating to AD 758, within the reign of the Rashtrakuta King Krishna I. The inscription recorded the name ‘Punya Vishaya’; referring to the Poona region. By the 10th century the city was recorded as ‘Panaka Wadi’, ‘Punnaka’ or ‘Punyapura’, synonymous terms roughly translatable as ‘City of Merit’, or ‘City of Purification’; a title perhaps related to the settlement's proximity to a river, or to the sacred sites on Parvati Hill to its south. Up to the present time the city has maintained variants of this same title, excepting a short period when the designation of the city was altered during the reign of the Mughal Emperor Aurangzeb who eponymously rechristened it ‘Muhiyabad’.

Up to the fourteenth century there was little further mention of Poona. During this period the surrounding region came under the control of several different dynasties; the Rashtrakuta Kings of the eighth century were overthrown by the Yadavas of Devagiri in 973, and the Yadavas in turn were conquered by the (Khilji Dynasty) Sultanate of Delhi in the fourteenth century. Within the Khilji period of Muslim rule the administrative headquarters for the region of which Poona was a part was located in a fort built at Chakan, 18 miles to the north of Poona itself.

Between the fourteenth and seventeenth centuries Poona came to be included in the Bahamani Deccan State that rebelled against the Tughlaqs, the successor dynasty to the Khiljis within the Delhi Sultanate. The Bahamani Deccan State decayed into five kingdoms, and it was through this decay that Poona fell under the general overlordship of one of these;

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22 Sardesai, G.S., Main Currents of Maratha History, Delhi, 1949, pp.181-2.
the Nizamshahi Kingdom of Ahmadnagar, in the fifteenth century.\textsuperscript{26} It is only with events related to Shivaji the Great, founder of the Maratha Empire, that the history of Poona is recorded in greater detail. In 1604 historical records relate the grant of Poona, by the Sultan of Ahmadnagar, to Maloji, the grandfather of Shivaji,\textsuperscript{27} with the grant being reconfirmed by the successive Sultan of Ahmadnagar to Shahaji Bhosale, Shivaji's father. Shahaji, (1594-1664) built a reputation as a political force in removing Poona from the rule of his immediate feudal master, the Adilshahi of Bijapur. The young Shivaji (1627-80) apparently spent part of his childhood in Lal Mahal wada in Poona. (\textit{Figure 5.3: Portrait of Shivaji})

\textbf{Figure 5.3}

‘Portrait of Shivaji’

\textit{Deccani (Golconda), c.1680-7, Gouache and ink on decorated album page, the Trustees of the British Museum, (BM 1974-6-17-011 [12]).}


Whilst Shivaji went on to found an empire, he and his successors chose Satara as their capital, and Poona remained a relatively provincial settlement until the eighteenth century.

Shivaji’s successors fought to protect their Empire\textsuperscript{28} against onslaughts from the

\begin{itemize}
\item \textsuperscript{26} Gokhale, B.G., \textit{Poona in the Eighteenth Century}, Oxford University Press, Delhi, 1988, p.3.
\item \textsuperscript{27} Hunter, W.W., \textit{The Imperial Gazetteer of India}, Vol. XI, Trubner and Co., London, 1886, p.212.
\item \textsuperscript{28} Which decayed administratively into a loose alliance of territories termed the Maratha Confederacy.
\end{itemize}
Emperor Aurangzeb who eventually took Shivaji’s grandson, Shahuji into captivity as
hostage in 1689. Shahu was released upon Aurangzeb’s death in 1707, and upon his return to
Maharashtra was declared sovereign of the Marathas.

Shahu had been assisted and financed by a minor Brahmin revenue official, Balaji
Vishwanath Bhat, and in gratitude of for these services Shahu appointed him Peshwa, an
office analagous to Prime Minister\(^{29}\) in 1713.\(^{30}\) Balaji Vishwanath was also granted the jagir
which included Poona and the surrounding districts, although he made his residence at
Saswad. After Balaji Vishwanath’s death, Shahu appointed his son, Baji Rao Ballal (Baji Rao I)
as successor to the title of Peshwa, rendering the position hereditary in the Chat family.\(^{31}\)
Baji Rao I, (ruling 1720-40), was the Peshwa who chose Poona as his primary capital in 1730.
Shahu was not by nature an interventionist ruler and thus left the minutiae of governance to
Balaji Vishwanath and thence Baji Rao I. The centre of power within the Confederacy
consequently shifted from Satara to Poona.\(^{32}\) With the Peshwas wielding executive authority
the Maharajahs of Satara who were the descendents of Shivaji accepted a primarily religious
and ceremonial role.

The years between 1740 and 1796 saw a succession of Peshwas; Balaji Bajirao,
Madhavrao I and Narayanrao. Narayanrao (1755-1773) ruled for only eight months before
being murdered by Gardis, (mercenaries) possibly under the orders of his uncle
Raghunathrao. The murder plunged the Confederacy into a crisis and initiated a plan by the
Maratha Finance Minister, Nana Phadanis, (1742-1800), to place the infant son of Narayanrao
upon the throne. His machinations were successful, and Narayanrao’s son was declared
Peshwa Madhavrao II in 1774 and placed under the protection of one of the tributary rulers of
the Confederacy, Mahadji Scindia.\(^{33}\) (Figure 5.4: Madhu Rao Narayan).

It was under Scindia’s Regency that the British first appeared upon the Maratha
political scene. Raghunathrao was driven out of Poona by Nana Phadanis and Scindia in the
name of Madhavrao II, and the exile turned to the British in Bombay asking for support in his
claim to the title of Peshwa. The Bombay Council named Salsette and Bassein as the

\(^{29}\) The term ‘Peshwa’ is a Persian word meaning ‘foremost’ or ‘head’.
\(^{33}\) The major subsidiary rulers of the Confederacy were the Scindia of Indore, Holkar of Gwalior, Bhonsle of
Nagpur and the Gaikwad of Baroda.
Figure 5.4
Image: James Wales, 1792, Oil on canvas, 228.6 x 190.4cm, Royal Asiatic Society London.
territorial price for their assistance. The ensuing conflict ensued lasted seven years, and is now termed the First Anglo-Maratha War.

The eventual cessation of hostilities was followed by the conclusion of the Treaty of Salbai in May 1782. Scindia was declared guarantor of both parties’ adherence to the treaty and he eventually became the representative of the Confederacy to the British Government, usurping that prerogative from the Peshwa. Nana Phadanis, who was considered the power behind the throne of Madhavrao II, was anti-British in sentiment but accepted a British Resident at Poona, seeing the office as a means to curtail the growing power of Scindia. Sir Charles Warre Malet was appointed Resident and arrived in Poona in 1786.

Madhavrao II died in 1795 after falling from a balcony within his palace. It was within the reign of his successor, Baji Rao II (a son of Raghunathrao) who assumed the title in December 1796, that the Maratha Confederacy was brought to its final crisis. In an attempt to break Scindia's power over the Peshwa, and achieve his own supremacy in Poona, the Holkar attacked the combined forces of Scindia and the Peshwa, defeating them. Baji Rao II fled to Bassein where he asked for the assistance of British troops in effecting a restitution of his rule. A Company force under the command of Major General Wellesley placed the Peshwa back upon his throne, but only upon his ratification of the Treaty of Bassein which stipulated that a Company Force be stationed on a permanent basis outside of the city.

In the years that followed the ratification of the Treaty of Bassein the Peshwa attempted to reassert his power, resenting his dependence upon the British. Tensions rose until the murder of Shastri, the representative of the Gaikwad of Baroda in Poona, brought events to a head. The Gaikwad was nominally subordinate to the Peshwa, but had paid no tribute to the Poona government from 1798-1813. In 1814 Baroda delegated Gangadhar Shastri to Poona to negotiate a settlement; by this time the demand for tribute amounted to over four crores of Rupees. In the lengthy negotiations that ensued Shastri was murdered, despite the fact that his mission had been sponsored by the British, and he was considered to be under British protection. The British considered Trimbuckji Danglia, a companion and minister to the Peshwa as guilty of the murder.

34 Bassein was an ex-Portuguese enclave that had been conquered by the Marathas.
Trimbuckji was arrested by the British and was imprisoned in Thana Fort, from which he managed to escape in 1816. While a fugitive he remained in contact with the Peshwa and raised an army of over 6000 men. In Poona similar hostile actions suggested to Elphinstone (the Resident) that the Peshwa was ‘engaged in a deliberate conspiracy to stir up a war against the British Government.’\textsuperscript{38} Elphinstone requested military assistance from the Governor-General, and consequently a Subsidiary Force was deputed to Poona under General Smith, arriving in May 1817. Elphinstone then presented the Peshwa with an ultimatum demanding the surrender of Trimbuckji and the hill forts surrounding Poona. The city was surrounded on the 8th of May upon which day the Peshwa submitted, being forced to commit to a new treaty of alliance with the Company.\textsuperscript{39}

The British demanded under the \textit{Treaty of Poona}, (signed 13th June 1817), that the Peshwa, admit to the guilt of Trimbuckji, never admit any ‘European or American’ power onto his territories without permission of the Company, and that he;

‘...hold no communication with any power whatever except through the [British] Resident...’\textsuperscript{40}

Baji Rao was also commanded to extend the subsidiary force by 5000 cavalry and 3000 infantry and cede territory for cantonment lands as well as the provision of funds for the force and renounce all territorial claims outside of his current territories.\textsuperscript{41} The most contentious provision was that the Peshwa was to surrender his titular leadership of the Maratha Confederacy;\textsuperscript{42}

‘[His Highness]...recognises the dissolution in form and substance of the Mahratta (sic) confederacy, and renounces all connection whatever with the other Mahratta powers...’\textsuperscript{43}

It was the harsh stipulations of the \textit{Treaty of Poona} restricting the sovereignty of the Peshwa that acted as a catalyst for the Third Anglo-Maratha War (discussed in \textit{Chapter 6}).


during which the British deposed the Peshwa, conquered Poona and appended the heartland of the Maratha Empire to the territories of the Bombay Presidency. Even at Westminster, reports of British victory over the Marathas were received with little enthusiasm. Lord Morpeth, responding to a resolution put to the House of Commons calling for a ‘Vote of Thanks to the Marquis of Hastings and the Army in India’ remarked in respect to the British victory in the Third Anglo-Maratha War:

‘The Peishwa had been described as guilty of ingratitude and treachery; but it must be observed, that you placed a barren sceptre in his hand, and almost insulted him with the mockery of independence. You were not authorised to calculate upon the gratitude of a person so circumstanced.’

5.4 The Spatial Layout of the Poona City Core

Poona did not possess the grandiose qualities in terms of either architecture or planning of many of the older Indian capitals; not having a long imperial history, or any great commercial importance. The Peshwas did their utmost to provide Poona with a gracious setting suitable for an important ceremonial centre. Poona as a military-administrative capital can therefore be seen to be the creation their family; the Bhat.

Poona between the eighth and fourteenth centuries consisted of a small settlement possessing a market and temples dedicated to Ganesha and Kadareshwara located near the sacred sites on Parvati Hill. This ‘village’ was a walled settlement confined to the southern part of the later area termed ‘Kasaba’ or ‘Kasba’ Peth within eighteenth century Poona. The wall or ‘fort’ that surrounded the settlement was termed ‘Pandhari’ or ‘Juna Kot’, and was destroyed by Baji Rao I who was discouraged from refortifying his capital by the Maharajah of Satara. Poona remained from that date an open settlement. The lack of fortifications rendered the city generally indefensible, and in times of war the administration would withdraw to the nearby hill forts of Sinhgad or Purandhar for protection.

Between the fourteenth and eighteenth centuries the city developed into a ‘Kasba’, or

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‘Treaty of Poona’, 13th June, 1817, Article IV.
45 Gokhale, B.G., Poona in the Eighteenth Century, Oxford University Press, Delhi, 1988, p.4.
46 As stated above the first mention of the name of Poona was in the 8th century.
a ‘market town’ that was militarily protected, and the seat of a Jagir; a position that could be described as a feudal gift of territory. A ‘Kasba’ formed part of the contemporary hierarchy of urban sites. Settlements smaller than a Kasba were termed ‘mauja’, (villages), or ‘gav’, (small towns), whilst a settlement larger than a Kasba was regarded as a ‘shahar’, (city). Kasba or shahars were basically ‘an accretion of gav units’ that clustered about the original kasba-gav.

Gavs were regarded as standing upon ‘white soil’, or residential land, (as differentiated from agicultural or ‘black soil’), and was surrounded by perimeter fortifications termed the ‘gav-kusu’. In Poona Juna Kot was therefore often referred to as the ‘white wall’, referring to the fact that it protected the ‘white soil’. Caste Hindus were usually given right of residence within the gav-kusu, whilst outcaste communities constructed separate residential areas external to the fortifications.

The constituent gavs of Poona were termed ‘peths’, (an Arabic word describing a town division), which acted as administrative divisions semi-analogous in nature to the ward in the British urban hierarchy. The original centre of the city in Kasaba Peth reflects (through the peth’s title) the pre-18th century role of Poona as a market settlement. In 1637 Poona possessed four Peths Kasba, Murtzabad (or Shanwar), Raviwar and Shahpura. By 1730, the year of Bajirao I pronouncement of Poona as his place of residence the city had expanded to six, which Gokhale estimates to have contained between 20 000 to 30 000 persons. A further expansion had occurred in the period up to the year the city surrendered to British rule. For the year of 1818 population of the city was estimated to be over 100 000, distributed throughout 18 peths. Seven of the peths were named for days of the week, with the remainder taking the names of rulers or persons of note. (Figure 5.5: The late 19th century peth structure of Poona).

The role of Poona from 1730 as a political, administrative and military capital gave impetus to a period of expansion and development. Poona grew through the addition of new peths to its established area, the addition of these following a predetermined administrative

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Figure 5.5
The late nineteenth century Peth structure of the ‘Native City’ of Poona.
Image: Author
procedure. Impetus for the growth was instituted by the government who appointed an hereditary ‘overseer’ given the title of the ‘Shete-Mahajan’ to whom was given a ‘watan’ or grant for the land. The role of the Shete-Mahajan was to develop the prescribed area, to attract artisans and professionals to the new settlement and to impose taxation or charges upon the inhabitants. The ‘watan-patra’ or charter listing the responsibilities of the Shete Mahajan could be transferred to another individual if the government found progress in urban development unsatisfactory. After the establishment of a peth the government played no further regulatory role within its further development other than to transfer the watan-patra in order to reinvigorate the area if it entered a period of decline.52

The eighteen eventual peths of the city were not merely small administrative sub-regions of the city. Each peth was configured to attract a certain type of economic activity, reflecting to an extent the hereditary caste based nature of certain occupations in Maratha caste Hinduism. Censuses of Poona were commissioned between 1765 and 183053, the first of which was undertaken by Madhavrao I in order to assess the damage inflicted in the 1763 sack of the city by the Nizam of Hyderabad.54 Evidence from Gokhale’s analysis of these censuses with regard to demographic and structural character suggests that various caste designated professional groups were attracted to reside in particular peths.55 In Poona Brahmin communities tended to cluster in the riverine peths whereas the outcaste residential areas were constructed in a swampy area to the northeast. The Gujerati and Marwadi communities of traders generally clustered in the Kasba or areas adjoining it.56

Within the peths there was little functional differentiation of land usage; there being no formal division between residence and workplace.57 The major industries within the city included tanneries, tile and brick makers, butchers and a small cotton weaving industry was also maintained. Poona was never, however, a major commercial centre; being primarily a military-bureaucratic capital and maintaining this role even after the British occupation.58 The city possessed no specific market buildings, although traders gathered outside the city gate of

53 Prior to the *Census of India* which was comprehensively instituted after the mid-nineteenth century.
the Peshwa’s palace.

The domestic architecture of Poona was constructed in the Maratha vernacular style. Residences followed the general Indian architectural archetype of the courtyard house; an inwardly looking courtyard centred structure, which in an urban context was often up to two to three stories in height, and which connected to its neighbours formed a coterminous facade-wall from the street. The central courtyard was surrounded by pillared verandahs through which were accessed the rooms and hallways of the house. The street facade was usually provided with an overhanging verandah upon which were often quartered the household cattle and other domestic animals.

Larger residences were constructed upon stone plinths that were from six to fifteen feet in height, the remainder of the structure being constructed with a wooden load-bearing frame with brick and mud, or brick and mortar infill. Bamboo frames were mounted upon these walls as a base for a plaster finish. Wood formed a major structural and decorative component of Maratha architecture. Decorative figures or motifs were painted onto stuccoed wooden surfaces or carved directly into the wooden members of the residence which usually included doors, arches pillars and shutters. Roofs were of terracotta tiles of a semicircular section mounted upon a bamboo frame.

Maratha architectural styles borrowed from several other developed traditions. The design of columns and arches were primarily derived from the Mughals, with the use of cyprus pillars and cusped arches. These two elements were utilised on a scale unseen in Mughal architecture and can be regarded as characteristic of Maratha architectural design. Bijapuri adaptations utilised in Poona included the bulbous spherical or onion dome, the neck of which was usually decorated with petals, and the Bijapuri ‘ogee’ arch. A description of the city from 1820 confirms this overview of Maratha architecture;

‘[Poona]...is but indifferently built, and wholly open and defenceless; on which account it better answers the description of a large village than of a city. Several of the houses are large, and are built with square blocks of granite to about 14 feet from the ground; the upper part is a framework of timber with slight walls. The lime, bricks and

60 Mate, M.S., *Maratha Architecture*, University of Poona, Poona, 1959, p.28.
61 Mate, M.S., *Maratha Architecture*, University of Poona, Poona, 1959, p.29.
tiles are so bad that the rain washes away any building that does not depend on timber for its support...The streets are named for mythological personages...and the members of the Hindoo Pantheon are brought still further into notice by paintings on the exterior of the houses.\textsuperscript{64}

A description of the (by then designated) ‘Native City’ in 1864 reveals little change in the description given above, excepting perhaps a sense of increased decrepitude;

‘The chief streets run North to South...they are all more or less crooked...the streets running east to west are all narrow and short\textsuperscript{65}...The houses are mostly of more than one storey and are generally built of wooden frames filled in with brick or mud and all are tiled. Some are substantially built of brick and lime, others wholly of mud and brick. A few large houses and palaces of the old gentry are inhabited, but many are ruinous, especially in Somwar, Kasba and Sunwar Peths. Within the blocks of houses that are bounded by streets and alleys there are often large yards. In these there are numerous huts and hovels.’\textsuperscript{66}

Louis Rousselet, (a traveller from the same year) regarded the external decoration upon the larger domestic residences of the city as worthy of note, stating that;

‘The houses of the wealthy, whose basements are of brick and the upper storeys of wood and plaster, are remarkable for their carved beams, and their panels covered with paintings of gods, elephants, and tigers, executed in lively colours.’\textsuperscript{67}

Bishop Heber provides a final (although temporally earlier) description of the core of the settlement shortly after the British conquest of the city;

‘The city of Poonah is far from handsome, and of no great apparent size though, to my surprise I was assured that it still contains 100 000 people. It is without walls or fort, very irregularly built and paved, with mean bazaars, deep ruinous streets interspersed with peepul trees, &c many small but no large or striking pagodas, and as few traces as can well be conceived of it having been so lately the residence of a powerful

\textsuperscript{64} Hamilton, W., \textit{A Geographical, Statistical, and Historical Description of Hindostan and the Adjacent Countries}, Oriental Publishers, Delhi, 1971 (fasc., first pub. 1820), p.196. Note that from the description Hamilton seems to be referring to larger residences.

\textsuperscript{65} One of the short east to west streets was reserved by the Peshwas for the execution of criminals, who were trampled to death by elephants. Hunter, W.W., \textit{The Imperial Gazetteer of India}, Vol. XI, Trubner and Co., London, 1886, p.211.

The major streets of the city were lined by larger residences although many of the larger houses were in a state of disrepair by the mid-nineteenth century. Major Martin observed that the facades of houses were better maintained than their rears, and that often the upper stories were uninhabitable.

Each peth had its focal landmarks, a ‘wada’, (a mansion or palace of the wealthy, the ‘sardars’ or officers of the Peshwa, or of the Bhat family), a temple, or a park. The pre-eminent city wada, was constructed by Peshwa Baji Rao I (son Nanasaheb) beyond the walls of the Kasba settlement. By popular legend this site was chosen for being the place where Nanasaheb saw a hare chase a dog. The construction of this residence was symbolic of the transformation that Baji Rao sought to achieve in the relocation of his capital from Saswad to Poona. The foundation of the residence was laid in January 1730 and construction upon a two storey mansion or ‘wada’ was commenced. The main gate of the palace faced Delhi, and however apocryphal the legend may be, the orientation of the palace gate and the legend of the hare and dog reveal the imperial pretensions of the Peshwas. The locality of the palace was later absorbed into the settlement itself becoming part of Shanwar Peth, the palace taking the name Shanwar Wada or the ‘Saturday Palace’. (Figure 5.6: Shanwar Wada Gate)

The term ‘palace’ is a misleading term by which to describe the eventual form of the residence. Shanwar Wada actually occupied five acres of land and formed a series of buildings which housed the ruling family, courtiers, artisans and their families. The entire complex was surrounded by a wall with five gates, whilst the building occupied by the Peshwas was six stories in height, (this Mahal being inadequately described by a German Officer in the early nineteenth century as, ‘...a kind of tower shaded by a verandah.’)

The durbar hall or audience chamber of Shanwar Wada was called Ganesh Mahal, and was described by Mahon in 1790-5;

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70 Gokhale, B.G., Poona in the Eighteenth Century, Oxford University Press, Delhi, 1988, p.4.
Figure 5.6
The main entrance to Shanwar Wada (see also Vol 2 II.1).
Image: Author
'The room in which the Peshwa thus sits in state has nothing of beauty or elegance to recommend it; on one side is a row of wooden pillars...Opposite to the pillars are a few windows in the eastern mode, very narrow and long.'\(^73\)

Another description of the palace derives once again from Bishop Heber’s visit to Poona in 1824-5, a few years before much of Shanwar Wada was destroyed by fire;

‘The palace is large and contains a handsome quadrangle surrounded by cloisters of carved wooden pillars, but is, externally of mean appearance, and the same observation will apply to the smaller residences of the Peishwa...’\(^74\) (Figure 5.7: The Durbar Hall of Shanwar Wada).

Under British rule in the few years preceding its destruction, Ganesh Mahal was converted first into the office of Mountstuart Elphinstone, and after the transferral of the administration to the East India Company the structure was used as a prison and then a ‘native’ hospital.

Minor residences of the Peshwa and his sardars were scattered throughout the city and its environs. The most notable of these were the Parvati Palace by Parvati Hill which was utilised as a summer residence and which was destroyed in the British conquest of the city,\(^75\) and Budwar Wada, which was apparently designed by an Englishman for Baji Rao II in 1809 to house part of his administration. Other wadas included the small residence that predated the Bhat named the Ambarkhana or Lal Mahal Palace in which Shivaji reputedly spent part of his childhood,\(^76\) and the ‘Topkhana’ in Shukrawar peth, which was utilised to garrison the Maratha artillery forces.

The construction of large residences for the Maratha elite also led to an investment by the Peshwa or the sardars into public open space. By the late eighteenth century Maratha censuses listed Poona as possessing 13 major, and over 37 minor gardens or parks. With the institution of the Company Raj some of the old palaces or mansions, as in the case of Shanwar Wada were occupied by the British and utilised to house symbols of imperial disciplinary force, represented by prisons or police and troop garrisons. The bulk of the Maratha

\(^{73}\) Indian Science Congress, *Bombay-Poona*, The Aryabhushan Press, Poona, 1934, p.89; A description by artist Robert Mahon, invited to a durbar at Ganapati Rangamahal in Shanwar Wada, 1790-95.


\(^{75}\) The last Peshwa, Baji Rao II watched the Battle of Kirkee from the Temple, Douglas, J., *Bombay and Western India, A Series of Stray Papers*, Sampson Low, Marston and Company, London 1893, p.103.

\(^{76}\) The site of this structure was maintained as a garden during British Rule. Indian Science Congress, *Bombay-Poona*, The Aryabhushan Press, Poona, 1934, p.90.
Figure 5.7
‘Sir Charles Warre Malet, Bt., the British Resident at Poona, in 1790 concluding a treaty in Durbar with Souae Madarow, the Peshwa or Prince of the Maratha Empire.’
This image presumably depicts (at second hand) the Durbar Hall of Shanwar Wada.
administrative structures were, however, allowed to fall into decay, the Company relocating the majority of administrative functions into the British controlled Civil Lines.

The majority of the city core was only constructed at a maximum of 70 feet above the river, exposing the lower part of the city to flooding during heavy rains. In order to ameliorate the risks of this low elevation many of the residences were ‘raised upon the accumulated rubbish of former ruined buildings’. Generally the city was well drained with two (generally) dry ‘nullahs’, the Manik and Najiri, entering the Mutha River, running through the urbanised areas.

The riverine setting of the city also necessitated the construction of river crossings. The earliest of these was over the Mutha River. This ‘dhurran’ or causeway was termed Kumbhar Ves, or ‘The Potters Gate’, and entered the city at Kasba Peth. During Maratha rule the Peshwas built the Lakdhipul or ‘Wooden Bridge’ over the Mutha River, and the Jakat or ‘Toll’ bridge where tolls for entry to the city were collected. Under British rule thirteen further bridges were constructed.

The nullahs that drained the city also served as latrines, the more elaborate residences by the banks of these watercourses possessing privies that overhung the nullah bed. The poor who did not possess access to the rudimentary city waste removal systems utilised the banks of the nullahs or the holes that were dug throughout the city to quarry stone and gravel for construction material.

One widespread waste removal system was the traditional ‘sweeper’ system (discussed in Chapter 2). Members of the out-caste Hindu community would remove excrement from internal household privies through hatches that opened onto the street. The actual presence of a sweeper was considered polluting to caste Hindus and the access of sweepers to a residence was discouraged. Excrement and household refuse removed by the sweepers was recycled, faeces as fertiliser and road sweepings and household waste being

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79 Watercourses flowing only during heavy rains.

A limited sewerage system was also constructed by the Peshwas, consisting of underground drains confined to the boundaries of ‘Somwar, Kusbar, Boodwar, Aditwar, Sookurwar and Sudaseeo’ peths.\footnote{Leith, A.H., ‘Report on the Sanitary State of the City of Poona…’, \textit{Selections from the Records of the Bombay Government}, New series. no. 79, Bombay, 1864, p.6.} The sewerage system was utilised well into British rule and its operation was described in several official tracts on sanitation commissioned by the government. A series of drains connected to three main sewer lines, one of which emptied into Najiri Nullah, the other two joining a major drain running along the river by Narain Peth and discharging near the city bund.\footnote{Leith, A.H., ‘Report on the Sanitary State of the City of Poona…’, \textit{Selections from the Records of the Bombay Government}, New series. no. 79, Bombay, 1864, p.6.} Although one drain was constructed out of masonry, the remainder were stone-lined cuts in the earth, that were covered with loose slabs.\footnote{Leith, A.H., ‘Report on the Sanitary State of the City of Poona…’, \textit{Selections from the Records of the Bombay Government}, New series. no. 79, Bombay, 1864, p.7.} The system of draining to river channels meant that when river flow ceased in the hot season, excrement would build up upon the river banks and beds.

Individual houses along the sewer lines were provided with privies which emptied into this drainage system which was flushed by river water. Public latrines were also provided on roads that followed sewers,\footnote{Leith, A.H., ‘Report on the Sanitary State of the City of Poona…’, \textit{Selections from the Records of the Bombay Government}, New series. no. 79, Bombay, 1864, p.12.} however by the mid-nineteenth century this system had not been maintained by the British and had thus blocked.

The sewerage system caused problems in the supply of drinking water to the city, with effluent draining into the river channels. Furthermore the seasonal nature of the Mula Mutha river system led to water shortages in the hot weather, even privately owned wells running dry.\footnote{These were described as, ‘narrow in circumference’, and were lined with either brick or stone.} Water supply therefore represented another area of high expenditure for public works under the Peshwas’ administration. The water supply system constructed by the Peshwas remained generally unaltered by the British.

The major element of this system was the Katruj aqueduct (constructed between 1755 and 1761) which brought water from a reservoir located 11 miles from Poona at the foot of the Katruj Ghat or pass, and which conveyed ‘10 lakh gallons per day’ to the city.\footnote{Wadekar, D.D., and Kale, D.V., (eds.), \textit{A Handbook of Poona}, Kesari Mahratta Trust, Poona, 1934, p.56.} In 1755 a
further project was commenced to dam the Ambil stream to the south of the city and provide additional water to the Parvati Lake. By 1818 four aqueducts had been constructed to supply the city with water, these being the Katruj, Nana, Raste and Choudhari.

The aqueduct system was the only source of *potable* water for the city in the hot weather. Water was distributed via 32 public cisterns located in the nine most populous areas of the city, and 21 private cisterns fed by the same aqueduct. Areas without access to these cisterns relied upon river water stored at the city bund, which was a small catchment designed to capture and store the seasonal flow of the Mutha - although in the hot weather this supply was rendered stagnant. The bund was furthermore contaminated with excrement and was also used as the site where the dhobis washed the city laundry. Despite the efforts of the Peshwa to adequately supply the city with a continuous supply of water shortages were common and continued until the late nineteenth century when the British commissioned a new system to replace and upgrade the Maratha engineered water-supply.

5.5 The Early ‘Cantonments’

Between 1802 and 1818 the British played an ever increasing role in the affairs of Poona, with several small British enclaves being established in this period outside the city proper. After Holkar overthrew the Peshwa the British eagerly acceded to the request of the deposed ruler for a British armed force to reinstate his rule. British intervention would render the premier leader of the Maratha Confederacy dependent upon Company armed support, and the British realised that; ‘...the dependence of a state in any degree upon the power of another tends to increase.’ The formal policy concerning the Marathas under the expansionist Governor Generalship of Marquis Wellesley was;

‘...to detach the Poona state from the other Mahrratta chieftains, and bring it under the influence of the British Government.’

Wellesley succinctly stated of the Peshwa’s request;

‘This crisis of affairs appeared to me to afford the most favourable opportunity for the

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complete establishment of the interests of British power in the Mahratta Empire...”

This opinion ran contrary to the spirit of a recent Act of British Parliament (1793), a clause of which stated that schemes to extend British Rule in India or for the Company to involve itself in armed conflicts were; ‘...repugnant to the wish, to the honour, and policy of the British nation...’, and were to be discouraged.

A Company force commanded by Major General Wellesley placed the Peshwa back upon his throne in 1802, but only upon the condition that a ‘Subsidiary Force’ be stationed close to Poona. The harsh conditions of the restitution of Baji Rao’s (II) rule were related by Henry Prinsep;

‘The British Army restored him to his capital and independent authority within the Poona territory; but bound him, as a condition of the alliance, in all transactions with the Nizam and independent Mahratta powers, such as Holkar and Sindeeha, to square his policies with our views.’

The Subsidiary Force or Subsidiary Alliance system was essential to Wellesley’s plan to increase the area of Indian territory under British control and operated under the principle that drilled ‘native’ troops officered by Europeans were superior to the irregular troops that comprised the armed forces of Indian rulers. Given the superiority of British-trained soldiers it was (rightly) presumed that British assistance would be sought to aid in the settlement of many conflicts between Indian rulers. Any ruler who had to resort to such assistance in the maintenance of their regime, or who were defeated by the British were usually forced to sign a treaty binding them to accept a permanent British presence within their territory. The system represented the first appearance of the cantonment pattern of quartering troops in many cities.

Sepoys and their British officers were ‘leased’ from the East India Company, ostensibly for the ‘protection’ of the local ruler who paid a fee not only for the troops but also their equipment maintenance costs and for their quarters. Although the leased force was nominally under the control of the indigenous power, in practical terms the loyalty of the officers lay with the East India Company, and in a crisis deployment of the troops often lay

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95 Prinsep, H., *A Narrative of the Political and Military Transactions of British India*, 1813-18, John Murray, (Continued Overleaf)
with the discretion of the British Resident; the representative of the Company in the ruler’s durbar.

The original British presence in Poona was the Subsidiary Force stationed under the Treaty of Bassein; *A Treaty of Perpetual and Defensive Alliance between the Honourable East India Company and His Highness the Peishwa* [1802]. Article 3 of the treaty stated:

> ‘With a view to fulfil this treaty of general defence and protection...His Highness...agrees to receive, and the Hon. East India Company to furnish, a permanent subsidiary force of not less than 6000 regular Native Infantry...and with the proper equipment of warlike stores and ammunition, which force is to be accordingly stationed in perpetuity, in his said Highnesses territories.’

The money for both the force and the quarters for the troops came from the Peshwa who under the treaty provisions ceded territory whose taxation revenues returned 26 lakhs of rupees per annum. The subsequent defeat of Scindia and Holkar incorporated these powerful rulers into the network of subsidiary alliances and brought them into the sphere of influence of the British.

The Poona Subsidiary Force was stationed outside the city itself at a small encampment near Garpir, with its main quarters between Ganeshkhind and the nineteenth century Poona Gymkhana which was placed near the Sungum. Remnants of the old cantonment, including several officers’ bungalows and sentry boxes, were still extant in 1915.

Another pre-conquest British enclave external to the city was formed by the compound-complex of structures of the Residency. The first ‘Resident’ or representative of the British Government and East India Company, Sir Charles Malet, constructed his house or

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100 Garpir was the site of a shrine to a Muslim Saint who visited the city in 1290. Indian Science Congress, *Bombay-Poona*, The Aryabhushan Press, Poona, 1934, p.91.
‘Residency’ at the Sungum in 1787. (Vol. 2 II.6). The term Residency connotes a modest structure, however Malet arrived in Poona with, ‘...an establishment of one thousand persons.’

The Residency as was finally constructed comprised five houses along with outhouses for troops and escorts. This compound along with the Subsidiary Force’s cantonments were destroyed in the Battle of Kirkee by the Peshwa’s forces in 1817.

The period from 1730 to 1802 has been regarded as the ‘golden age’ of the city during which time Poona was the independent capital of a great empire. The stationing of a Company garrison was a major step taken by the British in an attempt to curtail that independence and bring the Maratha heartlands into the British sphere of influence. The increasing strictures placed upon the Peshwa through the various treaties enacted were the eventual catalyst to open opposition to British expansionism by the Peshwa. The failure of the Peshwa led to the disintegration of the Maratha Confederacy and an end to Maratha imperial aspirations. Elphinstone had long recognised the role of the Peshwa (and the Confederacy) as the last obstacle to British paramountcy and that, ‘if the Peshwa’s dominions were annexed, Pax Britannica could stretch over the entire Peninsula...’

The eventual conquest of Poona by the British therefore bought the Company Raj far more than a single city and its hinterland.

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Chapter 6

Poona in the British era

6.1 The Third Anglo Maratha War

In the years following the Second Anglo-Maratha War tension between the British and the Marathas polities continued to increase. In this climate of growing hostility Mountstuart Elphinstone, the British representative at the capital of the Maratha Confederacy, noted;

‘The contest with the Peishwa if it becomes inevitable will be either of short duration or prove one of considerable difficulty complication and length as a predatory war.’

War did eventually prove ‘inevitable.’ In the previous chapter the causes of the Third Anglo-Maratha War were briefly discussed, and although the series of battles that directly affected Poona and Kirkee are described within this chapter, there will be no discussion of the extended Pindari War in which the British in part sought to suppress organised brigandage in the Deccan.

The death of Shastri, and the capture and escape of his presumed murderer, Trimbuckji Danglia, (who was perceived to be plotting against British interests with the connivance of the Peshwa), were two of the major events that placed great stress upon Anglo-Maratha relations. It was, however, the terms of the Treaty of Poona, signed on the 13th of June 1817, that were perceived as an intolerable imposition. In addition to positioning an extended Subsidiary Force adjacent to Poona its clauses largely curtailed the power of the Peshwa by placing him under the authority of the British Resident, restricting his rights to negotiate with foreign powers and removing him from the position of head of the Maratha Confederacy. The British understood completely that under these conditions the position of the Peshwa was rendered politically untenable and that Anglo-Maratha hostilities were probable. By October of 1817 the situation in the city had reached a crisis point.

In that month the British garrison of Poona commanded by Lieutenant Colonel Burr consisted of the 2nd Battalion 1st Bombay Infantry, the 2nd Battalion 6th Bombay Infantry, the 1st Battalion 7th Bombay Infantry, and the 1st Battalion Poona Brigade. In addition there

1 To Mountstuart Elphinstone from Resident at Nagpur, (Mr. Jenkins), extract of letter to Ft. Col. Adam, 3/05/’8‘7 Deccan Commissioner’s Records, Vol. 238, Letter 50, MSA.
were also two companies of Bengal Infantry present, along with detachments of the 65th Foot and Bombay Artillery, the last representing a recent reinforcement.

As already noted the Third Anglo-Maratha War has also been called the ‘Pindari War’; after a ‘...predatory tribe...who principally [infested] the southern parts of Hindoostan and the northern quarter of the Deccan’. Pindaris often accompanied Maratha armies, and the British sought to curb the increasing organisation of their activities. Another division of soldiers stationed in Poona - the ‘4th Deccan’, had recently marched away from the city in order to take up a position at Khandesh as part of the operations against the Pindaris. The Peshwa had also been collecting troops near Poona, ostensibly for the same purpose, but with the departure of the 4th Deccan division, he refused to send his forces to the war.

On the afternoon of the 30th of October the 30/10 Bombay European Regiment arrived in Poona from Bombay. Despite this influx of reinforcements, the British remained vulnerable since the troops quartered at Garpir Cantonment were in an indefensible position; within musket shot of the city, and close to the large bodies of the Peshwa’s horse and infantry encamped in the vicinity.

The Resident fearing impending war, commanded Lieutenant-Colonel Burr to withdraw the British forces from the Cantonment on the 1st of November. The soldiers were removed to open ground near the village of Kirkee to the north of the city, an area of ground protected by the Mula River on three sides.

After the British withdrawal the Peshwa’s forces burnt the Garpir Cantonment to the ground. Elphinstone, however, remained at his Residency (which was not located at Garpir but at an area called the ‘Sungum’ at the confluence of the Mula and Mutha rivers) protected by a personal escort, consisting of the two companies of Bengal Native Infantry. Elphinstone recalled General Smith and the 4th Deccan Division from Khandesh, although their arrival would be impossible before the 10th or 12th of November.

On the 5th of November the Peshwa demanded that the terms of the Treaty of Poona be repudiated on pain of war. He further demanded that the British forces be reduced to their

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3 Ross, J., Fall of the Maratha Power and the Marquess of Hastings, Delhi, Sunita Publications, 1985, p.121.


5 Ross, J., Fall of the Maratha Power and the Marquess of Hastings, Delhi, Sunita Publications, 1985, p.122.
ordinary strength and that the British cantonment be removed to a place of his choice. Elphinstone did not agree to these terms and abandoned the Residency to join the British garrison at Kirkee. At this point the Maratha army put the Residency to the torch. The Peshwa had, by this stage removed to the safety of Parvati Hill in order to watch the ensuing conflict.

The Maratha Army commanded by Gokhla consisted of an estimated 25,000 irregular horse and 10,000 foot, most encamped near Ganeshkhind. Of this number 7000 soldiers were stationed with the Peshwa at Parvati.

In addition to his irregular troops the Peshwa possessed one Battalion of Infantry with three field pieces. This Battalion had been trained by Europeans and was stationed with its Commander, Captain Ford, at the village of Dapuri located several miles to the north west of Poona, over the Mula River. Although Ford’s battalion was ostensibly incorporated into the Peshwa’s forces, an arrangement had been reached between Ford and the British that, in the case of an attack, the corps would ford the river and join the British Brigade under Burr.

Lieutenant-Colonel Burr advanced his troops to cover the Resident’s retreat to Kirkee, and gave the order to attack. The British force at Kirkee was separated from the Marathas by two miles and a ridge of high ground. Leaving soldiers to guard camp, Burr’s Brigade marched to unite with Captain Ford’s corps and turned to face the Peshwa’s troops. Gokhla commenced;

‘...the attack by opening a battery of nine guns, detaching a strong corps of rocket camels...and pushing forward his cavalry to the right and left. The British...were soon nearly surrounded by horse; but the Mahratta infantry...were left considerably in the rear, except a regular battalion under a Portuguese named de Pinto...which were now forming with apparent steadiness...in front of the 2nd Battalion 6th Regiment. No sooner...were their red coats and colours exposed to the view of the English Sepoys, than the latter with one accord, pushed forward to close and by this impetuous movement became detached from the rest of the line. Gokla hoping...to take advantage of their impetuosity prepared a select body of 6000 horse...which were now ordered to charge. The Mahratta guns ceased firing to let them pass, and they came down at speed in a diagonal direction across the British front. Giving their fire and receiving that of the line they rode right at the 7th regiment. Colonel Burr...had just

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time to stop the pursuit of De Pinto’s Battalion...and call to the men, who could not be
dressed in line, to reserve their fire. Fortunately there was a deep slough...immediately
in front of the British left. The foremost of the [Maratha] horses rolled over, and
many, before they could be pulled up, tumbled over those in front; the [Sepoys’] fire
was given with great effect, numbers fell, the confusion became extreme, and the
force of the charge was completely checked...A few continued to attack in the rear,
but many turned back; some galloped round the left as if to plunder the camp, but
were driven off by a few shots from the two iron guns at Kirkee. This failure
completely disconcerted the Mahrattas; they began to drive off their guns; their
infantry retired from the distant position they occupied; and upon the advance of the
British Line the whole field was cleared. The Brigade returned to its position at Kirkee
after nightfall, and next morning the Light Battalion and Auxiliary Horse from Seroor
joined it. The report of their arrival, and the effect of the forward movement deterred
Gokla from renewing the attack. The Mahrattas in Ford's corps deserted, but not one
of the Sepoys of the regular service left his colours. The number of British Troops
engaged, including Ford’s was 2800 rank and file, of whom about 800 were
European; their loss was 86 dead and wounded of whom 50 were of the Sepoys on the
left. The Mahratta army... lost 500 men killed and wounded...”

The battle had taken place between about four in the afternoon and nightfall, at which
point the British Brigade returned to camp. (*Figure 6.1: Plan of the Battle of Kirkee*).

General Smith and his troops arrived at the British encampment on the 13th of
November, and plans were made to attack the Peshwa on the early morning of the 15th,
although this attack was eventually postponed until the 17th. On the evening of the 16th of
November an advance brigade was ordered to ford the river where the Fitzgerald Bridge was
later built, (*see Volume 2 II.67*), and take up a position to assist in the morning attack.
Although the Brigade managed to take up its position at the Ghorepuri Village, 84 men were
killed or wounded in a battle where the Peshwa’s forces, (infantry, parties of horse and two

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Although this passage of was part of Grant Duff’s more extensive *History of the Mahrattas*, he was actually
present with Mountstuart Elphintone at the Residency and therefore his account of the battle can therefore be
considered one of an eyewitness.
guns), attempted to prevent their fording the river.

**Figure 6.1**

**Plan of the Battle of Kirkee**

On the 17th of November General Smith discovered the camp of the Peshwa’s forces deserted, and ascertained that Baji Rao II had fled south. A flag of truce was sent into the city and Poona emptied of the remnants of the Peshwa’s infantry before the British flag was flown above Shaniwar Wada. The commander of the British troops had to restrain the soldiery;

‘...who were...exasperated, not only by the burning of the Residency and the cantonments, but by the murder of their officers, further aggravated by the loss of a part of their effects...’

General Smith left on the 22nd of November to pursue the Peshwa who was attempting to reach the Maharajah of Satara, the titular monarch of the Maratha Confederacy. The remainder of the campaign was fought away from Poona and has little relevance to this study. Baji Rao eventually surrendered to Sir John Malcolm and the British authorities, although he first had to be captured, as British forces conquered his hill forts and hounded him throughout the countryside for six months.

Upon his capture Baji Rao II eventually accepted a pension of 80 000 pounds a year, and exile to the city of Bithur, a holy Hindu city on the River Ganges near the British cantonment of Cawnpore. The Peshwa also accepted the title of Maharajah and foreswore sovereign power for both himself and his successors. The Maharajah of Satara was given a small territory to rule ‘independently’ of the Peshwa.

Once their power had been established in Poona, the British attempted to gain the goodwill of an populace resentful of foreign domination;

‘...when the town was taken possession of public opinion was strong against us. The people had been prepared during a considerable period before the War whence all the feelings... recited against our Government, and surprised at the boast of the Mahratta Indians that we should be driven into the sea.’

Placation of the populace was considered essential to the continuance of British Rule;

‘The Policy of pleasing the People of Poona is in my opinion unquestionable- This

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10 The Bhat family of the Peshwas came into prominence once more during the Mutiny when the adopted son of the last Peshwa, Baji Rao II came to head the Mutineers in Cawnpore. Nana Sahib Peshwa was blamed by many of the British for the massacre of British women and children that occurred at Cawnpore. The remains of Nana Sahib were returned to Poona and are interred at Parvati Hill.
11 Deccan Commissioner’s Records, 1818, Volume 89, Poona 8th April 1818, To Elphinstone by Robertson. (Collector).
city has for many years given the tone to the feeling of the Mahratta Empire. It is looked upon with a respect that is quite surprising, and it has been considered by the lower classes...that he who rules Poona governs the world."12

6.2 The Impact of the Third Anglo-Maratha War upon the spatial organisation of Poona

An extensive description of the Battle of Kirkee may seem unnecessary, but the attributes of the battle in which the British conquered Poona were of immense importance. The acquisition of Poona by the British began the imposition of a colonial urban pattern within and around the city, and in several cases it was the physical nature of the battles of 1817 that determined where the various elements of British settlement were situated.

By the end of the Battle of Kirkee the old British cantonment at Garpir had been destroyed by the Peshwa’s troops. Events prior to the Battle of Kirkee had demonstrated the drawbacks of the position of Garpir. As has been noted above, gardens and enclosures belonging to the northern part of Poona city were ‘...within half musket shot of the lines...’ 13

The site for the cantonment at Garpir had been chosen by Arthur Wellesley to protect Poona during the second Anglo Maratha War. Its position was however not well suited for the converse role; to isolate the loyal soldiery and house them safely in the face of a hostile local population.

The British therefore did not relocate troops at Garpir after the conquest of Poona. Instead, as was the case with many of the sites where British battles of conquest had been fought in India, Kirkee became the site of a British military cantonment. Troops were also encamped under canvas on the later site of the ‘Ordnance Lines.’ This area to the east of the Poona city limits developed into the new primary military cantonment area that that has remained in use until the present day.14 The Garpir area, although it was abandoned as a cantonment site, was not however forsaken by the British since it was later incorporated into the site of the Civil Lines.

The old Residency built by the first British Resident appointed to the court of Poona had also been destroyed during the battle of Kirkee. There was no technical reason for a

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12 Deccan Commissioner’s Records, 1818, Volume 89, Poona 8th April 1818, To Elphinstone by Robertson. (Collector), p.42
replacement ‘Residency’ to be constructed, since the dissolution of the Peshwa’s court had removed the necessity for a Resident. The British did not, however, relinquish the Residency site since it held a certain symbolic value. It is thought that the British dead from the Battle of Kirkee were buried near the site of the old Residency, and in later years the residence of the Sessions and District Court Judge was built upon the site. (Vol. 2: II.6 and II.51).

Dapuri, the ‘cantonment’ of the European trained Infantry battalion commanded by Captain Ford, also maintained its British association. Ford’s bungalow was eventually acquired by the government in 1829 and refurbished as Government House; the residence of the Governor of the Bombay Presidency in Poona. (Vol. 2: II.2).

With the ancien régime vanquished, the British sought to ‘colonise’ positions of power in the city. The British conquest had led to a proportion of Poona’s population to abandon the area, fearful of British recriminations. The old Wadas of the Peshwa were no longer occupied, and the British noted that Shaniwar Wada in particular held a strong association with power amongst the populace as the (recent) primary residence of the Peshwa. Mountstuart Elphinstone (the erstwhile British Resident at the Peshwa’s court) was accorded the new title of ‘Deccan Commissioner’ by the British government and installed himself in Shaniwar Wada as the visible representative of the new order in Poona.

6.3 Poona’s position within the British Imperial Hierarchy

The territories conquered from the Peshwa in 1817 were annexed to the Bombay Presidency and declared an administrative ‘District’, with Mountstuart Elphinstone, acting as the sole Commissioner for the settlement of lands.

Poona was incorporated in the succeeding decades into the administrative hierarchy of the British Indian Empire. Within the context of that Empire, Poona was firstly regarded as a subsidiary city within the Bombay Presidency, which itself was one of the three semi-autonomous administrative areas into which India was divided.

The primary and official capital of the Presidency was located at Bombay, but Poona eventually developed into one of the triumvirate of administrative capitals. Bombay was only occupied by the majority of the administration during the ‘healthy’ or ‘cold’ season, whilst during the yearly ‘hot’ season the administration withdrew to Mahableshwar, the Presidency’s major hill station, where the British found the cool climate of the high altitude more satisfactory than the heat of the coastal plain. Similarly during the annual monsoon the capital
was nominated as Poona. Poona was also designated the headquarters of the Bombay Army, (which had previously been administered from the Colaba Military Cantonment in Bombay), one of the three autonomous territorial divisions, that together with Crown Regiments on secondment from Great Britain formed the Indian Army.

The role of Poona as military headquarters of the Presidency delineated that a large military bureaucracy operated from the cantonment enclave that included the offices of a General of Division, the Quartermaster-General and the Adjutant-General. Although Poona operated as temporary capital of the Presidency during the monsoon, several civil bureaucracies also operated on a permanent basis from Poona including the offices of the Presidency Survey, Revenue and Police Commissioners.15

Beyond this major role within the administration of the British Indian Empire, Poona was designated ‘capital’ of an administrative ‘district’; the ‘Poona District’ which covered an area of 5348 square miles. This district was further split into eight administrative subdivisions; Kirkee, Junnur, Jhed, Sirur, Purandah, Mawal, Indapur and Bhimthadi. Administrative power over the district, was vested in a ‘Collector’ (a bureaucrat charged with the collection of revenues) who was based at Poona and assisted by five Assistant Collectors drawn from the Indian Civil Service.16

As monsoon capital the city was granted its share of Imperial monuments and public buildings, and its Civil Lines attracted wealthy households from Bombay, who would travel with the administration between Mahableshwar, Bombay and Poona, and partake in the social ‘season’ of each. Poona however never escaped the shadow of Bombay, was never regarded as comparable with the other primary Presidency capitals, Madras or Calcutta, and was disregarded as a potential Imperial capital after the British decided to relocate from Calcutta.17

The spatial subdivisions of Poona itself were governed by yet another layer of administration. Poona Cantonment was managed by a Cantonment Committee, the original structure of which was determined for all cantonments by the 1864 Cantonments and Contagious Diseases Act (see Chapter 3) that also ordered public health regulation in British enclaves.18

17 Some members of the press believed that the grandiose new Government House at Ganeshkhind near Poona was destined to be the residence of the Governor-General.
18 The Poona Cantonment Committee was established in 1868 under the Act.
A mixture of official and ‘non-official’ members served on the Cantonment Committees, (in a similar fashion to the Governors’ Legislative Councils). The Official members represented the most senior of the Cantonment’s officers. The Officer commanding the station acted as President of the Committee with the Cantonment Magistrate serving as the Committee Secretary.\(^{19}\) In Poona the official members also included the Civil Surgeon of the station and the Executive Engineer, whilst the non-official members would later become elective positions. This general management structure survives in post-independence India.

The responsibilities of the committee were to provide for the sanitation of the Cantonment and create regulations for the Cantonment under the framework of the local public health legislation. Funds were provided for these needs by property rates, octroi taxes and charges.\(^{20}\) The Sadr Bazar was also eventually managed in part by the Cantonment Committee. Although there were jurisdictional disputes concerning the right of the Committee to do so, public health legislation gave cantonment authorities wide powers to intervene in areas that were adjacent to cantonment lands and that might pose a public health risk to European soldiers.

The Civil Lines in Poona were incorporated as a suburban municipality administered by a Council dominated by British civilians. Although the East India Company had been granted the right to form municipal corporations in India from the seventeenth century, the application and extension of local government outside of the Presidency Towns was slow until the nineteenth century.

It was only in 1850 that a serious attempt was made to enact legislation establishing nominated municipal governments in the mofussil, although a wide expansion of the number and powers of municipalities had to wait until the aftermath of the Royal Commission investigating the Sanitary State of the Army in India, which highlighted the poor public health situation in urban areas. An extension of the electoral system for councils was only approved in the 1880s, with municipalities being given the right of electing half their members.\(^{21}\) The

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(Continued Overleaf)
establishment of the Poona suburban municipality in 1884 reflected this extension of local self-government in the mofussil of British India. Prior to municipal self-government the Civil Lines had been administered by the Collector.\textsuperscript{22}

The role of the municipality effectively mirrored that of the Cantonment Committee with the primary responsibilities of local government being designated ‘...public safety, health, convenience and instruction.’\textsuperscript{23} For this purpose the Civil Lines were divided into three wards.

The ‘Native City’ represented yet another separate, administrative unit. As with the Civil Lines this urban area had been incorporated as a municipality, although the local government Poona itself dated to 1857, representing a council from the earlier appointive system of municipal administration.\textsuperscript{24} Poona City Municipality maintained the urban tradition of the city by retaining the ancient peths as units of administration.

Despite it being considered by the British as a relative backwater, Poona maintained a certain prestige. As with Delhi and Lucknow, Poona never lost its cachet as the ex-capital of an independent Empire or Kingdom, and it was Poona that Marathas looked to for a cultural renaissance.\textsuperscript{25} As an intellectual and cultural centre of Poona therefore became the city where a number of famous schools and educational institutes were established.

Poona, and the Bombay Presidency as a whole were untouched by the upheaval caused by the ‘Mutiny’, or as it is termed in India, ‘The First Indian War of Independence.’ This conflict was generally restricted to the Northern provinces, although in Poona Mrs. Paget noted that several fires were lit and that;

‘Each night we have been disturbed, by distant fires and continual noises...I would not regret leaving Poona as the public native mind is in an uneasy state.’\textsuperscript{26}

Poona however remained generally peaceful throughout the duration of the Raj, and as one guide proudly related of the city;

\textsuperscript{22} Reports; Military Cantonments and Civil Stations in the Presidency of Bombay, Inspected by the Sanitary Commissioner in the years 1875-76, Part 1, Government Central Press, Bombay, p.3.
\textsuperscript{24} Secretary of State for India, The Imperial Gazetteer of India, Vol. XX, Clarendon Press, Oxford, 1908, p.185.
\textsuperscript{25} Gokhale, B.G., Poona in the Eighteenth Century, Oxford University Press, Delhi, 1988, p.1.
\textsuperscript{26} Paget, Mrs. Leopold, Camp and Cantonment, Longman Green Longman Roberts and Green, London, 1865, p.120, Thurs, Feb 11.
‘Nothing of importance has happened in Poona under British Rule.’

6.4 The Spatial Structure of Poona

Poona Cantonment

The nineteenth century Cantonment of Poona was located to the east of the ‘Native City’ on a roughly rectangular area of land that in 1885 covered 4.25 square miles. The dimensions of this area was 2.72 miles from north to south, and 1.36-1.62 miles east to west. To the south west the Cantonment met the old city at Nana and Bhavani Peths, whilst to the west lay the Sadr Bazar that serviced the European, Cantonment and Civil Lines communities. On the east the natural Cantonment boundary was formed by Bhairoba’s Stream, whilst to the north the boundary was formed by the G.I.P. Railway. In the north west the Civil Lines and Cantonment were divided by Council Hall Road. The Cantonment, although it was unwalled, therefore formed a bounded, discrete spatial sub-unit of the Poona city-site. (Figure 6.2: Poona Military Cantonment).

A large proportion of the Cantonment lands were occupied by nine sequences of lines, each of which represented a semi-autonomous area providing residences and support structures usually for a distinct category of military personnel.

The major military lines were located at Ghorepuri and Wanowri and were respectively to the north east and south east of the Cantonment. These two complexes housed the European regiments serving in Poona, whereas the ‘Native Lines’, located in the central area of the cantonment, accommodated the ‘Native’ Sepoys of the Indian regiments. The function and position of the other Poona lines complexes are listed in Table 6.1.

The nine lines sequences listed in Table 6.1 accommodated a total of 4451 persons in 1885, only 981 of whom were European. Descriptions of each of the major European and ‘Native’ troop lines as well as individual cantonment structures are provided in Volume 2.

The Cantonment was also divided into eleven wards for purposes of sanitation (the importance of public health to the British regime is described in Chapter 3). Sanitation and conservancy were the major delegated functions of the ‘Cantonment Committee’ that charged

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Figure 6.2
The Military Cantonment of Poona, 1879.
Map: Author
with the administration of the military station, and revenue the committee raised from octroi duties, licenses and property rates was mostly expended upon these services.

Table 6.1

<table>
<thead>
<tr>
<th>Lines</th>
<th>Accommodating</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ghorepuri Lines</td>
<td>European Infantry Regiment</td>
<td>Northeast of Cantonment</td>
</tr>
<tr>
<td>2. Native Cavalry Lines</td>
<td>Native Cavalry Regiment</td>
<td>3/4 Miles North of the Cantonment Proper</td>
</tr>
<tr>
<td>3. Native Lines</td>
<td>3 Native Infantry Regiments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Right, Centre and Left Flank Lines]</td>
<td></td>
</tr>
<tr>
<td>4. Old Horse Artillery Lines</td>
<td>Mountain Battery [1885]</td>
<td>1/2 Mile S/E</td>
</tr>
<tr>
<td>5. Neutral Lines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ordnance Lines</td>
<td>Eurasians and European Pensioners, Government Servants</td>
<td></td>
</tr>
<tr>
<td>7. Petty Staff Lines</td>
<td>Eurasians and European Pensioners, Government Servants</td>
<td>Opposite St Mary's Church</td>
</tr>
<tr>
<td>8. Transport Lines</td>
<td></td>
<td>3/4 Miles West of St. Mary's Church</td>
</tr>
<tr>
<td>9. Wanowri Lines</td>
<td>European Infantry Regiment</td>
<td>Southeast of Cantonment</td>
</tr>
</tbody>
</table>

The lines themselves were under direct regimental control, but all other areas, including public roads and latrines were maintained by the Committee. One central task of the
Committee (and one that had major public health connotations) was the collection and relocation of nightsoil to a manure yard that in the late nineteenth century was located on Sholapur Road, to the north of the cemetery.30

The Cantonment was regarded as possessing a fine road system, particularly in comparison with the ‘Native City’. Cantonment roads were wide and tree lined, and since most were not sealed until the twentieth century the roads were watered twice daily in the hot season to minimise the dust. Roads were also provided with surface drains that were flushed twice daily to remove horse sullage. These gutters drained directly into Manik Nala.31

Major roads were not ordered into a formal grid. The western part of the Cantonment was dominated by the intersection of Sholapur, Stavely, Wanowrie and Satara Roads, which fanned out in a star pattern, whereas the eastern portion was dominated by Prince of Wales Drive which meandered along the perimeter of the Race Course.

Subsidiary streets (mostly constructed to service the bungalows of officers) were organised into informal grids. Since bungalows were in general associated with regimental ‘lines’ several discrete street grids were distributed across the cantonment, most of which were not (coterminous) but offset, reflecting different periods in the development of the Cantonment. A large area of land was also occupied by barracks the newer of which (in contrast to bungalows) did not face streets but were built en echelon on open ground and without a great deal of reference to the road pattern.

Ironically the major streets of the Cantonment (Main Street and East Street) were actually part of the Sadr Bazar. If one excludes the Sadr Bazar as an integral part of the Cantonment it becomes more difficult to locate a focus for the settlement. The dominant role of the army in the Cantonment, and the regimental nature of the armed forces delineates that the enclave was polyfocal in nature. It easily divides into a number of semi-autonomous sub-settlements; most of which represent the military lines that each housed a regiment within barracks the regimental officers, and the service structures necessary to support the regiment.

Stavely Road (running parallel and directly to the east of East Street and directly on the interface between the Cantonment and Sadr Bazar) represented a focus of sorts for the European community. This thoroughfare included the Cantonment garrison church, St.

Mary’s which was the official place of worship. Several other places of worship were in the vicinity including St. Andrew’s (Presbyterian Church) and the United Free Church. This street and its environs also included several schools and bungalows of wealthy residents.

If Stavely Road was located on the far west of the Cantonment and represented a religious centre of sorts then another ‘focus’ of the enclave existed on the eastern extremity. This was the General Parade Ground (better known as the race course), an open space where military ceremonies could be held. *(Figure 6.3: The Governor reviewing the Troops).* Although it was therefore a culturally important site, and vast in size, General Parade Ground was in no way in constant military use (thus its employment as a race course). No major public buildings were constructed in the vicinity of this open space and in fact the Parade Ground was quite isolated emphasising the decentralised nature of the Cantonment enclave.

Detached residences in the Cantonment were primarily bungalows built upon plinths between two and five feet in height, set within compounds that were between a half and two acres in area. Bungalow and compound size increased with the status of the resident. The boundaries of compounds that were not walled tended to be marked by prickly pear hedges.

Since most of the British in Poona were only present in the settlement for a restricted tour of duty there was no imperative for residents to purchase property. Most of the Cantonment bungalows were built by Indian landlords and let to the British. Although wealthier members of the Indian community sometimes resided within the Cantonment, regulations were passed to reserve the majority of residential land for British civilian and military officers;

‘The provision of residential accommodation for the officers…obviously contained financial implications of considerable magnitude which made it virtually impossible for Government to put up all the permanent accommodation required at its own cost. Consequently schemes for the erection of accommodation by private persons at their own cost, subject to conditions which retained to Government…the right of user of the houses were developed.’

III, p. 356.


33 This was also the case in Calcutta. Martin, Sir J.R., *Notes on the Medical Topography of Calcutta*, Departments of State and Public Institutions, Calcutta, 1837, p.63.

Figure 6.3
The Governor of the Bombay Presidency reviewing troops on the General Parade Ground, Poona.
Image: courtesy Jim Masselos
Under the *Cantonments (House Accommodation) Act, 1902*, the central government legislated that: ‘Every house situated in a cantonment…shall be liable…for appropriation at any time for occupation by a military officer’.

Rents increased during the ‘Poona Season’, the period when the Governor was in residence and polite society relocated from Bombay.35

**Other Cantonments within the vicinity of Poona**

In addition to the main Poona Cantonment, subsidiary cantonments were constructed in the vicinity of the city-site. Kirkee, a short way to the north of Poona, provided additional lines for the accommodation of troops. Although adjacent to Poona, Kirkee was an autonomous settlement run by a separate Cantonment Committee and hence these military lines provided all the services usual to a cantonment including a church, burial ground, bazar, a hospital and a lock hospital.

Further lines were constructed in the area named ‘East Kirkee’ that was sometimes also known as ‘New Jhansi’. This area (located between Poona and Kirkee) consisted of the lines for the Bombay Sappers and Miners, and although it was not part of Poona Cantonment *per se*, neither was it as self-contained an enclave as either Kirkee or Poona Cantonment.

One further enclave was established in the vicinity, but one that fitted into neither the category of civil or military lines. This was the Government House compound which had originally been located in Major Ford’s bungalow at Dapuri (as has been noted above Major Ford had trained a battalion of Infantry for the Peshwa that was brought to the British side during the Battle of Kirkee) before the construction of a more opulent residence at Ganeshkhind approximately four miles north west of the Civil Lines. *Vol. 2 II.3*. This compound comprised elements of both civil and military lines, since it housed the Governor and his family, a number of officials connected with the Governor, and also a small lines sequence designed to house the Governor’s bodyguard and the bandsmen who played at official functions. Although Government House compound included a small military function, in reality it represented a separate type of settlement altogether, one that served as the ceremonial ‘centre’ of the British community at Poona (and indeed the entire Presidency

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during the monsoon) despite its relative distance from the Cantonment and Civil Lines.

**Civil Lines**

The Poona Civil Lines was the enclave ostensibly set aside to accommodate the European ‘Official’ Community. Although the residents of this area therefore comprised members of the Indian Civil Service and their lowlier bureaucratic colleagues, the settlement also housed a number of military officers, members of the non-official European community (which consisted of those Europeans not employed by the State including persons engaged in business) and also some wealthier Indian households. *(Figure 6.4: Poona Civil Lines 1879).*

The Civil Lines were located to the north of the Sadr Bazar and Military Cantonment, partially on the site of the original ‘Garpir’ Cantonment that had been abandoned during the battle of Kirkee. In 1885 this enclave covered an area of 1 3/4 square miles and other statistics listed in the Bombay Gazetteer of that year relate that the area contained 184 residences (135 of which were bungalows) that housed a population of 2597 (with the qualifier that this number swelled to approximately 3000 during the monsoon).³⁶

Poona Civil Lines divided into several sections. The enclave was divided by the Great Indian Peninsula railway line and the Mula-Mutha River. The southern portion of the Civil Lines was bounded by the ‘Native City’, the Cantonment and the railway line. North of this area was another section of the settlement that was bounded in the south by the railway line and in the north by the Mula Mutha River (The eastern part of this area was known as Koregaon Park). The Civil Lines also eventually expanded to include territory to the north of the River that included Yeroada and Deccan College, whist beyond the northern boundary of the enclave were located the Panoptic Central Prison and the Mental Hospital.

The role of Poona as monsoon capital meant that the Civil Lines was large in comparison with most mofussil stations, reflecting the size of the extensive bureaucracy that was permanently based in the city. The population the enclave swelled further during the rains due to an influx of additional officials who relocated in this season from Bombay.

Although the Poona Cantonment and Civil Lines were geographically close, in the mid-nineteenth century a buffer zone divided the Cantonment and the Civil Lines.³⁷ This zone


³⁷ This zone has long since been developed.
Figure 6.4
The Civil Lines of Poona, 1879.
Map: Author
was called the ‘Munjeree Malee,’ an area that was;
‘...mostly occupied by fields and vegetable gardens...’
and was not under the jurisdiction of either the Cantonment or the Suburban Municipality.38
This region was also used by the inhabitants of the Bazar and the Military lines who had no
privies and the area was described by British commentators as ‘exceedingly filthy’39.
Areas within the Munjeree Malee not used for cultivation were overgrown with
prickly pear hedges, and it was on these lands that the nightmen from the bazar and lines also
disposed of nightsoil;
‘Immediately beyond the military boundary...on the West of the Commissariat Cattle
Yard, deposits of filth and sweepings brought from the military lines [are found].’40
This part of the Munjeree Malee was notably windward of the European barracks and very
close to the ‘Native Followers Lines’.
The built environment of the Civil Lines was ‘suburban’ in character (as the
designation ‘Suburban Municipality’ suggests) in the sense that the enclave was placed on the
periphery of and was adjacent to the dense urban agglomeration of Poona ‘Native City.’ In
contrast to the high population density of Poona City the Civil Lines comprised a relatively
small and dispersed population housed almost entirely in detached bungalow-compound
residences.41 In a sense the Civil Lines with its wide tree-lined streets, public open spaces,
large detached houses and manicured gardens (and which as a civilian settlement were not as
literally regimented as the Cantonment) resembled the ‘Garden Suburbs’ that developed in
later metropolitan British society.
Although the enclave was certainly dominated by ‘bungaloid’ style residences, this is
not to imply that the urban environment of the Civil Lines was a monoculture. The settlement
was not merely a dormitory suburb and contained numerous additional elements other than
residences that were sufficient to render it semi-autonomous in nature. The Civil Lines
contained the places of work necessary for the administration, schools and places of worship.
A ‘core’ of offices and public buildings existed in proximity to the south of the Poona railway
station along the GIP line in a triangular area of land that was bounded by the railway, the

41 In this it differed even from the Cantonment where a large sector of the populace was crowded into
communal barracks.
interface between the Cantonment and the Civil Lines and the interface between the Native City and Civil Lines. This area also contained a number of traders and merchants (grouped in the small ‘suburban municipal bazar’) and a range of hotels designed to cater for travellers and the large number of transient residents who settled in Poona during the monsoon.

In a similar arrangement to the Cantonment, many Civil Lines bungalows were owned by Indian landlords42;

‘We cannot...disguise from ourselves...that landlords in Camp are rather an ill-used class, and have to put up with a great deal more than is either just or equitable from the whims and caprices of their tenants.

‘The Camp Regulations too rather tend to the fleecing of landlords than to their protection...As it is the owner of a home is everlastingly at the mercy of a Committee of military men...[who]...are as ignorant of the value of such property as the working of the Electric Telegraph...many of the houses in Camp are thus greatly undervalued...’43

This system had developed for several reasons. Since the British did not settle in their enclaves permanently but were usually stationed in a particular cantonment or civil lines for a relatively short tour of duty, there was no real incentive or reason to purchase real estate. There were two possible solutions to finding housing. The first was to wait for official housing. The civilian and military authorities did at times authorise the construction of residences, but due to the generally impecunious nature of the government and the short supply of housing, trying to procure an official residence would more often than not necessitate a long waiting period.

This presented several problems. The British were effectively socially barred from renting from the pre-existent building stock in the ‘Native City’. The authorities however allowed the market to solve the problem of housing supply. Indian builders were permitted to build bungalows in British culture areas as a speculative venture. Many of the British therefore lived in housing constructed by Indians, and it is important to note that much of the built environment of the Cantonment and Civil Lines was designed and built by Indians interpreting the needs of British residents.

42 This was also true of the Cantonment.
The Sadr Bazar

In 1817, after the hostilities of the Third Anglo-Maratha War in the vicinity of Poona ceased, British troops were placed ‘under canvas’ upon the site of the old Garpir Cantonment, before being relocated to another camp where the Ordnance Lines were later constructed. Merchants attracted by the market for goods that these troops required built two lines of thatched huts from which to trade. This locality became Main and Taboot Streets in later years, and represented the nucleus of the Sadr Bazar. (Figure 6.5: The Sadr Bazar of Poona, 1879)

The function of the Sadr Bazar was the provision of goods and services to the European community of Poona. Of course the ‘Native City’ had its own market areas, but the British preferred not to enter the environs of the old city, and the Sadr Bazar provided a ‘safe’ compromise whereby British consumption and contact with Indian merchants was concentrated in an enclave external to the British culture area and yet ostensibly under British control. In this way the colonial community did not have to enter the Native City and nor were Indian merchants required to live in proximity to the British.

Since the function of this enclave was to service the expatriate British population, it was in the Sadr Bazar that the ‘Europe Shops’ were located; establishments that sold goods imported from Britain (ranging from tins of food to toiletries) that were prized by the British community usually for the sole reason that they were from the metropolitan society.

Although the Bazar was primarily an Indian area, the major streets of the Sadr Bazar were regarded as the major streets of the Cantonment. There were four primary roads, all of which were orientated in a north-south direction and stretched from the vicinity of Arsenal road, south to Parvati Villas. The largest of the four was called ‘Main Street’, (now Mahatma Gandhi Road) and was described as;

‘[a]...wide and open thoroughfare, a good specimen of an Indian bazaar—but the side streets are narrow, and, as a rule crooked, rough and mist unpleasant to pass

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43 Poona Observer, May 21, 1853, p.82, col. 1.
47 Now Mahatma Gandhi Road.
Figure 6.5

The Sadr Bazar of Poona, 1879. Note the high structure-density of the Sadr Bazar area when compared with the Cantonment lands to the East. (Structures in the 'Native City' to the west have not in this case been mapped).

Map: Author
through.\textsuperscript{48} (Figure 6.6: Mahatma Gandhi Road [Main Street])

To the east and parallel to Main Street lay the aptly named ‘East Street’, where the majority of the European stores were located. The eastern side of East Street directly interfaced with the cantonment lands, without the intermediary of a buffer zone of open ground. The western side of the street was therefore lined with large trading establishments whereas the eastern side was dominated by a range of larger Cantonment bungalow-compounds.

To the west of Main Street lay the two remaining longitudinal roads, Centre Street, and West Street, (which was of course the westernmost of the Sadr Bazar major roads). A number of smaller streets running east to west linked these longitudinal roads, and to the south west of ‘Sachapir Street’, one of the small linking thoroughfares, the Sadr Bazar merged with the peths of the ‘Native City’.

At its northern extremity Main Street met Arsenal Road, and it was in the vicinity of this intersection that the Sadr Bazar, Civil Lines and Cantonment, three of Poona’s spatial sub-units actually met.

The Sadr Bazar occupied a substantial area and should in no way be considered as a minor component of the Poona city-site. In 1875-76 it was described as covering around 350 acres, the Bazar being 1233 yards in length and about 733 yards broad at its widest, this area accommodating about 22,046 people, as counted in the 1872\textsuperscript{49} Census of India.\textsuperscript{49} The 1885 statistics relate that the market accommodated 17,813 people, an apparent drop from the 1872 figure\textsuperscript{50} but nonetheless a substantial number.

Additional data, also collected in 1885 demonstrates that the population was divided between 2491 houses and 705 shops,\textsuperscript{51} revealing an interesting fact about the Bazar. The Sadr Bazar represented an area that was not only a trading enclave, since not all households were engaged in trade, but a substantial area of residential land, adjacent to the British enclaves of Poona yet dominated by Indians. For this very reason The Sadr Bazar was considered by the British authorities, ‘...the point of greatest danger to the troops and the residents of the

\textsuperscript{48} Treacher and Co. Ltd., \textit{Guide to Poona and Kirkee for the Season 1876}, Treacher and Co. Ltd. Poona, 1876, p.3.
\textsuperscript{49} Hewlett, T.G, \textit{Report on Military Cantonments...inspected}, Indian Medical Department, 1875–76, p.190.
\textsuperscript{50} Although the accuracy of nineteenth century methods for counting the indigenous population are open to question.
Figure 6.6.
Main Street, Poona (now Mahatma Gandhi Road) 1995.
Image: Author
Despite the equivocal position of the bazar, the abolition of Sadr Bazar was not an option since it was an integral unit of the cantonment-civil lines system. The Sadr Bazar might have been perceived as a risk, but it was also a convenience, and abolition could only result the necessity of the British having to enter the despised ‘Native City’ for their supplies or inviting traders to reside within the cantonment or civil lines boundaries, an imposition that would have been considered even less tolerable.

In particular it was the pseudo-residential nature of the Sadr Bazar that worried the British authorities, who were concerned by the tendency of the Indian community of the Sadr Bazar to expand, many residents having no involvement with the trade that the Bazar was meant to conduct. British control of the Bazar areas was not however as rigorous as the authorities would have perhaps wished due to the ambiguous position of the Bazar Lands. In Poona for example it was not entirely clear whether the Bazar was a component of the Cantonment or the ‘Native City’; and certainly the interface between the Bazar and ‘Native’ city was not rigorously defined. Various attempts were made to control the Bazar population. In Poona the authorities decreed that;

‘...no shops or places of trade are to be allowed except in the General and Regimental Bazars, and it is desirable that all European shops and traders be strictly confined to the Sudder Bazar...’

The urban pattern of the Sadr Bazar, was completely divergent from the British pattern visible in both the Civil Lines and the Military Cantonment. A population of 22,046 in an area of 350 acres produced the high density of occupation that was always avoided in the exclusive British culture areas where very low structural and population densities were the norm.

The Sadr Bazar was considered ‘...virtually a continuation of the native city of Poona.’ As such its appearance had much more in common with Poona City rather than with the British culture areas that it abutted. Although the remarks of British observers makes it plain that they saw the Bazar as an alien space, it was perhaps the only enclave within the

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1885, p.351.
52 Reports; Military Cantonments and Civil Stations in the Presidency of Bombay, Inspected by the Sanitary Commissioner in the years 1875-76, Bombay, Government Central Press, 1877, p.2, para 5.
54 Reports; Military Cantonments and Civil Stations in the Presidency of Bombay, Inspected by the Sanitary Commissioner in the years 1875-76, Bombay, Government Central Press, 1877, p.2, para 5.
Poona city-site taken as a whole where an ad-hoc synthesis between the colonial British and Indian urban traditions can be seen. Main Street was lined with multi-storied residences and shops that adjoined one another, many of which reflected indigenous Marathi architectural traditions. Away from the major thoroughfares there were areas where:

‘...no attempt at regularity has been made...Clusters of houses form complete labyrinths. Different warrens laid out in straight lines; unmade streets between them extend parallel or at right angles to the principal streets. Lanes between the rows of huts frequently end in cul-de-sacs.’\(^{55}\)

Another description survives, a British account of the poorer housing in the Bazar listed as ‘[a] not uncommon description of a warren tenement.’;

‘In a row of about 30 houses a tiled house consisting of only the ground floor was entered by a door 3'4'' high and 16 inches broad. The floor is about a foot and a half below the surface of the road in front, which is only about six or eight feet wide. The room is 7'10'' long by 7'10'' broad and 7'7'' in height, at the back is another room of similar dimensions and between the two is a mud wall extending up to the roof. The back room opens into a yard enclosed by a mud wall, in one corner of which are laid two stones where the occupant, his wife and four children bathe, and in the opposite corner is a place shut off by a mat where they pass their faeces and urine and wash their bodies after defecation.’\(^{56}\)

This account contrasts significantly with descriptions of the generously proportioned bungalows occupied by officials of the British military and civilian classes, and staffed with servant complements to care for any possible necessity.

The Sadar Bazar did not consist entirely of Indian style residences and stores, or of the housing of the poor. There was a leavening of bungalow-compound housing, as the enclave housed a larger proportion of Europeans (usually of the non-official category) than the ‘Native City’. There were also a number of shops in the colonial British built in the colonial British style, particularly on East Street, public buildings, and Christian churches (notably the gothic St. Xavier’s). The Sadr Bazar therefore represented a composite of Indian and British urban traditions, and although it was sometimes despised by the British as being dangerous

\(^{55}\) Reports; Military Cantonments and Civil Stations in the Presidency of Bombay, Inspected by the Sanitary Commissioner in the years 1875-76, Bombay, Government Central Press, 1877, p.4, para. 11.

\(^{56}\) Reports; Military Cantonments and Civil Stations in the Presidency of Bombay, Inspected by the Sanitary (Continued Overleaf)
and unhealthy, it was the Sadr Bazar that provided a focus for both the Civil Lines and Cantonment.

The Urban Periphery

The outskirts of the city, except where the ‘Native City’ and Cantonment abutted were utilised for cultivation. Common local crops in this area included, ‘...Joaree, Bajree, vegetables, oilseed, [and] sugarcane...’, grown in fields hedged with milk-bush or prickly pear.57

The periphery of Poona city-site was however not all undeveloped land. Particularly as Poona grew in the late nineteenth and twentieth centuries the periphery began to be settled as settlement extended beyond the traditional divisions of ‘Native City’/Cantonment/Civil Lines. Although the Civil Lines and Cantonment represented a form of suburban settlement ‘ringing’ the old city, they were primarily settled by the British and were therefore restrictive in terms of Indian settlement.

Poona City declined in population from the time of its conquest by the British until 1851 and thence increased rapidly in population size through the late nineteenth century.58 Population growth in the ‘Native City’ therefore was generally constrained within its traditional boundaries leading to relative increases in population density.

The anglophile portion of the Indian middle classes who wished to emulate the British suburban lifestyle and could not relocate to the Civil Lines or Military Cantonment were restricted by the traditional boundaries of the old city. Poona consequently began to develop an outer ring of suburbs to cater for wealthier Indian (and British) households who could not or would not live in the Civil Lines or Cantonment.

Peripheral growth in the city-site was constrained by the existence of the British culture areas; the Cantonment to the East, the Civil Lines to the North East, and the Kirkee/East Kirkee cantonment complex to the north. Suburban development was therefore restricted to the south, west and north-west, although Government House and its attached ‘botanical’ garden in the north west acted as another constraint upon growth. Areas in the periphery that contained nineteenth century detached housing stock included Salisbury Park

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to the south of the City, a large area to the west of the City that was in the vicinity of Fergusson College and Fergusson road, and the area along Ganeshkhind Road (the thoroughfare that led to Government House compound).
Chapter 7

British Society in Poona

Although Chapter 1 and Chapter 2 dealt with ‘Anglo-Indian’ architecture and settlement morphology, the social activities that occurred within these physical settings have not been extensively discussed. This chapter therefore seeks to describe the social milieu of the British living in India, and in drawing heavily upon primary historical records derived from Poona, attempts to specifically describe British society as experience by residents of the Cantonment and Civil Lines of Poona.

7.1 The British Social Hierarchy in India

The British community in India could be broadly divided into four sectors of declining status, determined by the occupation of the head of a household. Uppermost in this system was the ‘civil’ or official population, which was composed of the Indian Civil Service and other administrators. The stratum directly below this comprised the military officers, and after these came the third grouping made up of the non-official European business population (the ‘box-wallahs’ as they were called). Lowest in this hierarchy were the British other ranks and other components of the non-official community including Anglo-Indians and domiciled Europeans who had chosen to settle in India.

The British social order within the Indian Empire was so highly structured that it was sometimes compared with the Hindu caste system:

‘Governors and their caste look with smiling hauteur on the lower Civil Servants and their caste; who tolerate Military Officers and their caste; who nod to a Warrant Officer, listen to a Sergeant and frown at a Private; who blow up the Cooks and ‘walk into’ the Shoe-Blacks and their caste.’

The similarities were even more explicitly stated by journalist Ian Stephens;

‘The Brahmins, the so-called heaven-born, were the members of the topmost British Government service, the Indian Civil Service. They were the pukka Brahmins and below them were the semi-Brahmins, the various other covenanted services-

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1 For detailed information concerning structures in Poona listed within this chapter please refer to Volume 2.
2 Members of the ICS were sometimes called the ‘twice born’ in emulation of the higher Indian castes.
provincial civil services and so on. Then you had the military caste, composed partly of members of the British Army and partly of members of the Indian Army. They all strikingly resembled the Hindu warrior caste, the Kshatrias. The British businessmen, very wealthy and powerful in places like Calcutta but fairly low caste, were analogous to the wealthy, but also low caste mercantile and moneylending caste, the Vaisyas. These were the box-wallahs, a term of contempt applied quite freely by the two upper British castes to the British mercantile community...Then you went lower down to the menials, the so-called Eurasians or Anglo Indians, people of mixed blood analogous to the despised lower Hindu castes. Another category here was the unfortunate domiciled community, people of pure British race whose parents, for one reason or another, had elected to settle in India.4

Relative social position was considered to be of great importance. A formal document, the Warrant of Precedence listed all grades of official, by job description and seniority. The pinnacle of the rigid social hierarchy and consequently occupant of the first position on the Warrant was the Governor General and Viceroy of India.5 (See Figure 7.1: The Warrant of Precedence). From this unambiguous beginning the Warrant proceeded through the Governors of Madras and Bombay to more obscure occupations.

Entry ‘42’ for example gave precedence to;
‘Residents, Political Agents, and Superintendents on pay of Rs 200 per mensem or more, (not being Collectors or Deputy Commissioners of British Districts)’

over the;
‘[Entry] 43. Superintendent, Great Trigonometrical Survey.’6

The positions listed within the Warrant demonstrate the importance of occupation and seniority in ‘Anglo-Indian’ society. The British after all formed a transient working elite where individuals chose residence in India only for a particular tour of duty and to fill a particular position. In a mobile and transient society where intimate knowledge of a person could be lacking the Warrant provided an instant easy reference that described the relative status of individuals. The document was not merely referred to in the context of employment, but was widely utilised to order social events. Guests at every conceivable function, from

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Figure 7.1

Part of the Indian Warrant of Precedence.

From: The Times of India, The Times of India Calendar and Directory for 1924, The Times of India, Bombay, 1924, p.95.
receptions held by the Governor to humble dinner parties were introduced and seated with reference to the *Warrant*, and any mistake in the placement of an individual was considered a great slight.

### 7.2 Daily Life

**The Elite**

In the Indian Empire, where pay was relatively generous and credit easily available, expatriate British administrators and military officers could afford lifestyles that would have been out of the reach of persons of similar station in Britain. The colonial British standard of living was consequently unobtainable by the overwhelming majority of Britain's Indian subjects and the common justifications given by the British for their extravagant colonial lifeways; that their Indian subjects expected to be dazzled by pomp or that the prestige of the ‘ruling race’ needed to constantly be maintained seemed hollow.

‘Anglo-Indian’ elite households surrounded themselves with servants and adopted many of the trappings and leisure activities of the British gentry (fox hunting is but one example). Although some members of the British ruling class and aristocracy served in India, such persons comprised only a small minority of the local British population. In general the British aristocracy did not have to resort to the self-imposed exile of a career in India, although colonial service remained an option for the ‘second sons’ of prominent families seeking to make a name or fortune, and the Governor General and the provincial Governors were normally peers nominated to high imperial office for short terms of service. Despite their sometimes lavish colonial lifestyle, the majority of ‘Anglo Indians’ actually originated from modest backgrounds, and the Raj was essentially administered by members of the British middle classes.

Social activities were often permeated by tradition and ceremony. One example was the behavioural protocol developed for newly arriving residents of a civil or military station. The tradition was for any new cantonment resident of rank to visit with his or her calling card at every bungalow (a box was usually affixed to the gateposts to receive these introductions). In Poona the system of ‘calling’ was slightly different. As Mrs. Paget discovered;

‘[It was] the custom...for all the gentlemen in a station to call on the newly arrived

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ladies...and I was...amused and surprised at first at my morning levees of officers in full uniform with their swords on, who invariably drove up to the door in close carriages, and generally came in pairs and introduced one another.’  

By the twentieth century the complex system of introductions was simplified so that newcomers only had to write their names in the visitors’ book kept at the local Government House, Residency or commanding officer’s bungalow. 

It was only once the ritual of introduction was complete that one could expect invitations or visitors. Once the formal etiquette of introduction had been completed however the social life for residents of a large station such as Poona could be quite varied, since the local British community was able to maintain a range of recreational activities.

**Figure 7.2 Government House, Ganeshkhind.**

Image: Author

The major centre of ‘society’ in Poona, especially for the ‘burra sahibs,’ (the more important members of colonial community), was Government House. This was not actually located within the ‘Native City’, Cantonment, or Civil Lines, but was originally situated within a separate enclave at Dapuri (Vol 2: II.2) where the bungalow of Major Ford (who fought in the Battle of Kirkee) had been acquired by the government for use by the Governor

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in 1829. A new and more ostentatious Government House was constructed at Ganeshkhind (Vol. 2: II.3), three miles south west of Kirkee, between 1864 and 1871, partially with revenue derived from the mid-nineteenth century Bombay cotton boom (figure 7.2).

Ganeshkhind was a focal point for polite society during the monsoon when Poona served as Presidency capital and the Governor was in residence at Government House. Although many of his administrative duties were undertaken at Council Hall (Vol. 2: II.7) on Bund Garden Road in the Civil Lines, (where the Executive and Legislative Councils convened), the plan of the Ganeshkhind Government House reflected the necessity for ceremonial, administrative and residential spaces. Although rooms inside the residence and outhouses within its grounds were designed as offices for the administration or for apartments for the Governor his guest and entourage, large areas of Government House were designated for ceremonial and social functions. The ballroom and dining room were both important social spaces, and the residence itself was set within a landscaped pleasure park often utilised for official functions such as garden parties.

During the Poona ‘Season’ the Governor hosted numerous entertainments at Ganeshkhind. Public breakfasts and levees were held for gentlemen and military officers, in addition to receptions, investitures, balls, and fetes all of which emulated the pastimes of the upper and upper middle classes at ‘Home’, and catered for the upper echelons of colonial and Indian society. (Figure 7.3: Hunt Ball).

Of course not all social events were related to the Viceregal enclave. Balls were universally popular and in Poona many were held in the local Assembly Rooms (Vol. 2: II.16) opposite the ‘Native Lines’ and adjacent to the Masonic Club (Vol. 2: II.17). Several other venues were available and dances were also held in the New Gymkhana Club (Vol. 2: II.14) ballroom or in the public rooms of hotels in the Civil Lines. Balls were sometimes lavish affairs, and were often reported in the local press;

‘The Ball given by H.M. 86th Regiment in the Assembly Rooms on the evening of Thursday last...was the most brilliant of the season...-“It was the most magnificent entertainment I ever witnessed in India. I was one of the subscribers to the Ball given to our revered Governor, the Hon. Mountstuart Elphinstone in 1826, when fully 20

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11 *Times of India, Guide to Poona, June 1902*, Times of India Press, Bombay 1902, p.35.
Figure 7.3
The ‘Burra Khana’ at the Hunt Ball, held at Ganeshkhind in 1901
Image: Courtesy Jim Masselos
000 Rupees were spent to do him honour; but I must say with the recollection of that remarkable fete still fresh in my memory, the ball of the 86th was in no way behind it.”- The rooms were beautifully decorated with yellow and white draperies festooned with garlands of flowers...About 250, comprising the elite of society were present...- The supper tables were laid in the Masonic Hall, and the display of trophies and the magnificent Regimental Plate were much admired. The wines were of the choicest description and the tables were profusely laden with all the delicacies of the season. Two Bands,- those of the Fusiliers and the 86th discoursed sweet music through the live-long night, and it was not until Soll (sic) intruded his rays within the sacred precincts that the party broke up.'12

Sporting activities were another favoured form of social interaction and were regarded very seriously by the ‘Anglo-Indian’ elite. This attitude was mirrored by the importance games were accorded in the Metropolitan society, where a cult of athleticism developed in the nineteenth century that was particularly in evidence at the great public schools.13 Organised sports were perceived as possessing a moral quality, were thought valuable in dissipating sexual tensions, and were harnessed to assist in the creation of an elite of virile warriors.14 In some fashion the success of British imperial conquest in the world was associated with a British aptitude for games. In India in particular there was the additional fear that if people didn’t keep fit by playing sport they would be more likely to contract a tropical disease. (Figure 7.4: Poona Rugby Team).

Polo was particularly popular amongst military officers. Winston Churchill (who briefly resided in Poona) directly experienced the military obsession with polo, and noted that during his years as a subaltern in India;

‘...freed from mundane cares, [we] devoted ourselves to the serious purpose of life. This was expressed in one word - Polo. It was upon this, apart from duty that all our interest was concentrated.’15

Like most stations Poona had a polo ground (Vol. 2: II.20) but the preoccupation with polo reflected a wider interest in horses in general.

Horses were considered an indispensable part of station life especially since the local

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12 Poona Observer, Sat, August 7 1852, Vol. 1, No. 13, p.50, col.2.
13 Hyam, R., Empire and Sexual Opportunity, Manchester University Press, Manchester, 1990, p.73.
Figure 7.4
The Poona Rugby Team, 1901.
Image: courtesy Jim Masselos.
urban environment was of such low density that most destinations were too widely dispersed to conveniently walk. Horses were also a necessity for participation in a range of social activities. The widespread pastimes of polo, horse racing, pigsticking, and fox hunting, all required good steeds, and horse riding was a popular early morning, pre-breakfast recreational activity.

Pigsticking and fox hunts were both varieties of hunting, which in all its forms was almost a colonial obsession. Pigsticking was regarded as the most dangerous of sports, since participants had often to ride at high speed through tall grass and on unfamiliar ground, and risk dangerous charges by boars that could outrun horses for a short distance. (Figure 7.5 a: Participants at the Kadir Cup & figure 7.5 b: Pigstickers).

Hunting was best undertaken outside of cantonment and civil lines areas, and although a variety of game was available in the hills that surrounded Poona, those hunters who wanted bag truly big game had to venture further afield. One form of hunting that could be undertaken close to cantonments and civil lines was ‘fox hunting’ which had been introduced into India by middle class Europeans attempting to emulate the lifestyle of Britain's aristocracy. In India this sport could take some unusual forms. The dogs were mostly motley packs although sometimes hounds would be imported from England, and if foxes weren't available the hounds would usually chase jackals. (Figure 7.6 a: A satirical view of an ‘Anglo-Indian’ foxhunt, & figure 7.6 b: The Mysore Pack). One resident of Poona related the local adaptation of the sport;

‘We were invited to a hyena hunt at Kirkee...The animal was caught some days previously, and imprisoned in a bathroom and then turned loose before some strong curs doing duty as hounds.’

One horse-sport that was securely station-based was racing. Every military or civil station had its own race course, however primitive, and Poona, the largest station in proximity to Bombay, possessed a large track (Vol. 2: II.15) that developed into a major centre for the sport. The original Poona course was located to the north of the Civil Lines and just south of the Mutha Mula River. In 1870 the race track had been relocated south-east, into the Cantonment itself where a race track approximately one and a half miles in circumference

16 Personal Communication from Mr. C.J. Dani.
17 Paget, Mrs. Leopold, *Camp and Cantonment*, Longman Roberts and Green, London 1865, p.100.
Figure 7.5 a
Pigsticking -
‘Participants and wives at the annual Kadir Cup meet near Meerut c.1910’,

Figure 7.5 b
A more violent view of the sport of pigsticking.
Drawing by Samuel Howett, Foreign and Commonwealth Office
in Field, H.C., (ed.), The British Empire, No. 12 [The Coming of the Raj], Time Life
Figure 7.6 a

Figure 7.6 b
The Mysore Pack.
was laid out that surrounded the Cantonment General Parade Ground\textsuperscript{18} (\textit{figure 7.7}).

Throughout British India the usual venue for most other British sports was the ‘Gymkhana’ which provided facilities for athletics and games.\textsuperscript{19} In Poona a lavish ‘New Gymkhana’ had been constructed in 1885 on Bund Garden Road, to replace an older institution. This provided a cricket ground, courts for other ball games, and a ballroom that could converted into a theatre.\textsuperscript{20} The Gymkhana buildings also housed the United Service Library, and although there were other libraries in Poona, notably the Albert Edward Institute on East Street\textsuperscript{21} (\textit{Vol. 2: II.18}), all were inadequately stocked and poorly patronised.

\textbf{Figure 7.7 The Grandstand at the Poona Race course.}

Image: Courtesy J. Masselos.

The British community of Poona was better serviced than most when it came to sporting facilities. In addition to the Gymkhana there were several other sporting clubs and venues available. The Royal Connaught Boat Club (\textit{Vol. 2: II.20}) hosted regattas on the Club’s river frontage that opened onto the reservoir behind the bund, and The Western India Turf Club (\textit{Vol. 2: II.15}), founded as part of the relocation of the Race Course, allowed access to the horse races to members, whilst its Clubhouse provided residential accommodation for

\begin{footnotesize}
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\item[\textsuperscript{19}] Hobson-Jobson lists that this word was first used with reference to the Gymkhana instituted at Rurki in 1861. Yule, Col. H., \textit{Hobson-Jobson}, John Murray, London, 1903, p.406.
\item[\textsuperscript{20}] Times of India, \textit{Guide to Poona, June, 1902}, Times of India Press, Bombay, 1902, p.45.
\end{itemize}
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visitors as well as a billiard room, a card room and a ballroom. As is perhaps obvious the Gymkhana and other sporting clubs in Poona served a range of functions beyond supplying sports facilities. These institutions represented places where the elite could socialise, eat, entertain, and engage in physical activity, and therefore were similar in role to social clubs.

Differing from the Gymkhana, although offering a similar range of services, the ‘Club’ was an essential component of colonial life, representing the centre of social life in a station. British clubs were usually ‘racially’ exclusive, sometimes male only,22 and operated as venues where the ‘sahibs’ could withdraw from the scrutiny of Indian society and socialise amongst their own company. In the mofussil the Club could be a humble bungalow where the British gathered to drink, play cards, have the occasional meal and read, but particularly in the larger stations the Clubs of elite society were highly prestigious where membership was sought after and prized. Not to be accepted as a member of a Club meant courting social ostracism.

Membership for an individual was dependent upon occupation, and usually only the most important members of the community could seek membership of the best club in a station. Members lower down the European social hierarchy such as Domiciled Europeans, Anglo-Indians and Box-wallahs formed their own social clubs that had equally stringent membership criteria.

In Poona there was a plethora of substantial institutions for the elite to choose from. The Club of Western India (Vol. 2: II.13) which was based in Poona was one of the more prestigious in the Bombay Presidency. Founded in 1866 this was housed within a complex of bungalows and provided accommodation and sporting facilities in addition to a newspaper and dining room.23 Another similarly important institution in the vicinity of the city was the Deccan Club, built on the shores of Parvati Tank.

Although military officers were often sought as club members, their social life revolved around the Regimental Mess. Regimental life could be very insular, more so than life in the civilian community since the regiment of a soldier served as de facto family. Messes were attached to the regimental lines and in Poona they therefore clustered in Ghorepuri, Wanowri, and East Kirkee.

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22 Women were allowed access to most clubs and their facilities, except (usually) the bar.
The regimental mess was particularly important to young officers, since most were unmarried and had not established independent households. Many resided in the mess and all the officers of a regiment ate communally there every night. The evening meal was a ceremonial affair and the men dressed in ‘mess kit’ to dine.

In a similar manner to the social clubs where non-members; Indians, or guests were allowed access on occasion, the mess was not an entirely exclusive institution. Guest nights were regularly held for the entertainment of civilians, officers of other regiments or women, and on such occasions the regimental silver was laid out on the dining table (which also served as the table where the dead were laid out during battle).24

Just as the Domiciled Europeans and Anglo Indians were barred from elite social clubs and formed their own social organisations, the lower military ranks were of course disallowed from the commissioned officers’ mess and had to form formed messes of their own. Thus sergeants’ and corporals’ messes were established that operated as scaled-down versions of the officers’ mess. These provided facilities such as billiards, a bar, and a dining room,25 and in the identical manner to the commissioned officers who would entertain members of the elite European community on guest nights, so the sergeants’ or corporals’ messes would invite Domiciled Europeans or Anglo-Indians to share their meal.

Military cantonments or civil lines were not normally regarded as great cultural centres, and the British in India had a perhaps deserved reputation for philistinism. Sometimes however entertainment of a more sophisticated nature was available. Simple musical performances were often easily accessible military stations due to the necessary presence of military bands.

In Poona the European population would promenade in the parks of the Cantonment and Civil Lines after the heat of the day had dissipated in the evening, and in the bandstands located at in the Empress and the Bund Gardens military bands played until the sun had set;

‘The band-stands are the places of fashionable resort of an evening; and to a new comer, the scene is just like one in a theatre. A long procession of children, attended by Ayahs and bearers walk round and round the music; officers in uniform galop up

on tattoos with flowing manes and tails, like circus horses, to talk to ladies in light-coloured habits; or others in bullock carts and foreign looking equipages; while each horse, whether ridden or driven is attended by his ghorawalla, who, by the exquisites of society is dressed in a kind of livery of bright colour...As darkness comes on lamps are lighted round the Band-stand, and on the carriages; and when “God Save the Queen” proclaims the finale of the music, people grope their way home in the dark as best they may.  

Many stations possessed a theatre where concerts and plays could be performed. Theatres were mostly utilised for amateur dramas put on by the officers of a regiment since there were few professional companies of British or European actors in India except in the Presidency Towns. Most roles were played by men, since it was considered inappropriate for women to act, although this was a prohibition that had lessened be the end of the nineteenth century.

The theatres in Poona station were associated with European regimental lines and therefore were located at Ghorepuri, Wanowri, and at the Sappers Lines at East Kirkee. The talent of the amateur actors was sometimes dubious, nor was respect always accorded to professional performers. (Figure 7.8: ‘Our Theatricals’). One reporter at a concert in the Station theatre seemed to enjoy the night, but still managed a little ill grace, in his review;

‘The performances of the orchestral band during the evening were really delightful; and the Niggers spared no pains in their endeavours to please.’

In the twentieth century cinemas had supplanted the function of some of the station theatres. Several were constructed in the Civil Lines that screened only English language, British and American films although a large number of cinemas in the ‘Native City’ catered for the Indian population.

It is a mistake to believe that all of the British partook of opulent or decadent lifestyles in India. Many of the British were dedicated to their work and lived in difficult conditions in order to complete their tour of service. Accounts of the British lifestyle in India do however contain a sense of leisure and privilege, particularly in the larger stations of the Empire. Many of the British found life in India taxing petty, and insular, but there were also those who grew attached to India, and the sometimes slow and conservative nature of cantonment and civil

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Figure 7.8
Churchill certainly did not make the daily routine of a subaltern sound particularly taxing. He wrote of his time as a subaltern in Bangalore that:

‘...there were a great many military duties...By six o'clock the regiment was on parade, and we rode to a wide plain and there drilled and manoeuvred for an hour and a half. We then returned for baths at the bungalow and breakfast in the Mess. Then at nine stables and orderly room till about half past ten; then home to the bungalow before the sun attained its fiercest ray...We nipped across to luncheon at half past one in the blistering heat and then returned to sleep till five o'clock.’

Like many British, Churchill found life in India attractive and gentlemanly. The comments regarding the British in Poona made by an outsider, Victor Jaquemont, provide an interesting contrast to the usually positive British views of life in their station;

‘Ah what stupid creatures the people at Poona are, my dear fellow! They go out riding and driving, breakfast, dine, dress, shave and undress, or meet on committees for settling the affairs of a public library where I have never seen anybody but myself. They sleep, sleep a great deal and snore hard, digest as best they can and read their newspapers from Bombay; and that is their whole life! The stupid creatures! The idiots! The judge is a perfect idiot; the magistrate a rabid hunter, etc., etc. The only sensible man is the general, who learnt his profession in your country [Spain] fighting against us [France], and, what is more, a good fellow. The others may be good people too, but what stupid creatures! What nonentities!

I have tried to make some of them talk about the land in which they live. They know no more about it than I do, who have only just arrived, and they do not speak any of its dialects. They have not travelled about it, and have no desire to do so, or to know anything about it. Oh the brutish, brutish creatures!’

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In comparison with the lives of the officer class, the daily routine for the British other rank, was by no means exciting. In the later nineteenth century when there were few active campaigns to be fought, there were few occupations provided for the British soldier. For most of the day he was restricted to barracks;

‘...except for morning and evening parades and the man’s turn on duty he has nothing in the world to do...All the spare time people usually give to active occupations he spends lounging in his hot barrack room, most of it on his bed.’

The Royal Commission into the Sanitary State of the Army in India recorded the following details of a soldier’s routine in Poona within its returns,

‘The soldier at this station rises at 4:30 am in the hot weather and goes on parade about 5 am, with a half or one hour's drill or inspection with or without arms...Evening parades are from 5 to 6:30 pm.’

The work component of the day mostly comprised parade and drill. Specialist training was also provided to certain individuals, in signalling or scouting for example, and there were other soldiers with trades, including carpenters and armourers who maintained regimental equipment. Otherwise the major duty of a soldier was to mount guard duty for a given 24 hour period, (measured from sunrise), during the week. In addition, on Sundays a ‘church parade’ would be mounted as the soldiers were marched to the garrison church to attend Service, (with loaded rifles after the ‘Mutiny’).

Day-time activities were further restricted in Poona due to orders that the other ranks expressly avoid exposing themselves to the sun between 8am and 4pm. Even marches were undertaken at night to prevent the soldiers from the ‘fatal’ influence of the sun, and hence many of the ‘route marches’, designed to maintain the ability of the infantry to march fourteen miles a day with full equipment, must have taken place in the dark. This policy led to increased leisure time during the daylight hours that were difficult to fill. (Figure 7.9: Daily Means of Occupation and Amusements).

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Figure 7.9

The Barrack Room
‘Daily Means of Occupation and Amusements’
In a daily routine that could often be devoid of activity, mealtimes and drinking developed into major forms of recreation. Soldiers were granted a personal ration of food that was issued to them daily and usually cooked and served to them by Indian servants. There were three meals during the day, the major of which was ‘dinner’, served at 1pm.\textsuperscript{34}

Although rations of food were generous, drinking was the most widespread and favoured recreational activity;

‘The means of recreation are few, of exercise none...the men’s amusements, such as they are, are always connected more or less with drink.’\textsuperscript{35}

Alcohol was considered an integral part of the diet and privileges of the British other rank, and it was considered impossible to recruit men into the army without the providing the incentive of alcohol. The ‘wet’ ration was liberal;

‘A soldier in India may buy at the canteen no less than a gallon of spirits in 20 days, or he may have a quart of strong beer every day and one or two drams of rum or arrack. It is easy to see what must be the effect of this on health in such a climate.’\textsuperscript{36}

Alcohol was served in ‘wet’ canteens, although spirits were also sold in the bazars, sometimes illicitly as ‘eau de cologne’ in general stores.\textsuperscript{37} It was thought better to provide the troops alcohol in the canteens rather than have them obtaining illicit liquor from the bazars.

The British other rank was not believed to be an individual in possession of great self-discipline, and both temperance and sexual abstinence were seen as impossible goals for this sector of the European population. Sports in particular were supported as an easy way in which to exhaust the men and keep them from drink and liaisons with Indian women, in addition to its uses in building ‘moral fibre’ and team spirit. Hunting was another encouraged activity, and the other ranks were allowed leave to shoot game in groups of three.\textsuperscript{38}

Facilities were provided within military stations to keep the troops physically active;

‘Some means of passing the time are provided for the soldier at all stations. The usual

games are long bullets, quoits, fives and cricket; and almost every station has its ball
court and skittle alley.'39

Poona Cantonment in the early nineteenth century provided the soldiery with a ball
court, a skittle ground, a school and a library. These facilities were perceived as deficient and
as the nineteenth century progressed greater interest was taken in expanding these recreational
options.

Some significant reforms were posed within the recommendations of the 1863 Royal
Commission. This sought to minimise drinking amongst the troops through the provision new
outlets for the soldiers’ energies. ‘Coffee Rooms’ were established in order to keep soldiers
away from the wet canteen, and reading rooms and gymnasia for the physical and mental
education of the men were also sanctioned. Other schemes to prevent boredom in the ranks
included the formation of regimental gardens and workshops designed to maintain the skills
of those soldiers who had trades and to otherwise fill the days of the unskilled British Other
Rank.

One important reform was the foundation of ‘Soldiers’ Institutes’, a version of the
clubs frequented by the elite but designed for the enlisted man. The institutes encouraged
temperance and provided light refreshments, tea, coffee, and games for soldiers. In Poona a
Soldiers’ Institute; the ‘Connaught Institute’ (Vol. 2 II.16) was located opposite the Native
Lines and near the Masonic Lodge (Vol. 2 II.17). This had been founded by the Government
for the benefit of British soldiers and housed a theatre, a billiard room, a refreshment room
and a reading room. A similar institute, called the ‘Soldiers’ Home’ was located on East
Street.40

Since outlets of officially approved entertainment were few, soldiers often sought to
amuse themselves, sometimes through forbidden activities. The ‘Native City’ and even the
regimental and Sadr Bazars were generally out of bounds to the Other Rank although many
courted trouble to visit the cheap, unregistered local prostitutes or buy liquor.

7.3 Sexuality

European women were originally rare within Britain’s Indian territories due to East

39 Leith, A.H., Report on the General Sanitary Condition of the Bombay Army, Indian Medical Department,
1864, p.2.
40 Times of India, Guide to Poona, June, 1902, Times of India Press, Bombay, 1902, p.35.
India Company regulations that until 1833 only permitted ‘Company Servants’, (who were male), the right of residence. From early-on in the British tenure in India, the practice developed whereby English men took mistresses from the local population, described as ‘bibi’ - the Persian term for ‘high class woman’ or ‘great lady.’ The mistress or bibi of a prosperous Englishman was often housed within his bungalow compound in an outhouse called the ‘bibikhana’.

It was not only the administrative and official elite who formed relationships with Indian women. The British other ranks often formed connections with, or married Indian or Eurasian women, a custom that was in fact originally encouraged by the authorities through the payment of 5 rupees per month to every soldier in the ranks who had a child in India.

It was the number of these relationships between British men, and Indian women that eventually led to the growth of a sizeable community of persons with mixed parentage. In the eighteenth century, when the practice of keeping a mistress was usual, this grouping of ‘Eurasians’ was not largely discriminated against, and usually regarded as British. However, as sexual mores in the metropolitan and colonial societies shifted towards conservatism, Eurasians (also known as half-castes, Indo-Britons, and from the early twentieth century as Anglo-Indians) were increasingly excluded from employment in the higher grades of occupation within the armed forces and bureaucracy.

Viscount Valentia, despatched by the Court of Directors of the East India Company to review the Company’s possessions in India, promoted the fear that a large elite of mixed parentage would place British rule in jeopardy by increasing the risk of rebellion, as had proved the case in the French colony of Santa Domingo. In 1791 ‘sons of Native Indians’ were precluded from employment in the Civil, Military or Marine services of the Company, and in 1792 persons without European lineage from both parents were forbidden Company jobs, ‘...except as fifers, drumsmen, bandsmen and farriers.’

Structural discrimination against Eurasians led to the development of a community consciousness, and the cessation of regular intermarriage with the colonial British community led to the development an endogamous population of Anglo-Indians within India. Since this community perceived itself as primarily British, it attempted to stress its utility to the colonial

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hierarchy. The Anglo-Indians developed into a useful workforce for the British and particularly after the 1856-7 ‘Mutiny’ during which Anglo-Indian loyalty was ‘proven’ through their pro-British stance, the community was delegated middle-ranking tasks through protective employment quotas in the railway, telegraphs and postal systems.

From the beginning of the nineteenth century the practice of expatriate British men keeping Indian mistresses or entering into marriage with Indian or Anglo Indian women declined. This did not however mean that sexual contact between the races ceased, although contacts did perhaps become more transgressive in nature. In the nineteenth century almost every station possessed a ‘lal bazar’; the local ‘red light’ district where prostitutes resided. In the mid to late nineteenth century there were over seventy five stations in India where prostitution was sanctioned and regulated and where prostitutes were allowed to reside within local lal bazar areas under supervision, under the condition they were registered and subjected to regular medical tests. If a prostitute was found to be infected with a sexually transmitted disease she was admitted to the ‘lock hospital’ for compulsory treatment on pain of losing her registration.

The scale of this system was quite extensive, Hyam calculated the level of ‘white reserved’ registered prostitutes for three major Indian stations at 1 prostitute per 44 men. The Lal Bazar in Poona was known as ‘the Nadge,’ and in 1885 there were 225 prostitutes in Poona registered with the local lock hospital. In the same year there were only 1165 European soldiers in the Poona military contingent.

Homosexual activity was undoubtedly also present amongst the troops, although this remains a subject about which it is difficult to collect data. What information exists may only be gleaned from the memoirs, diaries or the rare oral histories of homosexual officers. In part it was fear of increasing homosexual activity amongst the troops that led to the official decision to support lal bazars rather than ban prostitutes from cantonment areas. Keeping a pool of female prostitutes available for the use of the men was gauged to prevent the other ranks turning to each other for sexual gratification. Presumably male prostitutes also existed,

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43 East India Company, Court of Directors, Resolution 19th April 1791, p.58.
but male prostitution was not officially sanctioned, and so does not appear in the statistics or records kept by the Indian Medical Department or other authorities.

7.4 Religion

Although religion played an important role in ‘Anglo-Indian’ life, colonial society could not be described as being particularly spiritual in tone. In the early years of the British presence in India commercial concerns were of a greater priority than church building, and Britain did little to officially support Christian religion in comparison with the other European powers active in the subcontinent. Although chaplains had been regularly appointed by the Company, these were only permitted to service the British community and it was only the 1813 renewal of the East India Company Charter that sanctioned the appointment to India of an Anglican Bishop with wider powers.\footnote{Charter of the East India Company, 1813, Resolution XII.}

In addition to the foundation of an Indian diocese the Charter of 1813 also decreed that;

‘...it is the duty of this country [the United Kingdom] to promote the interest and happiness of the Native Inhabitants of British Dominions in India, and such measures ought to be adopted as may tend to the introduction among them of useful knowledge, and religious and moral improvement.’\footnote{Charter of the East India Company, 1813, Section 33.}

This clause opened the subcontinent to British missionary activity, and represented a major shift in religious policy for a Company that had previously distanced itself from Christian proselytising.

There were a growing number of adherents to the view that converting Indians to Christianity might be a desirable policy; after all many of the British perceived Hinduism as mere superstition and or at worst as an abomination. Members of the evangelical revival growing out of Britain during the late eighteenth and early nineteenth centuries such as William Wilberforce and Sir John Shore fostered the belief that if the Raj had one aim that had to be the widespread introduction of Christianity into India. The evangelical movement claimed that surely it was the role of a Christian power to; ‘...establish Christ’s Kingdom among the Gentiles of the Eastern world...’\footnote{Kaye, J.W., Christianity in India: an Historical Narrative, Smith Elder and Co., London, 1859, p.485.}
Almost every cantonment or civil lines possessed a number of missionaries intent upon converting Indians, with varying, although usually low rates of success. Missionary activity was generally regarded with suspicion by the authorities, who perceived such proselytising activities as interfering with the religious traditions of the Indian populace, a practice that could result in social disturbances that could threaten British rule. Some Indians regarded the work of missionaries with equal mistrust, suspecting that it would one day result in mass, or forced conversions to Christianity.

Missionaries also held an equivocal position in colonial society because they did not live within the culture area of the British, but chose to reside instead in localities where converts could be most likely garnered, that is the sadr bazaars or ‘native cities.’ Missionaries consorted with Indians, and although the British conceived their work in extending the influence of Christianity as valuable, Christianity marked the rulers from the ruled, and the missionary role essentially served to reduce the social distance between British and Indians.

There were several missions in Poona. The Church Missionary Society built a place of worship on the border of the Civil Lines and ‘Native City’ on Arsenal Road (Vol. 2 II.28), and other groups including the Church of Scotland Foreign Mission and a United Free Church Mission operated within the station and city.\(^{50}\) These missions however provided relatively few conversions from either Hinduism or Islam to Christianity, and what Hindu converts as there were came from the lower castes. The relative rarity of conversion was exemplified by the fact that in Poona conversions were usually reported in the press and Christian services to fete proselytes were major events.\(^{51}\)

In the years that followed the ‘Mutiny’ the British became more cautious about organised missionary activity since the disturbance of Hindu and Muslim religious traditions was one of the oft quoted causes of the conflict. The retraction of British aims for the extension of Christianity was made clear in the Queen’s Proclamation of 1859 where she declared;

‘Firmly relying ourselves on the truth of Christianity, and acknowledging with gratitude the solace of religion, we disclaim alike the right and the desire to impose our convictions upon any of our subjects.’\(^{52}\)

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\(^{51}\) The *Poona Observer* recorded many such ceremonies.

\(^{52}\) Proclamation of the Queen, 1st November 1858.
Religious neutrality was henceforward to be the policy of the Indian Empire.

The Church of England and the Presbyterian Church were accorded a semi-official status, in the Raj due to their position as the established religions of Great Britain. The position of Bishop of Calcutta was funded through state revenue, many churches were built at government expense, and standard lists were even compiled by the authorities of the material culture necessary to stock a Christian place of worship.  

Every cantonment possessed an official ‘garrison’ church. This place of worship belonged to the Church of England, and was where the British soldiers were marched to pray on Sundays, regimental colours hung, and where memorial tablets were set up to recall those who had died in the service of the Empire. In Poona the garrison church was St. Mary’s (Vol 2. II.21), located on Stavely Road in the Military Cantonment (figure 7.10), whilst a separate church, St. Paul’s, was built to service the administrative population in the Civil Lines (figure 7.11).

**Figure 7.10**

*St. Mary’s Church, Poona Cantonment*

Image: Author

Within cantonments places of worship were also established for European soldiers belonging to many other Christian denominations, usually in proportion to numbers within a regiment. Regimental lines would usually include a chapel or at least a prayer room for worship. Poona was large enough to possess a range of Christian congregations. St. Andrews

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(Vol 2. II.29), a small Presbyterian Church was built in the Cantonment on Sholapur Road for the Scottish Presbyterians of the station and the use of Presbyterian soldiers in the European or Highland Regiments based at Wanowri Barracks. A Methodist chapel (Vol. 2 II.30) also existed on East Street in the Sadr Bazar, and a Baptist Chapel in the Sholapur Bazar.

Figure 7.11

*St. Paul’s Church, Poona Civil Lines*


Other than the official churches, the largest Christian places of worship in the station were those of the Roman Catholic Church. There was a relatively large Catholic population in Poona, the congregation drawn from Catholics within the British other ranks and the ‘Native Christian’ population which contained numbers of Luso-Indians. The oldest of the Catholic churches was Our Lady of Immaculate Conception (Vol. 2 II.27) located on the outskirts of the ‘Native City’ a place of worship that predated the British conquest of Poona, and owed its existence instead to Portuguese influence.

There were however several Catholic churches, and a cathedral based in Poona all of which dated to the period of British rule. The Catholic churches were not constructed at government expense but through public subscriptions, and therefore the location of the churches was marginal, all being quite distant from the formal areas of the station where land was less expensive. St. Patrick’s Chapel (Vol. 2 II.26) was constructed upon an allotment that

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54 With rifles and live ammunition after the Mutiny so that they could never be surprised unarmed.
abutted the Empress Gardens across from the Race Course from 1850, and it was this structure, massively expanded over the years, that in 1885 was declared the cathedral for the local diocese.55 Another Catholic church, St. Xavier’s (Vol. 2 II.24) was built in the Sadr Bazar opposite the Cantonment market (Vol.2 II.43) in 1865. This church was associated with a convent and a school that educated Catholic children, many of whom were Anglo-Indian or children of the British other ranks.

7.5 The Memsahibs

During the British Industrial Revolution the developing separation between workplace and dwelling increasingly tied women to home and children, as men withdrew from the domestic environment into waged labour. Management of the home, and responsibility over children and family came to be perceived as ‘natural’ feminine roles, and in the nineteenth century a growing ‘cult of Domesticity’ idolised women as wives and mothers, positions that could only be acceptably attained through marriage.

Since women were restricted from participation in the labour market, and not permitted to own property once married, it is not surprising that many were quite ambitious in their search for a spouse. Finding an available, wealthy, and socially acceptable man was often the only way that a woman could secure her social position and financial security.

Female education was virtually ignored, except to provide skills in certain areas such as music, sketching and sewing, talents that were considered essential to creating the appearance of feminine accomplishment necessary to forming a successful attachment. Women were furthermore expected to appear innocent and submissive, and were advised to suppress their intelligence or independence in order to conform with British society’s ideal of female behaviour.56

Although the regulations restricting the right of British women to residence in India were removed in the 1833 renewal of the Company Charter, it was only after the completion of the Suez canal in 1869 that the voyage to India was rendered less arduous; the shorter travelling time and reduced cost prompting more women to travel out to India to join their partners on a tour of duty. For the first time a career in India did not mean permanent exile

from Britain for men. Leave could be taken at ‘Home,’ men could meet and marry women in Great Britain, and children could be sent back to Britain for their education.

Single women of marriageable age were even sent to India under chaperone, to live with relatives or friends in order to search for an eligible bachelor in the civil of military service of the Raj. These women were known as the ‘fishing fleet,’ and those who failed and returned to Britain not engaged were derogatively dismissed as the ‘returned empties.’ Since there was such an oversupply of British men it was not unusual for an available young women to be proposed to by several men, or to go through several ‘attachments’ or engagements.

Soldiers tended to marry late for a number of reasons. Men in the military usually required the permission of the commanding officer before they could wed, pay was considered insufficient to start a family, and marriage allowances were not paid until the age of thirty was reached.\footnote{Hyam, R., \textit{Empire and Sexual Opportunity}, Manchester University Press, Manchester, 1990, p.64. In the earlier nineteenth century subalterns were not allowed to marry at all.} Quotas also existed that restricted the allowable number of married men in a regiment, \cite{Hyam1990} (Hyams cites the proportion as 12 percent), for single men were thought to make better soldiers.\footnote{Hyam, R., \textit{Empire and Sexual Opportunity}, Manchester University Press, Manchester, 1990, p.64.}

The quotas also existed in order to minimise the numbers of ‘married quarters’ built for the British other ranks in the lines, since these were designed to accommodate families in privacy and were therefore more expensive to construct, and required more space than the standard single men’s dormitory barrack.

Life could be particularly difficult for the wives of low-ranked soldiers. In the first place it was often difficult for a woman married to a British other rank to obtain permission to travel to India. Even the lucky few who did obtain the necessary authorisation were often faced with substandard accommodation. There were even occasions when the only quarters available for soldier-families were sectioned off areas of a single-men’s barrack, a system that afforded little or no privacy.

Marriage usually represented a lifetime commitment since the legal processes for divorce were complex, and women had no independent means to pursue divorce since upon marriage their property was transferred to their husband. Although flirting was considered an acceptable diversion even for married women,\footnote{Hyam, R., \textit{Empire and Sexual Opportunity}, Manchester University Press, Manchester, 1990, p.64.} extra marital relationships were another matter. These were difficult to arrange and discovery was constant danger. The design of
bungalows ensured that privacy was elusive since most were planned with many internal doorways, few physical doors and were serviced by large servant establishments. In the early nineteenth century the environment was even less conducive to ‘affairs’ since clubs or hotels where lovers could meet were rare, and in any case anonymity was impossible to achieve in insular mofussil European communities.60

The ever-increasing numbers of British women in nineteenth century colonial society led to a gradual cessation of the practice of British men taking Indian mistresses or wives since there was now the possibility of bringing one’s spouse to India or of meeting and marrying British women in the colonial environment. British women were praised in some quarters as guardians of British morality who had improved the ‘morally destitute’ character of old, masculine, Anglo-Indian society. Women however were also blamed for limiting contact between Indians and British men and leading the British withdrawal into the exclusive culture area of the cantonments and civil lines.

‘Anglo-India’ largely replicated gender relations within metropolitan society. The majority of British men were engaged in salaried occupations within branches of the military, the administration or the commercial concerns operating in India and from which they obtained social position. The status of a ‘memsahib’ was drawn from the position her husband held in colonial society, as determined by the *Warrant of Precedence*. The wives of highly ranked men presided over the wives of those in lowly positions; the wife of the ranking officer of a station (known as the ‘burra memsahib’) held the highest female social position within local British society. In contrast with the men, ‘Anglo-Indian’ women61 were permitted no formal employment or position, and fulfilled instead the roles sanctioned by the cult of domesticity and lived within a restricted world, mostly limited to the British territory of the station.

In India female dependence was further fostered by the perception that a host of perils existed from which women had to be protected (by British men of course). The Indian climate and environment may have posed a certain threat, but British women had particularly to be sequestered from Indian men who were believed to find British women irresistible and were therefore considered a serious sexual threat. The harsh punishments the British imposed

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60 Particularly in the hill stations where women usually outnumbered men.
against the Mutineers were in part a reflection of the horror they felt at the murder of women (such as in the Bibighar massacre) who were idolised as wives and as mothers.

Although home and family were ostensibly the responsibility of the memsahibs, servants were hired to undertake most household duties and children sent ‘Home’ (to Britain) at school age for their education (since India with its ‘dangerous’ climate, and ‘inadequate’ food was believed to have a detrimental effect upon the young). Women had the choice of remaining in India with their career-bound husbands, or following their children back to Britain. Sectors of the wider British population, including Domiciled Europeans and Anglo Indians who were permanently based in India or who could not afford the expense of British schooling, sent their children to the boarding schools that clustered in the hill stations.

Female leisure may have been considered a status symbol, but despite the excess of ‘leisure’ time that servants and the absence of children could impose, the structure of ‘Anglo Indian’ society discouraged women from undertaking intellectual pursuits or from seriously applying themselves to charity work or acceptable hobbies such as music or sketching, in case their behaviour could be construed as independent or ‘masculine.’ In the Presidency Towns or the more important stations social life could be intense and hectic, and thus provide an outlet for persons with a surfeit of time, but in the host of smaller settlements where there was strict segregation between races and perhaps only a handful of European men and women, there were far fewer recreational possibilities.

Within the cantonments and civil lines the range of leisure activities for both genders was similar. Calling upon others in the station was the social duty of both women and men, and in the later nineteenth century women began to play the same range of sports as men (excepting the more hazardous ones such as pigsticking). There was also the usual round of card playing, dinner parties, and recitals and although membership of a station’s clubs was often restricted to males, women were allowed access to most facilities usually excluding the bar.

Some women were able to transcend the stifling social milieu of the ‘Anglo-Indian’ memsahib. A minority of middle-class women chose not to marry and founded public careers within professions considered acceptable and the province of women; including nursing, teaching and the Christian missions, thereby seeking achievements forbidden women who

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61 Literally a contraction of ‘madam sahib’.
were restricted to the domestic environment.

7.6 Household Life

The colonial urban framework of ‘Anglo-India’ was geared toward the provision of detached bungalow accommodation for nuclear families. Elite British households in India were very small, since children over the age of about seven were usually sent back to the United Kingdom for their education. The children could be sent to boarding school there or the mother might return to Britain to supervise their upbringing and leave her husband in India to pursue his career. The bungalow-compounds of the British elite were therefore of extraordinary size considering that each might house only a couple of British residents.

Domestic help was heavily utilised within households, an indicator of both the relatively low cost of labour, and caste divisions that led to a strict demarcation of function amongst household staff. It was believed necessary to retain up to fourteen servants to run a colonial household properly, and consequently the largest component of a British bungalow compound in India represented the live-in Indian staff, who outnumbered the Britons under their care.63 (Figure 7.12: Servants)

Servants were acquired by a variety of methods. Some were inherited from friends returning to Britain, whilst others were chosen via testimonials or references written by former employers. A household retinue included a number of standard, essential staff. A ‘Khansamah’ or butler was the head servant of a household, a ‘Bearer’ was usually employed to attend to each adult resident, and an ‘Ayah’ or nurse to care for any children. Other common categories of servant employed by a household included the ‘Chuprassy’; a messenger who would carry the ‘chits’ of the residents; the ‘Khitmagar’ who waited table, whilst food was prepared by a cook, (who usually had a helper or mate). Water was supplied to the household by a ‘Bheesti’ while outside in the compound the ‘Mali’ cared for the garden, a ‘Chowkidar’ guarded the gate to the compound, whereas horses were cared for by a ‘Syce’ or groom. At the bottom of the servant hierarchy was the ‘Sweeper’ who would remove excrement from the ‘thunder-box’ toilets. Completing the retinue were the part-time services of the laundryman, or ‘Dhobi’, and the ‘Durzi’ or tailor, who were often shared

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63 The number of servants employed by a household dropped through time as Indian wages rose and as British purchasing power declined.
Figure 7.12
‘A British Officer and his household in India’ (Lieutenant-Colonel C.L. Hervey of the Wiltshire Regiment, c. 1880-90).

between a number of households, and who did not reside within servants’ quarters.

Every conceivable household task was catered for by large servant establishments, and many of the British were even dressed, undressed, and bathed by their servants. Although as has already been noted the large number of servants rendered privacy minimal, the practice of not employing servants who spoke English was designed to salvage some privacy and keep conversations personal.

It was the ostensible role of a memsahib to manage this extensive household, a function that included issuing instructions to, and disciplining servants, setting the menu for the day, checking accounts, and doling out supplies from the storeroom. The cool mornings were usually reserved for housekeeping tasks since these activities did not fill more than a small part of the day. Although the ‘private’ sphere of ‘Anglo-Indian’ life was in theory dominated by the memsahibs, to unequivocally accept this assertion paints a perhaps inaccurate picture of British household life in India. The high median age of marriage amongst British men in the Indian Empire, the high proportion of men who never married, and those whose wives and children remained in Britain determined that there were a large number of male-only households. Young officers in particular tended to rent bungalows and reside together in order to defray the costs of living and these share-households were termed ‘chummeries.’

The British householder in charge of household oversight was advised to be strict with there staff, and Indian servants were regarded with a certain degree of suspicion. Laziness and dishonesty was believed inherent to servants, and it was also thought that they would take advantage of lax household discipline and either lapse into slovenly cleaning or cooking practices, or pilfer household supplies. Lapses of discipline were sometimes punished with violence, particularly prior to the mid-nineteenth century. Mistrust was not however universal and many Britons formed strong bonds with their servants after almost a lifetime of association.

As in most societies the serving of food furnished a reason for social ceremony. The pattern of meals for the British in India differed from the system in metropolitan British society. The day usually started early with ‘Chota Hazari’, a small breakfast served near 5 in the morning that usually consisted of tea and fruit eaten upon waking, whilst a larger breakfast followed at nine or ten o’clock that was often composed of a range of heavy savoury
or meat dishes.\textsuperscript{64} In the eighteenth century the main meal was eaten in the middle of the day and consisted of a generous selection of food. Eating ‘heartily’ was common and many accounts survive of British indulgence at table;

‘Disgusted at seeing one of the prettiest girls in Calcutta eat two pounds of mutton chop at a sitting the satirist “Quiz” went on to write about officers who:

March to barracks where with joy
Their masticators they employ
On curry, rice, and beef and goat
Voraciously they cram each throat\textsuperscript{65}

As the nineteenth century progressed the main meal was pushed ever later until it settled as an evening event. Tiffin, or lunch replaced the heavy midday dinner, (except on Sundays), and was a light, informal meal. After tiffin there was usually an afternoon tea.

An evening dinner was the major meal of the day, and generally a formal event. The elite always dressed for this meal, enduring a meal in heavy dinner suits and evening dresses. If any member of a household was still hungry a small supper was sometimes served in the late evening.

The British, although they could easily have had access to the cuisine of India, maintained their own culinary traditions. Although a few dishes such as the ubiquitous Kedgeree were influenced by Indian fare, highly spiced foods were often perceived as indigestible and inferior to British dishes.

This European dietary focus caused certain practical problems. The British entrusted the cooking of their meals to Indian cooks who whilst competent preparing local dishes, produced dubious interpretations of European cuisine with the limited range of ingredients and facilities available. In the later nineteenth century food prepared in the French style was considered to be the epitome of good taste, and consequently British cuisine in India at that time tended towards over-decorated dishes smothered in pre-made sauces, supplemented with the tinned produce imported from Britain that was considered a status symbol. Some households were however lucky enough to possess very good Indian cooks who were highly valued, not least since they produced results from a restricted range of ingredients and the

\textsuperscript{64} Burton, David, \textit{The Raj at Table}, Faber and Faber, London, 1993, p.80.

primitive facilities of a bungalow kitchen outhouse.

In the eighteenth century the main meal had been eaten during the heat of the day and therefore it was only in the nineteenth century, when this meal had shifted to the evening that the dinner party became a popular entertainment. A formal dinner party was colloquially termed the ‘Burra Khana’ or the grand feed that was held for important events. Atkinson in *Curry and Rice* satirised these huge formal feasts (figure 7.13: ‘The Burra Khana’);

‘...these grand spreads,’ he wrote, ‘are cruelly ponderous, and indigestible to the feelings-those awful periods between the heats-that stifling room, with the incense of savoury meats hanging about like a London Fog, which the punkah fails to disperse.’

Dinner party were ordered to a universal schedule. Drinks were served prior to the meal before the guests entered the dining room and were seated in a strict order determined by the *Warrant of Precedence*.

In the nineteenth and early twentieth centuries the first course was normally ‘first toast’, a savoury served on toasted bread. This was sometimes followed by soup, fish, a main course with meat or ‘joints’, then dessert (steamed puddings were favoured). The meal ended with another small savoury, termed ‘second toast.’ After the meal had been finished port, marsala or madeira was served and the women withdrew until the men joined them later in the drawing room. Sometimes small entertainments were planned, such as recitals or singing until the guests returned home.

### 7.7 Workplaces

Although many descriptions of Anglo-Indian social and household life exist, in comparison there are relatively few that describe places of employment (in the case where workplace was separated from place of residence) despite the high proportion of each day that was spent within the work environment.

The British were a tiny minority within the Indian population, and British administration outside the Presidency Towns and major stations could be dispersed and diffuse in nature with lone administrators in charge of vast territories. With such a small expatriate population ‘Anglo-Indian’ administrators were generally employed in positions of

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67 *Atkinson, Capt. George F., Curry and Rice (On Forty Plates): The Ingredients of Social Life at "Our" Station in India*, Day and Son, London, 1859, [the ‘Burra Khana’].
Figure 7.13
‘Our Burra Khana’
authority, with subordinate positions within the hierarchy filled by Indians or Anglo-Indians drawn from the educated sectors of Indian society, and usually employed in the capacity of clerks.

Indians in subordinate positions within the office were often regarded with contempt and suspicion by the British. In Bengal the Indian office clerk was referred to as the ‘Babu’ (originally a term of respect but under British usage a pejorative term) describing a ‘superficially cultivated but too often effeminate’ Bengali, a maligned stereotype of the Indian office worker.  

To state that a large number of the British were in positions of authority is not to claim that there were no Europeans in subordinate positions, after all the British other ranks represented perhaps a largest proportion of the expatriate population in India. In addition, a number of Britons did decide to settle in India, despite the restrictions and difficulties preventing permanent British colonisation of the subcontinent, and ‘Domiciled Europeans’ as they were designated usually sought employment in the intermediate positions of the hierarchy, for example in the Police or Posts and Telegraph.

A variety of workplace categories were utilised by the British in India. For the military ‘caste’ the place of work might represent a barrack, the parade ground, the field of battle, or the military administrative offices located in larger stations such as Poona. In contrast the bureaucratic machinery of State run by the Civil Service was mostly office based, and in the Presidency Towns and large stations dedicated structures were built to accommodate clerks. The most famous of these was perhaps the Writers’ Buildings, (‘writer’ being an early title for clerk), on Calcutta’s Tank Square. The office was also province of the ‘Box Wallah’, or member of the commercial community, and the Presidency Towns in particular were crowded with the administrative buildings of the great trading houses and banks since British individuals engaged in commercial activities were a comparatively rare sight in the mofussil.

In isolated stations where there were few Europeans the ‘office’ was nothing so extravagant and might merely represent a room within a bungalow or an outhouse inside the bungalow compound. Thus the residence of a District Officer would often be the location where the business of a District was transacted, or the Magistrate’s bungalow-compound

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where durbar was held, and justice dispensed. In a similar fashion the Government Houses of the Indian Empire were both residences for the Governor-General or Governors and places of work, where decisions of high import were made.

The tent encampment formed another distinct (if unusual) category of workplace. The officials of the Raj who were posted in remote areas were required to tour the localities under their jurisdiction. District Officers were ordered to spend a significant proportion of the year ‘under canvas’, as it was called, so that isolated communities could be exposed to British justice, administration and authority.

7.8 Conclusions

Examining the organisation of British society in India provides valuable context for analyses of demographic spatial patterning within Indo-British settlements and reveals the activities enacted within the architectural and settlement forms the British developed in India. Due to the utilisation of site-specific historical records this chapter has in particular sought to describe a representative range of household and communal activities undertaken in the British cultural area of the city of Poona itself.

In Chapter 1 and Chapter 2 of Deccan Queen the ways in which the colonial British community sought to physically mark itself as culturally and ‘racially’ distinct from indigenous communities through manipulation of the built environment was discussed. Given the segregative tendencies incorporated into the physical design of their residential enclaves and architecture, the self-imposed insularity of the British community in India and its distance (both physical and cultural) from majority Indian society, it is of no surprise that although the small and scattered British community lived in proximity to a vast indigenous population, contacts between British and Indians were often either restrictive or formalised in nature.

To make this claim is not to say that there was only minimal interaction between the races, merely that such interaction was often public, professional or non-personal in nature. By virtue of their adopted administrative and military roles in India the British were in contact with Indians in offices, workspaces and bazars, were in constant intimate contact with the Indian servants who administered their domestic environments, and (as discussed in Chapter 3) engaged in sexual relations with Indians.

Interracial contacts were particularly strong in the military where ‘Native’ regiments were under the charge of British officers who would often build-up strong paternalistic
relationships with their subordinates (the military respect and admiration of the ‘martial
classes’ perceived to form the backbone of the ‘Native’ army unfortunately did not always
extend to the wider Indian populace). Relations between members of the indigenous and
colonial populations were however complicated not only by British distance but by the
‘outcaste’ nature of the British among Hindu society. A rapport nonetheless developed
between the ‘Anglo-Indian’ hierarchy and members of the old Indian royal or aristocratic
houses. Many indigenous rulers of the Princely States of India travelled to Britain, adopted a
range of pro-western customs and willingly entertained Britons of appropriate (and sometimes
inappropriate) status. Similarly the British also had significant contact with the pro-western
Indian elites based in the urban centres. Indian capitalists and industrialists depended for their
prosperity upon the British-sponsored peace in India, British laws and upon British approval
for their business initiatives.

Although these ‘public’ contacts were extensive, it is immediately apparent that the
British preferred to socialise within their own ‘racial’, cultural and class groupings. In
Chapter 4 the bias in the compiled historical address directory data toward British household
heads, the heads of households of members of the indigenous Indian elites resident within
the British culture area, and businesses that the British were likely to patronise, was
examined. In many of the surviving ‘Anglo-Indian’ (qualitative) memoirs and published
diaries of British administrators and military officers a similar bias is evident. Often the
activities of British householders, of the British community in a station, the pro-British Indian
elite and of the ubiquitous domestic servants and sepoys are well-covered, whereas the same
British diarists chronicle the activities of the wider Indian population in a more circumspect
fashion. The activities of the wider city do not often intrude, or if they do serve to assist in the
description work or as anecdotes to add local colour.

The natural bias of ‘Anglo-Indian’ diarists and memorialists toward the social
activities of the local British community (of which they were of course a part) means that
these historical documents, so useful for chronicling the appearance of the Indo-British built
environment and the activities that took place there, often present a very restrictive view of
the populations of military cantonments and civil lines. These biases suppress evidence of
variability in the population of the residential enclaves, resulting in inaccurate presumptions
being made about cantonment and civil lines demography. The chapters that follow (Chapter
8 and Chapter 9) attempt to analyse the surviving quantitative historical documents that
describe later nineteenth century and early twentieth century Poona. These documents include the *Census of India*, British *Parliamentary Papers*, reports of the Indian Medical Service, and of course the compiled and processed data drawn from contemporary Poona address directories. Analysis of these resources can hopefully reveal the correspondence or non-correspondence of the quantified population characteristics of the British culture areas of Poona, with the expected and traditionally accepted spatial and demographic patterns behaviours derived from more subjective historical sources.
Chapter 8

Demographic Results: The Census of India and Compiled Address Directory Data

8.1 Introduction

Chapter 8 represents a simple and broad analysis of the aggregate historical address directory data compiled for the chosen target years of this study. Although this data has been incorporated into the three GIS models of Poona and is mapped in Chapter 9, in the present chapter the demographic data is analysed independently of the spatial data drawn from historical maps. Issues (such as public health theories) previously discussed in a historical context are in this chapter re-addressed utilising quantitative historical data.

In addition, the compiled address directory data are compared and contrasted with other historical demographic sources. The most notable of these sources is the Census of India, however comparative data is also drawn from a variety of historical documents, including Royal Commissions and the reports of the Indian Medical Service.

Before the demography of the constituent enclaves of Poona is discussed in detail, a number of introductory comments should be made about both the population of British Indian Empire and of the city of Poona in general.

The British represented only a tiny proportion of the population of their Indian Empire. The British born community in India comprised only 169,677 persons in 1901 - the population of a smallish metropolitan city - and a (demographically) insignificant .06% of the total population of India (figure 8.1). The majority of these British residents were engaged by the military; even in 1861, 84,083 Britons served in the armed forces based in India.

Given this military preponderance, India’s place within the British Empire was obviously not one of a settler colony, and instead represented a territory acquired with economic exploitation in mind where the dominance of the British over the huge indigenous population was imposed and maintained via military power.

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1 Data from figure 8.1. Note that the references for data sources are embedded with the relevant figures.
2 Data from figure 8.2.
Despite the large number (84,083) of ethnically British troops stationed in India in 1861, and the fact that the military was almost entirely British officered, the army was nevertheless dominated by Indians who represented approximately 62% of the force (figure 8.2).

Given this Indian dominance, strong Indian co-operation was necessary for maintaining the continuance of British rule in the subcontinent.
The gross numerical position of the British in Poona reflected the India-wide pattern. Although at 1.68% of the total population of Greater Poona the British were present in the city at a higher proportion than throughout India in general (figure 8.3), the community still only represented a tiny minority. The higher proportion of British in Poona probably reflected the role of the city as a major administrative and military centre.

**Figure 8.3**
*Census of India 1921*, Vol. 9 Part 2, p. CXXXIX, (Table VI Part 1).

**Proportion of British in (All) Poona 1921**

<table>
<thead>
<tr>
<th></th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>1.68%</td>
</tr>
<tr>
<td>Non-British</td>
<td>98.32%</td>
</tr>
</tbody>
</table>

### 8.2 Spatial Morphology

Given the small number of Britons in India and in Poona, one might presume that this community occupied only a small proportion of the urban environment when compared with the land-requirements of the numerically superior Indian population. This was not the case, since British colonial society utilised urban space in a manner that stressed their political dominance over the indigenous population.

If the area occupied by the each of the three major enclaves of Poona - Civil Lines, Cantonment and ‘Native City’ - is expressed as a proportion of the whole city-site as it existed in the 1880s, it is revealed that the old or ‘Native City’ of Poona only occupied 29% of the total city area (see figure 8.4). Fifty percent of total city-site area was occupied the Military Cantonment, a proportion that rises to 70.59% if the area of the Civil Lines (20.59%) is added.
to the area of the Cantonment to give the proportion of the whole settlement that comprised the British culture area of the city.

**Figure 8.4**


**Area of total occupied by each Poona Enclave (1880s)**

![Chart showing the area of total occupied by each Poona Enclave](chart.png)

**Figure 8.5**


**Population of Poona divided by city-site Enclave, 1880's**

![Chart showing the population divided by city-site Enclave](chart.png)
In contrast, when the population of each of the constituent enclaves of Poona city-site is expressed as a proportion of the total population for the same period (figure 8.5) it is apparent that in the 1880s approximately 75.27% of total city-site population resided in the ‘Native City’ within a mere 29.41% of total city site area. The British culture area of Poona (Cantonment and Civil Lines) which represented 70.59% of area was therefore excised for use by only 24.72% of the total city-site population.

**Figure 8.6**

*Census of India 1921, Volume 9, Pt 2 (Poona City Table 1).*

This inequitable relationship continued well into the early 20th century when it can be shown that in 1921, 73.94% of city-site total population resided within the ‘Native City’ (figure 8.6) a proportion almost identical to that recorded in the 1880s. The absolute inequality of this form of urban organisation is further stressed if one considers that the British population - the raison d’être for the construction British station, represented only a small fraction of the 26.06% (1921 proportion from figure 8.6) of city-site population resident in the Cantonment and Civil Lines.

In Poona the majority Indian population consequently lived, throughout the period of British rule, in the smallest-area enclave of the tripartite city. This was in part a reflection of both indigenous and pre-industrial urban land usage since pre-industrial Indian cities tended to be small and dense in nature. It was, however, also a reflection of British political and military hegemony that the Empire was able to annexe and monopolise productive areas.
adjacent to long-established cities in order to provide land to house its military and administrative arms.

When population and area statistics for Poona are expressed in terms of population density, the extreme divergence in the urban organisation of the Station and the ‘Native City’ of Poona becomes apparent. The ‘Native City’ accommodated 39,848.8 persons per square mile in the 1880s, (figure 8.7 below) and was consequently a vastly dense urban centre, especially in comparison to the ‘suburban’ Civil Lines (the enclave with the lowest population density) where a low 1,484 persons resided per square mile. Even the Military Cantonment density of 7,089.2 persons per square mile was only 17.8% of that experienced in the crowded ‘Native City’.

**Figure 8.7**


In the early 20th century although the *Census of India* expressed population density as ‘persons per acre’ in its statistics rather than the slightly more abstract ‘persons per mile’, Poona population density remained (unsurprisingly) similar to the 1880s pattern. The ‘Native City’ remained the most dense enclave followed once again by the Military Cantonment and lastly by the Civil Lines (figure 8.8).
The population density of the ‘Native City’ in 1921 was 32.63 persons per acre (20,883.2 persons per square mile or 52% of the 1880s density). This represented a decline from the recorded population density of the 1880s, despite an increase of the population of the enclave from 99,622 in 1881 to 133,227 in 1921 (data from figure 8.33 below), and also reflected an increase in the area of this enclave from a recorded 2.5 square miles in the 1880s (1,600 acres) to 4,083 acres in 1921 (data from sources; figure 8.7 and figure 8.8). The 1921 population of the ‘Native City’ was 134% of the 1880s population and the 1921 area of the ‘Native City’ 255% of the 1880s area. Growth in city area outstripped population growth, a fact that probably reflected the increasing suburbanisation of the ‘Native City’, as it spread west into areas unconstrained by the physical barrier of either the Mula Mutha River or the British Civil Lines or Military Cantonment.

*Figure 8.8*
*Census of India 1921, Volume 9, Pt 2 (Poona City Table 1).*

In comparison to the changes in the ‘Native City’ the density of the Cantonment in 1921 was recorded as 11.16 persons per acre (7,142.4 persons per square mile) only a slight increase to the recorded density for the 1880s (7,089.18 persons per square mile). The Civil Lines changed to a greater degree; by 1921 the density of this enclave was 4.44 persons per acre (2,816 per square mile) an increase of 1332 persons per square mile from the 1880s density of 1,484 persons per square mile.

Seasonal changes took place in the population of Poona’s Civil Lines and Military Cantonment, most notably the increase in residential numbers (and consequently population density) that took place during the Monsoon. This was the period during which the city
operated as capital of the Bombay Presidency, however, it seems unlikely that the increase in the Civil Lines density to 1921 reflects such a simple cause. Firstly, it would be unlikely that Census data collection (these data were derived from the 1921 *Census of India*) would have been scheduled during the difficult monsoon period. Furthermore, if the change in Civil Lines density was primarily due to a population increase during the monsoon, one would expect to detect a similar population and density increase in the Military Cantonment for the same period. Such an increase was not recorded and in 1921 Military Cantonment population and density remained at a level similar to that recorded in the 1880s.

Several processes could account for the increased Civil Lines population density. Additional households had obviously made the enclave their place of residence by the 1920s. Were these additional households British? If they were, this could reflect an increase in the number of British administrators who were resident in the enclave, an increase that would reflect a growing importance for Poona in the administrative hierarchy of India and the Presidency. Alternatively, if the additional households were Indian, this could reflect changing residential choices made by the wealthy indigenous population of the whole city. Was the Indian elite discovering that the Civil Lines, with its suburban appearance and large bungalow-compounds was a pleasant and high status residential locale and relocating from the ‘Native City’?

The compiled Address Directory data can shed some light upon this matter. The data for 1876 (the closest target year to the 1880s Gazetteer data) shows that there were approximately 135 listed households within the Civil Lines, of which 134 were households that were applicable to be rated for ‘occupational category’; that is whether the household head was involved in ‘Civilian’ activities (those not involved in any way with the governance or defence of the Raj), was ‘Military’ in character, or was an imperial administrator or ‘Official’ (*figure 8.9* below).

Forty four of the 134 rateable household heads could be described as ‘Official’ (42.72% of Civil Lines households once unknowns are removed), 33 were ‘Military’ (32.04% with unknowns removed) and 26 ‘Civilian’ (25.24% with unknowns removed). Although the Civil Lines did not therefore quite live up to its reputation as a residential area for *administrators* of the Indian Empire, 74.76% of households and institutions were, however, directly associated with the maintenance of British rule in India being either ‘Official’ or
‘Military’ in character. The administrators concentrated in this enclave by no means represented the majority of households.

**Figure 8.9**

‘Category’ of Civil Lines Household Heads, 1876

Data Source: Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>Category of Household</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian</td>
<td>26</td>
</tr>
<tr>
<td>Military</td>
<td>33</td>
</tr>
<tr>
<td>Official</td>
<td>44</td>
</tr>
<tr>
<td>Unknown</td>
<td>31</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>135</td>
</tr>
</tbody>
</table>

In terms of household head ethnicity for the same year (**figure 8.10**, below) 91 of the 132 ratable³ Civil Lines households were British in affiliation. This figure represented 80.53% of the 132 recorded and ratable households in the Civil Lines (with unknowns removed), a proportion quite close to the combined number of households categorised as ‘Official’ and ‘Military’. Conversely, if indigenous communities are conflated into one group, 22 households heads or 19.47% of the total number of households (with unknowns removed) were non-European in nature.

**Figure 8.10**

Ethnicity of Civil Lines Household Heads, 1876

Data Source: Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>Ethnicity Household Head</th>
<th>Civil Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>91</td>
</tr>
<tr>
<td>Goan</td>
<td>1</td>
</tr>
<tr>
<td>Indian</td>
<td>4</td>
</tr>
<tr>
<td>Jewish</td>
<td>4</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>3</td>
</tr>
<tr>
<td>Parsi</td>
<td>13</td>
</tr>
<tr>
<td>Unknown</td>
<td>19</td>
</tr>
</tbody>
</table>

³ Excluding ‘Not Applicables’ (135-3=132).
Although the Civil Lines did not have as strong an administrative character as qualitative historical records would perhaps indicate, in 1876 at least, the area was dominated by British households and also by households engaged in the support of British rule. However, despite indications of British dominance, the enclave also encompassed a small although significant minority of prosperous Indian households in residence.

In comparison, the 1924 address directory data for Poona records 312 households in the Civil Lines, over twice as many as in 1876. The increased number of households in the enclave reflected the additional bungalows that were built in the enclave over the intervening 48 years, and also points to the increase in population density under consideration. The ‘Category’ of the 1924 household heads year is listed in figure 8.11. If unknowns are removed, 46.15% of these households could be described as ‘Civilian’, 14.9% of households as ‘Military’, and only 38.94% of households as ‘Official’ and consequently directly connected to the imperial administration. Although in 1876, 74.46% of Civil Lines households (the combined proportion of the ‘Official’ and ‘Military’ occupational categories) were involved in some way with imperial administration or defence, this figure had, according to the directory data, dropped to a slim majority of 53.84% by 1924, while the ‘Civilian’ category consequently increased to 46.15% of the total number of enclave households.

\textit{Figure 8.11}

\textbf{‘Category’ of Civil Lines Household Heads 1924}

Data Source: Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>Category</th>
<th>Civil Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian</td>
<td>96</td>
</tr>
<tr>
<td>Military</td>
<td>31</td>
</tr>
<tr>
<td>Official</td>
<td>81</td>
</tr>
<tr>
<td>Unknown</td>
<td>104</td>
</tr>
</tbody>
</table>

The ethnicity of 1924 Civil Lines households is listed in figure 8.12. Of the 301 rateable households for this variable, 169 out were British, a number that rises to 175 out of 301 households if one considers the wider European population and 59.52% of recorded households (with unknowns removed). Europeans represented the majority of Civil Lines
household heads, although a significant minority, 119 out of 301 households (40.48% of Civil Lines households with unknowns removed) were indigenous or non-European in their ethnic affiliation. If one considers ethnic communities within the ‘non-European’ category, it is notable that the wealthy and generally pro-British Parsi community was the largest, with 56 out of the 119 recorded non-European households deriving from this ethnic community.

According to the directory data the proportion of British households in the Civil Lines area dropped from 80.53% to 57.48% between 1876 and 1924 with a proportionate increase (from 19.47% to 40.48%) in the number of Indian and particularly Parsi households resident in the area. There is therefore considerable evidence that by the 1920s the number of households within the Poona Civil Lines had increased, that this increase in population led to the increase in population density seen in figure 8.8, and that much of the increase in population represented relatively wealthy, Indian, and ‘Civilian’ household heads who found the Civil Lines an attractive locale in which to reside. The increasing number of Indian households in the enclave diluted both the British dominance of the quarter and also its nature as an administrative area. By the 1920s the Civil Lines, although still an enclave with a bare majority of British household was increasingly a ‘mixed’ suburban area.

**Figure 8.12**

**Ethnicity of Civil Lines Household Heads 1924**

Data Source: Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>Ethnic Household Head</th>
<th>Civil Lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>1</td>
</tr>
<tr>
<td>British</td>
<td>169</td>
</tr>
<tr>
<td>European</td>
<td>2</td>
</tr>
<tr>
<td>Goan</td>
<td>3</td>
</tr>
<tr>
<td>Indian</td>
<td>54</td>
</tr>
<tr>
<td>Italian</td>
<td>2</td>
</tr>
<tr>
<td>Jewish</td>
<td>6</td>
</tr>
<tr>
<td>NA</td>
<td>11</td>
</tr>
<tr>
<td>Parsi</td>
<td>56</td>
</tr>
<tr>
<td>Scottish</td>
<td>1</td>
</tr>
<tr>
<td>UN</td>
<td>7</td>
</tr>
</tbody>
</table>

*Not Applicables’ are ignored reducing the number of households from 312 to 301.*
The ethnicity and occupational category of household heads will be further discussed later in the chapter, but for the moment we must return to consider the physical fabric of the city.

Another indicator of inequality and of the divergent utilisation of urban space by British and Indian populations is that of ‘houses per acre’ (figure 8.13). The 1921 statistics describe the average density of houses in Poona City (the ‘Native City’) as 8.15 houses per acre. In comparison structural density in Poona Cantonment was recorded as 2.35 houses per acre whereas the density of the Civil Lines represented a very low .97 houses per acre. The Civil Lines figure (and here it should be stressed that the Civil Lines was also known as the Suburban Municipality) reflects the large size of the compounds primarily designed for the accommodation of British administrators.

*Figure 8.13*

*Census of India 1921, Volume 9, Pt 2 (Poona City Table 1).*

**Houses per acre by enclave 1921**

Given that the number of houses per acre in the Civil Lines in 1921 was .97, and the population density for the same enclave in the same year was 4.44 persons per acre, there was an average of 4.58 persons per house for this year. Servants-in-residence were presumably counted in the population statistics in order to meaningfully calculate enclave

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5 The definition of ‘house’ is not explicitly given in this table. The manner in which ‘houses per acre’ were counted in the ‘Native City’ could of course significantly affect the figure eventually arrived at. In the Poona city core there were many multi-storey structures that of course comprised many residences, unlike the British culture area where generally each (generally detached) structure was a discreet ‘house’.

6 There were 3097 ‘houses’ listed in the Civil Lines and a population of 14,233 persons. *Census of India 1921, Volume 9, Pt 2 (Poona City Table 1).*
population density. Given that it could also be presumed that most British children would have been sent ‘Home’ for schooling, a reasonable scenario would be that an average (British) Civil Lines household in this year comprised one to two British adults, who employed two to four residential servants.

The population density and the ratio of houses per acre for the Cantonment were both higher than that recorded in the Civil Lines in 1921, at 11.16 persons per acre and 2.35 houses per acre recorded respectively. This represented an average of 4.75 persons per house for this year, a figure was not substantially different to that recorded in the Civil Lines perhaps indicating a similarity in (British) household composition in the two enclaves.

In contrast with the two British culture area, the boundaries of the ‘Native City’ of Poona encompassed an urban area of far greater density of houses and persons. The ratio of houses to area was over eight times and the population density over seven times the figures recorded in the Civil Lines at 8.15 houses per acre, and 32.63 persons per acre, respectively. This represented an average of 4.04 persons living in each ‘house’, a relatively surprising figure, lower than the number of persons per house recorded in either the Civil Lines or the Cantonment for the same year. It should, however, be noted that the density of housing in the ‘Native City’ was much higher than in the other two enclaves. Houses (and houselot/allotments) in the ‘Native City’ were obviously smaller than their generously proportioned counterparts in the Civil Lines and Cantonment, and the skewing effect of residential servants upon average household size would probably not have been as extreme in the indigenous residential context. The figures suggest therefore that, on average, in the ‘Native City’ slightly fewer persons per residence lived in smaller residential spaces than in either the Military Cantonment or the Civil Lines.

**Land Use**

Patterns of land use have been extrapolated from the compiled address directory data. Directory entries that describe the occupation of the ‘household head’, or the nature of the institution situated in any listed allotment or structure in Poona have been utilised to express land usage via two variables; ‘General Land Use’ and ‘Specific Land Use’\(^7\). The ‘Specific

\(^7\) See Appendix 1.
Land Use’ variable has been designed so that individual buildings or very specific types of building\(^8\) can be precisely located within the matrix of the consolidated address records.

‘General Land Use’ is perhaps the more useful variable when undertaking a broad analysis of land usage throughout the city and station of Poona. Eleven simple variables have been designed to express land usage. These are all fairly self evident in nature and categorise land as either; ‘Residential’, ‘Commercial’, ‘Mixed’ (where there is a confluence of place of work and place of residence), ‘Civic’ (governmental and other institutions including schools), ‘Military\(^9\)’, ‘Service’ (public infrastructure), ‘Religious’, ‘Entertainment’ (clubs, theatres and similar institutions), ‘Vacant Allotment’, ‘Vacant Building’ or as ‘Public Open Space’. Reference should be made to Appendix 1 for detailed definitions of the variables encompassed by ‘General Land Use’.

It is the 1924 address directory data that provides the best coverage of the three primary enclaves and the Sadr Bazar of Poona and which is therefore analysed below. Figure 8.14 outlines the ‘General Land Use’ of households in the city and station, and also for the recorded households and institutions in the Cantonment of Kirkee to the north. Figure 8.15 graphs the percentile land-use proportions for the four major Poona enclaves displayed in figure 8.14.

Although the collected address directory data is skewed by a number of biases, nonetheless the results of the land-use analysis as displayed in figure 8.15 reveal a number of very interesting patterns. These broadly confirm the morphology and land-use patterns one would expect to detect within a ‘tripartite’ Indo-British city.

The Sadr Bazar, for example, reflects a pattern that confirms the use of this city sub-unit as the primary trading focus of the station. The data shows that this area encompassed no dedicated ‘Military’ land, yet around 35% of its households listed in the table were considered to be ‘Commercial’ in nature (that is used for a business function and not associated with a household), with approximately another 28% of its households being ‘Mixed’ (where there was a confluence between place of residence and place of work). An approximate total of 63% of houses listed in this city sub-unit were therefore related to artisanal, commercial, retail or industrial functions.

\(^8\) Roman Catholic Churches could be located for example and compared to Anglican Churches using this variable.

\(^9\) A land use which excludes the bungalows of officers - which have been designated ‘Residential’.
In a similar vein, the Civil Lines as the area that was ostensibly designed to house imperial administrators incorporated the highest recorded number of public institutions\(^\text{10}\) (approximately 21% of households/institutions listed in this enclave).

\[\text{Figure 8.14}\]

**General Land Use Listed by Enclave 1924\(^\text{11}\)**

Data Source: Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>General Land Use</th>
<th>Totals</th>
<th>Percent</th>
<th>Civil Lines</th>
<th>Percent</th>
<th>Kirkee</th>
<th>Percent</th>
<th>Sadr Bazar</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic</td>
<td>154</td>
<td>8.27</td>
<td>67</td>
<td>21.47</td>
<td>5</td>
<td>1.97</td>
<td>13</td>
<td>5.14</td>
</tr>
<tr>
<td>Commercial</td>
<td>192</td>
<td>10.31</td>
<td>28</td>
<td>8.97</td>
<td>3</td>
<td>1.18</td>
<td>91</td>
<td>35.97</td>
</tr>
<tr>
<td>Entertainment</td>
<td>25</td>
<td>1.34</td>
<td>1</td>
<td>0.32</td>
<td>4</td>
<td>1.57</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Military</td>
<td>48</td>
<td>2.58</td>
<td>4</td>
<td>1.28</td>
<td>19</td>
<td>7.48</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Mixed</td>
<td>159</td>
<td>8.54</td>
<td>16</td>
<td>5.13</td>
<td>5</td>
<td>1.97</td>
<td>71</td>
<td>28.06</td>
</tr>
<tr>
<td>Religious</td>
<td>32</td>
<td>1.72</td>
<td>6</td>
<td>1.92</td>
<td>6</td>
<td>2.36</td>
<td>5</td>
<td>1.98</td>
</tr>
<tr>
<td>Residential</td>
<td>1251</td>
<td>67.19</td>
<td>190</td>
<td>60.90</td>
<td>212</td>
<td>83.46</td>
<td>73</td>
<td>28.85</td>
</tr>
<tr>
<td>UN</td>
<td>1</td>
<td>0.05</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>1862</td>
<td>100.00</td>
<td>312</td>
<td>100.00</td>
<td>254</td>
<td>100.00</td>
<td>253</td>
<td>100.00</td>
</tr>
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</table>

Continued

<table>
<thead>
<tr>
<th>General Land Use</th>
<th>‘Nativ City’</th>
<th>Percent</th>
<th>Poona Cant’</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic</td>
<td>39</td>
<td>12.66</td>
<td>10</td>
<td>2.08</td>
</tr>
<tr>
<td>Commercial</td>
<td>59</td>
<td>19.16</td>
<td>5</td>
<td>1.04</td>
</tr>
<tr>
<td>Entertainment</td>
<td>9</td>
<td>2.92</td>
<td>7</td>
<td>1.46</td>
</tr>
<tr>
<td>Military</td>
<td>0</td>
<td>0.00</td>
<td>18</td>
<td>3.75</td>
</tr>
<tr>
<td>Mixed</td>
<td>51</td>
<td>16.56</td>
<td>13</td>
<td>2.71</td>
</tr>
<tr>
<td>Religious</td>
<td>3</td>
<td>.97</td>
<td>9</td>
<td>1.88</td>
</tr>
<tr>
<td>Residential</td>
<td>147</td>
<td>47.73</td>
<td>417</td>
<td>86.88</td>
</tr>
<tr>
<td>UN</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
<td>0.21</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>308</td>
<td>100.00</td>
<td>480</td>
<td>100.00</td>
</tr>
</tbody>
</table>

\(^{10}\) Those with a ‘Civic’ land-use.

\(^{11}\) For clarity, the seven most commonly used variables within ‘General Land Use’ have been displayed in this table. Indicators including ‘Vacant Allotment’, ‘Vacant Building’, ‘Public Open Space’ and ‘Unknown’ which were only very rarely used were omitted. Percentiles in this table and graphed in Figure 8.15 have been calculated from the raw number displayed in figure 8.14, the percentiles refer to the proportion of each land use category in each enclave. Due to the omission of the four least used variables the percentiles listed in this table differ slightly from the proportions calculated from the un-culled data set. This approach
Figure 8.15

General Land Use Divided by Enclave 1924 (Graph)

Data Source: Compiled Address Directory Data (Author)

* Please refer to footnote 12.

The Military Cantonment also conformed with the expected pattern and encompassed the highest proportion of dedicated ‘Military’ land (approximately 4% of the enclave’s

removes ‘clutter’ from the graph and table at the cost of slight (although tolerable) inaccuracies in the percentiles in figures 8.14 & 8.15
households and institutions). Only about 1% of households or institutions in the enclave were ‘Commercial’ nature, another 3% or so ‘Mixed’. Very little business activity consequently took place in the Cantonment area, confirming that the Cantonment population would have had to utilise the Sadr Bazar for the supply of many or most goods and services.

The land-use pattern of the last enclave, the ‘Native City’, is slightly more complex in nature. Despite the fact that the proportion of households in the ‘Native City’ listed in the 1924 Address Directory was low, the data that was recorded exhibits the diversity necessary in a quarter that of was fairly self-reliant. The ‘Native City’ displayed a relatively balanced land use pattern and comprised a high proportion of commercially orientated (‘Commercial’ and ‘Mixed’) lands that amounted to approximately 36% of its listed households and institutions.

Figure 8.15 shows that ‘Native City’ and the Sadr Bazar both comprised a range of land uses - ‘Commercial’, ‘Mixed’ and ‘Residential’ and these two enclaves therefore fall much closer together in land use patterning than they do to the British culture area of the Civil Lines and the Military Cantonment. Figure 8.16 compares land use in the ‘Station’ (Civil Lines combined with the Military Cantonment) to land use in the ‘City and Bazar Lands’ (the Native City and Sadr Bazar combined) - broadly contrasting the British to the Indian culture areas.

The difference in land-use patterning is immediately apparent. The Station was overwhelmingly ‘Residential’ in character (approximately 77%) whereas in the Indian culture area only about 39% of its listed households or institutions were solely residential in character, with much land given over to commercial, artisanal and business activities. In the station such functions were almost completely absent. Of interest is that both the British and the Indian culture areas incorporated an almost identical proportion (9-10% of each) of public institutions - the ‘Civic’ land use which includes government institutions and schools. The ‘Native City’ consequently continued to encompass an administrative and educational

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12 Although this figure seems low, the ‘Military’ designation only records those structures which housed dedicated military functions. The bungalows where officers lived were recorded as ‘Residential’ land for the purpose of this survey since although many of the houses accommodated soldiers, their military function was only incidental. This also explains why in figure 8.15 the Cantonment represents the enclave with the highest proportion of ‘Residential’ land.

13 These figures omit the regimental bazars.
function despite the adjacent placement of a Civil Lines enclave that served as base for many of the formal offices of the colonial administration.

*Figure 8.16*

‘Station’ Land Usage Compared to Land Use in the Combined City and Bazar Lands, 1924

Data Source: Compiled Address Directory Data (Author)

During the period of British rule, the urban organisation of Poona reflected great spatial inequality between the ruling and the indigenous populations. Until late in the imperial period the indigenous city, the ‘Native City’, was organised as a pre-industrial settlement, compact and dense in nature. The decline in population density and the
increase in area of this enclave in the early twentieth century perhaps reflects the increasing industrialisation of the Native City as the elite started to relocate out of the crowded city core, into the British areas, or to new territory at or beyond the periphery of the old city limits.

The inequality inherent in the design of the Indo-British city; the extensive areas excised for the British culture area, the low population densities within their enclaves, and the low number of houses per acre, clearly mark out the residential enclaves of the British as different from the Indian areas of the city and stress the relative positions of the ruling and subaltern populations. The racially segregative qualities stressed by the different architectural styles and the low spatial density of the ‘suburban’ mode of structural organisation favoured by the British was however mitigated by the demographic reality of the population make-up of these enclaves. The appearance of ‘Britishness’ within the station seems to have been more important than a definitive racial bar forbidding Indian residence in the Civil Lines or in the Cantonment. By the early twentieth century the British households of the Poona Civil Lines were intermixed with a significant population of prosperous Indian households who had relocated into the enclave. Despite this fact, the perception remained that the Civil Lines was a ‘British’ area, and consequently the antithesis of the ‘Native City’.

8.3 Public Health and Miasmatic Theories

The statistics collected and published by the Indian Medical Service quickly reveal the basis for British alarm concerning the health of their (European) army in India. British Other Ranks stationed in India at age 20 had a life expectancy of only 38 years or so in comparison with 20 year old men residing in the ‘healthy’ areas of Britain14 whose life expectancy was over 60 years. (See Figure 8.17) Even officers in India (whom one would expect to have access to healthier living conditions, better food and a better standard of health care) did not fare well, since life expectancy for this group was only slightly higher at 44 years (again at age 20).

It could superficially be proposed that the low life expectancy of British soldiers in India was due to high mortality caused by the many wars fought by the British in the subcontinent. The high mortality rate, however, was not largely due to war-deaths at all. If

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14 The data do not specify what constituted a ‘healthy’ area.
war casualties are excluded, the mortality rate for European peace time troops in India was approximately three times that (at 58 persons per thousand troops) of the mortality rates of either peacetime troops stationed in Britain or peacetime Indian troops stationed in India. (Figure 8.18) In fact it is interesting to note that the mortality rate of peacetime British troops stationed in Britain and peacetime Indian troops stationed in India were virtually identical at 17 and 18 deaths per thousand respectively.

**Figure 8.17**


<table>
<thead>
<tr>
<th></th>
<th>Healthy England</th>
<th>All England</th>
<th>Officers India</th>
<th>Soldiers India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Life Expectancy (in years) at age 20</strong></td>
<td>63.4</td>
<td>59.48</td>
<td>44.04</td>
<td>37.7</td>
</tr>
</tbody>
</table>
One conclusion of the time was that the cause of the higher mortality rate amongst British troops stationed in India was environmental (and therefore miasmatic) in nature. Since in their home environments the mortality rates of peacetime Indian and British troops were similar, the problem was perceived to be that the British did not acclimatise well to the Indian environment. This conclusion agreed well with contemporary British theories that proposed that temperate climates were ‘healthier’ than tropical climates (which were therefore not considered appropriate for colonies of settlement).
**Figure 8.19**


**Proportion of Types of Diseases 1847-1856**

<table>
<thead>
<tr>
<th>Type of Disease</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miasmatic</td>
<td>60</td>
</tr>
<tr>
<td>Other Zymotic Diseases</td>
<td>10</td>
</tr>
<tr>
<td>Syphilis &amp; c</td>
<td>10</td>
</tr>
<tr>
<td>Constitutional</td>
<td>10</td>
</tr>
<tr>
<td>Local</td>
<td>10</td>
</tr>
<tr>
<td>Violence</td>
<td>2</td>
</tr>
</tbody>
</table>

**Miasmatic Diseases included:**
- Smallpox
- Vaccinia
- Parotitis
- Quinsy
- Catarrh and Influenza
- Ophthalmia
- Fever
- Erysipelas
- Dysentery
- Diarrhoea
- Cholera
- Ague
- Remittent Fever
- Rheumatism
British authorities did not necessarily see high mortality rates amongst British soldiers as a humanitarian problem alone, but one with important economic and political consequences. Soldiers were an expensive commodity, since men had to be recruited in Britain, trained, transported to appropriate parts of the Empire and housed there. A high mortality rate amongst trained soldiers represented a significant economic drain upon metropolitan society since if British troop numbers were to remain stable in India a constant stream of recruits had to be sent from Britain. Eventually, the more efficient solution; to correct high mortality rates by improving or altering environmental conditions in British Indian stations was instituted.

The importance given to miasmas by the medical authorities of the time can be easily demonstrated by examining contemporary medical statistics. If the types of disease British soldiers caught are analysed and grouped as they were described in the nineteenth century (figure 8.19) the majority of diseases listed (57.36%) were thought to be miasmatic in origin.

The high recorded instance of miasmatic disease in the above graph is in the first instance due to the size of the miasmatic ‘category’ nineteenth medicine had created. From the summary list of miasmatic diseases that forms the lower part of figure 8.19, it is obvious that miasmas were blamed for a large range of diseases that we know today have quite disparate causes.

Since elevation was considered a major weapon in the public health arsenal (see Chapter 3) the British founded a number of settlements at higher elevations above sea level in the temperate zone where the climate was thought to be healthier than that of the coasts and plains. Residence in the hill stations where British society and the administration withdrew in the hot weather was thought to convey health benefits. Even Poona (although not a hill station per se) was considered a healthier place than Bombay due to it position atop the Sahyadri Range on the Deccan Plateau.

One can analyse the available data to examine whether the nineteenth century theory that increased elevation (and its usual correlate, a more temperate climate) determined a reduction in the incidence of miasmatic disease. Figure 8.20 organises a number of Indian cantonments from low to high elevation. It also lists the calculated rate of miasmatic disease per 1000 persons for each of those settlements.

As elevation above sea level increases there was no absolute decline in the rate of miasmatic deaths per thousand. The miasmatic death rate at Darjeeling for instance (at 7000
feet above sea level) was thought to be 23.37 per thousand, a fairly low figure, but similar to that of Karachi (Kurrachee) which, at a low 27 feet above sea level recorded the rate of 21.32 deaths per 1000. From these figures it cannot be claimed that any great health benefit was conveyed to Britons resident at higher elevations, and this lack of correlation should have been equally apparent to the nineteenth medical authorities who calculated the rates of disease.

**Figure 8.20**

<table>
<thead>
<tr>
<th>Cantonment</th>
<th>Elevation above sea Level (Feet)</th>
<th>‘Miasmatic’ Deaths per 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort William</td>
<td>18</td>
<td>77.83</td>
</tr>
<tr>
<td>Dumdum</td>
<td>18</td>
<td>64.79</td>
</tr>
<tr>
<td>Kurrachee</td>
<td>27</td>
<td>21.32</td>
</tr>
<tr>
<td>Dinapore</td>
<td>212</td>
<td>48.02</td>
</tr>
<tr>
<td>Lucknow</td>
<td>360</td>
<td>148.73</td>
</tr>
<tr>
<td>Allahabad</td>
<td>368</td>
<td>82.34</td>
</tr>
<tr>
<td>Ferozepore</td>
<td>720</td>
<td>36.77</td>
</tr>
<tr>
<td>Agra</td>
<td>800</td>
<td>20.58</td>
</tr>
<tr>
<td>Meerut</td>
<td>900</td>
<td>30.41</td>
</tr>
<tr>
<td>Sealkote</td>
<td>900</td>
<td>13.17</td>
</tr>
<tr>
<td>Jullundur</td>
<td>937</td>
<td>21.33</td>
</tr>
<tr>
<td>Umballa</td>
<td>1050</td>
<td>38.27</td>
</tr>
<tr>
<td>Peshawur</td>
<td>1056</td>
<td>41.81</td>
</tr>
<tr>
<td>Lahore/Mean Meer</td>
<td>1128</td>
<td>58.23</td>
</tr>
<tr>
<td>Neemuch</td>
<td>1476</td>
<td>11.1</td>
</tr>
<tr>
<td>Rawul Pindi</td>
<td>1500</td>
<td>14.29</td>
</tr>
<tr>
<td>Landour</td>
<td>7000</td>
<td>29.01</td>
</tr>
<tr>
<td>Darjeeling</td>
<td>7000</td>
<td>23.37</td>
</tr>
<tr>
<td>Murree</td>
<td>7800</td>
<td>47.06</td>
</tr>
</tbody>
</table>

**Climate**

The mortality and disease statistics discussed above apply to the entirety of the British Indian Empire, however some historical environmental data survives (including fragmentary monthly rainfall, climate and water quality records that cover several years) that describe the ecology of Poona itself in the nineteenth century. The average monthly climate and rainfall
statistics for the years 1856-1860 (figure 8.21a and figure 8.21b) show that rainfall peaked in Poona in July with 8.57 inches falling on average in that month, whereas the temperature peaked in June at 88 degrees Fahrenheit, with the highest three months of rainfall being July August and September and of temperature being April May and June.

It should be noted that rainfall also peaks in Mumbai\textsuperscript{15} during July although rainfall in the coastal city is much higher; an average of 25.48 inches\textsuperscript{16} for this month or 2.97 times the rate of rainfall in Poona during the same period. It is easy therefore to understand why the British chose to withdraw from Bombay to Poona where the monsoon rains were not as heavy.

\textit{Figure 8.21a}

Herbert, Sidney, (British Parliamentary Papers, XIX, 1863), \textit{Report of Commissioners inquiring into the Sanitary State of the Army in India}, XIX, Pt. 1, House of Commons, London, 1863, p.733 m.739 Table I.

\begin{center}
\textbf{Rain Inches, Sample 1856-60}
\end{center}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{rain_inches.png}
\end{figure}

The average monthly maximum temperature for Mumbai remains remarkably stable with average maximum temperatures ranging between 29 - 33 degrees Celsius (84.2 - 91.4 degrees Fahrenheit) and temperatures for the first half of the year ranging through a more restricted range of 31-33 degrees Celsius (87.8-91.4 degrees Fahrenheit). In comparison, the average monthly maximum temperature for Poona fluctuated through a larger temperature

\textsuperscript{15} Modern rainfall rate for the month of July, and not the rainfall rate for 1856-60.

range. As can be seen in figure 8.22 the average daily maximum temperature in Poona sits consistently below that of Mumbai except in the months April to May.

*Figure 8.21b*
Herbert, Sidney, (British Parliamentary Papers, XIX, 1863), *Report of Commissioners inquiring into the Sanitary State of the Army in India*, XIX, Pt. 1, House of Commons, London, 1863, p.733, m.739, Table I.

The three months of highest rainfall (July-September) of course correlate with the annual (south west) monsoon which lasted throughout the months June to October, the period during which the administration of the Bombay Presidency relocated to Poona.\(^\text{17}\) The hottest three months (April-June) correlate with what was considered the ‘hot weather’ which occurred during the months March-May (June was apparently both hot and wet). During this period the British administration retreated to the Hill Station of Mahabeleshwar.
Records also survive of the monthly disease rates for the ‘Native’ Regiments stationed in Poona (figure 8.23) which can be analysed in light of the ecological data provided in figures 8.21 & 8.22.

The monthly sick rate per 1000 began to increase from its low point in March and peaked in October - the last month of the monsoon proper (in November and December the monsoon was considered to be retreating). When temperature and rainfall data are displayed upon the same graph along with the data for the rate of ‘monthly sick per thousand’ no immediately recognisable correlation can be seen between temperature,
rainfall and rate of sickness (figure 8.24). All three indicators peaked in different months; temperature in June, rainfall in July and rate of sickness in October. The October maximum daily rate per thousand in fact occurred in a period of moderate temperature, 77 degrees Fahrenheit in October, a temperature that was in fact the average annual temperature for Poona in the period covered (1856-60). Similarly, the October maximum also occurred during a period of moderate rainfall, 3.66 inches, a figure close to the average Poona annual rainfall rate of 3.19 inches per month for the period 1856-60.

*Figure 8.23*


One factor revealed by plotting rainfall and incidence of disease rates together is that the period considered to be the latter part of the monsoon; August to October were the unhealthiest months. This correlation would have agreed with British theories of disease causation which held that the rotting vegetation in a swampy, wet environment (as would
have been present in Poona at the end of the monsoon) would lead to the creation of miasmas that would have explained the increase in the daily sick rate.

**Figure 8.24**
(Derived from figures 8.21a, 8.21b and 8.23)

Combined, Temperature, Rainfall and Sick Rate Data

Historical health statistics reveal that the British had extensive cause to be concerned about the health of their troops. British soldiers in India had a vastly reduced life expectancy as a result of their Indian service, even excluding the complication of war mortality which inevitably would have reduced life expectancy further.

In an attempt to explain the untoward mortality rate amongst their soldiers the British authorities turned to the prevailing theories of disease causation. Miasmas did indeed ‘cause’ the majority of sickness - if one put faith in the category of ‘Miasmatic’ disease as it was defined by the British in the nineteenth century. The concept of the miasma did possess explanatory value. It was through this theory, for example, that the high rate of disease in the wet, monsoon months could be understood. The British sought to understand phenomena in their environment through application of scientific method - ‘miasmatic’ theory was consequently rational, and the hypothesis accounted for a proportion of the medical data the British authorities collected. It was nonetheless incorrect and although India seems to have represented an unhealthy environment for
British inhabitants, it was not of course because of the climatic and environmental reasons that medicine of the time proposed.

8.4 The Impact of Public Health Theories and Legislation upon Individual Structures: The Barrack as Exemplar

Plans, other historical architectural records and recent measurements taken directly from surviving structures quantify a number of the British-period buildings in Poona. It is difficult however to utilise this information to consistently test whether British theories of environmental design were incorporated into local architectural design practice. Key variables such as room length, breadth, height, area and volume, could be collected for the many surviving public buildings of Poona, however, the changes in these variables through time that would indicate the adoption or rejection of designs developed to reduce the perceived impact of miasmas remain difficult to define. It is hard to compare the room dimensions of larger British (public) buildings in Poona since these structures were highly variable in appearance and function, were not designed solely for functionality but also comprised a symbolic component.

To analyse room-size variables through time it is necessary to isolate a simple and standardised category of structure that was indispensable, common and built in a variety of years over a long period, that were designed for economy rather than display and where room size was determined by function. Barracks adequately fulfil the above criteria. These structures were a military necessity and therefore common in a cantonment environment, new barracks were constantly being constructed as the size of the army increased and barracks were standardised in terms of design. Barracks also served a simple purpose - to provide basic shelter for a set number of men for minimum cost.

Structures that were designed to reduce the influence of miasmas would have incorporated elements to increase the access of inhabitants to sunlight and fresh air. Room length, breadth, height, area and volume are therefore important variables for detecting the uptake of this design ethos. As the British attempted to safeguard the health of their troops and provide ‘sanitary’ accommodation, one would expect average barrack room size to increase over time in order to alleviate the perceived health risks associated with overcrowding in barracks.
Although a range of data describing barrack dimensions in Poona throughout the nineteenth century has survived, only a small proportion of this data is comparable. Standardised barrack room measurements are available for four sequences of barracks, constructed in 1842, 1846, 1849 and 1860. Unfortunately, even the latest barrack sequence predates the Herbert Royal Commission which posed specific recommendations to improve the health of the soldiery (including alterations in barrack design) in line with the latest medical theories. The data below cannot therefore shed light upon the impact of the Royal Commission upon barrack design in Poona.

**Figure 8.25a**


**Dimensions of Barracks (Poona)**

<table>
<thead>
<tr>
<th></th>
<th>1842</th>
<th>1846</th>
<th>1849</th>
<th>1860</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storey 1 Room Length</td>
<td>97</td>
<td>100</td>
<td>100</td>
<td>110</td>
</tr>
<tr>
<td>Storey 1 Room Breadth</td>
<td>24</td>
<td>32</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>Storey 1 Mean Room Height</td>
<td>15.5</td>
<td>27</td>
<td>23</td>
<td>37</td>
</tr>
</tbody>
</table>

18 Taking measurements from the surviving barracks in Poona is difficult since the Military Cantonment remains an active military base and access to the lines is heavily restricted.
19 Twelve barracks were constructed in 1842, two in 1846, twelve in 1849 and six in 1860.
Figure 8.25a graphs the primary dimensions; the length breadth and height of each of the four listed barracks sequences. With respect to all three variables the earliest barrack sequence constructed in 1842 was also clearly the smallest of the four. Figure 8.26 graphs the volume of each of the primary barrack room of each of the sequences. The earliest barrack room (1842) was the smallest and the latest barrack room, constructed in 1860, was the largest in terms of volume.

Examining figure 8.25a and figure 8.26 together, a general trend for barracks to increase in length, breadth, height and volume over time is visible. In both figures however, the 1846 barrack sequence represents an idiosyncrasy within this pattern, being larger in height, breadth and volume than the later 1849 barracks. The 1846 barracks in fact differed in function to the three sets of lines constructed in 1842, 1849 and 1860. The latter three all served as accommodation for infantry regiments, whereas the 1846 lines were constructed as horse artillery barracks. Cavalry and horse artillery barracks ordered space in a slightly different fashion to those barracks designed for use by the infantry (in order to accommodate the specialist equipment, such as saddles, used by soldiers associated with horses) and perhaps this difference in function could explain the slightly anomalous dimensions.

If the 1846 horse artillery barrack is omitted from consideration for the moment due to its nature as a different barrack sub-type (figure 8.25b), between 1846 and 1860 infantry barracks increased in size. The length increased by 13 feet, and breadth by 1 foot during this period. The variable that reflected the greatest difference was ‘mean height’, since the average ceiling height in infantry barracks rose by a massive 21.5 feet, (from 15.5 to 37 feet). The volume of the barrack rooms consequently increased from 39,084 cubic feet to 101,750 cubic feet. The 1860 barrack room was consequently 260.3% the volume of the 1842 barrack room.

Increasing the length, breadth and height of barrack rooms and consequently the volume of barrack rooms probably aimed, in line with miasmatic medical theories, to increase the access of barrack-residents to space and fresh air. These raw measures of dimension discussed above can only demonstrate, however, that barracks were larger by the 1860s and do not inform us whether soldiers’ access to both space and fresh air increased in successive barrack designs.
Figure 8.25b

Barrack Dimensions, (excluding 1846 Horse Artillery Barrack)

Figure 8.26


Mean Structure Volume of Recorded Poona Barracks 1842-1860

<table>
<thead>
<tr>
<th>Year</th>
<th>1842</th>
<th>1846</th>
<th>1849</th>
<th>1860</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Structure Volume</td>
<td>39084</td>
<td>86400</td>
<td>55200</td>
<td>101750</td>
</tr>
</tbody>
</table>
British medical authorities utilised the measures of ‘area per person’ and ‘volume per person’ as indicators of the access of soldiers to floor space and to air in barracks. (Figure 8.27). In Poona, the barrack series with the largest recorded area per person was the (anomalous) horse artillery barrack sequence dating from 1846. These structures allowed a footprint for each soldier of 76 square feet, an area far greater than for either the later 1849 and 1860 infantry barracks which both recorded an area per person of only 57 square feet. Again, the additional area per man allowed for soldiers in the horse artillery was probably because those soldiers working with horses required extra space for specialist equipment. There is little evidence that area per man in Poona barracks increased over time, with 57-58 square feet per man representing the infantry barrack norm in 1842, 1829 and 1860.

**Figure 8.27**

**Barrack Characteristics Poona (I), 1842-1860**


<table>
<thead>
<tr>
<th>Year</th>
<th>Mean Structure Volume</th>
<th>Mean Structure Area per person</th>
<th>Mean Structure Volume per person</th>
<th>Storey 1 persons per (floor) barrack room</th>
</tr>
</thead>
<tbody>
<tr>
<td>1842</td>
<td>36084</td>
<td>58</td>
<td>902</td>
<td>40</td>
</tr>
<tr>
<td>1846</td>
<td>86400</td>
<td>76</td>
<td>1029</td>
<td>84</td>
</tr>
<tr>
<td>1849</td>
<td>55200</td>
<td>57</td>
<td>1314</td>
<td>42</td>
</tr>
<tr>
<td>1860</td>
<td>101750</td>
<td>57</td>
<td>1059</td>
<td>96</td>
</tr>
</tbody>
</table>

The measure of volume per person reveals that although barracks grew in terms of overall dimension over time, the volume allocated per man evinced no overall trend of increase. The barrack sequence constructed in 1849 provided the greatest volume per soldier, allowing 1,314 cubic feet per soldier, compared with the volume per person in the later 1860 barrack rooms which provided only 1059 cubic feet per soldier. The 1860 barrack rooms were voluminous in nature (101,750 cubic feet compared with the 36,084 cubic feet in the 1842 barrack rooms). If they had, however, been constructed by the army in order to provide a healthier environment for soldiers, then the apparent health benefit of the new barracks was
immediately minimised by squeezing 96 soldiers into each barrack room; over twice the number that were accommodated in the 1842 rooms (which housed only 40 soldiers).

**Figure 8.28**

**Barrack Characteristics Poona (II), 1842-1860**


<table>
<thead>
<tr>
<th>Year</th>
<th>Mean Number of Room Windows</th>
<th>Storey 1 Verandah Breadth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1842</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>1846</td>
<td>54</td>
<td>8</td>
</tr>
<tr>
<td>1849</td>
<td>26</td>
<td>10</td>
</tr>
<tr>
<td>1860</td>
<td>77</td>
<td>11</td>
</tr>
</tbody>
</table>

Despite the fact that less space (volume) was available to soldiers living in the 1860 barrack than in the 1849 barrack, several other features of the structures suggest that the later barracks were designed with the health of the soldiery in mind. The number of windows (important of course for ventilation) in the barracks increased greatly over time (**figure 8.28**). The 1842 infantry barracks were constructed with only 16 windows, the 1849 infantry barracks with 26 windows, whereas the 1860 infantry barracks were designed with a (perhaps excessive) 77 windows.\(^{21}\)

Similarly, infantry barrack verandahs (important for keeping direct sunlight off the barrack walls as well as providing shaded semi-outdoor space for the soldiers protected from the rain) increased in width in consecutive barrack designs (**figure 8.28**). The 1842 barrack was designed with a relatively narrow 7 foot wide verandah, compared to the 1849 infantry barrack which incorporated a 10 foot wide verandah. The latest barrack sequence, constructed in 1860, incorporated the largest verandah, 11 feet in width.

Although this analysis of the barracks in Poona is only brief and comprises only a small sample of structures, there is still enough evidence to suggest that as the nineteenth

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\(^{21}\) Seventy seven windows, each 3 feet wide (231 running feet in total) might seem an unlikely number given that the barrack room had a perimeter of only 270 feet. There consequently must have been a double row of
Chapter 8

century progressed barracks built in Poona became larger in their dimensions and more complex in design. The 1860 infantry barrack appears to be better adapted to the local climate than its predecessor constructed in 1842. Designed with a greater room volume, higher ceilings, a greater number of windows and wider verandahs, this barrack would have been more comfortable and healthy than earlier examples and more expensive to construct.

The authorities of the Raj were often parsimonious with respect to expenditure and the army was not renowned for showering money upon the British other ranks. The fact that more expensive barracks were constructed for soldiers based in Poona later in the nineteenth century would suggest that larger and more complex barracks were considered a necessity rather than a luxury. The increased 1860 barrack room volume, the wide-verandah and many-window configuration would also suggest that this barrack was designed to ameliorate the internal micro-climate, to dispel miasmas and consequently to protect the health of the accommodated troops.

Evidence is however by no means unequivocal. In terms of raw dimension and design the 1860 barracks looked impressive, however, the available statistics reveal that the area and volume allocated per man did not increase greatly between 1842 and 1860. This suggests that military architects were influenced by the latest public health ideas and designed barracks accordingly, but although the newer barracks were larger, any additional space ‘modern’ designs offered was used to accommodate additional soldiers.

8.5 Regimental Demography

The social composition of the regiments stationed in Poona proves just as interesting as the barracks that housed the soldiers. It could initially appear that regimental demography should be quite simple, after all the lines housing a British regiment would have to include enough barrack space to house approximately 800 to 1000 European men, and enough detached housing for officers.

However, if the demographic statistics for European regiments in Poona are examined, the demography of each regiment actually proves quite complex. Although each British regiment was essentially composed of British males, every regiment also commanded a large establishment of ‘followers’. Followers were a diverse group who included servants

windows in the barrack room walls, an easy design to accommodate given that mean barrack room height was 37 feet.
and traders and also the wives and children of the approximately ten percent of soldiers who were allowed to take their families to India.

The 2nd battalion 15th Regiment and the 66th Regiment were two of the European regiments stationed in Poona in 1876. The demographic profile of the camp followers of each of these regiments (figure 8.29) differs significantly in terms of both population composition and number.

The 2/15th Regiment comprised 926 European soldiers, a larger number of men than the 66th which in contrast numbered 793 men. Neither regiment possessed any European male followers - not a surprising fact, since the British military authorities were not likely to export non-essential European support staff to India, where labour was inexpensive.

Both regiments however included a small number of listed followers who were European women. These were obviously the wives of the soldiers. The ratio of (European) women to soldiers was similar for each regiment (.08 women per soldier for the 66th and .11 for the 2/15th) and the proportion was consequently close to the target that approximately 10% of the men were allowed to bring their spouses out to India.

Figure 8.29 also lists a number of European children that were obviously the children of soldiers. The ratio of European children to European women is similar in the case of each regiment with each woman being associated (on average) with approximately two children.

It is the composition of the Indian ‘followers’ establishment that markedly differs in the case of each regiment. In the 2/15th regiment there were five times as many Indian followers than in the 66th, in fact more Indian followers than fighting men, with a recorded 1.14 Indians per European man. In contrast the Indian followers of the 66th were more thinly spread with only .25 followers recorded per European fighting man.

Although each of the fighting men of the 2/15th might at first appear to have their own personal valet, this would be the wrong conclusion to draw, since almost exactly half of the Indian followers of this regiment (523/1057) were in fact children. Although a number of children might have been employed as servants, it would also seem likely that the majority of these children were associated with the female Indian regimental followers of the 2/15th. If this was the case the figures suggest that each female Indian regimental follower was on average associated with 2.64 children, and that over half of the male Indian followers were

---

22 Both numbers represent the total fighting strength of each regiment a figure that combines the officers and men.
married. In contrast in the 66th every Indian woman was associated with only 1.34 children and only approximately a third of Indian male followers could have been married to a female regimental follower.

**Figure 8.29**

Regimental Demography, Poona (European Regiments) October 1876

*Reports Military Cantonments and Civil Stations in the Presidency of Bombay Inspected by the Sanitary Commissioner in the years 1875-6, Government Central Press, Bombay, 1877, p. 2.*

<table>
<thead>
<tr>
<th></th>
<th>2/15 Regiment</th>
<th>66th Regiment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Fighting Men</strong></td>
<td>926</td>
<td>793</td>
</tr>
<tr>
<td><strong>European Followers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Women</td>
<td>104</td>
<td>61</td>
</tr>
<tr>
<td>Children</td>
<td>229</td>
<td>129</td>
</tr>
<tr>
<td>Ratio European Women/Total Fighting Men</td>
<td>0.11</td>
<td>0.08</td>
</tr>
<tr>
<td>Ratio European (Children/Total Fighting Men)</td>
<td>0.25</td>
<td>0.16</td>
</tr>
<tr>
<td>Ratio (European Children/European Women)</td>
<td>2.20</td>
<td>2.11</td>
</tr>
<tr>
<td><strong>Indian Followers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian Men</td>
<td>336</td>
<td>111</td>
</tr>
<tr>
<td>Indian Women</td>
<td>198</td>
<td>38</td>
</tr>
<tr>
<td>Indian Children</td>
<td>523</td>
<td>51</td>
</tr>
<tr>
<td>Total Indians</td>
<td>1057</td>
<td>200</td>
</tr>
<tr>
<td>Ratio Total (Total Indians/Total Fighting Men)</td>
<td>1.14</td>
<td>0.25</td>
</tr>
<tr>
<td>Ratio (Indian Children/Indian Women)</td>
<td>2.64</td>
<td>1.34</td>
</tr>
<tr>
<td>Ratio (Indian Women/Indian Men)</td>
<td>0.59</td>
<td>0.34</td>
</tr>
</tbody>
</table>

Several factors could account for such strong differences between regimental follower profiles. One possibility is that the 2/15th Regiment could have been stationed in India for the longer period and thus built up the larger and more established follower base that included a high proportion of families. If the 66th, with its smaller follower base, had only recently arrived in India this could explain the preponderance of unattached men in the followers establishment.

One can however put forward another option to account for these figures. In the mid-nineteenth century and as outlined in Chapter 3, registered brothels were often sanctioned by
the regimental colonel as an adjunct necessary for the health and well-being of the regiment. In the 2/15\textsuperscript{th} the ratios of women to children to men, rather than indicating the presence of a large number of families, could alternatively suggest that the followers of this regiment comprised a large number of single male servants (as were present in the 66\textsuperscript{th}) and in addition the existence of regimental brothel that could account for the higher numbers of women and children. It is unfortunately impossible to confirm this supposition by this statistical data alone.

\textit{Figure 8.30}

\textit{Reports Military Cantonments and Civil Stations in the Presidency of Bombay Inspected by the Sanitary Commissioner in the years 1875-6, Government Central Press, Bombay, 1877, p. 1.}

<table>
<thead>
<tr>
<th>Regimental Demography</th>
<th>British Officers</th>
<th>Indian Officers</th>
<th>Total Officers</th>
<th>Non Commissioned</th>
<th>Rank and File</th>
<th>Total Fighting Men</th>
<th>% Commissioned Officers to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/15 Regiment</td>
<td>34</td>
<td>34</td>
<td>79</td>
<td>813</td>
<td>926</td>
<td>3.67%</td>
<td></td>
</tr>
<tr>
<td>66th Regiment</td>
<td>16</td>
<td>16</td>
<td>43</td>
<td>734</td>
<td>793</td>
<td>2.02%</td>
<td></td>
</tr>
<tr>
<td>Native Troops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1\textsuperscript{st} Light Cavalry Lancers</td>
<td>6</td>
<td>12</td>
<td>18</td>
<td>30</td>
<td>288</td>
<td>336</td>
<td>5.36%</td>
</tr>
<tr>
<td>5\textsuperscript{th} NLI</td>
<td>6</td>
<td>14</td>
<td>20</td>
<td>36</td>
<td>592</td>
<td>648</td>
<td>3.09%</td>
</tr>
<tr>
<td>8\textsuperscript{th} NI</td>
<td>6</td>
<td>16</td>
<td>22</td>
<td>38</td>
<td>623</td>
<td>683</td>
<td>3.22%</td>
</tr>
<tr>
<td>27\textsuperscript{th} NI</td>
<td>7</td>
<td>15</td>
<td>22</td>
<td>37</td>
<td>587</td>
<td>646</td>
<td>3.41%</td>
</tr>
</tbody>
</table>

Another aspect of follower life that cannot be resolved via analysis of the available statistics is how they were housed. Normally followers would not have been accommodated within the regimental lines, a fact largely confirmed by reference to historical maps of the city which do not depict purpose-built accommodation within the lines themselves. As the Cantonment grew it absorbed several villages that existed within the hinterland of the ‘Native City’ and these became associated with the Wanowri and Ghorepuri European Lines although they were located outside the technical boundaries of the enclave. Since the soldiers were not allowed into the Sadr Bazar of the station these absorbed villages acted as service points for the men. Ghorepuri and Wanowri were two of these villages and they were the location of bazars for the regiments as well as brothels used by the soldiers.
The demography of these two European regiments based in Poona underscore a number of points concerning the demography of the British culture area as a whole. The first is that the size and composition of regimental followers establishments shows once again that the British were dependent upon vast numbers of Indian service staff in order to render the colonial urban environment functional. The second is, as figure 8.30 demonstrates, the tiny size of the officer class. The majority of a regiment consisted of the British other ranks housed in barracks, whereas the Commissioned Officer class, that dominated the Military Cantonment landscape in their residential bungalow-compounds represented, on average, a slim 3.46% of the regimental total. Given that it is the officers and sometimes the NCOs who appear in address directories, this demonstrates exactly the extent to which the directory lists represent a resource primarily describing elite British society.

8.6 Poona Demography

The spatial morphology of the enclaves of Poona, issues concerning public health, military barrack designs and regimental demography have all been examined in this chapter. It is now appropriate to analyse the social composition of Poona and its constituent enclaves.

Gender

An interesting quality of the British community in India, was small proportion of women it incorporated. Until the early to mid-nineteenth century most travel to Britain’s Indian territories was difficult, and women were discouraged or forbidden undertaking such an arduous voyage. Travel to India became a more attractive option only after the completion of the Suez Canal.

The dominance of males was clearly obvious in the Poona population where only 16% of the British population was female, even as late as the year 1921 (figure 8.31). The low proportion of British women in Poona was due in part to the policy that only approximately 10% of married enlisted men in the army were allowed to take their wives out to India a regulation already discussed in the prior section of the chapter.

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23 Average of the percentile proportions expressed in figure 8.30.
Another factor that depressed the proportion of British women in India was that many chose to return to Britain once they had borne children. The climate of India was believed by many to enfeeble to the European constitution, and British children were considered to be in particular in danger from the sapping qualities of the Indian environment. It was considered best to trust their children’s development to a British boarding school, and therefore children were sent home, sometimes with their mothers for schooling.

Figure 8.32 graphs the number of women per 1000 males\(^{24}\) in each of the constituent enclaves of the city for the year 1922. This graph shows that the ‘Native City’ was the only enclave approaching gender parity, with slightly over 900 females recorded for every 1000 males. In contrast, the ratio in both the ‘Suburban Municipality’ or Civil Lines and the Poona Cantonment was between only 700 and 800 women per 1000 men, evidence once again of the many British men employed either in the military or the administration who were either single or whose spouses remained in Britain. The proportion of women in Poona Cantonment and Poona Civil Lines would have presumably risen during the ‘Poona Season’, the period during the monsoon when the administration relocated to the city. During this period many households would have been enlarged by unmarried female relatives who were looking for potential partners at balls and other events that took place.

\(^{24}\) Total and not just British population.
Figure 8.32 also graphs the same ratio (women per 1000 men) for the Military Cantonment of Kirkee, established slightly to the north of Poona itself. This cantonment was more strictly a military dormitory, unlike Poona which was also a major regional station and part-time provincial capital. It is consequently of no great surprise that Kirkee Cantonment displayed the lowest number of women resident in 1922 with only 500 women present for every 1000 men.

The ‘Native City’

Researchers including Meera Kosambi and D.R. Gadgil25 have produced detailed historical analyses of the old or ‘Native City’ of Poona. The demographics of this enclave are consequently only analysed in a schematic fashion, since this thesis primarily concentrates upon the Civil Lines, the Sadr Bazar and the Military Cantonment of Poona. The GIS models do not comprehensively map the population or organisation of the ‘Native City’, due to the nature of both the map resources and the address directories.

25 See Bibliography.
utilised. The area has not, however, been actively excised from the study with all appropriate spatial and demographic data being incorporated into the GIS models.

Several points can be made concerning settlement patterns within the Native City. The western peths of Poona were primarily Brahmin and upper class and were situated furthest away from the British areas of the city and closest to the river. The central peths of the city were dominated by traders, and the eastern peths were heterogeneous in nature. It was of course these heterogeneous peths that interfaced with the British dominated areas of the city though the Sadr Bazar. It is also interesting to note that the Civil Lines was eventually constructed on an area of land traditionally reserved for outcaste Hindu communities.

Documented British sentiment regarding the ‘Native City’ suggests that Europeans regarded it as an alien if not dangerous area. Although there were no legal barriers to Britons settling within the ‘Native City,’ living within this enclave was at least culturally taboo since British society in India regarded it as a sign of ‘going native’ - having a dangerous affinity for the indigenous culture.

The compiled data derived from the address directories under consideration agree with this perception quite strongly. The directories recorded only two British households within the ‘Native City’ in 1924, and the household head of one of these was a Professor in a city college who was probably living in a residence provided for him by the college where he taught.

The same dataset, however, shows that although there were a negligible number of British households in the ‘Native City’, 12 British governmental institutions operated in this enclave. Most of these were not housed in British-style buildings as they would have in either the Cantonment or the Civil Lines, but were instead located in the old wadas (mansions) and palaces of the Peshwas, the usurped indigenous rulers of the city. This colonisation of public buildings was a deliberate policy on the part of the British to demonstrate that a new power had completely supplanted the old.

Presumably the management of the governmental offices would have been under British control. Therefore although there were virtually no British actually resident the Native City, there must have been small British workforce that would have had to travel into the enclave on a daily basis. This is not a practice that is ever explicitly mentioned in
the historical records that imply that the most of Poona’s administrative structure had been relocated to the Civil Lines after the British conquest of the city.

The 1921 Census reveals that the population of the ‘Native City’ increased between the years 1872 and 1921 (figure 8.33). This population increase was not however constant. In two decile periods the population of the ‘Native City’ actually declined, (1872-1881 and 1891-1901) The earlier decline in population, 1872-81, is probably attributable to the fact that Poona District was ‘…one of the Districts specially affected by the famine of 1876-77.’

\[\text{Figure 8.33} \]

\textit{Census of India, 1921, Bombay, Volume 8, Part 2, (Imperial Table IV).}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{population_poona_n native_city.png}
\caption{Population Poona ('Native') City}
\end{figure}

The latter decline, recorded between the year 1891 and 1901 was probably due to an outbreak of the plague, which arrived in Bombay from Hong Kong in 1896. Famines also afflicted India in the years 1896-97 and 1899-1900\footnote{Most famine deaths of this time were however in the Central Provinces rather than the territories of Bombay.}, these disasters corresponding to the decline in Poona’s population during this decade.\footnote{Smith, V.A., and Spear, P., (eds.), \textit{The Oxford History of India}, Oxford University Press, Delhi, 1957, p. 691.}


\footnote{Smith, V.A., and Spear, P., (eds.), \textit{The Oxford History of India}, Oxford University Press, Delhi, 1957, p. 691.}
Ethnicity

Figures 8.34 to 8.36 tabulate the ethnicity of household heads and selected institutions in each of the component enclaves of Poona. For purposes of clarity, only a restricted set of ethnicities have been listed, and those household heads and institutions described as ‘Unknown’ or ‘Not Applicable’ as well as several very small ethnic minorities have been omitted from the statistics and totals. The patterns in ethnic affiliation inherent in the presented data are best revealed when displayed graphically. Figures 8.34 - 8.36 tabulate the relevant data used in figures 8.37 - 8.39 which graph the population of each listed ethnic grouping in each enclave as a percentage of the total population of each enclave.

Figure 8.34
Ethnicity of 1876 Household Heads
Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>Ethnic HH</th>
<th>Civil Lines</th>
<th>% Civil Lines</th>
<th>Poona Cantonment</th>
<th>% Cantonment</th>
<th>Sadr Bazar</th>
<th>% Sadr Bazar</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>91</td>
<td>80.53%</td>
<td>183</td>
<td>92.89%</td>
<td>69</td>
<td>46.94%</td>
</tr>
<tr>
<td>European</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>0.51%</td>
<td>3</td>
<td>2.04%</td>
</tr>
<tr>
<td>Indian</td>
<td>5</td>
<td>4.42%</td>
<td>2</td>
<td>1.02%</td>
<td>39</td>
<td>26.53%</td>
</tr>
<tr>
<td>Jewish</td>
<td>4</td>
<td>3.54%</td>
<td>0</td>
<td>0.00%</td>
<td>5</td>
<td>3.40%</td>
</tr>
<tr>
<td>Parsi</td>
<td>13</td>
<td>11.50%</td>
<td>11</td>
<td>5.58%</td>
<td>31</td>
<td>21.09%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>113</td>
<td>100.00%</td>
<td>197</td>
<td>100.00%</td>
<td>147</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Figure 8.35
Ethnicity of 1905 Household Heads
Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>Ethnic HH</th>
<th>Civil Lines</th>
<th>% Civil Lines</th>
<th>Poona Cantonment</th>
<th>% Poona Cantonment</th>
<th>Sadr Bazar</th>
<th>% Sadr Bazar</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>132</td>
<td>67.35%</td>
<td>215</td>
<td>89.58%</td>
<td>24</td>
<td>22.64%</td>
</tr>
<tr>
<td>European</td>
<td>4</td>
<td>2.04%</td>
<td>4</td>
<td>1.67%</td>
<td>8</td>
<td>7.55%</td>
</tr>
<tr>
<td>Indian</td>
<td>16</td>
<td>8.16%</td>
<td>10</td>
<td>4.17%</td>
<td>28</td>
<td>26.42%</td>
</tr>
<tr>
<td>Jewish</td>
<td>3</td>
<td>1.53%</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>0.94%</td>
</tr>
<tr>
<td>Parsi</td>
<td>41</td>
<td>20.92%</td>
<td>11</td>
<td>4.58%</td>
<td>45</td>
<td>42.45%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>196</td>
<td>100.00%</td>
<td>240</td>
<td>100.00%</td>
<td>106</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
Chapter 8

Figure 8.36

Ethnicity of 1924 Household Heads

Data Source: Compiled Address Directory Data (Author)

<table>
<thead>
<tr>
<th>Ethnic HH</th>
<th>Civil Lines</th>
<th>% Civil Lines</th>
<th>Native City</th>
<th>% Native City</th>
<th>Poona Cantonment</th>
<th>% Cantonment</th>
<th>Sadr Bazar</th>
<th>% Sadr Bazar</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>171</td>
<td>57.97%</td>
<td>14</td>
<td>4.79%</td>
<td>387</td>
<td>83.41%</td>
<td>34</td>
<td>16.92%</td>
</tr>
<tr>
<td>European</td>
<td>5</td>
<td>1.69%</td>
<td>2</td>
<td>0.68%</td>
<td>5</td>
<td>1.08%</td>
<td>9</td>
<td>4.48%</td>
</tr>
<tr>
<td>Indian</td>
<td>57</td>
<td>19.32%</td>
<td>266</td>
<td>91.10%</td>
<td>38</td>
<td>8.19%</td>
<td>100</td>
<td>49.75%</td>
</tr>
<tr>
<td>Jewish</td>
<td>6</td>
<td>2.03%</td>
<td>1</td>
<td>0.34%</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>0.50%</td>
</tr>
<tr>
<td>Parsi</td>
<td>56</td>
<td>18.98%</td>
<td>9</td>
<td>3.08%</td>
<td>34</td>
<td>7.33%</td>
<td>57</td>
<td>28.36%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>295</td>
<td>100.00%</td>
<td>292</td>
<td>100.00%</td>
<td>464</td>
<td>100.00%</td>
<td>201</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Figure 8.37 graphs the ethnic breakdown of household heads and institutions in Poona Cantonment over the case-study timeframe. The initial and most obvious characteristic of the graph is the dominance of British household heads in the address directory data. Over 90% of listed Cantonment household heads were British in ethnicity. This dominance did not of course mean that British households constituted the dominant population component in the Cantonment. As we will see below (as part of the analysis of the Religious Affiliation of household heads) British households represented only a small minority of total Cantonment population. The British dominance manifest in the data presented in figure 8.37 was political and social rather than purely numerical in nature.

The second notable feature of figure 8.37 is that over time British dominance was declining. The three address directories under consideration (1876, 1905 and 1924) record successive decreases in the proportion of British household heads recorded in the Cantonment address lists. There was a related and progressive increase over the three target years of the number of Indian household heads recorded so that by 1924, 8.19% of household heads were Indian, (15.52% if Parsi households are counted as Indian) compared to 1876 when only 1.02% of recorded Cantonment households were Indian (6.6% if Parsi households are counted as Indian). The proportion of Indian households (excluding Parsis) residing in the Cantonment in 1924 was marked; over 8 times the 1876 proportion. The proportion of Parsi households resident in the Military Cantonment remained much more stable during this timeframe; 5.58% of Cantonment household heads were Parsi in 1876, a proportion that rose to 7.33% in 1924 with a small decrease in 1876-1905.
Figure 8.37

Data Source: Compiled Address Directory Data (Author)

Cantonment Ethnicity

![Cantonment Ethnicity Graph]

Figure 8.38

Data Source: Compiled Address Directory Data (Author)

Civil Lines Ethnicity

![Civil Lines Ethnicity Graph]
The ethnicity of household heads in the Civil Lines reflects a similar pattern. This enclave seems to have been more varied than the Cantonment over the time-frame under analysis. In 1876 the British accounted for 80.53% of household heads listed in the address directories, a dominant position, however less so than in the Cantonment where in the same year almost 93% of the household heads were British (figure 8.38). In 1876, the proportion of listed Indian\textsuperscript{29} household heads might have been low, 4.42% of households, but this proportion was still over 4 times that of Indian households listed in the Cantonment for 1876.

If the Civil Lines reflected a pattern of slightly higher ethnic variability than in the Cantonment, this variability increased over time, with British dominance in the household heads lists decreasing markedly between 1876 and 1924. By 1924 the proportion of British household heads in the address lists had dropped from 80.53% to 57.97% with a concomitant increase in Indian\textsuperscript{30} listed household heads from 4.42% to 19.32%. The listed Parsi population of the Civil Lines had also increased over time from 11.5% to 18.98% so that the major non-British ethnic groupings amounted to 38.3% of the listed enclave household heads. As described in section 8.2, this probably reflected the increasing attractiveness of the Civil Lines as a residential enclave by elite Indian households.

The ethnicity data reveals a more equivocal pattern in the Sadr Bazar (figure 8.39). The Bazar lands were, for reasons already discussed the most varied of the spatial sup-units within the British cultural zone. Figure 8.39 reveals that there was no one dominant ethnic grouping in the region, with a high proportion of listed Parsi and Indian households, and in 1876 a large proportion of British households also. One trend was, again, for the proportion of listed British households to drop sequentially, in this case from 46.94% of listed households in 1876 to 16.92% in 1924. This decline was accompanied by an increase in the number of Indian household heads from 26.53% of listed household heads in 1876 to 49.75% in 1924. The number of Parsi household heads was also high in the Sadr Bazar. Over the three target years the average number of listed Parsi households in Sadr Bazar sub-unit amounted to 30.63% of listed household heads. This reflects the strong trading emphasis of the Parsi community since this ethnic group is over-represented.

\textsuperscript{29} Excluding Parsis.
\textsuperscript{30} Excluding Parsi household heads.
in the Sadr Bazar being but a tiny ethnic and religious sub-community among the Indian population of Poona and the Bombay Presidency.

The ethnicity data reveal and confirm that the spatial enclaves of Poona were strongly segregated areas. The address directories suggest that the British-founded residential enclaves of the city were dominated by the British in the sense that the majority of the large bungalow-compounds in the Military Cantonment and the Civil Lines were inhabited by British households. The data also clearly show (see below in the analysis of Religious Affiliation) that the British were in terms of numerical strength, but a small minority of total Cantonment population and furthermore (see section 8.2), that the British were almost wholly ‘concentrated’ in the Civil Lines and the Cantonment areas, choosing to wholly avoid residence in the ‘Native City’. An interesting revelation of the address directory data-set is that, the bungalow dominated area of the Cantonment was more ‘British’ in character than the Civil Lines, which as a region reflected slightly more ethnic variability. A second interesting revelation is that the British population was in a proportionally declining position in both the Civil Lines and the Cantonment, where increasing numbers of Indian and to a certain extent Parsi households were taking-up residence.
**Figure 8.39**

Data Source: Compiled Address Directory Data (Author)

![Sadr Bazar Ethnicity](chart)

**Religious Affiliation**

Since surname was in this case not considered to be an accurate indicator of household head religious affiliation, the data derived from historical address directories does not provide a detailed picture of this aspect of Poona demography. It is consequently best to rely upon the minimal appropriate evidence from the *Census of India*.\(^{31}\)

\(^{31}\) The 1872 *Census* provides the best Cantonment data describing enclave religious affiliation. It is the 1872 census data that is consequently presented below.
Figure 8.40

*Census of India* 1872, Vol.2, (Cantonment Section Table Number 1)

Religious Breakdown of Poona Cantonment 1872

<table>
<thead>
<tr>
<th>Sect</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindu</td>
<td>5509</td>
</tr>
<tr>
<td>Muslim</td>
<td>1225</td>
</tr>
<tr>
<td>Christian</td>
<td>2622</td>
</tr>
</tbody>
</table>

*Figure 8.40* divides the population of Poona Cantonment into the various major religions practised in the enclave. The majority of the residential population (59%) was Hindu, with a further 13% of residents being adherents of Islam. Almost three quarters of the Cantonment population was therefore adherent to an ‘Indian’ faith rarely if ever practised amongst the local British population.
Only 28% of Cantonment residents were Christians. The local British residents probably represented the major proportion of the Cantonment Christian population, although not all, since many British households would have also employed Indian Christian, or Luso-Indian servants. That the primarily Christian-British population of the Cantonment represented such a small minority of total Cantonment population, shows the extent to which the British character of the Cantonment was maintained by symbolic manipulation of the built environment rather than by the numerical superiority of this ethnic group.

### Christian Denominations in Poona Cantonment 1872

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church of England</td>
<td>1528</td>
<td>58.2761251</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>88</td>
<td>3.356216629</td>
</tr>
<tr>
<td>Roman Catholic</td>
<td>954</td>
<td>36.38443936</td>
</tr>
<tr>
<td>Wesleyan</td>
<td>25</td>
<td>0.953470633</td>
</tr>
<tr>
<td>Native Christian</td>
<td>27</td>
<td>1.029748284</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2622</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 8.41
Census of India 1872, Vol.2, p.356*
Figure 8.41 divides the total Christian population of Poona Cantonment into the various denominations present in the enclave in 1872. The majority of Christians (58%) were adherents of the Church of England, a statistic that suggests the dominance of the English (rather than persons derived from the other constituent parts of the United Kingdom) in the Cantonment population. The second largest denomination was the Roman Catholic Church, which encompassed 36% of the enclave population. The strong Catholic population in part reflected the number of Irish enlisted men in the European regiments stationed in Poona. ‘Native Christians’, a category which presumably included Indian converts (although it is unclear whether Luso-Indians were counted as Roman Catholics or ‘Native Christians’) represented only a tiny 1.03% of the Christian population.

Occupational Category

The occupational category of households in Poona has already been discussed briefly in section 8.2 in the context of the spatial morphology of the settlement. It is however worthwhile to re-present and re-analyse the occupational category data.

Occupations (and where appropriate institutions) have been graded into three categories - ‘Official’ which include those household heads or institutions which were directly involved in the administration of the Raj; ‘Military’ - which includes those households heads which were employed in the military, and ‘Civilian’ - the category which includes those household head which were neither employed in the military or the administration of British India.

Figure 8.42 graphs the categories of household heads in each of the enclaves of Poona over the three target years. The population of each enclave in each target year has been taken as a whole (100%) and each occupational category has been expressed as a percentage of total enclave population.

In 1876 (figure 8.42b) 42.72% of Civil Lines listed household heads were employed in an ‘Official’ capacity, the highest proportion for this enclave in all three target years. In 1905 and 1924 the proportion of those Civil Lines household heads designated as ‘Official’ had declined to between 35% and 39%, with the proportion of ‘Civilian’ household heads rising to between 46% and 49%; almost half of all enclave households. In the Civil Lines in 1876 the number of ‘Military’-employed household
heads was high, approximately 32%, and although this proportion dropped to between 14% and 16% in 1905 and 1924, there remained a significant proportion of military personnel resident in this enclave.

**Figure 8.42 a**

Data Source: Compiled Address Directory Data (Author).

**Occupational Categories**

<table>
<thead>
<tr>
<th>Category HH</th>
<th>Civil Lines</th>
<th>% Civil Lines</th>
<th>Poona Cantonment</th>
<th>% Cantonment</th>
<th>Sadr Bazar</th>
<th>% Sadr Bazar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian</td>
<td>26</td>
<td>25.24%</td>
<td>28</td>
<td>17.07%</td>
<td>81</td>
<td>81.82%</td>
</tr>
<tr>
<td>Military</td>
<td>33</td>
<td>32.04%</td>
<td>98</td>
<td>59.76%</td>
<td>4</td>
<td>4.04%</td>
</tr>
<tr>
<td>Official</td>
<td>44</td>
<td>42.72%</td>
<td>38</td>
<td>23.17%</td>
<td>14</td>
<td>14.14%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>103</td>
<td>100.00%</td>
<td>164</td>
<td>100.00%</td>
<td>99</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
c. 1905 Occupational Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Civil Lines</th>
<th>% Civil Lines</th>
<th>Poona Cantonment</th>
<th>% Poona Cantonment</th>
<th>Sadr Bazar</th>
<th>% Sadr Bazar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian</td>
<td>88</td>
<td>49.16%</td>
<td>74</td>
<td>40.44%</td>
<td>72</td>
<td>85.71%</td>
</tr>
<tr>
<td>Military</td>
<td>28</td>
<td>15.64%</td>
<td>95</td>
<td>51.91%</td>
<td>4</td>
<td>4.76%</td>
</tr>
<tr>
<td>Official</td>
<td>63</td>
<td>35.20%</td>
<td>14</td>
<td>7.65%</td>
<td>8</td>
<td>9.52%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>179</td>
<td>100.00%</td>
<td>183</td>
<td>100.00%</td>
<td>84</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

d. 1924 Occupational Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Civil Lines</th>
<th>% Civil Lines</th>
<th>Poona Cantonment</th>
<th>% Poona Cantonment</th>
<th>Sadr Bazar</th>
<th>% Sadr Bazar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian</td>
<td>96</td>
<td>46.15%</td>
<td>97</td>
<td>28.61%</td>
<td>192</td>
<td>94.58%</td>
</tr>
<tr>
<td>Military</td>
<td>31</td>
<td>14.90%</td>
<td>207</td>
<td>61.06%</td>
<td>4</td>
<td>1.97%</td>
</tr>
<tr>
<td>Official</td>
<td>81</td>
<td>38.94%</td>
<td>35</td>
<td>10.32%</td>
<td>7</td>
<td>3.45%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>208</td>
<td>100.00%</td>
<td>339</td>
<td>100.00%</td>
<td>203</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

These statistics suggest that a not inconceivable number of military officers were residing in the Civil Lines rather than in the Military Cantonment. These officers could either have been those who could not find residences close to their regimental lines bases in the Military Cantonment, or perhaps these officers were employed in the military bureaucracy which supported a number of offices in the Civil Lines.

The high number of ‘Civilian’ households (almost 50%) in the Civil Lines reflects the fact that there was no absolute bar on anyone with sufficient means from residing in the enclave. The ‘Garden-City’ feel to the area must have been attractive to wealthy families who would have usually resided in the ‘Native City’. Looking through the names of the Indian residents of the Civil Lines proves the case with a number of the families residing or constructing residences in this enclave being among the wealthiest Indian families in the Bombay Presidency.

In addition to the Sassoons, the family of Sir Jamsetjee Jeejeebhoy (a famous philanthropist), and Readymoney (another Bombay magnate) had houses in the area. It may not however be correct to assert that many of the importance Indian ‘Civilian’ households of the Civil Lines were permanent residents of Poona. Wealthier families may have in fact resided the majority of the year in Bombay, and moved between the three
capitals of the Presidency in a manner similar to the administration. Such households possibly only resided in Poona during the monsoon period. Bombay address directories show that three of the wealthiest Indian families listed as Poona residents also owned residences in Bombay in the ‘Fort’ or in the exclusive Malabar Hill area, suggesting that they did indeed seasonally relocate.

Although almost 50% of recorded Civil Lines household heads were accounted ‘Civilian’ in 1905 and 1924 only 8.16% of households in 1905 and 19.32% of recorded households in 1924 were Indian. Parsi households accounted for another 20.92% and 18.98% of Civil lines households in 1905 and 1924 respectively. ‘Civilian’ Indians accounted therefore for a maximum of 29.08% of Civil Lines households in 1905 and 38.3% of recorded Civil Lines households in 1924. The balance of ‘Civilian’ households probably represented the British business community or ‘box-wallahs’.

In the Military Cantonment the majority of household heads listed in address directories were employed in the military. In 1876, 59.76% listed household heads were so employed, in 1905, 51.91% and in 1924, 61.06% household heads were deemed to be ‘Military’.

Despite this military predominance, for the majority of the target period over 40% of listed household heads resident in the Cantonment were not employed in the military. In 1876, the majority of the listed non-military household heads were ‘Official’ in character (23.17% of total enclave population), whereas in the latter two target years the majority were ‘Civilian’ in nature (a maximum of 40.44% of total enclave population in 1905). The fact that there was a large minority of households that were ‘Civilian’ in nature is an unexpected discovery. The British authorities attempted to reserve the Cantonment housing stock for military officers alone due to complaints that there was an insufficient stock of bungalows to allow officers to live near their regiments. From these results it seems that this system of reservation was unevenly successful.

The occupational category pattern in the Sadr Bazar was more simple than that displayed in either the Civil Lines and the Military Cantonment. In 1876, 81.82% of listed Sadr Bazar household heads were ‘Civilian’ in character with the trend being one of increase throughout the case-study time-frame. Therefore, in 1905 the proportion of ‘Civilian’ household heads had grown to 85.71% and by 1924 to 94.58% of the total enclave population. The increase in ‘Civilian’ households was accompanied by a decline.
in the number of ‘Official’ household heads resident in the Bazar lands. In 1876 the proportion of ‘Official’ households heads living in the Bazar was quite high (14.14%), but this proportion had declined to 9.52% of listed households in 1905 and to an insignificant 3.45% of listed household heads by 1924. The proportion of ‘Military’ household heads in the Sadr Bazar remained relatively small ranging between 1.97% in 1924 and 4.76% in 1905.

The Sadr Bazar and the Military Cantonment therefore conform much more closely to historical expectations that do the Civil Lines. The Cantonment was dominated by ‘Military’ employed households as befitted an enclave that served as a military base. The Sadr Bazar was strongly dominated by ‘Civilian’ household heads - as would be historically expected of an enclave dedicated to trade. The Civil Lines however remained more variable in nature, since this enclave was never dominated by household heads employed in the administration. The significant minority of ‘Military’ household heads resident in the Civil Lines is of interest and this perhaps reflects both the importance of the Civil Lines as a military-administrative centre, the possibility that the Civil Lines were used as an ‘over-flow’ residential space for Military Cantonment personnel. British population and that the boundary between the two enclaves was not well-defined.

Of much more interest is the large ‘Civilian’ minority of household heads that resided in both the Civil Lines and the Military Cantonment. The general pattern is one of a decline over time in the ‘Official’ and the ‘Military’ character of both the Civil Lines and the Military Cantonment respectively, a decline matched by the ethnicity results that suggest the Indian elites were slowly claiming the British enclaves as areas of residence.

This chapter has revealed the physical indicators of inequality embedded within the urban fabric of Poona in the late nineteenth and early twentieth centuries. It has also highlighted the relative intricacy of the settlement’s demography, exposing areas of non-correspondence between the expectations of the city’s socio-spatial arrangement generated from the tripartite model, and the more complex actuality of Poona’s organisation. The following chapter directly continues this analysis of the city. Chapter 9 focuses upon analysis of the GIS models of Poona and consequently upon the detailed socio-spatial
organisation of the settlement. The full summary of conclusions is presented in section 9.7.
Chapter 9

Analysis of the Geographical Information System Models of Poona

Figures 9.1, 9.2 and 9.3 depict the 1876-1879, the 1905 and the 1924 models of Poona respectively. These figures incorporate all digitised layers, including streets, structures, compounds (allotments), and where applicable, outhouses. To enhance clarity, successive figures in this Chapter strip away any extraneous cartographic information wherever possible.

9.1 Ethnicity

British and Indians

In order to examine the most obvious ethnicity-pattern in Poona - the division of the British and Indian populations in the city - it is best to turn to the 1924 city-model which incorporates the most detailed ‘Native City’ demographic data. Figure 9.4 maps the residential location of British household heads across the city and demonstrates that the British primarily resided in the lands comprising the Military Cantonment and the Civil Lines. A total of 160 British household heads or institutions were recorded as resident in the Civil Lines and 339 British household heads or institutions in the Military Cantonment in 1924.

In contrast only 27 British household heads or institutions were recorded as resident within the Sadr Bazar in this year. Seven of these were residential households and a further seven were households of ‘Mixed’ land use - where place of work was associated with place of residence. These latter seven British households were engaged in a range of trades and included three Milliners and Drapers, a jeweller and watchmaker, an art dealer and Mr. W.D. Burge of Burge and Sons - who was described as an ‘Aerated Water Manufacturer, General Merchant, Contractor and House Agent’. A further 11 institutions were businesses that included major offices such as those of the ‘Oriental Life Assurance Co.’ or ‘Empire of India Life Assurance’, and ‘Whiteaway and Laidlaw’ - a department store. It is apparent from these data that it was not only Indian traders who were attracted to the Sadr Bazar area in order to service the market created by the proximity of the Cantonment and the Civil Lines. A number of British businesses based themselves in the
enclave as also did the households of a number of British traders and managers - although this group was relatively small.

*Figure 9.4* also shows that only 14 British household heads or institutions were recorded as residing in the ‘Native City’ of Poona in 1924. If the relevant records of are compiled, it is revealed that 12 of these 14 were institutions rather than households; mostly British offices such as those of ‘The Sub-Registrar of Poona’ or the ‘City Police Inspector’. Discounting the 12 institutions, only 2 British residential household heads were actually located within the ‘Native City’ boundaries; one of whom was a teacher living in a residence attached to schools, the other of whom was a Captain in the Indian Medical Service. The surnames of both these household heads are indeterminate, rendering their ethnicity open to re-interpretation.

*Figure 9.5* plots the location of ‘Indian’ household heads and institutions in 1924 (excluding Parsis). This map demonstrates that the residential pattern for Indian household heads in this target year reverses the British pattern depicted in *figure 9.4*. Indian households dominated the ‘Native City’ and the Sadr Bazar enclaves of Poona. A total of 453 Indian household heads and institutions were recorded across Poona in 1924, 260 of which were located in the ‘Native City’ and 81 of which were located in the Sadr Bazar. Of the 81 Indian households and institutions based in the Sadr Bazar, 61 were in some way linked to commercial or trade interests, with only 17 representing residential households. These figures tend to confirm the presumed trading role of the Bazar lands.

In contrast with the Sadr Bazar and the ‘Native City’, Indian household heads were relatively rare in the Military Cantonment - only 27 were recorded in this enclave in 1924. This does not of course imply that there were only a small number of Indians resident in the Cantonment lands. As has already been discussed in *Chapter 8* the Indian population of the Military Cantonment was superior to the local British population in terms of raw number, if the Native Infantry Sepoys, and the large number of Indian residential servants the colonial British employed are counted. Despite this numerical dominance, the number of Indian household heads living in the Cantonment on generally equal terms with the

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1 The pattern of households *within* the ‘Native City’ itself - with low population densities in the eastern region of the enclave, is a reflection of bias within the address directory record rather than of physical settlement patterns.
British or running businesses the British might frequent (therefore warranting entry in an address directory) were few.

Of the 27 recorded Indian households or institutions in the Civil Lines 23 were residential or ‘Mixed’ land-use households. Little information was recorded concerning these households although household heads in this group included a Lt-Colonel and a Captain in the Indian Medical Service, and another Captain posted at the Army Signalling School. The three Indian businesses actually within Cantonment borders were a Draper and Milliner, a photographer and a medical dispensary. Although all three were listed in the directory as within the Cantonment, it is clear by mapping their location that all existed at the nexus-point of the Cantonment, the Bazar and the ‘Native City’.

Figure 9.5 also demonstrates that a surprising number of Indian households were recorded as located in the Civil Lines in 1924. Although the area was ostensibly designed to accommodate employees of British administrators, in reality the demography of this enclave appears quite varied and agrees with the statistical data presented in Chapter 8 that suggests that the Civil Lines of Poona were in fact never truly dominated by the households of officials.

There were 50 Indian households and institutions listed in this enclave in 1924 (48 once households mis-located by the address directory enumerators are excluded). Of these 48, 37 represented residential households. Unlike the Sadr Bazar, where the Indian presence was primarily commercial in character, Indian household heads in the Civil Lines seems to have been relatively high in status. Although little occupational data remains, the group did include three knights, two princes, a princess, an ‘honourable’ and a medical doctor. In contrast only 9 of the total 48 households and institutions were commercial or trading interests. It is interesting that 3 out of 9 businesses were described as ‘seed merchants’.

Although the 1905 city-model does not incorporate data describing the ‘Native City’, or the Civil Lines, figure 9.6 nonetheless maps the distribution of Indian and British households for this target year in the Military Cantonment and in the Sadr Bazar.

It can easily be seen that British households and institutions were concentrated in the Military Cantonment - 278 were recorded in the Cantonment lands compared to only 21 in the Sadr Bazar. Of the 21 Sadr Bazar British household heads or institutions, 11 were residential
households, but unfortunately no occupational data survives describing any of these (the fact that no occupation data survives for these households suggests that they were fairly low in status). A further five records encompass larger British companies (in 1905 no small-scale British traders residing at their place of work were listed in the data). Another four describe British civic institutions that included the Bazar (Connaught) Market and three bureaucratic police and court offices.

In contrast, Indian households and institutions clustered in the Sadr Bazar, as they did in 1924 for the same enclave. Indian households were not however evenly distributed across the Cantonment proper, which was spatially divided into a number of zones. The westernmost tract of (bungalow-compound) housing was primarily British in character excepting only a handful of Indian institutions or households. Although 17 Indian households and institutions were listed in this area only two records represent residential households. Other Indian instances in the western Cantonment zone are institutions including the Dhobi Ghats, various ‘Native’ and military hospitals and the ‘Native Free Church’.

The eastern tract of the Cantonment in contrast was far more militarised in function and no independent Indian household heads (living in detached bungalow-compound accommodation) are evident at all in the eastern Cantonment zone. Its southern region, was associated with Wanowri Lines and its European Infantry regiments - its barracks and its bungalows consequently reflected a ‘British’ occupational orientation. Similarly, its north-east region (south of the railway line) was associated with the Ghorepuri Lines (another area set aside for European Infantry Regiments) and these consequently also reflected a British orientation.

Despite the fact that the areas described above account for a large proportion of the Cantonment lands, there yet remained significant Indian-dominated sub-units within the enclave. *Figure* 9.7 maps the ‘ethnicity’ of the Cantonment’s eastern-zone lines in the year 1905. The major Indian sub-enclave - the Native Infantry Lines - lay at the very core of the Cantonment itself. This area was intensively developed with pendalls designed for the accommodation of the Native Infantry Regiments stationed in Poona, the Sepoys and their families.

The placement of these Lines appears to follow a deliberate strategy. The Native Lines were bordered on the north by the Ghorepuri Lines and in the south by the Wanowri Lines, both of which accommodated British Infantry Regiments. Whereas the two flanking
British lines were constructed on relatively high land, the lands occupied by the Native Lines were relatively low in elevation. The British regiments were consequently in an advantageous military position (with clear lines of fire over the Sepoy compound), were in what would the authorities would have considered a healthy position (being located on high ground), and were also in a position to protect the northern and southern routes in and out of Poona and deny Sepoy access to these routes (see section 9.6 for a more extensive discussion of Poona Cantonment topography). The Native Lines were also separated from the strategic railway corridor by the Ghorepuri British Infantry Lines, isolated from the primary Indian population area of the ‘Native City’ and even separated from the cosmopolitan Sadr Bazar area by intervening streets of British dominated bungalow-compound housing.

Although it would perhaps seem appropriate that the core lands of the Cantonment serve as a symbolic focus for British interests and military strength, or a place perhaps for final retreat for the British community in case of attack, this central zone instead seems to have been constructed as an area of quarantine for Indian sepoys, ensuring that they remained under British control at all times and also that they were in a disadvantageous position should mutiny take place.

The Native Lines was not the only Indian-dominated residential sub-enclave in Poona Cantonment. In the north eastern extremity of the enclave, to the north of the rail line an extension of the Cantonment lands accommodated the Native Cavalry Lines. In contrast with the Native Infantry Lines which were encircled by the British, this additional residential area for British commanded Indians was placed on the periphery, isolated from the Native Infantry by the British military and from the Indian population at large by the bulk of the entire station. It is interesting, however, that the Native Cavalry was housed in such proximity to the strategically important railway corridor.

Other than military lines another series of Indian sub-enclaves can be discerned in figure 9.8 (data derived from figure 9.6). Two of these, the first in the far south eastern corner of the Cantonment, and the second in the north eastern corner south of the railway line are displayed as small, yet densely occupied areas of built-over with irregular structures, very different in design and spatial organisation to the Military Cantonment at large. These areas were subsidiary markets the bazars and/or their associated villages, which were designed to serve the material (and sometimes sexual) needs of the British Other Ranks housed in the
Wanowri and Ghorepuri Infantry Lines. Both were located on the eastern periphery of the Cantonment as far east as could be situated, on marginal and isolated land.

If one considers the Cantonment and the Sadr Bazar (in 1905) as a single entity, then a count of the raw number of ‘Indian’ or ‘British’ inhabited structures shows that Indian households or institutions dominated, with 409 Indian households or institutions in comparison to only 330 British. The raw count does not however display the fact the British households and institutions clearly occupied a greater area than the Indian households and institutions. Indian households and institutions were in addition not evenly distributed across the enclave, and the majority were either limited to dense Bazar lands set aside to service the British population, or to ‘Native’ military installations (lines) that were located with clear reference to isolate the internal Indian population and ensure British dominance.

*Figure 9.9* maps the distribution of recorded Indian and British households and institutions in the target year 1876-9. It should be recalled that the this model does not incorporate data from the ‘Native City’ and consequently only describes the Civil Lines, the Military Cantonment and the Sadr Bazar regions. In raw numbers, and for the entire mapped area 459 British and 307 Indian household heads and institutions were recorded for this year. The vast majority of the 307 Indian households and institutions described were in actuality institutions or barracks, and relatively few data recorded individual residences that accommodated separate households. The majority of the few ‘Residential’ or ‘Mixed’ general land use Indian households (18) were located in the Sadr Bazar region.

Only one Indian household head was recorded in the Military Cantonment itself in 1876; an Indian photographer - far fewer than in the succeeding two target years. The major recorded Indian presence in this enclave was of course incorporated into the Native Infantry Lines at the heart of the Cantonment, and the Native Cavalry Lines in the far north east. Other major Indian sub-enclaves were Wanowri Village and Bazar - associated with the Wanowri European Infantry Lines - and Ghorepuri Village and Bazar - associated with Ghorepuri European Infantry Lines in the north east of the Cantonment.

In the western tract of the cantonment dominated by bungalows the only Indian institutions were military in character and represented the ‘Native Infantry Cells’ and the ‘Native Infantry Hospitals’.
The south eastern zone of the Cantonment (south of the Wanowri Lines) is of particular interest. This area incorporated a small cluster of Indian structures including two Hindu temples, the ruins of ‘Scindia’s Palace’, and a Muslim cemetery. Slightly further south again were a series of tanneries isolated from the British residential areas. This small cluster of ruins and temples on the absolute periphery of the enclave seems to represent a residual part of the pre-British settlement pattern in the area that was absorbed into the Cantonment, and only seems to have survived due to its marginal position, being well-away from British residential streets. Similarly, in the far east of the Cantonment (directly east of the General Parade Ground) a small cluster existed constituted of three recorded structures. Two of these were Hindu temple buildings recorded as ‘Bhyroba’s Temple’ whereas the third structure was St. Patrick’s chapel, the Cantonment Roman Catholic church (and in later years the Cathedral). The isolated position of these structures, far from the true locus of Cantonment power - especially when compared with the location of the Church of England garrison church\(^2\) in the bustling western quarter of the Cantonment, reflects the marginal character of the local Hindu and Catholic communities.

There were only three recorded Indian household heads recorded as resident in the Civil Lines in the 1876 address directory data, one of whom was the Aga Khan, another the Sirdar Mahomed Khan, both high status individuals.

**Parsis**

The Parsis were (and are) an ethnic group of Persian extraction, Zoroastrians who settled in western India and particularly in Bombay. They were considered to be a generally pro-British community, were prosperous and heavily involved in business and trade.

*Figure 9.10* plots the distribution of Parsi households and institutions across the city of Poona in 1924. This map shows that the number of recorded Parsi households resident in the ‘Native City’ was extremely low in 1924 (amounting to only 9 household heads) and that the few households located there were mostly limited to the eastern peths that bordered the Sadr Bazar and the Civil Lines.

\(^2\) The Church of St. Mary the Virgin.
The enclave with the highest concentration of Parsi households was the Sadr Bazar. In contrast with the ‘Native City’, 56 Parsi households or institutions were recorded in the Sadr Bazar. Of these 56, 17 were households of ‘Mixed’ land use where there was a confluence of place of work and residence. The range of commercial activities run by these households was wide and the group included providores, wine and spirit merchants, professionals such as opticians and dentists, artisans such as jewellers and watch makers and offices such as those of insurance and estate agents. A further 9 records describe major commercial enterprises that reflect a similar, wide range of activities and another 29 describe residential household heads. Although little data survives describing the occupations of these 29 residential household heads, 3 were described as lawyers. The concentration of Parsi households in the Sadr Bazar and the range of economic activity they fostered in this enclave in preference to the Indian focused ‘Native City’ is clear indication both the dedication of the Parsi community to commerce and in addition the community’s avowed pro-British stance.³

Parsis were not only limited to the Sadr Bazar territory. Thirty Parsi household heads (no institutions were recorded) were listed as residents of the Military Cantonment in 1924, although little occupational information survives describing their character. Parsi households were limited to the western area of the Cantonment, in the region primarily bordering onto the Sadr Bazar.

This area of the enclave, in the broad vicinity of Stavely Road was the most heterogeneous Cantonment zone⁴. A range of different institutions were located here, including churches and schools in addition to military infrastructure and residential bungalows. It was a region that acted as an interface between the more heterogeneous Sadr Bazar and the militarised eastern region of the Military Cantonment. There was of course no physical barrier marking the transition between the two regions, although an intangible boundary was expressed symbolically in terms of architectural style. East Street (the easternmost thoroughfare in the Bazar) was primarily known as a retail shopping street whereas the westernmost thoroughfare in the Military Cantonment, Elphinstone Road, was dominated with large bungalow compounds, a profound architectural transition from the dense Sadr Bazar urban environment.

³ These hypotheses are further confirmed when one examines the 1924 distribution of retail establishments and artisanal establishments (discussed under ‘land use’, section 9.5).
⁴ Excluding the Sadr Bazar.
Forty nine Parsi household heads were listed as residents in the Civil Lines in 1924. These households clustered close to the interface with the ‘Native City’ and also along the north eastern route out of this enclave and the city itself (Bund Garden Road). The distribution of Parsi households in the Civil Lines does not consequently seem as peripheral as their distribution in the Military Cantonment. Although very little information was recorded describing the character of the 49 listed Parsi Civil Lines households, it is known that 3 were of ‘Mixed’ land use and that therefore these three Parsi household heads operated businesses (there was a watchmaker, a paper merchant and a cinema operator) within the Civil Lines itself. Of the remaining (46) residential Parsi household heads in the enclave four were knights and four were medical doctors. One Parsi household head was a Lieutenant Colonel in the Indian Medical Service and another was a member of the elite Indian Civil Service, demonstrating that a small number of Parsis seem to have risen through the ranks of the British administration and military by the early twentieth century. The socio-economic profile of the small number of Parsi household heads resident in the Civil Lines tends to suggest that they represented a high ranking elite group.

The distribution of the 65 Parsi household heads and institutions recorded in the mapped Cantonment and Sadr Bazar area in 1905 is depicted in figure 9.11. Most were situated in the Sadr Bazar, and of these 49 Sadr Bazar households and institutions 39 represented residential households, whereas 7 of the remaining 10 Parsi institutions were businesses and 3 religious or charitable institutions (including two Parsi ‘Fire Temples’). Elite Parsi families such as the Jeejeeboys and the Dinshaws were absent from the Sadr Bazar residential lists and were probably resident in the Civil Lines as they were in 1924.

Although 30 Parsi households were recorded residing within the Military Cantonment in the 1924 target year, in 1905 only 10 residential Parsi households were so listed. It is interesting that 2 Parsi institutions were also recorded within the Cantonment boundaries; one was an educational establishment, the ‘Sirdar D. Nowsherwan Zoroastrian Girls’ High School’, the other the ‘Parsi Gymkhana’.

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5 The one listed Parsi institution, the ‘Byramjee Jeejeebhoy Medical School’ was founded and named for a Parsi and not restricted to Parsi students alone.
Figure 9.12 displays the distribution of Parsi households in the Sadr Bazar, Military Cantonment and Civil Lines in the earliest target year, 1876-9. In the address directory for this year only 46 Parsi household heads and institutions were recorded compared to 65 (distributed across a smaller area) in 1905, and 159 in 1924. A bare 5 Parsi households were recorded in this year as resident in the Cantonment. All recorded instances were residential household heads, two of whom were Christian ‘Reverends’.

Only 10 Parsi households and institutions were recorded in the Civil Lines, but the profile of these households confirms that the Parsi elite resided within this enclave continuously between the 1870s and the 1920s. The household of the Hon. Sir Jamsetjee Jeejeebhoy, for example, appeared in the 1924 address directory and also in the 1876 directory as located the Civil Lines, demonstrating the continuity of this household head’s occupation in the area despite the lacuna in the Civil Lines data for 1905.

As in the two succeeding case-study target years the Parsi community was primarily concentrated in the Sadr Bazar region. Twenty nine Parsi households and institutions were recorded in this area in 1876, 16 of which were residential households. Although as was the case with many of the listed Parsi household heads, few occupational details were recorded, what little data there is shows that the households in the Sadr Bazar included a cashier in the Bank of Bombay and a clerk in the Commissariat Department. As was the case in 1924 one therefore gains the impression that the socio-economic profile of the Parsi household heads was lower than those resident in the Civil Lines (where the Parsi magnates chose to live). The remaining 13 Parsi institutions in this enclave included a range of businesses.

The Parsi community seems to have utilised the Sadr Bazar enclave not merely as a place to transact business with the British, but as their primary residential anchor in Poona. Parsi households were not however restricted to this enclave alone, although the community had broadly settled in the Sadr Bazar lands, as time progressed an increasing number of Parsi households settled in the Civil Lines in particular. Those Parsi household located in the Civil Lines represented the Parsi elite since the very wealthiest Parsi households seem to have resided within this enclave from the earliest target year under consideration. The distribution of Parsi household head and institutions seems to confirm the conclusion presented in Chapter 8 that the British culture area, and especially the Civil Lines, increased in heterogeneity over time.
Europeans

Although the British represented the primary European component of Poona, Europeans deriving from non-British backgrounds also settled in British India, often as traders. The distribution of ‘European’ households and institutions is a residential ethnicity pattern best displayed through reference to the 1924 model - due to its wider geographic coverage and its incorporation of the largest number of households and institutions.

Figure 9.13 reveals that only 18 (non-British) ‘Europeans’ were recorded as residents of Poona in 1924, the majority of which (9) clustered in the environs of the Sadr Bazar. All 9 Sadr Bazar ‘European’ household heads were engaged in business (4 out of the 9 were bakers and confectioners). Several resided within the ‘Native City’ itself - although close to the interface between the ‘Native City’ and the Bazar lands. Only five however resided within the Military Cantonment (three of whom were Catholic priests). None appear in the core of the Civil Lines.

When the occupations of the European households are examined, they fall within a restricted occupational ‘Category’ range. One of the only two ‘Official’ European household heads in Poona was the Hon. S. Calvocoressi, an Aide-de-Camp of the Governor of Bombay. Since the majority of the other ‘European’ household heads were resident in or near the Sadr Bazar and involved in commercial activities most were also of ‘Civilian’ character. The data therefore suggests that Europeans of non-British origin were rare in the station in 1924, and by far the majority of this category of household were ‘non-official’ in nature and centred therefore around non-military and non-administrative employment in the Sadr Bazar.

In the prior two target years, household heads who were European (non-British) in ethnicity were even less common than in 1924. Seven were recorded in 1905, four of whom resided in the Sadr Bazar, and in the 1876 data only three ‘European’ household heads were recorded, two of whom resided in the Sadr Bazar and one of whom was the ‘Lady Superior’ of a Roman Catholic religious order.

9.2 Gender

Only restricted data concerning gender can be derived from the compiled directory data, primarily due to the fact that the overwhelming number of listed household heads in

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6 Employed in the administration.
Poona were male, a factor that suppresses the visibility of women in the enclaves given the dependence of these GIS models upon household head data. It would be wrong however to claim that no women household heads were listed, and a small proportion of households had female heads.

Figure 9.14 plots the location of the 80 recorded households or institutions with female heads in 1924. Five female-led households or female oriented institutions were listed as located within the ‘Native City’ for this year. Of the 3 listed residential households 2 represented female Medical Doctors practising in the ‘Native City’. The 2 institutions included a Training College for Women and interestingly a Bene Israel Girls’ School. The very low proportion of female-led households and institutions in the ‘Native City’ is no surprise for an indigenous enclave where the sequestration of women was practised as a cultural tradition. The majority of female household heads were consequently concentrated in the British culture area and its associated zones.

Nine female-led households were listed as located within the Sadr Bazar, 4 of whom ran businesses. The ethnic profile of these 9 household heads was varied; including 4 Parsis, a Jew, 3 Britons and a ‘European’ (all the Britons were drapers and milliners). This result provides further confirmation that the Sadr Bazar was a cosmopolitan area.

Another 9 female household heads were located in the Civil Lines, again, a fairly small number. The ethnic profile of these 9 household heads was surprisingly varied, the group including a Muslim princess, three Parsis (two of whom were teachers and another a doctor) and 5 Britons. Once again the Civil Lines is revealed as a surprisingly diverse area.

It was, however, the Military Cantonment that encompassed the largest number of female household heads - 46, the largest number of all city areas, and notable in an enclave major parts of which were devoted to military and therefore often male functions. Although the majority of these household heads resided in the western tract of Cantonment land dominated by bungalow-compounds, unlike the Indian Cantonment households (described in section 9.1: Ethnicity), a number of female household heads (4) resided in the far-eastern reaches of the enclave. Three of these four household heads were employed as nurses.

It is difficult to examine the character of many of the female household heads in more detail, since occupational data is absent for the majority. Thirteen of the 46 were however employed as nurses and it can consequently be assumed that many of the female household heads were employed as medical staff in the many Cantonment hospitals. Indeed, if one
examines figure 9.15, two clusters of female household heads can be seen in the southernmost part of the Military Cantonment. These two groupings correlate with no. 2 Section Hospital (the western cluster) and the Station Hospital (the eastern cluster).

Despite the fragmentary occupational evidence, many of the female household heads were employed in positions that could be considered areas of ‘traditional’ employment for women in the early twentieth century; teaching, nursing or in garment-making. Two of the Indian/Parsi female household heads in the ‘Native City’ were however fully-qualified doctors (presumably there was demand for female and Indian doctors to minister to sequestered women), and there was another European (non-British) female doctor practising in the Sadr Bazar.

Recorded instances of female household heads decline rapidly as one moves back in time from the 1924 case-study target year. In 1905 only 36 female household heads were recorded, a number that included the reverend mother of a Catholic religious order and one teacher.

There were 28 recorded female household heads in 1876. All were ‘Civilian’ in character and all were British in terms of ethnic affiliation. Little or no data has been recorded regarding the mode of employment of these 28 household heads, the only available data is that two were milliners, one was a teacher and, another, again the ‘Lady Superior’ of a religious order.

9.3 Occupational Category

As has already been discussed in Chapter 4 and Chapter 8, all recorded household heads were divided into three occupational categories; ‘Official’ - describing those household heads that were employed in the administration, ‘Military’ - a category describing those household heads employed in the armed forces and ‘Civilian’ - which describes those household heads who were not involved with either the administration or defence.

1924

In 1924 it was the ‘Military’ occupational category that that revealed the most distinctive residential patterning. (Figure 9.16). In this map it is clear that the majority of ‘Military’ employed household heads were located in the Cantonment enclave. The 249 ‘Military’ household heads and institutions based in the Cantonment lands encompassed
the full range of military personnel and activities. A minor number of ‘Military’ household heads and institutions were, however, also located in the ‘Native City’ in this year. Eleven out of the 17 listed were Indian soldiers who held military honours. In addition there were also 4 recorded Indian Captains in the area, 3 of whom were employed in the Indian Medical Service rather than in fighting regiments.

Fourteen ‘Military’ household heads or institutions were recorded as based in the Civil Lines. Although Poona was a major station and it was possible that a number of military offices or part of the General Staff functions of the army were situated in this enclave, in actuality only 2 out of the 14 recorded ‘Military’ instances represented offices (the Military Accounts Office and the ‘Office of the Commanding Royal Engineer’). The remaining 12 instances represented household heads, all of whom were military officers (4 Lieutenants, 5 Captains, 1 Major and 2 Majors-General).

The square located in the far north western of the map in figure 9.16 is a schematic representation of the Vice-regal enclave of Ganeshkhind, and this particular plot records the fact that 9 ‘Military’ household heads were located in this compound. These 9 were all officers ranging from the rank of Lieutenant to Lieutenant-Colonel, and included four of the Governor’s Aide de Camps, a military Secretary, a Major (who was the Commandant of the Governor’s bodyguard) and the Lieutenant Colonel who was a doctor in the Indian Medical Service.

The pattern of ‘Official’ category household heads or institutions was a little more unorthodox. Figure 9.17 shows that household heads or institutions associated with the government-administration were much more evenly spread across the settlement than in the ‘Military’ pattern described above.

Of the 181 ‘Official’ households or institutions recorded in Poona in 1924, approximately 61 were recorded in the Civil Lines, 41 in the Cantonment, 16 in the ‘Native City’ and only 6 in the Sadr Bazar. There was a concentration of administrative functions in the Civil Lines; 48 of the 61 listed ‘Official’ instances in this enclave were Governmental offices, many of which were clustered on Byramjee Jeejeebhoy Road or Finance Office Road (the ‘Official’ cluster that can be seen in figure 9.17 in the southern
part of the Civil Lines area). The 9 recorded residential household heads in the area were an elite group that included 3 members of the Indian Civil Service, the Postmaster and the Director of Agriculture for the Presidency.

The 41 ‘Official’ households and institutions recorded in the Cantonment were distributed throughout the western sector of the Military Cantonment and were absent from the highly militarised central and eastern portions of the military enclave. Only 1 of the 41 was a Governmental Office - the Council Hall in Queen’s Gardens - whereas 34 were residential in character, a reversal of the Civil Lines pattern where recorded institutions dominated.

The profile of the 34 residential household heads in the Cantonment was by no means as uniformly elite as those recorded in the Civil Lines. The 13 most elite household heads (a group that included 6 members of the Indian Civil Service and the Cantonment Magistrate) almost completely accounted for the ‘Official’ households in the western tract of Cantonment land running from Queen’s Gardens in the north to the rifle ranges in the south. The remaining ‘Official’ household heads in the Cantonment, in the south and the east mostly represented nurses working in the Cantonment state-sponsored hospitals.

All except two of the 16 ‘Official’ category instances recorded in the ‘Native City’ actually represented institutions and offices or courts (that included the Judge- Small Cause Court, the First Class Sub-Judge, the City Branch Post Office and the Income Tax Collector) rather than households. The two (residential) exceptions were a Professor at a teaching institution and a High Court lawyer - although whether these two were actually ‘Official’ or ‘Civilian’ in character is a matter open to interpretation.

Ganeshkhind incorporated 12 household heads employed in an ‘Official’ capacity. These included a couple of non-military Aides de Camp, and a number of other persons who would have been employed on the Government House staff - including a stenographer an electrician, the Superintendents of the stables and the gardens and the House Steward. The Governor, his family and his advisors do not appear in the recorded data.

7 It is interesting that one of the officers, Captain Alderson was described as ‘Captain, Seed Merchant, Victoria Cross, Military Cross’.
Mapping the ‘Civilian’ employment category in 1924 creates yet another distinctive residential pattern (See figure 9.18). ‘Civilian’ household heads were strongly concentrated in the ‘Native City’ and the Sadr Bazar lands, however a number of ‘Civilian’ households were also located in both the Military Cantonment and the Civil Lines, although none were present in the Vice-regal compound.

A total of 589 ‘Civilian’ household heads and institutions were recorded across Poona in this year, 207 of which were recorded in the ‘Native City’, 187 in the Sadr Bazar 90 in the Civil Lines and 80 in the Military Cantonment.

Of the 90 recorded in the Civil Lines, 40 were residential households rather than institutions. The profile of this ‘Civilian’ household head group was very varied - only 13 out of 40 of these recorded household heads (32.5%) were British in ethnic affiliation, exactly the same proportion as the number of Parsi households. Given that there were a further 11 ‘Indian’ ‘Civilian’ household heads in the enclave (27.5%) the total proportion of Parsi/Indian households in the Civil Lines amounted to 60% of rated ‘Civilian’ households in the Civil Lines in this year.

Looking at the British ‘Civilian’ household heads, 9 of the 13 were female, the others being a ‘box wallah’ (the manager of the business ‘Cornaglia and Son’), a Missionary, a Doctor, and a reverend; no persons of notable status or importance. In contrast the ‘Civilian’, ‘Indian’ household heads were for the most part all very exalted personages. Five of the eleven were Indians who held British knighthoods (including, Sir Ebrahim Currimbhoy and Sir V.D. Thackersey), another three held higher titles and included the household of the Aga Khan, the separate household of his wife ‘Her Highness the Lady Aga Khan’ and another notable, Aga Shah Rookh Shah. The final three household heads were women with little information recorded describing their occupations or backgrounds.

In a similar fashion many of the recorded ‘Civilian’ ‘Parsis’ resident in the Civil Lines were also the wealthy and powerful. Four of the 13 recorded Parsi household heads held British knighthoods or baronetcies, including the Parsi industrialist Sir D.J. Tata, the philanthropist and the baronet Sir Jamsetjee Jeejeebhoy. A further 4 held doctorates and 4 were women.

Of the remaining 50 ‘Civilian’ households and institutions recorded in the Civil Lines, almost half (24) were commercial enterprises, most of which were located in the
region of interface between the Civil Lines and the Sadr Bazar. Nine businesses were located in the core of the Civil Lines lands, and of these 3 were literary presses, 2 were hotels and a further 2 a doctor and dentist, quite different to those businesses closer to the Sadr Bazar, which were more varied in nature.

1905

Although the 1905 model omits data describing either the ‘Native City’ or the Civil Lines, mapping the occupational category of household heads still reveals strong spatial patterning within the Cantonment and the Sadr Bazar. As in the 1924 target year, although ‘Military’ household heads were strongly concentrated in the Military Cantonment lands, a small number resided outside of this enclave. Five ‘Military’ household heads were recorded as located in the Sadr Bazar (figure 9.19), two of whom were Indian soldiers whilst the third possessed an indeterminate (possibly European) surname. Of all 550 ‘Military’ household heads and institutions recorded for 1905 no individual Indian officers or non-commissioned officers were recorded as residing within the Military Cantonment proper. Neither were any ‘Military’ Parsi households recorded present anywhere within the Cantonment boundary. Consequently, not only were Military household heads concentrated in the Cantonment, but the vast majority were British in terms of ethnic affiliation.

Fifty three ‘Official’ household heads or institutions were recorded as resident in the Military Cantonment, and a further 8 in the Sadr Bazar in 1905. (See figure 9.20). Of the 8 Sadr Bazar records, 6 were governmental-administrative institutions including the Police Station, the Government Engineering School and the ‘Albert Edward Institute’. Only two instances recorded residential household and both these were teachers, a lecturer and Professor respectively, positions that were, in fact, almost ‘Civilian’ in character.

Only 4 of the 53 ‘Official’ households or institutions recorded in the Cantonment represented residential household heads. All of this group were located within the tract of bungalow housing in the west of the Cantonment. One household head was a high-ranking Indian described as ‘Executive Officer, Cantonment Magistrate, Hon. Sect’y Deccan Club, Special Judge under D.A. Relief Act’. Two of the other recorded officials included a member of the Indian Civil Service, the ‘Superintendent of Land Records and
Agriculture’. The third was the Principal of Bishops School - a Church of England teaching Institution.8

The 49 remaining ‘Official’ institutions were primarily non-military government supported facilities including a number of hospitals (the Plague Hospital and the Female Hospital in particular), the Ghorepuri Railway Station and a number of offices. ‘Official’ households and institutions consequently seem to have been strongly associated with the British culture area with relatively few present in the Sadr Bazar. In addition, those administrative or civic functions delegated to the Cantonment seem non-essential in character, encompassing hospitals, schools and institutes, so that it can logically be presumed that the more important offices of state were located elsewhere in the settlement, most likely within the Civil Lines itself.

‘Civilian’ households and institutions clustered strongly in the Sadr Bazar (where 64 relevant households or institutions were located) and also in the western tract of the Cantonment lands in 1905 where a further 161 ‘Civilian’ households or institutions were recorded (figure 9.21). Of the 64 Sadr Bazar household heads or institutions 23 were residential in character and another 33 businesses.

Of the 78 (out of the 161 total) recorded Indian ‘Civilian’ households and institutions listed as located in the Cantonment only one was a residential household - that of Mahomed bin Jamal - a trainer. The 77 listed ‘institutions’ included the regimental bazars already discussed, a number of (Hindu) temples and (Christian and Muslim) burial grounds, the Dhobi Ghats, the Native Free Church a tannery, and Dherwara Village. An additional 42 British ‘Civilian’ household heads or institutions were also located in the Cantonment. Twenty six of this group represented residential households, and their profile reveals that exactly half of the households heads (13) were women. The majority (10) of the 16 recorded British ‘Civilian’ institutions within the enclave represented the many individual structures that together comprised the Club of Western India.

The Sadr Bazar area encompassed only 10 British households or institutions. Of these ten, five were households (no data was recorded concerning their occupation), and

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8 Although this position would seem more appropriately ‘Civilian’ in character, as a Church of England institution the school had close links with the State. The school was founded for the education of Warrant (Continued Overleaf)
four of these five household heads were women. The Sadr Bazar British institutions were all businesses.

1876-9

As was the case in the two succeeding target years, the majority of ‘Military’ household heads and institutions in Poona in 1876-9 were located in the Military Cantonment. Out of the 425 recorded ‘Military’ household heads and institutions for the entire settlement, 366 were located in this enclave. Although 176 Indian ‘Military’ institutions were recorded as in the Military Cantonment in 1876 no residential ‘Indian’ household heads were recorded in this enclave. Neither were any Parsi ‘Military’ households listed in the address directory data in this year anywhere in the city. The 60 residential ‘Military’ household heads listed in the Cantonment in this year, were all British in ethnic affiliation.

Only 13 ‘Military’ household heads were recorded within the Civil Lines boundaries (no institutions were listed) all of whom were soldiers, British in ethnic affiliation, and very high-ranking individuals. This group of individuals included the Commander in Chief, and the Surgeon General. The lowest listed rank in the group was that of Captain.

A further eight ‘Military’ households and institutions were recorded in the Sadr Bazar. Seven were households (all of which were British in ethnic affiliation) and included household heads with listed ranks that ranged from Lieutenant to Major. The ‘Military’ households in the located in the Bazar lands therefore seem to have been of a somewhat lower socio-economic status-range than those based in the Civil Lines.

Of the 137 ‘Official’ household heads and institutions recorded across Poona in 1876, 37 were recorded in the Civil Lines, 19 of which were residential in character. The group of residential household heads was elite, with 13 of the 19 residential household heads being of ‘Official’ occupational category and graded as socio-economic status ‘2’ (this grade represents Executive Managers in the bureaucracy) including administrators such as the Collector, the Superintendent Photozincographic Office, the Officiating

and Non-Commissioned officers; the school’s original building was a barrack lent by the Commander in

(Continued Overleaf)
President Post Master General and the Chief Inspector of Police. No Indian ‘Officials’ were recorded in this group. The institutions within the enclave were dominated by a range of governmental offices that included, the Office of the Railway Magistrate, (Her Imperial Majesty’s) Treasury and the Office of the Adjutant General.

Fifteen ‘Official’ households and institutions were recorded within the Sadr Bazar. Of these 15, 8 were household heads - 4 of which were British, another 3 Parsi, and the last Indian. The three Parsi officials included the headmaster of a government school and a clerk in the Commissariat Department - fairly low ranked occupations. The Indian ‘Official’ worked in the railway in another low-rank occupation. In contrast the 4 British ‘Official’ household heads were higher up in the administration and included a member of the elite ICS and the Assistant Revenue Commissioner.

Forty two ‘Official’ households and institutions were in contrast recorded as located within the Cantonment itself. Twenty two of these represented residential households (all of which were British bar one Parsi household head who was employed as a Government contractor). Many of the British household heads appear to have been highly placed in the administration of the settlement since this group of 22 British ‘officials’ included 7 members of the elite Indian Civil Service. The 20 ‘Official’ institutions in the Cantonment were very different from the heavily bureaucratic offices located in the Civil Lines and mostly represented a range of infrastructure (including tanks and reservoirs), Church of England places of worship and schools supported by State, non-Military barracks, and small outposts of the bureaucracy such as local Post Offices.

Two hundred and forty one ‘Civilian’ household heads and institutions were distributed across the mapped area, 126 of which were located in the Military Cantonment. The primary residential streets within the Cantonment seem to have accommodated few residential ‘Civilian’ households at all. It is interesting that of the 16 ‘Civilian’ household heads recorded, 11 were women and another two Parsi. Of the 3 remaining male-led households 2 were Reverends, as indeed were the 2 Parsi household heads. The profile of ‘Civilian’ household heads resident within the Military Cantonment lands within this year seems quite specific. All the male household heads seem to have been religious in

Chief; grants of money from the Army supported its operations as did the Education Department.
character, with the balance of household heads being female (and given historical evidence) perhaps widows.

No individual ‘Civilian’ Indian household heads were listed as resident in the Military Cantonment in 1876. Lands were however set aside for ‘Civilian’ Indian use, the majority (83 out of 126) of the ‘Civilian’ institutions in the Cantonment were set aside for Indian use and included the Bazars attached to the European infantry lines, subsumed villages and Indian religious institutions and burial grounds.

Approximately 10 ‘Civilian’ households and institutions were recorded within Civil Lines boundaries for the year 1876. Of these 10, 7 were households and three institutions. Two Parsi and ‘Civilian’ household heads were recorded, one of whom was a hotelier (a number of hotels were constructed in the Civil Lines especially in the areas close to the railway station) the other being the highly-ranked The Hon. Sir Jamsetjee Jeejeebhoy, a noted philanthropist. Two further ‘Civilian’ household heads resident in the Civil Lines were highly-ranked Muslims, these being the household of the Aga Khan and the household of Sirdar Mahomed Bokhar Khan. The remaining 4 household heads were British in ethnic affiliation, with two employed as medical doctors. The profile of those ‘Civilian’ household heads located in the Civil Lines seems to have differed from ‘Civilian’ household heads within the Cantonment. The Military Cantonment households seem to have been of relatively low or indeterminate status, whereas many of the ‘Civilian’ household heads located in the Civil Lines were quite notable in terms of importance.

Eighty-five ‘Civilian’ household heads and institutions were recorded as located within Sadr Bazar boundaries in the year 1876. Forty-seven of the 85 were households and 13 of these were Parsi in ethnic affiliation. All but one of the Parsi household heads with recorded occupational data were traders by employment (the last was a female school-teacher at the ‘Victoria Girls’ School’) a profile which matches both the trading emphasis of both the Sadr Bazar and the Parsi community. A further 20 household heads were British in ethnic affiliation, with 8 of the 20 involved in some form of work out of their place of residence, including traders and home-based professionals. Of the five recorded Indian household heads, four were involved in trade or home-based work, the last being the highly-ranked Raja of Duffla.
The remaining 38 of the 85 records described institutions. Twenty-two of the 38 were commercial entities representing shops or offices where there was no indication that a household was resident on-premises. Of the 38 institutional records a further five describe religious entities including St Xavier’s Catholic Church a Synagogue, a Methodist Hall, and a ‘Plymouth Brethren’s House’. A final seven were schools, the majority of which were Catholic in orientation.

The Sadr Bazar was dominated in this year (as could be predicted) by commercial or business concerned. It is however also apparent that the Bazar lands also incorporated a number of religious functions. The religious churches and schools based in the Bazar were not part of the established religious order. Non-Church of England functions seem to have primarily been sited within either the Sadr Bazar (or on the periphery of the Military Cantonment).

9.4 Socioeconomic Status

Utilising a system of socioeconomic scaling based upon the occupational description of the household head (described in Appendix 1 and Appendix 2) household heads of different ‘Military’, ‘Civilian’ and ‘Official’ ranks can be selected and plotted. It is however difficult to broadly map and discern socio-economic patterning within the residential areas of Poona. This is probably due to the nature of the original address directory data set which, in effect, restricts the listed household descriptions to fairly elite members of society. Household heads of semi-skilled, working class or subaltern backgrounds are vastly underestimated in the demographic data.

A pertinent example of strong socio-economic patterning is, however, presented below.

Figure 9.22 shows the location of household heads who were either Colonels or Generals for the year 1879. The majority of these high status military households were located in the privileged northwestern corner of the Military Cantonment known Queen’s Garden. Several Colonels were also resident in the north eastern part of the Cantonment, an area associated with the Ghorepuri Lines and the European regiments based there.

If the distribution of Colonels and Generals in 1879 is compared with the distribution of Lieutenants a strong divergence in residential patterning for the two groups
is apparent. (See figure 9.23). It should first be noted that officers of all three ranks were
limited to the British culture area only. The Lieutenants were however constrained to the
military compound of the Cantonment whereas Generals and Colonels seem to have been
more ‘mobile’ in their residential choice, with a number resident in the Civil Lines.

Notably Lieutenants resided primarily in the southern part of the Military
Cantonment whereas the senior officers resided in the north and northwest. This pattern
suggests that the southern regions of the cantonment were lower in socio-economic status
than the northern areas. This demographic matches the evidence provided by the maps of
Poona themselves, since these show that the southern part of the Cantonment
encompassed smaller size bungalows and associated allotments than those in the north.

9.5 Land Use

Figure 9.24 maps the distribution of military land in Poona Station in 1879. This
figure only depicts structures and lands directly operated by the army that have been
categorised as ‘Military’ in general land use. Residential structures other than barracks,
including the bungalows rented by officers have not been defined as military structures for the
purpose of this study since bungalows were often open for rent by non-military households,
were often constructed or owned by Indian landlords these and thus were only indirectly
military in character.

This distribution quite clearly demonstrates that the Cantonment lands incorporated a
strong military emphasis. That the western tract of the Cantonment lands appears almost
empty of directly military operated structures is a reflection that most of the structures in this
area were residential bungalows. It is clear that the majority of higher status members of the
community (non-British other ranks and Non-Commissioned officers) lived in this area.

In comparison, the central and western areas of the Cantonment display intensive
military use with the areas dominated by the more regular street grids of the military lines and
their constituent barracks which accommodated the low-status British Other Ranks. The
largest ‘Military’ land-use area in the central region of the Cantonment is the large tract of

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9 In previous sections the year-order of the analysis has run from 1924 down, since the 1924 model
incorporates the most geographically extensive demographic data. Since in matters of land use patterning the
1924 model is the least accurate in this section the analysis order has been reversed and runs from 1876-9 up
to 1924.
open space that was used as the Cantonment General Parade Ground and that also served as the station Race Course.

If ‘Military’ general land-use is examined for the year 1905, the pattern is virtually identical to that seen in 1879. Figure 9.25 overlays the appropriate land-use patterns for 1879 and 1905. These show that the distribution of military lands in both years remained broadly similar. Recorded military land-usage increased over time, with 344 ‘Military’ structures recorded in 1879 and 493 in 1905. Expansion particularly occurred in the north eastern extension of the Cantonment lands where the Native Cavalry Lines had expanded extensively by 1905. Otherwise it is notable that although the number of European and Indian Infantry barracks seems to have remained generally stable between the two target years, the institutions that had expanded in terms of number of buildings were those concerned with health and discipline - both hospitals and prisons. The 1905 military hospitals associated with the Wanowri and Ghorepuri Lines (Number 1 and Number 2 Section Hospitals) had grown into massive institutions by 1905 and the military prison seems also to have increased greatly in size. The ‘Mounted Infantry School’ was another institution that had expanded by the year 1905.

The 1924 city-model is much less useful for mapping the distribution of military lands in the manner undertaken above, it does however reveal that there was no ‘Military’ general land-use in the ‘Native City’ for that year. Within the Sadr Bazar enclave only one (pseudo) military institution was recorded in the Sadr Bazar in 1879. This was ‘The Soldiers’ Home’ which served as an assembly hall.

It is a notable confirmation of functional division of Poona that only one structure with a military purpose appears in the Bazar lands set aside for commercial activity and none in the ‘Civilian’ ‘Native City’.

Figure 9.26 plots the location of administrative structures in Poona for the year 1924. This map confirms that the majority of these institutions were located in the Civil Lines. Administrative structures were not however evenly distributed throughout this enclave, and a

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10 Structures on this map sometimes appear ‘double’. Blue polygons represent structures from 1905 and red polygons represent structures dating from 1879. The ‘doubling’ is due to several factors - including inaccuracies in the derived map grids, and in the physical copies of the maps that were eventually digitised, differences between the original maps themselves and of course the replacement of buildings between 1879 and 1905 and the construction of new ones.
particularly obvious cluster of administrative institutions was located in the south of the enclave. The records for these administrative structures demonstrates that this cluster primarily comprised an office building; the ‘Central Building’ that housed many of the major offices of the British administration for Poona and the surrounding lands.

Five administrative structures were recorded as located in the Military Cantonment, primarily located the north western region which accommodated the Legislative Council building. Of these five listed institutions, only the Legislative Council Building was a governmental building in the civilian administration, the other four being military offices that included the ‘The Assistant Engineer Commanding the Royal Engineers’, and the (Army) Southern Command Office. The Council Hall consequently seems to have been located, therefore, in a very anomalous position.

The ‘Native City’ also encompassed very few administrative buildings. Each of the six (not all are depicted in figure 9.26) seem to divide so that one was placed in each of the central peths of the enclave (Shanwar, Budhwar and Raviwar), with a further three located in Shukrawar Peth. The six administrative institutions located in the ‘Native City’ comprised; the City Police Inspector, the Registrar Small Cause Court, the City Magistrate, the Income Tax Collector, the Sub-Registrar of Poona and the Inspector of Training Schools.

The fact that the ‘Native City’ ‘Civic’ and administrative structures did not cluster together in a single peth confirms the evidence presented in Chapter 5 that the British, after their conquest of Poona stationed a number of administrative functions in the ‘Native City’ usually in the old and abandoned Wadas of the Peshwas or the aristocracy - a symbolic appropriation by the British of the residences of the old regime. The dispersed nature of the administrative structures in the ‘Native City’ could only magnify this symbolic message.

Figure 9.27 maps the ‘Commercial’ land use across Poona in 1924 and also ‘Mixed’ land use (where a confluence of place of work and place of residence occurred). Although the map does not reveal any strong divergence in the distribution of purely ‘Commercial’ land usage compared with ‘Mixed’ land use it does however reveal two major commercial cores in the settlement. The nature of the first of these, the Sadr Bazar, has already been described in detail. If the Bazar lands are examined, it is immediately apparent that the majority of commercial activity was limited to just two streets running north to south in the eastern part of
the Bazar (these streets stand out quite plainly in the plot), the western of these being ‘Main Street’, the eastern ‘East Street’.

In the very north western corner of the Sadr Bazar, where this enclave interfaced with the Civil Lines, part of Arsenal Road incorporated another notable (if much smaller) cluster of Commercial and ‘Mixed’ establishments. This cluster included a boot maker, a tailor, a draper and milliner, a cinema, a tobacconist, a chemist and a providore, a wide range of useful retail establishments that perhaps represented a small shopping area that the Civil Lines population could utilise without having to visit the main shopping streets of the Sadr Bazar proper.

In contrast the remainder of the business activities (16 recorded instances) in the Civil Lines were less immediately practical in nature and included a book depot, two presses, two doctors, a dentist and four hotels. The tone of the core Civil Lines lands were obviously more ‘professional’ in character than the Arsenal Road boundary shopping zone which was primarily retail in focus.

Only seven businesses were recorded in the Military Cantonment in 1924 six of which were located in a single block directly to the north of the Sadr Bazar. The businesses in this area do not seem to represent a mini-bazar area and included two dentists, a motor engineer, a bookseller and a baker. The location of these businesses seem to represent an extension of the Sadr Bazar land-use pattern and consequently are anomalous with respect the majority Cantonment land-use.

In addition to the Sadr Bazar business zone, figure 9.27 reveals a second commercial centre based in the ‘Native City’ and primarily focused in Budhwar Peth. This would undoubtedly represent the commercial area utilised by the Indian population of the ‘Native City’ who were not targeted by the Sadr Bazar establishments. A number of other commercial and mixed establishments seem also to have been based in a range of the western and central peths of the old town, including Sadashiv, Shanwar, Kasba and Raviwar Peths, in addition to Budhwar Peth. There seem to have been virtually no recorded commercial or mixed activities in the eastern peths bordering the Sadr Bazar area.

Dividing the commercial and mixed institutions into those that were retail establishments or artisans’ workshops (Figure 9.28) reveals that in Poona Sadr Bazar in 1924 there seemed to be no major spatial clustering in the location of retail establishments and the

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11 Slightly anomalous businesses included two seed merchants and a palmist.
workshops of small-scale artisan-producers. In contrast, although the evidence from the ‘Native City’ is not comprehensive, the land-use pattern seems to suggest that in Shanwar Peth in particular there was a preponderance of artisans (nine recorded) over retailers (one recorded).

To return for a moment to the matter of the distribution of Parsi households in Poona. Given that there were two major retail nodes in Poona city-site, one in the Sadr Bazar, and another older commercial centre within the ‘Native City’ located primarily in Budhwar Peth, it is notable that although the business-oriented Parsi community was concentrated in the Sadr Bazar, not one Parsi household was recorded for 1924 in Budhwar Peth, a strong indication of the pro-British focus of this community.

Large scale industrial processes did not seem to have been based in either the Sadr Bazar or the Civil Lines, however, figure 9.29 shows that the Military Cantonment encompassed several semi-industrial functions. These mostly served some military-support purpose and included slaughterhouses, tanneries and brick-pits. The southern portion of the Cantonment was reserved for many such activities. A small tongue of land extending out of the southern Cantonment boundary seems to have been set aside for a number of noxious uses. Since the southern area of the enclave was only sparsely populated, leather-making and the slaughtering of animals took place in general isolation.

9.6 Structure Areas, Compound Areas and Settlement Topography

Primary Structures

The 1905 GIS model of Poona incorporates data concerning the area of primary structures\(^\text{12}\) for the Military Cantonment lands, the area of compounds, outhouses, and the height above sea level of the primary structures. This data provides additional information regarding settlement organisation within this enclave.

The average area of primary structures within the Cantonment enclave was large; approximately 398.801m\(^2\). However, the average area of structures in the north western Queen’s Gardens area of the Cantonment (that incorporated 25 separate buildings and in part accommodated a number of Colonels and Generals) was much larger, 638.556m\(^2\). The fact

\(^{12}\) The dominant or largest structure within each recorded compound.
that the bungalows and other primary structures in this Cantonment quarter were so much larger than the Cantonment structural average is yet more evidence of this zone’s privileged nature.

The bungalows in the south-western region of the Cantonment have been analysed separately in a similar manner. This area encompassed 98 bungalows or other structures and has been previously revealed as a quarter that more likely to accommodate household heads of the military rank of Lieutenant. The average size of the residences in this region was 354.522 m² - smaller than the Cantonment average, and only 55% of the Queen’s Gardens structural average, physically confirming the character of the south west Cantonment area as a residential zone for households of lower status than in the north-west.

*Compound Area*

The area of the Cantonment compounds manifest an identical pattern. The average size of the 418 Military Cantonment compounds was 0.0063064 square kilometres (6306.4m²). This figure renders the huge size of the open space around many structures immediately apparent. On average, the primary compound structure consequently represented only 6.32% of total compound area. The average area of the 27 compounds in Queen’s Gardens (excluding the Polo field) was 0.0174061 square kilometres (17406.1m²) or 2.76 times the Cantonment compound average.

In contrast, the average size of the 93 analysed compounds in the south western area of the Cantonment was only 0.00387165 square kilometres (3871.65m²). These compounds were therefore 61.4% the size of the average Cantonment allotment, and only 22.2% of the size of the huge compounds in Queen’s Gardens.

*Outhouse Areas*

The areas of 1,108 Military Cantonment outhouses were also incorporated into the 1905 model. The average size of these 1,108 structures was 110.48m², or only 27.7% of the average area of the primary compound structures that they serviced. Given that compound outhouses often represented the Indian residential zone within the bungalow-compound of a British household head, the relatively small size of outhouses in comparison with their
associated residences is a clear indicator of the minimal power and status enjoyed by outhouse (servant quarter) inhabitants.

As was the case with both primary structures and compounds, the 93 outhouses in Queen’s Gardens were relatively larger than the Cantonment average - an average of 154.628m². Since 25 primary structures were originally analysed in Queen’s Gardens, and there were approximately 93 outhouses in the area, each primary structure was associated with on average, 3.72 outhouses.

In the south western region of the Cantonment approximately 178 outhouses were recorded that were on average 118.442m² in area. Although outhouses in this region were smaller than those in Queen’s Gardens nonetheless the outhouses here were larger than the Cantonment outhouse average. Approximately 98 bungalows were analysed in the south west Cantonment, and 178 outhouses were associated with these primary structures. Every structure or residence in this area was therefore associated with 1.8 outhouses, under half the ratio seen in the north western sector of the Cantonment lands.

Compound size, primary structure size and outhouse size and number all indicate that the highest-status residential area in the Cantonment was Queen’s Gardens, for this zone comprised the largest residences, the largest compounds, the largest outhouses and the highest number of outhouses per structure in the Cantonment.

Elevation

The elevation of primary structures above sea level is another variable that presumably influenced residential and institutional spatial patterning in Poona. Elevation has particular bearing upon the issues discussed in Chapter 3, concerning public health and miasmatic theories of disease causation.

A few principles should be reiterated;
1. The aim of ‘healthy’ design and settlement planning architectural was to decrease the presumed influence of miasmas by maximising access of structure inhabitants to fresh water, fresh air and sunlight.
2. One could propose that those inhabitants of a settlement with greatest economic and political power would be able to exercise greater power in residential choice and

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13 In this case the Polo ground, the General Parade Ground, quarries and reservoirs have not been considered (Continued Overleaf)
consequently monopolise land with the greatest access to air, light and water (if these criteria were valued by society) at the expense of those households in possession of lesser power.

3. It would be reasonable to expect, given the available evidence, that those households in an economically and politically advantageous position would reside in larger residences, and that those residences would be located within the larger compounds as a means of expressing social status.

4. If the powerful valued elevation one should expect to see the largest residences and compounds placed at the highest elevations in the settlement where inhabitants would have greatest access to sunlight and fresh the prevailing winds.

The elevation of primary structures in the Cantonment is displayed in figure 9.30. It has already been noted in this analysis that the largest allotments in the Military Cantonment were located in the north western, Queen’s Gardens region of the enclave. To the south and particularly the south west of the Military Cantonment were located allotments of smaller size that accommodated households of lesser socio-economic status.

From the above points one could hypothesise that the larger compounds and residences of powerful British households would have been constructed upon land of high elevation. This was not, however, the case. Structures in Queen’s Gardens were located on land that was among the lowest in elevation within the Cantonment - mostly between 1830 and 1855 feet above sea level, although some residences were built below 1830 feet. This privileged area therefore was even below the height of the centre of the (non-British) Sadr Bazar, whose Main and East Streets sit for the most part between 1855 and 1870 feet above sea level.

In contrast the structures built within the smaller allotments in the south west of the cantonment were located at the highest recorded elevations in the Cantonment, and mostly stood on land standing between 1900 and 2000 feet above sea level. These south western bungalows and compounds were close to Wanowri (British Infantry) Lines. The barracks were constructed on a ridge of high land in the south of the Cantonment with good purpose; in order to protect the southern road route out of the city.

as part of the compound statistics.
One possible explanation for this unexpected pattern is that the ‘Queen’s Gardens’ region, although it housed important residents and institutions (including the Legislative Council), served no explicit military function and that the co-option of prime land for elite residential use may have proved secondary to military and strategic land requirements. The area was also part of the oldest inhabited British area in Poona, and the construction of bungalows and compounds in this region may possibly have pre-dated strong institutional concerns about miasmas.

This pattern perhaps suggests that in the Cantonment military advantage was considered more important than status display between the various ranks of the British population. The high status households resided at low elevations, the lower status officers lived on high ground. In this case status seems to have been more effectively displayed by residential compound and residence area than by elevation and outlook.

Another possibility is that since Poona was constructed on a high plateau the city as a whole was considered to be positioned in a generally healthy locale and that consequently elevation was not as sensitive an indicator of status as in settlements at low elevation on the coast. Of course to verify this hypothesis topographical and demographic data would have to be analysed for a cantonment constructed in a disadvantageous position (as defined by medical theories of the time).

The location of the British infantry barracks in the city of Poona show some (equivocal) evidence of being sited in accordance with the theories of miasmatic disease that were prevalent nineteenth century colonial India. The Wanowri Lines and its associated complex of structures in the south of the Military Cantonment, for example, were constructed on the highest ground in the Cantonment and at a higher elevation than the Sadr Bazar, the Native Lines or the Native Cavalry Lines. Four of the five large hospitals for Europeans in Poona (the Section 2 Hospital, the Station Hospital, the Female Hospital and to a slightly lesser degree the Plague Hospital) as well as the Army Veterinary Hospital were located in this zone of high elevation land. (Again, see figure 9.30). This high elevation would have provided the barracks and hospitals access to fresh air and they would have also stood well above the miasmas presumed to be generated in the more crowded residential areas to the north west of the lines. This strongly suggests that the medical authorities at least considered that a strong correlation existed between
height above sea level and perceived healthiness. In contrast the remaining large European hospital (Ghorepuri Hospital or Number 1 Section Hospital) and the various small hospitals that serviced the Sepoy population were located a much lower elevations.

The Ghorepuri Lines in the north east of the Cantonment represent a more equivocal example. These lines were constructed at 1830-1870 feet above sea level, compared to the Wanowri Lines which were constructed at the higher elevation of 1900-2000 feet above sea level). This land - relatively low elevation in the context of the entire Cantonment, nonetheless represented a low-lying ridge and so was placed above the immediately surrounding areas; Ghorepuri Village (under 1830 feet above sea level), the Native Cavalry Lines (under 1830 feet) and Queen’s Gardens. The southernmost barracks at Ghorepuri (approximately 1855-1870 feet above sea level) were above the northernmost Native Lines pendalls (1830-1855 feet above sea level). The Ghorepuri Lines were however lower in elevation than the eastern portion of the Sadr Bazar or the southernmost Native Lines pendalls. The area of land the Ghorepuri Lines were sited upon consequently seem to represent the highest available land in the northern sector of the Military Cantonment.

It cannot be stated with certainty whether the siting of both sequences of lines consciously served either medical or military purposes. Certainly siting both European regiments upon high (or relatively high) land would have increased access of the barracks to fresh air and minimised the influence of presumed miasmas. Constructing both lines complexes upon high land would however have also given the British infantry regiments a military advantage in terms of both offence and defence. Wanowri Lines were at a higher elevation than the southern Native Lines, the Sadr Bazar and the ‘Native City’, whereas the Ghorepuri Lines were built at a higher elevation than the northern Native Lines and the Native Cavalry Lines. This land would have been easier to defend, provided views over the surrounding territory and preserved clear lines of sight and fire over the ‘Native’ regions of the settlement.

Miasmatic theories of disease physical influenced the internal planning of Poona’s (British) military lines. This broad impact can clearly be seen in the 1879 and the 1905 GIS models of the city (figures 9.1 and 9.2). In the two British infantry lines in the
Military Cantonment - Wanowri and Ghorepuri Lines - the earlier barracks were aligned parallel with the local street grid (here note the barracks in the north of Ghorepuri Lines) whereas the later barracks were aligned (en-echelon) in order to catch the prevailing winds (here note in particular the barrack sequence in the south of the Ghorepuri Lines). (See Figure 9.2).

9.7 Conclusions

Each of the three GIS models of Poona provides extensive evidence that the spatial organisation of the city broadly conformed to the accepted, segregated ‘tripartite’ model used to describe Ind-British mofussil settlements. Consequently, they confirm that Poona ‘racially’ divided into ‘British’ and ‘Indian’ zones (the ‘Station’ and the ‘Native City’ respectively), and also functionally divided, in terms of occupational category into ‘Military’, ‘Civilian’ and ‘Official-Administrative’ zones (the Cantonment, the ‘Native City’-Sadr Bazar and the Civil Lines respectively).

The imposition of racial and functional segregation was not, however, absolute and beyond these gross spatial patterns, evidence of more complex (if less explicit) modes of settlement organisation are also observable.

Functional Segregation

Analysis of ‘occupational categories’ broadly confirmed the fact that Poona was functionally segregated. Military Officers were primarily restricted to the Military Cantonment. Despite this broad pattern, however, a number of ‘Military’ household heads and institutions were also recorded as located within the Civil Lines. ‘Military’ household heads resident within this enclave were in general of high rank. A small number of military household heads were also recorded within the ‘Native City’ although these were all Indian in terms of ethnicity.

In contrast ‘Official’ household heads were not as strictly concentrated within the Civil Lines enclave and in fact distributed more evenly across the Civil Lines and western zone of the Cantonment. ‘Civilians’ however were strongly associated with the Sadr Bazar and the ‘Native City’ although a number of Civilians also resided in the Civil Lines and the western zone of the Cantonment.
The Civil Lines became increasingly varied in terms of occupational category; less ‘Official’ and more ‘Civilian’ through the period 1876-1924. Unlike the Military Cantonment, which statistically was always dominated by households employed by the army, the Civil Lines was never truly dominated by the households of administrators. Although the land use survey suggested that the majority of administrative structures and institutions were located within this enclave, under 40% of Civil Lines household heads were actual administrators over the time frame concerned. Many of the household heads resident in this quarter were ‘Civilian’ in character and a large proportion of these ‘Civilian’ household heads were members of the Indian and Parsi elite. ‘Civilian’ household heads otherwise clustered in the ‘Native City’ and Sadr Bazar, although a significant number also resided in the Military Cantonment - many of these were women. Indian ‘Civilian’ households and institutions in the Cantonment lands were primarily restricted to the regimental bazars and subsumed villages such as Dherwara.

‘Racial’ Segregation

In terms of ethnicity, the one unquestionable ethnic-residential pattern was that the British exercised an almost absolute preference for residence within the Cantonment\textsuperscript{14} and Civil Lines areas. Only two Britons were recorded as resident in the ‘Native City’ during the time frame under consideration. The British were strongly discouraged from living in the ‘Native City’; not only was the area considered unhealthy, but living within the Indian zone would surely have been interpreted as a sign that a household head had ‘gone native’ and become too fond of the indigenous culture (the prestige of Empire was apparently firmly based upon social distance).

Conversely, no absolute racial bar existed excluding Indians from living within the British cultural zone and a number of Indian or Parsi household heads moved into the Civil Lines and the Cantonment over time. The ethnicity data shows for example that the Parsi community were strongly anchored in the Sadr Bazar, but that the Parsi elite was attracted to life within the Civil Lines. This relocation of Parsi and Indian households seems to have occurred in the later nineteenth century, since the earliest model demonstrates that in 1876-9 relatively few elite Indian or Parsi household heads were

\textsuperscript{14} Including the Sadr Bazar.
permitted residence in either the Civil Lines or the Cantonment. The Civil Lines eventually seems to have served as a high status suburb (open to many races) rather than an administrative enclave alone. The other elite British area - Queen’s Garden in the Cantonment remained, however, almost entirely British in character.

Land Use

It was in terms of recorded land usage that Poona most strictly conformed to the accepted tripartite city model. Land specifically utilised for ‘Military’ purposes was limited to the Cantonment enclave. In contrast administrative structures were overwhelmingly based in the Civil Lines, whereas the Bazar lands were wholly free of a serious military or administrative presence. Few military or administrative lands were delegated to the ‘Native City’ - those that were, were distributed across the old city and served as symbolic markers of British rule.

Land use analysis not only demonstrated that the Sadr Bazar indeed functioned as an enclave primarily focused upon trade and other commercial activities, but also that these commercial activities were primarily clustered in its two easternmost axial north-south streets. The analysis also revealed the presence of another commercial centre within the ‘Native City’ and the potential location of a small shopping strip on Arsenal Road that probably represented an area where the Civil Lines population could shop without having to venture into the major shopping streets of the Bazar proper.

Industrial or semi-industrial functions took place on isolated land in the south of the Cantonment away from densely populated areas - the position of these activities being in-line with medical recommendation.

Civil Lines

Once again, although the Civil Lines may not have been absolutely dominated by the households of administrators and became more ‘Civilian’ and Indian between 1876 and 1924, it continued to serve as a suburb inhabited by households of the high elite (whatever their occupational category or ethnicity). Segregation with respect to this enclave at least seems to have been socio-economic and class based rather than purely racial. The profile of those Indian or Parsi household heads who chose residence within this enclave suggests they were very wealthy and powerful and included the households of
the Aga Khan, of Parsi industrial magnates such as the Tatas and of philanthropists such as Jamsetjee Jeejeebhoy.

Administrative and civic institutions may have been scattered throughout the city, however, the majority of important offices seem to have been restricted to the Civil Lines and in particular in an office cluster in the south of the enclave. Those administrative functions delegated to the ‘Native City’ or Cantonment seem to have been non-essential in character, and many of the civic functions in these two, latter enclaves seem to have represented schools or officially supported churches. Legal institutions seem to have been an exception, and courts and tribunals were much more widely distributed than offices. Presumably the British were at pains, not only to express their military power (via the Cantonment) but also to stress by distributing legal institutions across the whole settlement, the reach and importance of their law.

**Military Cantonment**

Although the Military Cantonment undoubtedly incorporated the majority of ‘Military’ land and accommodated the majority ‘Military’ personnel in Poona, the spatial organisation of the enclave was more complex that at first appears. A broad division existed between the western zone of the Cantonment which was primarily composed of ‘bungalow’ residential accommodation, and the (central to) eastern zone which was more militarised in character and incorporated the majority of the lines and their constituent barracks.

The barracks themselves were organised with respect to ethnicity and the Cantonment incorporated four major lines sequences - two of which were British (and infantry) and another two which were Indian (one infantry and another cavalry). The European infantry lines and the European hospitals were situated on high or relatively high land that preserved lines of fire over the Indian barracks and also protected the major land routes out of the Cantonment. The Native Lines were in particular situated so that they were flanked by the strategically placed European Infantry lines and also isolated from the large Indian populations in the Sadr Bazar and the ‘Native City’ by the residential Cantonment streets.

The Cantonment also spatially divided in terms of socio-economic status although in this case north to south. The south western zone of the Cantonment incorporated
household heads of lower socio-economic status or rank than those situated in the northwest of the enclave.

Sadr Bazar

The Sadr Bazar Lands that were administratively connected to the Cantonment and that interfaced with the ‘Native City’ have been confirmed as strongly associated with commercial activities and trade. Despite this commercial focus the Bazar nonetheless represented the only true hybrid (Indo-British) space within Poona. Its hybridity was reflected in its morphology and architectural design. Meandering narrow streets similar to those found within the ‘Native City’ intersected with the wide axial thoroughfares favoured by the British in their Station. Similarly, the Bazar incorporated structures derived from the indigenous Marathi architectural and others based upon the bungalow-compound ‘Anglo-Indian’ tradition.

The cosmopolitan character of the Bazar was also confirmed in its demographic profile. Although the quarter was strongly non-British in character, this did not determine that the population was homogenous in character. The local Parsi community was concentrated in the Sadr Bazar demonstrating the trade-focus of Parsi inhabitants of Poona. Although wealthier members of the ethnic group were located in the elite Civil Lines region very few Parsi household heads were located in or near the commercial quarter within the ‘Native City’ a reflection of the pro-British and privileged nature of the group. Similarly ‘non-British Europeans’ clustered within or near the Sadr Bazar boundaries, their profile suggesting another community with interests in trade.

In addition to being a commercial quarter, the Bazar also served as a base for non-conformist European religious activities. The Station accommodated the established church’s places of worship- a Church of England garrison church in a prominent position in the Cantonment, and another (St. Paul’s) in the Civil Lines.

In contrast the Catholic Churches were placed in marginal positions - one on the far eastern Cantonment border with another in the zone of interface between the Sadr Bazar and the ‘Native City’. It was the Sadr Bazar however that incorporated the majority of the Christian non-conformist congregations - including a Methodist place of worship, a Catholic church, convent and school, a meeting house for the Plymouth Brethren. It was
this enclave that also accommodated a Parsi Temple for the large local Parsi community and a Jewish synagogue, this range and number of religious institutions once again attesting to the varied character of the Bazar.

Medical

The data analysed in Chapter 8 and Chapter 9 provides equivocal evidence concerning the relationship of miasmatic theories disease causation, public health legislation and the planning of the Cantonment and Civil Lines of Poona. Although it would not be true to claim that such legislation determined settlement form, nonetheless miasmatic theories seem to have had some impact upon both individual structural form and institutional placement and design.

The medical statistics analysed in Chapter 8 demonstrate that there was no true correlation between height above sea level and health. Mortality rates did not decline in the British military population as the height above sea level of a settlement increased. Although this fact would have been apparent to medical officers reviewing the relevant contemporary statistics miasmatic theory remained for much of the nineteenth century the preferred hypothesis for the causation and prevention of much disease.

Poona’s position as a major Indian settlement, as the subsumed capital of the Peshwas, and also as the closest major Indian city to Bombay over the Ghats necessitated the presence of a major British administrative and military population in the city. The important position of the Poona Station as military headquarters, monsoon capital of the Bombay Presidency, and a major British social centre (with its own ‘Season’) was possibly to some extent due to its relatively high elevation, as well as to the importance of the original indigenous settlement. Although the city was never thought of as a mountain settlement of the manner of Mahableshwar or of Simla, Poona nonetheless was sometimes referred to of as a ‘hill station’ and was consequently regarded as a relatively healthy post.

Miasmatic theory had some impact upon the placement of hospitals and military lines. Wanowri Lines was constructed upon the highest land in the settlement - a prime position in military and health terms. The lines also shared the high ground with the majority of the European-oriented hospitals in the Cantonment. Although the other European lines complex at Ghorepuri was at a lower elevation, it also was built upon a local ridge of high land (albeit a small one).
Beyond the broad planning of the infantry lines miasmatic disease theory had some impact upon the design of individual barracks. The newer (European) barracks at the Wanowri Lines were designed *en échelon* in order to capture the prevailing winds, firm evidence that miasmatic design conventions were taken seriously by the military authorities.

In addition, the analysis of individual barrack dimensions presented in Chapter 8 demonstrates that the primary dimensions of barracks constructed in Poona generally increased over the time-period under consideration, and also that the methods utilised to ventilate barrack rooms and ameliorate internal micro-climate increased in complexity over the same period.

In contrast with the highly militarised eastern tract of Military Cantonment land, miasmatic public health theories seem to have had minimal impact upon the morphology of the bungalow-compound dominated western Cantonment zone. The pattern of streets, of compounds and the arrangement of bungalows within those compounds does not suggest a spatial organisation to maximise access to prevailing winds in the manner described in the arrangement of the European Lines. The Cantonment topography provides further evidence suggesting that miasmatic design philosophies did not have a major impact upon the western Cantonment region. Although it could be proposed that if elevation was a sought after determinant of residential choice, then those households with the greatest socio-economic and political power (the British elite) would presumably have been able to monopolise those Cantonment regions of higher elevation.

The evidence of Cantonment topography and morphology does not however confirm that elevation was a major determinant of residential choice amongst the military elite. The privileged ‘Queen’s Garden’ region, in the north west region of the Cantonment, was placed on par with the lowest lying Cantonment lands (under 1830 feet). In contrast, the relatively smaller compounds and structures in the south west of the Cantonment which accommodated many households of relatively lower status were constructed at the highest recorded Military Cantonment elevations (1900-2000 feet).

The lack of observable ‘miasmatic’ impact could have (in part) been due to the manner in which the bungalow-housing ‘market’ operated within Poona. Bungalow-compound accommodation used by officers and administrators was not constructed by a central British authority after the fashion of the barracks in the lines. Instead, bungalows were
constructed by Indian landlords and rented by British households in semi-competitive market. It could be assumed that the local Indian bungalow-landlords constructed to maximise profit without paying great attention to the latest British design philosophies that were informed by miasmatic health theories.

**Physical Indicators**

Physical variables including areas of primary structures, compounds, outhouses, as well as broad indicators of structure (and population) density all demonstrate and confirm that there existed a strongly unequal relationship between the British and Indian communities, between the British Station and the ‘Native City’.

Whereas the ‘Native City’ accommodated the majority of the total city population, the Station dominated the landscape and total city area. Furthermore compared to the ‘Native City’ which incorporated very high population and structural densities, the Station represented a low density built environment that incorporated large single storey residential structures constructed compounds of large area that accommodated small households serviced by large servant establishments.

Analysis of primary structure, compound and outhouse areas in the Cantonment also revealed patterns status patterning within the bungalow-compounds of the Military Cantonment. Smaller compounds, structures and outhouses were located within the south western zone of the Cantonment enclave and were associated with household heads of lesser status than those resident in the north western Queen’s Garden area which also incorporated bungalows, compounds and outhouses of much greater size.

The British who lived in India during the Raj had very clear ideas of the purpose of the settlements they built there, and the form that they should take. The tripartite plan city type that was built by the British throughout the interior of India has at its heart the presumption of a policy of segregation on several spatial and social levels - between British and Indian, between ‘Civilians’, ‘Officials’ and the ‘Military’, between the rulers and the ruled. Historical records are very clear on the necessity of segregation and this
policy was justified on several levels; the British must live separately from Indians in order to provide an example to the populace of the benefits of British civilisation. They must not fraternise with Indians because this would create familiarity between the races and lead to a reduction in British prestige. The British of necessity had to build isolated residential enclaves because Indian cities and Indians in particular were perceived sources of disease.

Despite this clarity of aim the demographic reality of the Military Cantonments and Civil Lines of Poona was more complex and varied in nature than a cursory historical examination would suggest. One clear demographic trend was that the British did not or could not choose to live within the boundaries of the old or ‘Native Cities’ - that for them represented a truly alien and barely colonised space. Within the data collected for analysis a negligible number of British households lived outside of the station or the outlying suburbs of the city.

It is apparent that the British culture area of the Station was considered British because it appeared British (in terms of symbolic qualities of its built environment) more so than because Indians were excluded in entirety. The physical indicators analysed in Chapter 8 and Chapter 9 demonstrate quite clearly the strong physical divergence between the Indian sector of Poona (which was small in area and comprised high structural and population densities) and the British sectors of the city (which were large in area and encompassed low structural and population densities) - a divergence only made more obvious by aspects of architectural style for example.

Indians were not denied residence within the British cultural zone. Many Indians were accepted into British enclaves if those individuals could proffer a service of some kind. The Indian Sepoy therefore provided for defence, live-in Indian domestic staff provided for the comfort of British households, and Indian traders sold the British the goods and services they required in either the markets or in stores. It is apparent that Indians could also reside within the supposedly ‘British’ enclaves as long as they were able to afford to acquire access to property there and were Anglophile. Elite Indian households resident in the Cantonment or Civil Lines lived in bungalows rather than houses of vernacular Indian design.

15 Attempts were made in some Cantonments to reserve bungalows built by Indian landlords for purely (Continued Overleaf)
The demographic, spatial and physical variables under analysis confirm the existence of cleavages within Poona that divided ethnic groups and different occupational categories into different residential enclaves. Although the data therefore broadly confirms the existence of a tripartite city plan, the data also reveals a degree of variability in the demography of the city that would be suppressed if the accepted planning model was taken as an absolute determinant of urban form and demographic composition.

military or administrative use. Such attempts met with varying amounts of success.
Postscript: Future Research Directions

The GIS models of Poona do not represent a static resource and consequently can be amended or expanded in order to increase their scope or utility. Useful revisions and additions to this system could be incorporated in a number of ways.

1. In their current form the GIS models describe Poona within three target years, 1876-79, 1905 and 1924, each separated by a span of approximately 20-25 years. Additional target years could be added to the system where historical base maps and address directories remain extant that describe the city. Additional years could be added either within the existing time-frame (any year between 1876 and 1924, excluding 1905) or beyond this span - a year prior to 1876 or after 1924. Although maps exist of Poona that date prior to 1876, it would be a difficult task to locate good, matching address directory for such maps. In contrast, finding relatively good spatial and demographic data for proposed target years above the year 1924 would be more simple. If the current separation range between target years was continued above and beyond year 1924, the next logical date to incorporate into the system would lie approximately in the range 1944-49. Taking a post 1947 date would seem in this case appropriate - incorporating a Poona model for a year near 1950 would enable researchers to examine the changes in demography and spatial organisation brought to Poona by Independence and the process of decolonisation.

2. Rather than integrate additional target years, the ‘depth’ of the existing models could instead be increased by the incorporation of additional variables and/or map layers into the models. A first appropriate step would be to increase the spatial accuracy of the 1924 city-model, which in its current form utilises a construct as base-map that approximates city organisation in schematic form. Another appropriate addition would be to locate and to incorporate better demographic data describing the ‘Native City’ population of 1876 and 1905.

Caste data serving to more accurately describe the local Indian-Hindu population could be incorporated into the models. Extrapolating the caste of Indian-Hindu household heads from surnames for the ‘Native City’ and station data recorded in the 1924 GIS city-model would provide additional useful information that could reveal residential-caste patterns between ‘Native City’ peths.
The geographical range of the model could also be expanded. The most pertinent expansion would be to append to the existing models data describing the nearby cantonments of Kirkee and East Kirkee (or New Jhansi). Further efforts could also be made to increase the demographic coverage of the 1905 and 1876-9 models by incorporating ‘Native City’ and, where appropriate, additional Civil Lines demographic data, although such additions would depend upon the location of appropriate, and compatible historical, demographic sources.

3. The GIS models of Poona are interactive in nature and not designed to be limited to the research questions addressed in this study. Since the models are potentially of use to other academics, the question of access to the system arises. A representative range of mapped-queries have been printed in the case-study, but these are static and may not address the specific concerns of researchers from other disciplines. Certainly, the files that constitute the models can be copied and transported physically, yet this is laborious and the design of new queries requires the access to appropriate software.

The best and most appropriate solution would be to allow access to these models over the internet. Given the foundation of new interdisciplinary and co-operative online projects, most notably in this case ECAI (The Electronic Cultural Atlas Initiative), the probability of the Poona city-models being copied to a server and rendered accessible to academics world-wide without the use of expensive proprietary software is high.

4. The city of Poona need not be studied in isolation or indeed only in an Indian context. The settlement of course existed within the larger setting of the British Empire and also as part of a global pattern of urbanisation. The existence of models that describe other urban centres and that utilise data sources compatible with the Poona GIS system serve to facilitate inter-urban comparative studies. A model corresponding in virtually all respects to the Poona model exists of the Rocks and Millers Point in the Australian city of Sydney.\footnote{Mullen, W., \textit{Just Who Are the People in Your Neighbourhood?}, Unpublished Honours Thesis, University of Sydney, 1993.} Other useful data and studies exist for New York City\footnote{Rothschild, N.A., \textit{New York City Neighbourhoods: The 18th Century}, Academic Press, San Diego, 1990.} and Charlestown\footnote{Mullen, W., \textit{Just Who Are the People in Your Neighbourhood?}, Unpublished Honours Thesis, University of Sydney, 1993.} in the United States.
If additional settlement models were to be created, any number cities within the British Empire could serve as interesting comparative examples to Poona. Historical Singapore, with its multi-ethnic population, its historically large Indian community and strong links with the Indian Empire would be one such example. Kaduna, a Nigerian regional capital, represents another potential case study, since its city-plan (designed by its first High Commissioner, Sir Frederick Lugard) represented a direct adaptation of the Indian ‘tripartite’ plan.

Any one of the Chinese treaty ports would also represent fascinating case study sites. Perhaps the most famous of these cities, Shanghai, accommodated a number of expatriate populations derived from the Western imperial powers (including eventually the United States) in its International Settlement and French Concessions. Another smaller Chinese port, Hankou, incorporated five foreign concessions (British, Russian, French, German, and Japanese). Both of these cities, and others like them, captured the colonial urban patterns of a range of nineteenth century European empires and would consequently be particularly fascinating to model in a similar fashion to Poona. Even a Dublin city-model could shed light upon Indo-British and cross imperial settlement patterns; Christopher making the claim that;

‘…Dublin was the centre of a mid-latitude colony of settlement, not a tropical colony of exploitation. Yet a comparison [of Dublin] with cities such as Melbourne, Sydney and Toronto is in one respect misleading, as the settler population had not come to be numerically dominant in either the colony or the city. In Ireland, a relatively small British population, of Anglo-Scottish origin, maintained political control over a larger and increasingly restless indigenous population, making a comparison with India more apt.’


\[19\] Christopher, A.J., “‘The Second City of the Empire’: Colonial Dublin, 1911”, *Journal of Historical Geography*, Vol. 23, No. 2, 1997, pp.152. Christopher eventually concludes in this paper that Dublin in 1911 bore more similarity with the multi-ethnic cities of North America and Europe than with the ‘racially structured’ colonial cities of India.