

# Water Architecture in South Asia

A Study of Types, Developments and Meanings

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Volume 1: Text

A Thesis Submitted for the Degree of PhD

School of Oriental and African Studies

University of London

April 1998



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## THESIS ABSTRACT

The collection, storage and distribution of water, managed by means of dams, reservoirs, tanks and wells, are activities central to life and religious ritual in South Asia, and occasion some of the subcontinent's most spectacular architectural conceptions and engineering achievements. This study is the first to address the subject of water architecture as a whole, to relate the structures of the various regions, contexts and types to each other, and to present a comprehensive interpretation of the history and meaning of South Asian water architecture. It draws attention to the architectural splendour and sacred associations of monuments, many of which have not been documented before, or which have been considered merely as technical constructions. As such, it is the first study to attribute to water architecture a central position within the corpus of South Asian architecture alongside and on equal rank with temple and residential architecture.

The dissertation is a study of architectural structures relating to water in India, Nepal and Sri Lanka, mainly between the ninth and the nineteenth centuries. The structures under examination are divided into five main types: *ghāts* (steps into water), tanks, *kunḍas* (deep stepped basins), wells and ornamental pools in palaces and water gardens. The dissertation shows how water structures signify both practical and metaphysical importance; it investigates the various forms and parts of water monuments, and it traces their development from simple to more complex forms of architecture. In particular, it is concerned with the shapes of the structures, which favour both secular and religious activities, express sacred and royal meanings, and provide a setting for the re-enactment of mythical events.

The brief general introduction summarises the present state of research, discusses the sources and explains the chosen approach to the material. This is followed by an introduction to the religious meanings and cultural associations connected with water in the main religious traditions of South Asia. The five following chapters each deal with one of the five types of water architecture, and contain the main findings of the author's field-work. It is argued that the architectural framework of each of the principal types of water architecture is common to the entire subcontinent, that regionalism has considerably less influence on them than has hitherto been assumed, and that no type is exclusive to any one context. Each chapter analyses the main characteristics and the constituent architectural parts of the type, its variations, the border cases, and developments. The final chapter summarises the main results, examines common themes in water architecture, and outlines modern continuity in South Asia.

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## FOREWORD

On my first trip to South Asia in 1990, I was struck by the beauty and distinctiveness of the water structures of the Kathmandu Valley which left a deeper impression on me than the famous temples and stupas of the Valley. I returned to Nepal every year and from 1992 also visited India annually where I saw more and more impressive water monuments. While the structures seemed clearly related to each other and to the culture which produced them, it was surprising and disappointing to find in the available literature such a strong and arbitrary emphasis on water architecture in Gujarat. Thus, after having finished my BA, I set out to redress this imbalance and to document the beauty, grandeur and widespread nature of water structures over the entire Indian Subcontinent, and to relate the structures of the various regions to each other. I started my PhD field-work in 1994 and over the next two and a half years spent twelve months travelling in most of India's states, Nepal and Sri Lanka. The fact that so little had been documented filled this time with unexpected discoveries. Trying to trace structures mentioned briefly or only hinted at in a few words on the side, often led me to entirely decayed or filled in structures, but equally often to water monuments which in complexity and beauty surpassed any other building of the region, and over the months the theme continued to develop and expand in a way even I had not anticipated.

### **Acknowledgements:**

First and foremost, I would like to thank the University of London, SOAS, the Central Research Fund and my parents who through financial support, studentships and travel grants enabled me to undertake this research, and my research supervisor Dr. Giles H.R. Tillotson for his continuous guidance, help and advice

advice over the last years. I am also grateful to Crispin P.C. Branfoot, Philip Denwood, and Dr. Michael Willis in London, to Nigel H.M. Chancellor, and Dr. Raymond and Dr. Bridget Allchin in Cambridge, to Dr. Adam Hardy in Leicester, and to Dr. Emily Lyle in Edinburgh, for encouragement and valuable discussions of the material; and to Dr. Michael Hutt, Dr. Almut Hintze and Dr. Eugenio Biaggini for practical and academic advice. I would also like to thank Dr. David Matthews, Anne Glazier, Dr. Lucy Rosenstein, Dr. Wimalaratana, Dr. Rachel Dwyer and Dr. Stuart Blackburn, all at SOAS, for translating and transliterating names of water structures in various Indian languages or contexts unknown or incomprehensible to me. Special thanks go to my father, Prof. Dr. Ulf Hegewald, for countless discussions of the architectural material and for help with the drawings. I would also like to express my gratitude to Prof. Dr. Marianne Yaldiz (Director), Museum für Indische Kunst, Berlin, to Prof. Dr. Adalbert Gail from the Freie Universität, Berlin, to Prof. Dr. Michael Jansen from the Rheinisch-Westfälische Technische Hochschule (RWTH), Aachen, to Dr. Monika Boehm-Tettelbach from the Südasien Institute, Universität Heidelberg, and Dr. Reinhard Grunwald (Director) from the Deutsche Forschungsgemeinschaft for their support and encouragement, and to Prof. Giovanni Verardi from the University of Naples for valuable discussions and information on the *kuṇḍa* at Huligere. I am also grateful to Birgit Breilkopf and Gustav Widmann for a sketch plan of the Āṭh-Vāv Nau-Kuāṃ and for slides of various water structures in Gujarat. While conducting my field-work I received valuable assistance and advice from various people. I am particularly grateful to the following: in Delhi - to the Family Sidhu who on my returns to Delhi after weeks and months on the road welcomed me as a family member; the staff of the German Embassy, and among them in particular to Frau Annette von Wesendonk, for their generous help and support and for having guarded my irreplaceable field notes and photographic material safely over months; to Dr. Jutta Jain-Neubauer, Mr. M.C. Joshi from the Indira Gandhi National Centre for the Arts and to Dr. Arundhati Banetji from the Archaeological

Survey of India for stimulating discussions; to Mr. Hira Primlani from the Oxford Book & Stationery Co. for having tried to get every possible book related to water architecture for me; in Varanasi - to Mr. M.A. Dhaky and Mr. R. Sharma of the American Institute of Indian Studies at Varanasi for the use of their photographic archive; in Ahmedabad - to the School of Architecture and Planning for access to their library; in Hassan - to Mr. A.M. Sharath Chandra from the Department of Architecture, Malnad College of Engineering, for discussions on the tank at Banasankari; in Bijapur - to Mr Peter Alexander for sharing his research on the local water system; in Madras - to Dr. Deborah Thiagarajan for interesting discussions; in Pondicherry - to the helpful and friendly staff of the École Française d'Extrême-Orient, and in particular to Dr. Françoise L'Hernault, Dr. Marie-Louise Reiniche, and Dr. Pierre and Françoise Pichard for valuable advice and support, their many useful suggestions of further sites, and the use of their well-kept library; in Kathmandu - to Mr. G.B. Kalikote of the Nepal Research Centre for a calm oasis and the many discussions on pilgrimage and Nepali culture, to Mrs. Shobha Shrestha from the Department of Archaeology for help and advice, to Mr. Prafula Pradhan from Udle and the Patan Conservation Programme for valuable information on their work; and in Bhaktapur - to Mr. Götz Hagemüller for stimulating discussions on restoration programmes and the rehabilitation of traditional water structures in Nepal. I should also like to record my gratitude to the many local people in Nepal, India and Sri Lanka, who took me to water structures, explained their significance and shared my enthusiasm.

#### **Note on text, illustrations and transliteration**

'Fig.' in brackets refers to drawings and plans in the text (Vol. 1), and 'Plate' to photographic illustrations bound in two separate volumes (Vols. 2 and 3). At the end of volume one is a glossary of architectural and religious terms. The transliteration of indigenous philosophical and religious terms and the names of temples and water structures in Sanskrit, Hindi and Nepali follow the Library of

Congress system, and those in other languages follow the most common method of transliteration. The names of towns, cities and sites are given in the official English (roman) spelling, although the first time each place is mentioned in the text a transliteration with diacritics is also given in brackets, together with the name of the modern state in which it is located, and alternative ancient names where relevant. Throughout the text, modern names of rivers have been used, and diacritics have only been employed when they refer to river gods or goddesses (e.g. 'the Ganges', but 'Gaṅgā Devī'). Generally, the local names for sites and structures have been used and no attempt has been made to sanskritise them. Although originally, the name of the hot springs near Adavad derives from '*uṣṇa*' (hot), '*ap*' (water) and '*deva*' (divine), the local way of spelling Unabdev has for example been used in the text. Many water structures and villages referred to in this thesis have not been discussed before, and their spelling is based on the verbal testimony of local people nearby; where it has not been possible to dissect the names into common words with codified spellings and diacritical marks, the local pronunciation is rendered as closely as possible.

## Chapter 1: INTRODUCTION

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Just as life originally developed out of water, at the beginning of each new day, life in South Asian towns and villages unfolds from their water structures. With the first beams of the rising sun which are reflected and enhanced on the mirror-like surfaces of rivers, lakes and tanks, fishermen return and moor their boats on the steps and embankments, animals are watered, people assemble for their morning bath and purification rituals, and women come to fetch water.

Most water structures are used for a variety of practical and sacred activities and washing or watering cattle may take place alongside cremations or religious ceremonies and festivals. They are places where people meet, rest and chat while doing their daily chores, and many are of interest not only to the local people, but are frequented by pilgrims from other parts of the subcontinent. The activities along the water front of rivers, and at tanks, deep stepped basins, wells, and ornamental pools - the five main types of South Asian water architecture - provide a cross section through South Asian life, its social structures and religious beliefs. Because water and water architecture has this pivotal position in the life of the people of South Asia, frequently it has also been given an important and central position in the layout of towns and settlements. The houses surrounding these structures are oriented towards the water which offers light, air and space in congested town quarters, and stepping out of a narrow bazaar street onto the open and bright steps along rivers and lakes is similar in experience to entering a medieval city square from a small dark lane. Comparable to the importance of the market square in European towns, South Asian life and the layout of settlements frequently revolve around water monuments. While the architectural styles of these structures, their patrons and water levels change with rulers and seasons,

water architecture continues to be of crucial importance for the people of South Asia.

### I. South Asian Water Architecture: An Overlooked Heritage

Despite the importance of water architecture in South Asia, it has been widely underrated in art-historical writing. Tanks and wells have tended to be seen as primarily utilitarian structures, lacking artistic value or religious connotations. Art-historians have concentrated on so-called religious architecture, and frequently do not even mention closely-related water structures. There are, for instance, interesting and prominent water monuments at the Jain temples and in the western group of temples at Khajuraho (Khajurāho), at the Sanchi Stupa (Sāñcī), both in Madhyapradesh, at the Durgā Temple at Aihole (Aihole), Karnataka, at the Kailāsanātha Temple at Kanchipuram (Kāñcīpuram), Tamil Nadu, and there are probably more impressive water structures than temples or palaces in the forts of Gwalior (Gwālior), Madhya Pradesh, and Chitorgarh (Cittaudgarh), Rajasthan; but only a few of these water structures have ever been mentioned in the writings. Art-historical studies have frequently dedicated long sections to the analysis of temples, as for example the undoubtedly famous and important Harṣatmātā Temple at Abanēr (Ābānerī), Rajasthan, while it is unusual if the large and overwhelming *kuṇḍa* adjacent to it is mentioned, if only in a sentence or two<sup>1</sup>. Frequently, water monuments are even larger and more impressive than the adjacent temples, as may be seen in the elaborate *kuṇḍa* adjacent to the small Manikeśvara Temple at Lakkundi (Lakkuṇḍi), Karnataka, or in many stepwells.

The attention of art-historians has usually been directed to secular architecture only in so far as it dealt with residential buildings, such as palaces and

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<sup>1</sup>See for example G. Michell, 1990(a), *The Penguin Guide to the Monuments of India*. p. 273.

pavilions, and not to water monuments which are seen as primarily utilitarian structures. With respect to the clear but arbitrary differentiation between 'religious' and 'utilitarian' structures, the work of A.M. Hocart (1970), whose argument was later elaborated by scholars such as Nicholas B. Dirks (1976), gains new importance. Hocart described all activities which aim at increasing the welfare and prosperity of the community as rituals. In addition to this, he outlined the importance of south Indian temples as creators of wealth and prosperity for the state, and therefore concluded:

It would be an error to put such works [water structures] in a category by themselves as "utilitarian" in opposition to "religious" works such as temples. Temples are just as utilitarian as dams and canals, since they are necessary to prosperity; dams and canals are as ritual as temples, since they are part of the same social system of seeking welfare. If we call reservoirs "utilitarian" it is because we believe in their efficacy; we do not call temples so because we do not believe in their efficacy for crops.<sup>2</sup>

Even those studies which concentrate on water architecture frequently misrepresent and underrate the importance of certain regions or structures, by regarding them as primarily utilitarian and of little if any artistic value or religious significance. The scholar who was probably most explicit in expressing this view, is Judith Anne Patt (1979), who wrote a PhD thesis on water architecture in Indonesia. Her comparison with Indian water structures to highlight her own material merely reveals a lack of knowledge of South Asia. Comments such as the following have no validity with respect to the actual architectural material:

Despite the fact that Indian texts described the associations of the major Hindu deities with water, such symbolism in the art of India is rarely coupled with complex water work and holy water sources. The tank of the Sun Temple at Modhera in Rajasthan [it actually is in Gujarat] and the rockcut relief at Mamallapuram .... are among the few Indian sites that combine

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<sup>2</sup>Hocart, 1970, *Kings and Councillors: An Essay in the Comparative Anatomy of Human Society*. p. 217.

elaborate water use and water symbolism. ... the synthesis of waterwork and water symbolism visualized in sculptural or architectural form that is so common in classical Java and Bali seems not to have occurred to any extent in India.<sup>3</sup>

Even scholars with a better knowledge of Indian architecture and a keen interest in water structures have frequently focused on their technical and engineering aspects and neglected or even denied the artistic and religious importance of certain structures. Kirit Mankodi for example, who studied the Rāñī Vāv at Patan (Anahilvāḍa Pāṭan, Aṇahilapāṭaka) in Gujarat, wrote that "The question of most absorbing interest for any stepwell is the method of building."<sup>4</sup> In the introductory remarks of the same book Michel Postel commented that "The Mātā Bhavāñī stepwell at Ahmedabad (Aḥmadābād), Gujarat, is rather plain and seems mostly utilitarian."<sup>5</sup>, although the primary use of this particular well, at least since 1995 (when the author visited the site), has been religious. The Mātā Bhavāñī Vāv, which has beautifully carved balconies and niches, is dedicated to Mother Bhavāñī, a mother goddess who is worshipped in a large shrine in the well shaft, and evidently has been for a long time, maybe even since the eleventh century<sup>6</sup>. Her veneration has been increasing, and today the well is no longer used for basic water provision but has been converted into a temple.

Most studies of water related structures in South Asia were conducted by hydraulic engineers, who have concentrated mainly on irrigation-related issues, such as dams and sluices, on aqueducts, bridges, and navigation canals. These aspects will be dealt with only marginally in this thesis, and aspects of waste water management will be excluded entirely in order to counterbalance the prevalent emphasis on hydraulic technology. Studies of irrigation systems, were conducted for example by Emmanuel Adiceam (1966) and T.M. Srinivasan (1991)

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<sup>3</sup>Patt, 1979, 'The Use and Symbolism of Water in Ancient Indonesian Art and Architecture'. PhD dissertation, pp. 14 - 15.

<sup>4</sup>K. Mankodi, 1991, *The Queen's Stepwell at Patan*. p. xi.

<sup>5</sup>Ibid., p. 7.

<sup>6</sup>J.A.S. Burgess suggested that the shrine in the well shaft maybe slightly later than the main structure of the well (1905, 'Muhammadan Architecture of Ahmadabad.', p. 2).

in Tamil Nadu, by Sir William Willcocks (1930) in West Bengal, and by R.L. Brohier (1934, 1965, 1973) in Sri Lanka. Undoubtedly, their eyes were better trained for the appreciation of the technical achievements of water management than the artistic value of the structures, although they did notice certain cults, especially snake worship, connected with them. Although they made a valuable contribution to the understanding of irrigation, much of their admiration and surprise about the achievements of the ancient irrigation engineers now sounds slightly patronising, not to say Orientalist. A modern study of the irrigation and water supply of Vijayanagara in Karnataka was conducted in the mid-1980s by Dominic J. Davison-Jenkins (1988), which highlights the achievements of the Nāyaks and the importance of water for the city, describes and dates the structures, but rarely considers their use or meaning.

Early writers, such as James Fergusson, E.B. Havell and Percy Brown frequently mention water structures in their surveys. They aimed at conveying a general idea of the breadth and diversity of the built environment and were more open to Indian architecture in general than many modern art historians today. Although they did not provide much detailed information on individual water structures, they expressed a clear awareness of the importance and beauty of the monuments. Henry Cousens remarked that wells are frequently "not much behind the temples in architectural pretensions"<sup>7</sup>, and dealing with steps leading into water, Fergusson acknowledged that they are frequently "more elaborate and expensive pieces of architecture than any of the buildings above ground found in their vicinity"<sup>8</sup>. Somewhat typical of Fergusson, who viewed India very much from a Western perspective, however, is that he described step wells, whose elaborate constructions and artistic splendour remain almost entirely hidden underground, as a "strange perversion of ingenuity", a feature which he considered typical of India<sup>9</sup>.

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<sup>7</sup>H. Cousens, 1926, *The Architectural Antiquities of Western India*. p. 43.

<sup>8</sup>J. Fergusson, 1967 (1st edn. 1876), *History of Indian and Eastern Architecture*. Vol. 2, p. 183.

<sup>9</sup>Ibid., p. 183.

The fact that water architecture has long been regarded as merely utilitarian is not the only reason for the neglect of this large and impressive area of South Asian architecture. A further reason is the one hinted at by Fergusson above. Water structures are negative architecture; they insert themselves into the ground and above surface level usually make no display of their subterranean splendour and elaboration. They are often not even visible from far away, and one has to willingly descend into the depth of wells to discover their wealth.

Additionally, art-historians have tended to concentrate on the early periods of South Asian architecture while water structures are usually, at least in parts, relatively late in date. This is because water and humidity damage buildings which, if not regularly serviced and repaired, fall quickly into decay. While disused temples from the early centuries AD may survive in a ruined state, the pits of neglected water structures fill up with earth and rubbish and easily vanish underground. Probably the most famous example illustrating this point is the eleventh-century Rāñī Vāv at Patan, the largest and most elaborate surviving step well, which was entirely covered by sand and earth for several centuries until the Archaeological Survey of India started excavating in 1986. At times, water structures have even been filled in intentionally to create space for new constructions in often densely inhabited towns. In Madurai (Maturai) in Tamil Nadu, for instance, the large festival tank of the Kuṭal Aḷagar Temple was drained and converted into a new bus stand, and a large number of deep stepped basins in the Kathmandu Valley of Nepal were filled in to provide space for new offices, government buildings, schools, or bus stands<sup>10</sup>.

Ancient water structures which have continued to be used by the communities or religious institutions, by contrast, continuously had to be rebuilt. While many temple histories attribute their tanks to the first centuries AD, the actual surviving structures frequently date from the sixteenth to nineteenth centuries; so that the important information the histories record is that a sacred

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<sup>10</sup>P. Joshi, 1993, *Feasibility Study of Rajkulo: Rehabilitation of Patan's Traditional Water Supply Network, Final Report (Vol. II: Inventory of Pokharis)*.

water structure has existed, probably at this very place, for a long time. The fact that it still survives, even in a strongly modernised way, testifies to the continuous use and veneration of the site. The frequent alterations of water structures, however, often make dating extremely difficult. Even if certain parts of structures can be securely dated, such as the bottom part of the *kuṇḍa* at Abaneri to the early ninth and its upper part to the eighteenth century, it still remains a problem to place the monuments within a chronological sequence. An attempt has been made to date the water structures mentioned in this thesis as precisely as possible, but the main arguments are not dependent on the dating. Although developments from simple to more complex forms will be traced for various parts of water architecture, due to a lack of architectural records from the early periods, these cannot be securely attributed to a chronological sequence of structures. Only certain sections and a few entire surviving water monuments can be securely dated to the seventh to ninth centuries, and the major part of the material dates from the twelfth if not sixteenth to the nineteenth centuries, a period in which the simplest and the most complex stages existed alongside each other. The fact that even at a time where the technical expertise to construct more complex structures existed, simple arrangements continued to be built, may be because architectural developments are not always straight and linear, that there is a certain amount of conservatism in South Asian architecture, and also to a lack of money or skilled craftsmen at certain sites or points in time.

A final reason for the lack of attention paid to water architecture by Western art-historians and also the Archaeological Survey of India, may be the fact that water structures are usually not dead buildings, but living places which are still used by the people. Therefore, it is the responsibility of the local communities or the temples to look after them, and their conversion into fenced sites with international attention, as was done with the Rāñī Vāv at Patan, would not have been welcomed at other sites.

## II. A Survey of Available Literature

Having noted the general neglect of the subject, it is appropriate to consider the few exceptions in the literature. The best known place for river side *ghāṭs*, steps leading down into water, is Benares, and from early on travellers have been attracted to the sacred Hindu city. There are reports on Benares (Vārāṇasī, Kāśī), Uttar Pradesh, by M.A. Sherring from as early as 1868, and by E.B. Havell dating from 1905, which were followed by numerous modern accounts, as for example the noteworthy studies by Diana Eck (1983/93) and by Niels Gutschow and Axel Michaels (1985). These books describe the *ghāṭs*, but their emphasis clearly lies on the temples and palaces, and on the religious activities taking place along the river. Missing is a detailed description of the tendencies and developments of the separate parts constituting the *ghāṭs*, and of their relationship to river and town which is the main concern of Chapter Three of this thesis. The two studies which come closest to dealing with these questions are a useful exhibition catalogue by Pierre-Daniel Couté and Jean-Michel Léger (1989), and an article by Jan Pieper (1979a). Another point of criticism, which consequently became a further aim of the chapter on *ghāṭs* is the fact that writers concentrated almost entirely on Benares, and rarely drew attention to *ghāṭs* at other places in South Asia.

Not much has been written about tanks and *kuṇḍas* (deep stepped basins), and there is no description or detailed analysis of their architectural shapes, their formal development, or their various uses and meanings, the main questions raised in Chapters Four and Five. Most material on tanks and *kuṇḍas* is contained in short monographs on specific sites and in pilgrimage booklets which mainly concentrate on the history and mythology of the place, and rarely discuss the architectural structures. Two useful exceptions, although regionally very restricted, are the diploma thesis by Prabhubhai K. Patel (1973) on the architectural structures of seven selected water monuments in Gujarat, and the

work by Raimund O.A. Becker-Ritterspach (1995) which is concerned with *kunḍas* in the Kathmandu Valley. A PhD thesis by Wibke Lobo (1977) on the Sun Temple at Modhera (Modherā), Gujarat, and its adjacent *kunḍa*, which is one of the most remarkable and best preserved in South Asia, dedicates a long section to the discussion of the basin but, unfortunately, merely describes and identifies the individual sculptures contained in the niches. It does not attempt to interpret the overall arrangement of the images, nor to relate the structure to the numerous other *kunḍas* of the region.

Relatively more attention has been attributed to stepwells, and two specialised studies were conducted by Jutta Jain-Neubauer (1981) on the stepwells of Gujarat, and by Kirit Mankodi (1991) on the Rānī Vāv at Patan. Both are detailed studies and valuable to the understanding of step-wells and their religious connotations, but they are regional studies which convey the impression that elaborate step-wells exist exclusively in Gujarat. This regional imbalance and emphasis on Gujarat is slightly counterbalanced by Attilio Petruccioli (1988) who examined Fatehpur Sikri (Fathpur Sikri), Uttar Pradesh, and many of its wells, and by R. Nath (1971, 1982, 1985) who studied well monuments at a few places in north and north-western India. Chapter Six of this thesis includes wells in other areas of the Subcontinent, and shows that stepwells exist all over India. Perhaps even more importantly, it aims to redress the earlier focus on stepwells, and to draw attention to the many other sub-types of well monuments.

The area of water architecture which has probably been best covered is the Islamic paradise garden containing water courses, pools and fountains. Because of the availability of detailed studies and analyses (and the present inaccessibility of many of the structures, due to the military conflict in Kashmir), this area of water architecture will be dealt with more briefly. Among the countless books on Islamic gardens, the attention of the reader concerned especially with the Indian developments is directed in particular to the pioneering work by C.M. Villiers Stuart (1913), the studies by Sylvia Crowe and Sheila Haywood (1972), by

Elisabeth B. Moynihan (1980), and the many other books on the subject listed in the bibliography. Particularly interesting, because they include a lot of recent research and new insight into the subject, are two books edited by Attilio Petruccioli (1995, 1997). A useful analysis of water gardens in general was written by George Plumtre (1993). Many of the books on Islamic gardens also include material on pools, fountains and courtyards in Mughal palaces; among these, the study by Jonas Lehrman (1980) is especially valuable because more than others, he penetrates into the symbolism and meanings of Islamic water architecture. Much of the further information available on pleasure pools, baths and gardens is contained in studies on palace architecture by Oskar Reuther (1925), G.H.R. Tillotson (1987) and George Michell (1994), and in monographs, local histories and guides.

Although several studies of various specific aspects or types of water architecture, and of selected regions within South Asia have been conducted over the years, even collectively they do not convey a comprehensive or in any way representative picture of the diversity and development, the grandeur and religious significance, or the importance of water architecture within the wider context of the history of Indian architecture.

### III. Material and Approach

Various types of material have been used in this study to provide patterns for the understanding and interpretation of water architecture in South Asia. Inscriptions on the monuments have been used to assist dating, and as sources on patronage and social history. Most inscriptions record repair and restoration works, and the dedication of money and land grants for their up-keep. Due to lack of space, some aspects of patronage and water control, which in South Asia are closely connected with kingship and power, could not be discussed at any great length in this thesis,

which concentrates on the study of the architectural structures. Concerning these aspects, the attention of the reader is directed to the work of Karl A. Wittvogel (1957/73). On the other hand, the thesis does include information on water architecture found in various *śilpa* or *vāstu śāstras*, religious theoretical treatises on architecture. Although they provide interesting information on the choice of site, the positioning of water structures towards other buildings, and the consecration rituals, they do not account for the diversity and elaboration of water architecture. Snehal Shah concluded in his study of water structures in western Indian *vāstu śāstras* that at no time do the texts indicate or account for the amount, elaboration and importance of the monuments<sup>11</sup>. Additionally, primary religious texts and secondary sources on religion and anthropology have been used as a foundation to explain architectural arrangements and the way in which the shapes of certain structures assist the execution of religious rituals. The primary focus of this thesis, however, lies on the architectural material itself, which undoubtedly is its most important source. It is based on a survey and study of more than nine hundred water structures and water-related buildings located in over two hundred and fifty sites in Nepal, India and Sri Lanka. Many of the structures have never been documented before, and the points raised in the text are illustrated by numerous photographs, sketch plans and drawings<sup>12</sup>. In order to stress the widespread nature of the types all over South Asia, the five core chapters, each discussing one type, are preceded by a map marking the sites mentioned in the text.

While in some situations, water has mainly been used as a design principle and unifying element towards which adjacent buildings have been oriented, in many other cases there is more than just an aesthetic explanation for the presence of water. This view is based on the belief that architecture carries meanings and can communicate clear messages to the people viewing or using it. This is where much of the primary and secondary religious sources come in and provide the

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<sup>11</sup>S. Shah, 1989, 'Water Structures in Western Indian Vāstuśāstra.', p. 218.

<sup>12</sup>The plans and drawings are based on paced measurements only.

foundation for the interpretation of architectural arrangements and design. It will be argued that water and water structures are used to separate domains, to distinguish between the sacred and the profane, between the public and the private, between men and women and also between castes or various degrees of purity or pollution. As such, water architecture encodes value systems, conveys cosmological and religious ideas and teachings, and provides a setting for the re-enactment of mythical events.

No attempt has been made to present an encyclopaedic collection of water structures in South Asia, undoubtedly an impossible task. The aim of the study lies in the description and examination of the architectural structures of a large number of diverse sites in various cultural and climatic areas, secondly in the identification of changes and developments within them, followed by their explanation or interpretation in a South Asian cultural context. Despite the fact that each tank or well has its own story and distinct local divinities associated with it - and as such every water structure is unique to the people of the area - there are clearly similarities and general tendencies among the sites. A well-known comparable case concerns the *Rāmāyaṇa*, which exists in hundreds of versions within every part of the country, while the various stories are recognisable as derivations from and expressions of a common message. Instead of merely adding a further study of a specific site or region, it is the primary concern of this thesis to outline such commonalities for architectural structures relating to water, and by doing so, to provide a framework for the understanding and interpretation of South Asian water architecture in general. Where further information is available on the specific use, mythology and history of a site these can be used to deepen the understanding of the particular structures. Everybody who has travelled in South Asia will remember water monuments, and while particular favourites may not be included here, the thesis does offer a framework into which they can be fitted, and a context where they can be understood.

Various methods could have been applied for ordering the vast amount of field-work material. Initially, a regional approach was considered, but since all types of water architecture exist in all parts of South Asia, and existing regional studies convey a wrong picture of their distribution, this method was easily dismissed. A further possibility could have been the examination of water architecture in its various contexts - in a palace, a town, a religious context - but since all types exist in all contexts, a typological approach was chosen. The material is divided into five types: *ghāṭs*, tanks, *kuṇḍas*, wells, and ornamental pools. The final group also includes water gardens and baths, and is less rigidly defined by its architectural structure than by a context, which is frequently palatial, although it also includes structures from civic, religious and funerary contexts; this was felt to be inevitable, since tanks especially developed differently in a private and often royal context.

The first four types were identified primarily by examining the visual shapes of the architectural material and by studying the way in which the structures draw water. Texts, such as the *Aparājītapṛcchā* of Bhuvanadeva which distinguishes between wells (*kūpa* and *vāpī*), *kuṇḍas* and tanks (*taḍāga*)<sup>13</sup>, contributed to this division. *Vāstu śāstras* are, however, not always very precise in what they mean by a *vāpī* or a *kuṇḍa*, and various texts at different stages in time attributed one and the same term to different architectural structures<sup>14</sup>, or they describe structures of which few or no examples survive<sup>15</sup>. Especially in everyday usage, the meanings of terms to describe water structures have frequently changed by becoming more general or more specific. The steps along the Ganges for example which are today known as *ghāṭs*, were in earlier times referred to as *tīrthas*, a term which nowadays is not even exclusively applied to a water place,

<sup>13</sup> *Aparājītapṛcchā* of Bhuvanadeva 74.1-8; L.M. Dubey, 1987, *Aparājītapṛcchā - A Critical Study*. pp. 119-21; D.N. Shukla, 1993, *Vāstu-Śāstra*, Vol.1, p. 392.

<sup>14</sup> While earlier *vāstu-śāstras* frequently describe wells on cross-shaped ground plans as *kuṇḍas*, later texts classify them as wells (J. Jain-Neubauer, 1981, *The Stepwells of Gujarat: In Art-Historical Perspective*, p. 28).

<sup>15</sup> Of the *catur-mukhī* (Sanskrit) or *cau-mukhī-vāpī* (Gujarati) type of well, for example, only one major example survives in the whole of Gujarat (ibid., p. 28).

but any sacred site in general. While in Nepal, a *kuṇḍa* is any water site, in India, it is a deep stepped tank often containing a well. The Rānī-jī-kī Stepwell at Bundi (Būndi), Rajasthan, is variously called a *bāoli*<sup>16</sup> or a *tālāb*, although the term *tālāb* (or *tālāo*) means tank or reservoir. Also the term *bāoli*, meaning well, is at times used to refer to a large reservoir. A deep well at Benares is called the Yupā Sarovar, although 'sarovar' means lake or large tank, and a small well at Bhubaneshwar (Bhubaneśvara), Orissa, is called the Marīci Kuṇḍa (stepped basin). Thus, the terms attributed to water structures in their names alone are not enough to identify their type<sup>17</sup>. Due to the variations, the inconsistencies and frequently also the lack of precise descriptions in the texts, the classifications in this thesis have mainly been based on the architectural record itself. A clear definition of each type along with typical examples are provided at the beginning of each of the five chapters. The fact that in comparison with the large number of structures which precisely conform to a single type, a comparatively small group of border cases and hybrids exists, is an indication of the builders' awareness of different categories of water architecture, and their conscious and playful combination of various features. Particular attention has frequently been given to such border cases, which are often among the most imaginative and unusual water structures, adapted to the requirements of a specific site. The types defined are not arbitrary: while they are not exclusively derived from a specific local text, they are based on an equally indigenous source, namely the architectural structures themselves. The aim of the dissertation is not to apply categories rigidly, but to approach the material in a structured way.

The five core chapters each deal with one of the five types of water architecture and contain the main findings of the field-work. Chapter Three deals with *ghāṭs*, and the following chapter considers how they were used as building blocks to create tanks, and how building parts encountered at the *ghāṭs* developed

<sup>16</sup>While most texts spell this term 'bāoli', the proper transliteration of the Hindi word is 'bāvli'.

<sup>17</sup>This fact has also been pointed out by N. Gutschow and A. Michaels (1993, *Benares: Tempel und religiöses Leben in der heiligen Stadt der Hindus*. p. 76.)

differently in the more protected environment of tank architecture. Chapter Five considers the development and diversity of *kuṇḍas* which frequently incorporate elements of wells into their fabric, which are the subject of the subsequent chapter. Chapter Seven analyses distinct developments in the field of palace and garden architecture, and discusses the relation between sacred and profane uses of water architecture and imagery. These five chapters are preceded by a short religious introduction providing the necessary foundation for the understanding and interpretation of the visual material, and are followed by a summary of the main ideas along with a discussion of modern developments.

## Chapter 2: THE SACRED WATERS

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Water is essential for life, and it has therefore universally been attributed highest importance and religious significance. In a religious context, water takes on many different aspects, some of which may at first seem contradictory, as the creative and destructive associations of water. Such ambiguities, however, are also typical of certain gods, and can generally be seen as a common characteristic of the sacred which may never be fully understood<sup>1</sup>. Because a detailed analysis and discussion of the religious significance and various uses of water in South Asia would be a thesis in itself, in this short religious introduction, many aspects will have to be dealt with very briefly. Emphasis will be placed on those aspects of water which are necessary for the understanding of the water structures in the following chapters, and the rituals and sculptures associated with them.

### I. Water and the Creation of the World

In most South Asian cosmogonies, the myths which tell how in primordial times the world came into existence, water (*āpah*) predates all creation. Through its fluidity and elusiveness, it is a symbol of chaos and the absence of form. The waters are the primordial substance from which creation emanates and to which it returns at the end of a cosmic cycle. Because the waters are the essence of life, they are regarded as divine. The waters, as the source of creation, are frequently said to contain a divine seed or germ. In certain stories, the emergence of the first primordial matter within the water is described as resulting from an autonomous process of coagulation, or the creation of ascetic heat (*tapas*) or desire, which

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<sup>1</sup>Rudhardt in M. Eliade, 1987(a), *The Encyclopedia of Religion*. (Vol. 15), p. 357.

condenses this matter. The cosmic germ is frequently described as an egg, the *hiranyagarbha*<sup>2</sup>, which contains the world in potential, but at the same time is the world itself. Also in the present fully created world, water still possesses certain qualities attributed to it in the cosmogonies. For example all water, and particularly that of rivers, is regarded as generative and life-giving, similar to the creative power of the cosmic ocean.

In other cosmogonies a god is said to have intervened in the process of creation, as for instance Viṣṇu as Varāha, who in the form of a boar dives into the waters and brings up the first clod of earth from the bottom of the cosmic ocean. In some versions, the clod of earth is given human form as Bhū Devī, the goddess of the earth. A panel depicting this part of the creation story may be seen in the cave temple number five at Udayagiri in Madhya Pradesh (Plate 1). While in some stories a lotus is said to grow from the clod of earth, in others it is placed on top of a lotus leaf which is upheld and supported by the cosmic waters. An interesting parallel to this story is the small lotus shaped platform in the centre of the Kumāra Pokuna at Polonnaruva (Polonnaruvā) in Sri Lanka. This first stage of the various cosmogonies represents still an undifferentiated unity which arises from and floats on the cosmic waters.

In the subsequent step of the cosmogony, the first matter or undifferentiated unity has to be fixed to provide a place of reference, a sacred centre, which has to be opened up to reveal and release creation. The original whole has to be divided into the multiplicity of the phenomenal world. In cosmogonic literature, this stage is frequently related to the slaying of a dragon (Vṛtra) or cosmic man (*puruṣa*), who is sacrificed to provide the substance for a new creation of life and the cosmos. Several of these stories are related to the god Indra, who slays the dragon or snake and breaks open the primordial hill to create the world. With the peg (*Indra-kīla*), with which Indra kills the dragon, he also fixes the mountain, situated at the centre of the world. The idea that creation is the

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<sup>2</sup>F.D.K. Bosch, 1994, *The Golden Germ: An Introduction to Indian Symbolism*. p. 53.

division of a divine integral unity into the multiplicity of existence, is also essential to the belief that the divine is within every object in the world. In the following part of the creation, Indra props up the sky and creates the first duality of heaven and earth. This stage is frequently associated with images such as a pillar (*axis mundi*), the tree of life, the thunderbolt (*vajra*), the rising sun, or a mountain.

Related to the dismemberment of the cosmic unity, which is needed to supply the material for a subsequent creation, is a widespread belief in South Asia, that a constant supply of water and as such the effectiveness of a water structure, is secured most efficiently by a sacrifice. Regarded as most potent and propitiating towards water divinities, is a human sacrifice, which guarantees durability and efficacy to the building<sup>3</sup>. The *Rgveda*, the *Yajurveda* and the *Aitareya Brāhmaṇa* describe human sacrifices (*puruṣamedha*) as strengthening for structures<sup>4</sup>, and a legend describes how through a human sacrifice, the Sahasra Liṅga Tank at Patan, Gujarat, which had dried up through the power of a curse, was resupplied with water<sup>5</sup>. Especially for Gujarat, there are many reports of self-sacrifices as part of the consecration of water monuments. The victims had to be buried in the foundation of the water structures, and archaeological excavations in the so-called 'Great Tank' at Vijayanagara revealed a vaulted chamber under the floor containing the human remains of a man who is believed to have been sacrificed during the consecration of the tank<sup>6</sup>. Nowadays, such sacrifices are replaced by offerings of food and coconuts (Plate 6).

There are ample architectural examples, which will be discussed in detail particularly in Chapter Four, on 'Tanks', which give material shape to the stages

<sup>3</sup>J. Jain-Neubauer, 1981, *The Stepwells of Gujarat in Art-Historical Perspective*. pp. 6, 8.

<sup>4</sup>*Ibid.*, p. 8. Although folk mythologies and legends, particularly in Gujarat, report on human sacrifices, there are not many reports on the actual execution of such rites in earlier texts. It seems, however, to have been practice to slay the first-born sons of kings during the rite of *rājasūya*, the royal consecration of a king. The end to this practice is described in the *Aitareya Brāhmaṇa* VII.13-16 dealing with Śunaḥśepa who is saved from being sacrificed (A.B. Keith, 1920, *Rigveda Brahmanas: The Aitareya and Kauṣītaki Brāhmaṇas of the Rigveda*. pp. 61, 62.).

<sup>5</sup>*Ibid.*, p. 8.

<sup>6</sup>Archaeological Survey of India, Annual Report 1904-5, p. 30, Archaeological Survey of Madras and Coorg, Annual Report 1904-5, p. 36.

of the cosmogony so far discussed. Pillars, similar to Indra's peg at the creation of the world, are frequently found at the centre of tanks and reservoirs and mark the sacred spot of creation. It is also at the centre of the cosmos or the earth that the reunion with the ultimate unity from which all resolves, can be found again. The centre represents a kind of 'gate' through which transcendence and liberation can be gained. Therefore, temples and pavilions have frequently been constructed in the centre of tanks or lakes. They represent the cosmic unity and are a material manifestation of the divine energy contained within the waters. Like the first seed or mountain, the buildings seem to have arisen from the water on which they appear to float. Other temples were set on islands where they can be reached by causeways which provide access to the cosmic centre. Here, the visit to the temple is not only spiritually but also materially a clear expression of a return to the centre and the creation of the world. Mircea Eliade describes this tendency as man's desire periodically to return to his origin<sup>7</sup>. Also the idea that the multiplicity of creation develops out of the cosmic water has frequently been given architectural shape by many, sometimes hundreds of *liṅgas*, the phallic emblem of god Śiva, and shrines surrounding water reservoirs.

In a different set of traditions it is Viṣṇu who as Nārāyaṇa reclines, supported by a lotus or the coiled serpent Śeṣa or Ananta, on the cosmic waters. The Kathmandu Valley has three large-scale sculptures placed in water tanks which depict this part of the myth (Plate 2). A sculptural panel depicting this scene may also be seen in the Mahiṣamardinī Cave Temple at Mamallapuram (Māmallapuram, Mahābalipuram), Tamil Nadu (Plate 3). Frequently, a lotus is depicted growing from Nārāyaṇa's navel, which can be equated with the centre of the universe. The unfolding lotus reveals Brahmā within and unleashes creation. Carved panels associated with this story are frequently found in connection with water structures. Small versions of sculptures set into miniature basins may be seen at the *ghāṭs* in Benares, and along most Nepali rivers. A beautifully carved

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<sup>7</sup>M. Eliade, 1991 (a), *The Myth of the Eternal Return*. pp. 17-18.

panel was integrated into the side of the Koṭ Tirth in Kalinjar Fort (Kālañjara), Madhya Pradesh (Plate 4), and a similar panel is contained within the central shrine on the eastern side of the Modhera Kuṇḍa, Gujarat (Plate 5). Viṣṇu Nārāyaṇa is also the main sacred image of the Rāñī Vāv at Patan, one of the largest and most elaborate stepwells.

In the created world, water plays an important role as an ordering principle. The dividing of the waters defines cosmic order and at the end of a cosmic cycle reabsorbs creation again into nothingness<sup>8</sup>. In the periodical reabsorbtion, all is dissolved, purified and enriched with new possibilities. This reflects the cyclic world view, particularly of the Hindus, which is well expressed by the image of Viṣṇu Nārāyaṇa who floats asleep on the cosmic ocean, and whose awakening marks the beginning of a new world era, a *kalpa*. Since long before the connection between the lunar phases and water was scientifically proven, in South Asia, water was associated and even assimilated with the moon. The *Chāṇḍogya Upaniṣad* and the *Brāhmaṇas*, regularly identify the moon with *soma*<sup>9</sup> which in turn is associated with *amṛta*, the elixir of life and immortality created by the *devas* and the *asuras* during the churning of the Milky Ocean. This story again expresses the belief in a divine substance as contained within the waters, which can be concentrated and abstracted such as the divine seed or egg. Depictions of the churning of the ocean are not only common to the Hindu context, but also adorn Sikh shrines (Plate 11). Water in general is a symbol of life and represents a combination of aspects of fertility, health and immortality.

<sup>8</sup>The connection between water and law or order is sometimes hinted at in the names given to water structures, as for example in the Dharma Kūpa at Benares.

<sup>9</sup>*Chāṇḍogya Upaniṣad* V.10.4, *Śataptha Brāhmaṇa* II.4.2 and 7, and *Aitareya Brāhmaṇa* I.7.11 (32.10). (For a discussion of further references in other *Brāhmaṇas* and the *Vedas*, see A.B. Keith, 1925, *The Religion and Philosophy of the Vedas and Upanishads*. p. 170.).

## II. Holy Rivers

### 1. Rivers as Divine Mothers

Rivers are regarded as divine because water is the essence of life, and because earthly rivers are believed to originate in heaven. They are regarded as the continuation of heavenly waters on earth, and as the offspring of the gods. Brahmaputra, for example, means the 'Son of Brahmā'<sup>10</sup>. Most rivers, however, are feminine, and in the stories connected with rivers, they are often associated with earthly women. One such story is known about the River Kaveri (Kāverī), who is said to have been the wife of the sage Agastya. Because one day Agastya did not return home, Kāverī threw herself into a tank, sank to the bottom and disappeared underground. She became the River Kaveri and reappeared as a spring on top of Brahmagiri (Brahmāgiri), a nearby hill<sup>11</sup>. Because rivers are generally worshipped as goddesses, the rituals and offerings made to female deities or human women are also appropriate for rivers<sup>12</sup>. Sculptures and temples of river goddesses will be discussed in the section on 'Water Divinities', later on in this chapter.

Rivers are, however, not only worshipped in the form of anthropomorphic images of river goddesses, but Hindus also pay reverence to the physical rivers themselves. Certain rivers, particularly the sacred Ganges, are circumambulated by pilgrims who start at the source, walk along one side of the river until they meet its mouth, and then walk back on the other side. Some pilgrims prostrate themselves, measuring the entire way with the length of their bodies. To circumambulate the Ganges in this way takes six years<sup>13</sup>. Devotees may also worship rivers by stringing garlands of flowers often hundreds of metres long,

<sup>10</sup>In Tibet, the Brahmaputra is called the Tsang-Po meaning 'The Purifier'.

<sup>11</sup>A. Valliappa, 1992, *The Story of Our Rivers*. Part II, pp. 10-11.

<sup>12</sup>A. Feldhaus, 1995, *Water & Womanhood: Religious Meanings of Rivers in Maharashtra*. p. 43.

<sup>13</sup>D. Eck, 1993, *Banaras: City of Light*. p. 212; Newby in R. Singh & E. Newby, 1974, *Ganges: Sacred River of India*. pp. 16-17.

across their width<sup>14</sup>. Rivers are thus adorned in the same way as temple images, and also food, coconuts and flowers are offered to rivers (Plate 7). In the evenings, devotees set small boats made of leaves filled with flowers and lights afloat on rivers and tanks to worship the sacred waters, and to adorn and entertain the river goddesses (Plate 8). The earliest dated accounts of the worship and deification of the Ganges date from Megasthenes, who arrived as ambassador at the Mauryan court in 302 BC<sup>15</sup>.

Rivers are not only regarded as goddesses, but also as divine mothers, a connection made already in the *R̥gveda*<sup>16</sup>. This association is based on the fact that rivers flow through the landscape and water plants and fields. The land bordering them can be intensely cultivated due to the fertile sediments deposited on it by the periodical floods and because of the continuous presence of water for irrigation. Thus, the rivers fertilise the country and nourish the people the way a mother does<sup>17</sup>. Therefore, river water has frequently been linked to milk, the milk of a mother or a cow, and also to *amṛta* (Plate 9)<sup>18</sup>.

Rivers are venerated not only to ensure good crops but also to promote fertility in women<sup>19</sup>. Women who want offspring may bathe in rivers or certain tanks which are particularly renowned for their fertile properties. One such tank, which is visited by childless couples, is situated in the second enclosure of the Temple at Tiruvellarai, Tamil Nadu, but also stepwells in general are visited by brides or young couples after their wedding, to gain fertility and healthy offspring. As part of fertility rites, seeds are thrown into rivers and pots with sprouting grains are deposited in stepwells which are frequently associated with mother-goddesses. In the Yoginī Temple at Khajuraho, women offer clay water pots filled with grain to the goddesses (Plate 10) to ensure their own fertility and a

<sup>14</sup>D. Kinsley, 1987, *Hindu Goddess: Visions of the Divine Feminine in the Hindu Religious Tradition*. p. 196.

<sup>15</sup>J. Mahajan, 1984, *The Ganga Trail: Foreign Accounts and Sketches of the River Scene*. p. 11.

<sup>16</sup>RV I.34.8, III.33.3.

<sup>17</sup>Feldhaus, 1995, p. 82; Kinsley, 1987, p. 194.

<sup>18</sup>This led to the naming of certain tanks as pools of immortality, as the Amṛt Sarovar in the hill top fort at Nandi, Karnataka, and the better known tank of the same name at Amritsar, Punjab.

<sup>19</sup>Kinsley, 1987, p. 194.

good crop. Because of the fertility aspect of water, it is also common to the entire subcontinent to find depictions of *mīthuna* couples carved into the sides of water structures, as may be seen in the Bhīm Lāt Kuṇḍ at Chitorgarh, the Modherā Kuṇḍa (Plate 12), and the *kuṇḍa* at Kamalapuram (Kamalapurā), Karnataka. Also carved images of the tantric goddess Lajjā Gaurī may be associated with water structures, like the *kuṇḍa* of the Śrī Yogānandīśvara Svāmī Temple in Nandi Fort (Plate 13) and the tank of the Huchimalliguḍi at Aihole (Plate 14), both in Karnataka. Images of mother goddesses, the *saptamātṛkas* and the *aṣṭamātṛkas* are also common.

There is a close relationship between the feminine waters or rivers, and Śiva's masculine *liṅga*. Water or milk, which are both considered ritually cooling substances, are poured over *liṅgas* as part of worship (Plate 15), and clay or brass pots out of the bottom of which water continuously drips are suspended above *śiva-liṅgas* in the *garbhagrha* of temples (Plates 16, 18). This practice is related to the story of the descent of the Ganges, which coming from heaven fell onto Śiva's hair or head. At Sahasradha (Sahasrādhā) near Dehra Dun, Uttar Pradesh, a *liṅga* contained in a natural cave from whose ceiling water continuously drips is an important object of worship. It is also common practice, particularly at the beaches on Gangasagar Dvīp (Gaṅgāsāgara Dvīp), West Bengal, where the Ganges enters the Bay of Bengal, and at Rameshvaram (Rāmeśvaram), Tamil Nadu, where Sītā is said to have done so, to form *liṅgas* out of sand which become lustrated and dissolved by the rising tides (Plate 20). More permanent expressions of the same idea may be seen along the bank of the Tungabhadra River at Vijayanagara, where *liṅgas* and other religious images were carved into the boulders bordering the river (Plate 17)<sup>20</sup>. Depressions around the *liṅgas* keep them surrounded by water even when the river recedes, and post holes surrounding some of the carvings hint at the possibility of setting up temporary

<sup>20</sup>J.A. Patt describes similar carvings of *liṅgas* along a river near Angkor in Cambodia (1979, 'The Use and Symbolism of Water in Ancient Indonesian Art and Architecture'. PhD dissertation, pp. 38-39.).

structures such as awnings or small shrines above them (Plate 19). Also many *ghāṭs* in India and Nepal are lined by stone *liṅgas*, which at high water level become bathed and submerged by the rivers which purify and imbue them with divine energy.

## 2. Rivers and Cows

There is a strong association of water in general, and of rivers in particular, with cows and their bodily products. Cows are powerful maternal images, and this aspect links up well with the idea of rivers as being female and regarded as mothers. Cows are holy and like the sacred waters, they are regarded as symbols of wealth, prosperity and fertility. Already during the Vedic age, rivers were compared to cows<sup>21</sup>, the rising of their water level was compared to the swelling of the udders of cows<sup>22</sup>, and their waters were regarded as milk<sup>23</sup>. The association of water and cows is regularly expressed in water architecture, and cows play an important part in the consecration rituals of water structures. During the consecration ceremony of a tank, a cow should be covered and brought into the water of the newly built structure to make its waters sacred. In the case of a well, the cow is led around the structure, but even the presence of a cow is believed to bestow sacredness on the monument and the water contained<sup>24</sup>.

The connection between rivers and cows is particularly obvious in connection with the river Godavari. Folk etymologies divide its short form *Godā* into the parts 'Go', meaning 'cow', and 'dā', 'to give'<sup>25</sup>. According to the *Godāvārī Māhātmya*, the story of the Godavari which also deals with the descent of the Ganges, the Godavari was brought down from heaven because the sage Gotama killed a cow<sup>26</sup>. Small brass images of cows together with money are offered to the

<sup>21</sup>RV I.32.3 and 11, III.3.1, V.53.7.

<sup>22</sup>RV III.33.12, III.33.4.

<sup>23</sup>RV I.104.3 and 4, I.130.5, II.13.2, III.33.1, VII.36.6.

<sup>24</sup>P.V. Kane, 1974, *History of Dharmaśāstra: Ancient and Medieval religious Law*. p. 890; Jain-Neubauer, 1981, pp. 5, 8.

<sup>25</sup>Feldhaus, 1995, p. 46.

<sup>26</sup>Feldhaus, 1995, p. 46.

goddess Godāvārī at the source of the river and at a tank further down Brahmagiri (Brahmāgiri) at Trimbak (Trymbakeśvar), Maharashtra. The Godavari has often been identified with the Ganges, whose physical source, near Gangotri (Gaṅgotrī) in Uttar Pradesh, is called 'Gomukh' or 'Gaymukh' (Gomukha, Gāymukha), meaning 'cow head' or 'mouth'. The glacier out of which the Ganges issues is believed to be in the shape of a cow's head, and also the *Gaṅgā Māhātmya* provides detailed information on its shape. According to this text, the Ganges fell from heaven onto Mount Meru where it divided into four streams which emerged out of four rocks in the shape of animal heads. The earthly Ganges issued out of a cow head, the Chaksu out of a horse head, the Sita out of an elephant head and the Bhadrasoma out of a lion head<sup>27</sup>. The lesser known Nira River in Maharashtra issues at its source from a sculpted stone cow's head before it collects in a small tank in front, and at the source of the Narmada, at Amarkantak (Amarkaṅṭaka), Madhya Pradesh, the river water is also channelled through a *gomukh* spout. Also in the Pañcagaṅgā Temple (Five Gaṅgā or Five River Temple) at Mahabaleshvar (Mahābaleśvara) in Maharashtra, where the Krishna, the Koyna, the Vena, the Gayatri and the Savitri Rivers are believed to originate in separate shrines, the waters of the five rivers are channelled through the body of a small stone cow and issue out of its mouth into a tank in the temple compound<sup>28</sup>. Frequently, rivers are believed to flow for considerable distances underground, and to reappear in temples or tanks not obviously connected with the sacred rivers<sup>29</sup>. At such places, cow heads are often employed to hint at the origin of the waters and to identify them as sacred river water. An example of this is one of the twin tanks below the source of the Godavari on Brahmagiri at Trimbak. The water

<sup>27</sup>S. Piano, 1990, *Il Mito del Gange - Gaṅgā Māhātmya*. p. 26.

<sup>28</sup>In a further niche in the northern wall of the temple, the sacred Ganges is said to occur one year in twelve, and the Sarasvati is believed to issue out of a seventh niche for one week every six years (Feldhaus, 1995, p. 21.).

<sup>29</sup>This perception becomes particularly clear in the *Purāṇas* (S.M. Ali, 1973, 'The River System of the Puranas.', p. 60.), and it is also a belief which is very alive in Nepal, where all water structures are believed to be connected underground. Also in Islam, where paradise is imagined as 'a garden beneath which rivers flow' the idea of underground rivers is reencountered (Schimmel in A. Petruccioli, 1985, *Water and Architecture*. p. 6).

in the small tank issues out of the mouth of a stone cow head and an inscription above reads 'Śrī Gaṅgā-Godāvarī Prasan(n)', meaning 'clear' or 'pure' auspicious Gaṅgā-Godāvarī (Plate 21). This stresses also again the close relationship between the Ganges and the Godavari. The headless torso belonging to the *gomukh* spout in the tank is found on top of Brahmagiri at the actual source of the river<sup>30</sup>.

There are many examples where cow head spouts were employed in tanks where there is no connection with an actual river. Tanks containing cow imagery are, however, generally sacred pilgrimage spots, where the presence of a cow sculpture symbolises the purity and sacredness of the water. Examples may be seen at Siddhpur (Siddhapurā), Gujarat, where there are two examples of *gomukh* spouts in the Alpa Sarovar, and at Adavad in Maharashtra, where the naturally hot water of the Unabdev spring issues out of the mouth of a cow. The cow head is painted red, indicating its holiness, and flower garlands are placed on its head in reverence (Plate 24). Temple *praṇālīs*, the channels through which the milk, ghee and water mixture poured over the *liṅga* in the *garbhagr̥ha* of a temple is channelled usually out of the northern side of the *vimāna*, may also be in the shape of cow heads. This is the case with the *praṇālīs* of the Gṛśneśvara Temple<sup>31</sup> in Ellora (Ellorā, Elūrā) village (Plate 22), and with the Siddheśvara Temple in Sholapur, both in Maharashtra. The use of cow imagery indicates the sacredness and purity, but also the cleansing properties of the liquid. The connection between sacred waters and cow heads is also continued in modern structures, as for example the large twentieth-century cow head spout at the bathing *ghāṭs* of the Mallikārjuna Temple at Srisailam (Śrīśailam) (Plate 26), Andhra Pradesh, and in a modern fountain at Trimbak (Plate 23). In the latter, the water issues out of four cow heads which are fixed to a central pillar carrying a sculpture of Śiva wearing a tiger skin. In comparison with the frequent occurrence of cow heads in water architecture, sculptures of entire cows are relatively rare; they are, however,

<sup>30</sup>Feldhaus, 1995, 46.

<sup>31</sup>For this temple name various spellings exist. A further common way of spelling it is 'Gṛśneśvara'.

found at Mahabaleshvar and on Brahmagiri at Trimbak, mentioned above, and a row of large sculptured marble cows or buffaloes faces the Mandākinī Kuṇḍ at Achalgarh (Achalgarh), Rajasthan (Plate 25).

Various river *māhātmyas* identify certain rivers with bodily products of cows. The *Bhīmā Māhātmya*, for example, associates the Narmada River with the urine of a cow and the Yamuna with cow dung<sup>32</sup>. Every twelve years, the Sipra river is believed to turn into milk<sup>33</sup>, the name of the Payoshni River in Maharashtra means 'warm milk'<sup>34</sup>, and one of the many names attributed to the Ganges is Kṣīrā-śubha, 'White as Milk'<sup>35</sup>. Not only rivers but also tanks, *kuṇḍas* and wells are at times associated with milk. A stream of milk is for example frequently reported to spout out of the water surface of the large tank called the Mānsīgāṅgā at Govardhan (Govardhana), Uttar Pradesh<sup>36</sup>. Cows and all their bodily products are considered particularly purifying and are frequently used in rituals.

### 3. The Sacred Ganges

The Ganges is considered the purest and most sacred of South Asia's rivers, and is the prototype of all sacred waters<sup>37</sup>. Large numbers of pilgrims come to the Ganges for a purifying bath, if possible at a particularly sacred spot such as Benares, and it is the wish of all devout Hindus to be cremated on the banks of the sacred river and to have their ashes scattered in it. The Ganges has been personified in the anthropomorphic image of Gaṅgā Devī, the Goddess Gaṅgā, who is depicted standing on her vehicle the *makara*, a mythical sea animal, holding a lotus or a plate of food in one, and a water pot in her other hand (Plate

<sup>32</sup>*Bhīmā Māhātmya* 8.23 and 8.29 respectively.

<sup>33</sup>P. Dubey, 1992, *The Maha Kumbh at Prayag*. p. 13.

<sup>34</sup>Feldhaus, 1995, p. 47.

<sup>35</sup>Newby in Singh & Neby, 1974, p. 19.

<sup>36</sup>D. Anand, 1992, *Krishna: The Living God of Braj*. p. 55.

<sup>37</sup>Although the belief in the purity of the Ganges developed out of spiritual concepts and religious thought, also scientific studies have sought to prove the dirt and bacteria absorbing abilities of the Ganges (Dubey, 1992, p. 12; N. Gutschow & A. Michaels, 1993, *Benares: Tempel and religiöses Leben in der heiligen Stadt der Hindus*. p. 50).

27). Being depicted with nurturing and overflowing symbols, a strong element of her worship is the reverence of her maternal aspects. She is commonly known as Gaṅgā Mātā, Mother Ganges (Plate 28), and her worship is not restricted to the north, the region in which the Ganges flows, but encountered all over India, Nepal and Sri Lanka.

Rivers in other parts of India are also associated with the Ganges. The Kaveri is commonly referred to as the Ganges of the south, and the Godavari is considered part of the Ganges, which was diverted to central India<sup>38</sup>. There are innumerable rivers called Ramaganga, Krishnaganga or Vishnuganga and the main river to the east of Polunnaruva, Sri Lanka, is called the Mahaweli Ganga<sup>39</sup> formerly known as the Maha Ganga or the Mahavaluka Ganga<sup>40</sup>. Through their names and mythology, other rivers were related to the sacredness of the Ganges. This is also based on the Purāṇic perception that the descent of the Ganges consists of three distinct stages. It originates in heaven where the Ganges is equated to the Milky Way, followed by its descent to earth in the shape of snow covering the mountains of the subcontinent; the 'snowy' or 'glacial' stage is followed by the earthly fluvial Ganges which originates in the snow of the hills. According to the Purāṇas, every river which springs forth in snow-covered mountains is regarded as a manifestation of the sacred Ganges<sup>41</sup>. Today, the Ganges is symbolically believed to flow within every river, and also the water of a tank or even that contained in a pot may be regarded, or ritually transformed into Ganges water by evoking the presence of Gaṅgā Devī. As part of consecration rites, Ganges water is frequently poured into water structures in order to sanctify their waters<sup>42</sup>.

<sup>38</sup>Eck, 1993, p. 214.

<sup>39</sup>Also many tanks were given the name Gaṅgā such as the Gaṅgā Sāgar tank in Raigarh, Maharashtra, and the Mānsigaṅgā Tank at Govardhan.

<sup>40</sup>R.L. Brohier, 1965, *Seeing Ceylon*. p. 47.

<sup>41</sup>Ali, 1973, pp. 63-64, 68.

<sup>42</sup>This was for example done when the large tank near the temple at Gangaikondacholapuram was dedicated to the public by Rājendra Coḷa (Patt, 1979, p. 28).

The Ganges itself is known under innumerable names. The part closest to its source at the Gomukh Glacier is called Bhagirati, because it was at this place that the sage Bhagīratha caused the Ganges to descend from heaven through austere penance. There are many stories concerning the descent of the heavenly river to earth, but probably the best known is that connected with Bhagīratha. According to the myths, the sage Kapila was disturbed in his mediation by the sixty thousand sons of King Sāgara and out of anger burned them to ashes. None of the king's pious descendants managed to restore their forefathers, until generations later, Bhagīratha persuaded the river Ganges, who flowing in heaven is called Mandākinī or Svargaṅgā<sup>43</sup>, to descend to earth to dissolve the ashes of his ancestors. Because her fall from heaven would have destroyed the earth, Śiva agreed to receive the Ganges on his head, where diverted in his hair, the Ganges split into four or seven rivers, depending on the source<sup>44</sup>. The mention of seven sacred rivers, the Indus, the Sarasvati, and the five rivers of Punjab, is as old as the Ṛgveda<sup>45</sup>. The main river, the sacred Ganges, washed away and dissolved the ashes of the king's sons who were purified and saved. This happened at Gangasagar, where the Ganges, called the Hoogly, enters the Bay of Bengal. In some versions, the Ganges is said to have entered the underworld to free the king's sons, a view which contributes to her name Triloka-patha-gaminī, the Triple-Pathed River, or she who flows in the three worlds<sup>46</sup>. There are many other myths concerned with the origin of the divine river which relate to Viṣṇu who with his foot broke a hole into the vault of heaven through which the heavenly river poured, or Brahmā who is believed to have kept the Ganges in a water pot.

<sup>43</sup>Mandākinī is associated with the Milky Way (Pant in A. Dilwali & P. Pant, 1987, *Ganga: Origin and Descent of the River Eternal*. p. 1), and there is also an actual river called Mandakini on the banks of which the Kedārnātha Temple is located. The river originates in Cobāritāl, a lake nearby, in which some of the ashes of Mahatma Gandhi were immersed, which led to its renaming into Gandhi Sarovar.

<sup>44</sup>Today, the seven heavenly rivers are regarded to be the Ganges, the Yamuna, the Godavari, the Sarasvati, the Narmada, the Indus and the Kaveri (Bonn in P. Frey & G. Bonn, 1991, *Ganges*. p. 28).

<sup>45</sup>RV I.32.12, I.35.8, II.12.12, IV.28.1, VIII.41.2, X.13.5, X.104.8.

<sup>46</sup>Kinsley, 1987, p. 192; Eck, 1993, p. 211. In heaven she is connected with the Milky-Way, on earth she is the sacred river Ganges, and flowing in the netherworld she can reach and surface at any sacred place (Bonn in Frey & Bonn, 1991, p. 154.).

All stories account for the divine nature, the purity, and the ability of the Ganges to wash away sins and bestow salvation (*mokṣa*) to the dead.

The various versions of the story of the mythical descent of the Ganges encouraged countless paintings and sculptural representations. Gaṅgādhara-Mūrtis, for example, depict Śiva receiving the river goddess Gaṅgā in his hair. In several seated sculptures of Śiva, located at the centre of water reservoirs (*pokharīs*) in the Kathmandu Valley (Plate 29) and in a modern fountain in the Kālahastīśvara Temple in Kalahasti (Kālahasti), Andhra Pradesh (Plate 30), the water issues from the top of Śiva's head, and makes direct reference to the descent of the Ganges. On top of Brahmagiri at Trimbak, a small temple was constructed over a ribbed section of the rocky mountain, which is referred to as Śiva's hair (*jaṭā*), and the water which collects at the lowest point of the rock is regarded as Ganges water<sup>47</sup>. Probably the largest depictions dedicated to the theme of the descent of the Ganges, are two seventh-century reliefs cut into natural boulders at Mamallapuram. In the larger and better known composition, next to the Pañca Pāṇḍava Maṇḍapa, water was stored in a tank on top of the rocks, and could be released to pour down in the narrow cleft between the two boulders (Plates 31, 32). The carvings between the rocks depict water related beings such as snakes and water birds, and show Bhagīratha involved in austerities. Alternatively, the composition can be read as a depiction of Arjuna's penance.

Although the Ganges has this particular importance only for Hindus, also the members of other religions pay tribute to the river and integrated it into their legends. The traveller Ibn Batūta was the first to report that Ganges water was also drunk and considered special by Muslims, and that Delhi sultans and noble men exclusively drank Gaṅgājal<sup>48</sup>. According to Abū'l Faz'l, Akbar was one of them, and Ganges water even had to be taken on military campaigns<sup>49</sup>, and even the pious and orthodox Aurangzeb (Ālamgīr) is said to have preferred Gaṅgā

<sup>47</sup>Felhaus, 1995, p. 26.

<sup>48</sup>Mahajan, 1984, pp. 24-25.

<sup>49</sup>Pant in Dilwali & Pant, 1987, p. 2.

water to any other<sup>50</sup>. Many Buddhists believe that the Ganges originates at the foot of Mount Kailāsa or in Lake Mānasarovar, two water places sacred to the Buddhists.

### III. Tīrthas

#### 1. *Tīrthas* and Pilgrimage

Sacred sites in India, Nepal and Sri Lanka are commonly connected with geographical or natural peculiarities. They are believed to possess supernatural powers, and to be locations where contact with the divine is more likely. Such places are frequently located on hill tops, where one is nearer to heaven and the purer realms of the gods, or they may be rock caves, large trees or water related sites, such as rivers, confluences or lakes. Other places are sanctified through local legends and mythology, by relating stories about the deeds and lives of gods, goddesses and sages to actual geographical places. In these last cases, however, it has to be assumed that the sites were sacred places of worship since long ago, and that their 'rediscovery' has to do with the reintegration or reappropriation of ancient places of worship to new or changing beliefs<sup>51</sup>. The place itself is the primary object of worship, and the names of the gods and the legends connected with them have changed over the centuries. This is why the religious affiliation of sacred places may have changed, or why followers of different faiths worship at a common place.

In the wider Hindu tradition, sacred places are called *tīrthas*. A *tīrtha* is a 'ford' or a 'crossing place', which has been sanctified by an encounter, a hierophany<sup>52</sup>, with divine powers. At such places, gods are believed to have

<sup>50</sup>Dubey, 1992, p. 12.

<sup>51</sup>S.M. Bhardwaj, 1983, *Hindu Places of Pilgrimage in India: A Study in Cultural Geography*. p. 95; M. Stutley, 1993, *Hinduism: The Eternal Law*. p. 139.

<sup>52</sup>D. Eck, 1981, 'India's Tīrthas: "Crossings" in Sacred Geography.', p. 336; M. Eliade, 1987(b), *The Sacred and the Profane: The Nature of Religion*. pp. 20-21.

descended to earth, and to have broken open and established a threshold or door to descend to earth which can also be used by human beings to ascend to heaven. They are sites where contact with the divine is more easily established, and where salvation may be reached. As such, they are places of transition and change. The verb *tī*/tarati means 'to cross over', 'to ford', and therefore, the term *tīrtha* is particularly closely connected with water or bathing places<sup>53</sup>. A.W. Entwistle remarks that in the more recent vernacular texts dealing with pilgrimage and sacred places in Braj, the older term *tīrtha* is usually replaced by *ghāṭ* or *kuṇḍa* which are terms for different types of water structures<sup>54</sup>. The *ghāṭs* at Benares were originally referred to as *tīrthas*, and in the south of India, the term *tīrtha* has come to mean 'sacred water' in general<sup>55</sup>.

To use the metaphor of fording a river or stream for the crossing from ignorance to a purer state of being or salvation, or that from the profane to the sacred, is common to Hindus, Jains, Sikhs and Buddhists<sup>56</sup>. The transition is regarded either as a crossing upwards to heaven, usually connected with the image of a ladder (*sopāna*), or as a crossing over to a different realm, linked to the image of a bridge (*setu*)<sup>57</sup>. The latter is a recurrent theme in South Asian water architecture, where islands in tanks and lakes, carrying temples, pavilions and tombs, are frequently linked by bridges to the shore. At such sites, the devotee partakes in an actual crossing of water and reaches a sphere which is different from the ordinary world around. The island is an isolated space, embodying a religious ideal of purity, and carrying the primordial divine essence in the form of a temple or image. The same is true for temples or pavilions which were built straight into the water of basins, lakes or rivers, or for islands not connected by

<sup>53</sup>Eck, 1981, p. 323.

<sup>54</sup>A.W. Entwistle, 1987, *Braj: Centre of Krishna Pilgrimage*. p. 293.

<sup>55</sup>Eck, 1981, p. 335. The term *tīrtha* is also frequently used to describe the sacred milk and water mixture which is poured over the *linga* in shaivite temples and channelled out of the *vimāna* through a *praṇālī*.

<sup>56</sup>Kinsley, 1987, p. 56.

<sup>57</sup>The Ganges is sometimes referred to as 'the flowing ladder to heaven', *svarga-sopāna-sarīṇī* (Eck, 1981, p. 325).

bridges, where the crossing has to be done by boat. Places surrounded by water on all sides are considered particularly sacred<sup>58</sup>.

*Tīrthas* are places of pilgrimage to which devotees travel often over hundreds of kilometres because at these places a crossing to a higher sphere may safely be made. The difficulty of the journey (*durlābha*) to reach often remote sites or locations on steep mountains, increases the merit gained by the pilgrims and is part of a self-sacrifice of the pilgrim's soul<sup>59</sup>, an idea which will be discussed more closely in the section on ablutions. Although the ceremonies conducted at sacred *tīrthas* are usually no different from those performed elsewhere, they are regarded as more fruitful and beneficial, because *tīrthas* are imbued with divine energy and the sacred power of the site. Pilgrims attain merit, a higher status in the community, and they become spiritually purified. The merit gained by visiting *tīrthas* and particularly sacred bathing places, is said to be equal or greater than that achieved by Vedic sacrifices, and pilgrimage can replace other ceremonies and rites of sacrifice<sup>60</sup>. *Daśāśvamedha Ghāt*, the *ghāt* of the ten horse sacrifices, in Benares, is called so after the Vedic sacrifice which is believed to have been conducted at the site by King Divodāsa. Today, a bath at the *ghāt* is considered equally rewarding<sup>61</sup>. Because women and outcastes were not allowed to participate in certain Brahmanical rites and in Vedic sacrifices<sup>62</sup>, pilgrimage and bathing in sacred *tīrthas* opened up new possibilities for acquiring merit to these groups of society. This may also be a reason to account for the many women patrons of water structures, particularly stepwells. The dedication of water structures to the public is an auspicious deed, which was one of only a few means for women to acquire religious merit. The movement away from Vedic rituals contributed to the development and importance of the pilgrimage tradition to sacred *tīrthas* which, today, is one of the most developed expressions of

<sup>58</sup>J. Pieper, 1979(a), 'Water Architecture in Hindu Urban Architecture.', p. 41.

<sup>59</sup>D.D. Shulman, 1980, *Tamil Temple Myths: Sacrifice and Divine Marriage in the South Indian Siva Tradition*. p. 18.

<sup>60</sup>Entwistle, 1987, p. 293; Eck, 1981, p. 337.

<sup>61</sup>K.K. Klostermaier, 1994, *A Survey of Hinduism*. p. 166; Eck, 1981, p. 338.

<sup>62</sup>Kane, 1974, Vol. II, part II, pp. 889, 157 n.

popular religiosity and belief in South Asia. Pilgrimage to sacred *tīrthas* is an important unifying force not only for the people of India, but of the whole of South Asia.

In the same way as the Ganges is the prototype of all sacred waters, Benares is regarded as the archetype of the *tīrtha*. It is the final destination where after many lives, final liberation from the circle of rebirth (*saṁsāra*) is gained. There are complex links between the sacred *tīrthas* of India, which are believed to be connected, to exist within each other, and to increase each other's sanctity. Because Benares is the archetypal *tīrtha*, representations of other sacred places and towns have been created at Benares. The northern part of Daśāśvamedha Ghāt at Benares for instance is called Prayāga Ghāt, the old name of modern Allahabad (Allāhābād, Prayāga) in Uttar Pradesh, an important *tīrtha* on the Ganges itself. A further *ghāt* takes the name of the sacred mountain *tīrtha*, Lake Mānasarovar in Tibet, and a tank in the south of the town is called Kurukṣetra Tīrtha, referring to the sacred tank in what is today's Hariyana. At Pañcagaṅgā Ghāt, the four invisible rivers Yamuna, Sarasvati, Dhutpapa and Kirana are believed to merge with the Ganges<sup>63</sup>, making it a particularly sacred place to bathe. The bath in one sacred river purifies body and soul, but bathing in a sacred confluence, that means in several *tīrthas* at the same time, is even more purifying and powerful. This is why places such as Allahabad where the Ganges, the Yamuna and the underground Sarasvati merge (Plate 33), or Trivenī Ghāt at Rishikesh (Rṣikeś), Uttar Pradesh, the confluence of the Ganges with the invisible Yamuna and Sarasvati, are particularly auspicious places. On the other hand, in one sense there is not only one Benares in India, for many places, particularly in the south, partake in the sacredness of the town: Shivakashi (Śivakāśī) in Tamil Nadu, and Shivagange (Śivagaṅge) the 'Dakshina Kashi' (Dakṣiṇā Kāśī) or 'Southern Kāśī' near Bangalore, Karnataka, are only two of numerous places representing the sacredness of Benares in the south. An interesting phenomenon, which is also

<sup>63</sup>P. Sheshadri, 1925, *Benares*. p. 35; H. Wilson, 1985, *Benares*. p. 22.

important for the understanding of many water structures, is that through legends, images of the river goddess or through special water basins, the river Ganges is believed to be present at other sacred places or water sites. Particularly common is the idea of the 'Pātāla Gaṅgā', the underground or lower Ganges. This phenomenon is based on the belief that the Ganges has subterranean currents running through the subcontinent. At certain places, such as an underground cave in Kalinjar Fort, a well in the Kālahastīśvara Temple at Kalahasti or a basin in the fort at Nandi, one can descend to the Ganges, tap it through a well, or bathe in it where it emerges above ground<sup>64</sup>. This phenomenon can also be encountered with other sacred rivers, and a 'well' outside Amarkantak provides access to the underground confluence of the Narmada and the Son Rivers. In the following chapters, several examples will be encountered where basins constructed in temples or within other rivers, which are sacred themselves, are believed either permanently or temporarily to be filled with Ganges water. This does not mean that the sites themselves are not sacred, but rather that they are further purified and sanctified by the emergence or presence of the purest of all rivers.

## 2. The Siting of Religious Centres

Because the potency of a place is such an important spiritual concept in South Asia, the siting of sacred centres and temples is an important issue. Pilgrimage centres often developed around ancient *tīrthas* located at prominent geographical or natural sites. The images and temples set up at a later stage at these places partake in the sacredness of the site and contribute to it, while the sacred site remains the main object of veneration. Temples were not constructed to create a sacred place, but they were built at a certain site because the place itself has been considered holy since long ago. Frequently, entire cities developed around sacred sites to cater for the pilgrims' needs and to benefit from the sacredness of the place.

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<sup>64</sup>All these places are locally referred to as 'Pātāla Gaṅgās'.

Temples and monasteries were, however, constructed not only at ancient sacred sites, but are present in every modern city or newly established town quarter. Because the presence of water is essential for temple rituals and ablutions, a temple is meant to be located close to a source of water. The ritual need for water is augmented by the belief that gods dwell and pass their time near water, particularly along river banks, and that therefore it is more likely that gods will permanently inhabit temples located in the proximity of water. The *Viṣṇudharmottara* says "In places without tanks, gods are not present. A temple therefore should be built where there is a pond on the left, or in front, not otherwise."<sup>65</sup> Although there are plenty of examples where tanks are located to the right or at the back of a temple<sup>66</sup>, there is no temple lacking access to water. The source of water can be a simple draw well or today even a water tap, but many temples are located close to sacred rivers or lakes, or have large tanks or deep *kuṇḍas* adjacent to them. In this context a modern report on the sacred pilgrimage site of Pashupatinath (Paśupatinātha) in Nepal gains new importance. Due to the many industries surrounding the Kathmandu Valley which redirect much of the Bagmati's waters for their own purposes, and because of climatic changes, hardly any water remains of the sacred river during the dry season. Therefore, it is the special concern of the religious authorities to ensure at least a minimum flow to guarantee the presence of gods and to heighten the 'spiritual potency' of the place<sup>67</sup>.

<sup>65</sup>Viṣṇudharmottara III, 43.25-31 (S. Kramrisch, 1991, *The Hindu Temple*. p. 5).

<sup>66</sup>There are *kuṇḍas* to the right of the Mallikārjuna Temple at Srisailam, and the Navalīṅga Temple at Kukknur, Karnataka. Examples of water structures behind temples are for example the *kuṇḍa* behind the Mahādeva Temple at Ittagi, and the tanks on the back of the Mahākāleśvara Temple, Ujjain, and the Mukteśvara Temple, Bhubaneswara.

<sup>67</sup>S.R. Tiwari, 1988, *Tiered Temples of Nepal*. p. 62.



#### IV. Water Rituals

##### 1. Concepts of Purity and Pollution

Concepts of purity and pollution are common to all the world religions, and play an important role in the religions of the Indian subcontinent. Hinduism especially has a highly developed system of relative pollution, which serves as a structuring principle of society. While some pollutions may be due to deliberate acts violating social or religious norms, such as murder or the crossing of caste borders, pollution may also occur accidentally. Unintentional religious pollutions may be caused through bodily functions such as urination, bleeding or death. Since these kinds of pollution cannot be prevented, the main emphasis has been directed towards establishing boundaries to prevent other people from being affected, and towards providing means of subsequent purification<sup>68</sup>. Ritual pollution is also closely associated with social bonding, since one's birth into a certain caste or family determines one's social status and the crossing of social lines is regarded as dangerous and polluting. This category also involves stages of transition, such as interruptions and changes in a person's life, referred to as life crises events. Often complicated purification rites are associated with these critical rites of passage which demarcate major points of transition such as child birth, initiation, marriage, and death. It is the idea of crossing and of not being part of any of two fixed categories any longer, which makes such transitions so dangerous and polluting to the persons involved and those associated with them. The meaning of rituals following religious pollutions generally lie in reinforcing the principles of health and the boundaries of society, in assisting individuals in coping with life crises, and in establishing a relationship to the sacred<sup>69</sup>. Practically all such rites involve water. Concepts of purity and pollution not only deal with physiological and social aspects of life, but also with spiritual pollution and the maintenance of

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<sup>68</sup>Thus, since also high caste members cannot escape pollution, a Brahmin householder is obliged to bathe and perform complex purification rituals three times a day.

<sup>69</sup>Preston in Eliade, 1987(a), (Vol. 12), p. 99.

the boundaries of the sacred<sup>70</sup>. The degree of intrinsic pollution of any person makes rites of purification necessary before entering the sacred and therefore pure space of a temple or mosque. The visit of a sacred precinct is a crossing of borders, a transition from the profane to the sacred, which demands purification rituals.

## 2. Ritual Ablutions

There are many purifying agents, such as fire, cow's urine<sup>71</sup>, fasting, sexual abstinence and self-mortification. The most efficient ritual means of purification, however, is thought to be running water because it absorbs pollution and carries it away<sup>72</sup>. Considered especially cleansing therefore, is the water of rivers and springs, which are also believed to have healing, regenerating and rejuvenating properties. But even the running water from a modern tap, or the stagnant waters of sacred lakes and holy wells are regarded as efficient means of purification. Devotees of all Indian faiths have to be in a ritual state of purity before worship or prayer. Ablution rituals before the visit to a temple, gurdwara (gurdwārā) or mosque involve ritual bathing, which can be a total immersion in water, the washing of certain parts of the body (particularly those most exposed to pollution such as the feet), or the sprinkling of water onto one's head or body. Such ceremonial washings are not concerned with hygiene, but are symbolic actions which internally prepare the person for the crossing of a border. By being ritually clean, the devotee can come closer to the divine reality, and contact is more easily possible. In purification rituals, the religious boundaries between the domains of purity and pollution are re-established and honoured, and order is reinstated after

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<sup>70</sup>A good discussion of the concepts of purity and pollution are included in Mircea Eliade's *Encyclopaedia of Religion* (1987a), under the headings 'Ablutions' (Vol. 1, pp. 9-13, by Hans J.W. Drijvers), and 'Purification' (Vol. 12, pp. 91-100, by James J. Preston).

<sup>71</sup>All bodily products of cows are regarded as being especially purifying by Hindus. When a house has been polluted by a death, or whenever there is a need for a special act of purification, dung, milk, ghee, curd and urine, all five being products of cows, are mixed and applied to the walls and inhabitants of the house to purify them (Preston in Eliade, 1987(a), Vol. 12, p. 96).

<sup>72</sup>Eck, 1993, p. 216.

a period of transition which is regarded as polluting. The newly established norms of purity are essential for a successful encounter with the divine.

In the Hindu versions of the creation of the world, water represents chaos and a formless state of existence because it predates the creation of forms and order. Because water dissolves all form, bathing, and especially the total immersion in water symbolises a return to the pre-formal. On the human level, the immersion of the body in water is therefore equivalent of one's death, the conscious sacrifice of one's soul, because it means the dissolution of form, a reintegration into the formlessness of pre-existence, and a fusion with the cosmic unity<sup>73</sup>. The subsequent re-immersion from the waters is equivalent of a new birth, in which the old life and all its pollution and sins have been dissolved. As such, what looks from the outside like physical washings really are purifications of the soul. It is not enough to physically participate in the ritual, but people seeking a renewal of their soul will utter prayers to place themselves in the right frame of mind to sacrifice their soul. Ablutions before the visit to a temple make the step from the ordinary to the sacred possible because they prepare the devotee for the crossing to a higher and purer sphere of conscience which is possible because the person has come in tune with the primordial cosmic order, and therefore corresponds to the ritual order of the temple.

The view of ceremonial washings as being followed by a new birth explains also the regenerating and rejuvenating properties attributed to water, the belief that contact with it can heal physical illnesses and mental distress, and that water is regarded as *amṛta*, the elixir of life. It also clarifies the need for water in funerary rites. Other objects or substances, such as cooking utensils and food, are also purified by sprinkling water onto them, and in some temples, the water of a particular well is used to purify offerings before they are handed to the priest. Temple images are bathed (Plate 34), and on certain festival days, they are

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<sup>73</sup>At a cosmic level, this idea is equivalent with the cataclysm or the great flood, which at the end of a world era destroys and re-absorbs the world before it is created anew out of water (M. Eliade, 1993, *Patterns in Comparative Religion*. p. 194.

immersed in the temple tanks or bathed in sacred well water. Through these rituals, the divinities are reborn and invigorated with new life and sacred energy.

As has been pointed out above, the concepts of purity and pollution are particularly developed and refined in Hinduism, and every temple must have a water source. Various religious texts prescribe the ritual of bathing and in particular the bath in the Ganges, although it hardly differs from the ceremonies carried out at any other river or tank (Plate 36). Water used for ablutions is previously invested with the presence of the Ganges and the other six sacred rivers of India<sup>74</sup>, which at the Ganges is done by putting one's hands into the water and pronouncing certain *mantras*. This is followed by external washings, further *mantras* and gestures, and the greeting of the sun (*sūrya-namaskāra*) and the four cardinal directions. After a series of other preparatory rituals, the believers are ready for taking the bath proper (*snāna*). They stand in the water, turn towards the source and welcome the current of the river, with both hands joined in front of the body, pronouncing the appropriate *mantras* followed by a triple immersion of the entire body (Plate 37)<sup>75</sup>. In the first immersion, the believers pronounce a *mantra* through which they try to abandon their physical body (*sthūla śarīra*). During the second immersion, they mentally recite a *mantra* to abandon their subtle body (*sūkṣma*), followed by a third dip during which they visualise themselves as being a *bija*, a germ or seed. By mentally abandoning their causal bodies (*kāraṇa*), they experience their own death and reintegrate with the world of pre-existence. Stepping out of the water, the sacrificers regain their 'three bodies'<sup>76</sup>. Believers may also take several gulps of water to internally cleanse their bodies (*ācamana*)<sup>77</sup>. These ceremonies are frequently followed by rites of libation to ones ancestors (*tarpaṇa*), described in the following section on ancestral rituals.

<sup>74</sup>P. Amado, 1971, 'Le Bains dans la Gange: Sa Signification.', pp. 197, 200.

<sup>75</sup>Ibid., pp. 200-201.

<sup>76</sup>Ibid., p. 205; Eliade, 1993, pp. 188, 194.

<sup>77</sup>Amado, 1971, p. 202.

Muslims too must be in a state of ritual purity before praying or participating in Friday Worship in a mosque, and this involves usually the washing of the face, the hands and the feet. If no pure water is available, according to the *Shari'a*, the divine law, sand or dust should be used<sup>78</sup>. Minor ablutions are called *wuḍū'*, and major ones *ghusl*<sup>79</sup>. The *Shari'a* also points out that ablutions, like other ritual acts, are only made valid by the right intention and concentration on God. The mere physical performance of the rituals without an inner development is worthless<sup>80</sup>. According to the *Hadīth*, "Cleanliness is part of the Faith"<sup>81</sup>, and this led not only to the construction of ablution tanks and fountains in mosque courtyards, private houses and palaces, but also to the development of elaborate bath houses, the *ḥammāms*. Water imagery is found throughout Islamic literature, particularly in poetry and mythical writings, where water is a symbol of the divine. The water is believed to have been sent by Allāh<sup>82</sup>, and the prophet is frequently compared to blessed rain or a river flowing into the Divine Ocean of life<sup>83</sup>. To some extent, this may be a sign of an assimilation of pre-Islamic river cults, but it also expresses the profound importance of water in Islam, where Muslims believe that even the sound of water can revive and heal man<sup>84</sup>. Many mosques were constructed near large tanks, and a small mosque at the Quṭb Shāhī Tombs at Golconda, Andhra Pradesh, was constructed over a spring (Plate 40). To those who follow the teachings of Islam, the Qur'ān promises a life in paradise with rivers of pure water, milk, wine and honey<sup>85</sup>. Also Islamic funerary rites involve the offering of *āb-e-zamzam*, water

<sup>78</sup>J.A. Williams (ed.), 1994, *The Word of Islam*. pp. 68, 70. It is interesting to note that *Shari'a* means 'the right way to the water'. (Ibid., p. 66).

<sup>79</sup>Welch in J.R. Hinnels (ed.), 1991, *A Handbook of Living Religions*. p. 138.

<sup>80</sup>Williams, 1994, p. 69.

<sup>81</sup>Rötzer in P.D. Couté & J.M. Léger, 1989, *Bénarès: Un voyage d'architecture - An Architectural Voyage*. p. 95.

<sup>82</sup>The Qur'ān 6, 99.

<sup>83</sup>Schimmel in Petruccioli, 1985, pp. 6, 8.

<sup>84</sup>Ibid., p. 9.

<sup>85</sup>The Qur'ān 20, 72 and 47, 15.

from the sacred well of Zamzam in the precincts of the Great Mosque of Mecca, to the dying<sup>86</sup>.

Sikhs, Jains and Buddhists seem at first glance more critical and even opposed to ritual purification through water and bathing. Guru Nanak wrote in the *Ādi Granth*, the holy book of the Sikhs, that "Should a man go to bathe at a place of pilgrimage with the mind of a crook and the body of a thief his exterior will, of course be washed, but inwardly he will be twice as dirty as before. ... Saintry people are pure without such ablutions." (verse 789)<sup>87</sup>. Before this century, many Sikh rituals, particularly those associated with life-cycle rites did, however, demand ablutions involving water, and particularly that of the sacred Ganges. Two weeks after the birth of a baby, for example, the family priest had to sprinkle the members of the household with Ganges water<sup>88</sup>; halfway to the cremation grounds, water was sprinkled onto the body of a deceased, the mourners took a purifying bath after the cremation, the bones and ashes of the dead were either personally brought and immersed in the Ganges, or sent there by the family Brahmin (*brāhman*), and as part of post-cremation rites (*śrāddha*), rice balls (*piṇḍa*) were immersed in a river<sup>89</sup>. Because many Sikh rites of passage were, however, regarded too similar to the Hindu equivalents, between 1884 and 1915 several manuals were published describing the way proper for Sikhs to execute these rites<sup>90</sup>. From that time onwards, the ashes and bones of the dead, for example, were not to be immersed in the Ganges any more but in the nearest river, tank or canal, and no *śrāddha* rituals were to be executed. Although importance was removed from the waters of the Ganges, the importance of bathing and of water for funerary and other religious rites continued, and the concepts of purity and pollution, which were regarded as a Hindu influence, have

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<sup>86</sup>M. Asad, 1988, *Indian Muslim Festivals and Customs*. p. 77.

<sup>87</sup>W. O. Cole, 1994, *Sikhism*. p. 24.

<sup>88</sup>H. Oberoi, 1995, *The Construction of Religious Boundaries: Culture, Identity and Diversity in the Sikh Tradition*. p. 336.

<sup>89</sup>Ibid., p. 338-339.

<sup>90</sup>Ibid., p. 339.

not been eradicated entirely<sup>91</sup>. Sikhs have to bathe and put on clean clothes before their morning prayer or a visit to the temple, and more important ceremonies require a full or so-called 'head-' or 'hair-bath'. There is hardly any gurdwara in India without at least one large ablution tank and further walk-through basins prevent anybody from entering a gurdwara without having washed at least their feet. As such, the architectural material speaks for the importance of water and bathing in Sikhism. Although certain tanks, such as the Amṛt Sarovar at Amritsar (Amṛtasarovar), Punjab, and the tank at Tarn Taran, both in Punjab, are believed to be especially curative of leprosy, Sikhs do not normally seem to travel to far distant *tīrthas* because the waters there are more purifying, but because they are places of religious importance.

Like the Sikhs, the Jains incorporated rituals into their religious ceremonies which were regarded as Hindu-derived. During the medieval period, Jain writers and mendicants such as Somadeva opposed practices such as ritual bathing and making *śrāddha* offerings to the dead, which were regarded as alien to the religion and as material practices<sup>92</sup>. Lay Jains are, however, expected to bathe and put on clean clothes before visiting a temple, in order to show reverence and respect to the images<sup>93</sup>. Also *Śvetāmbara* nuns and monks may wash, but Jain ascetics are not allowed to bathe in water, a practice regarded as worldly and harmful to organisms living in it<sup>94</sup>. Jains also use the term '*tīrtha*' for a sacred place, and the Jain *tīrthanīkaras* are 'fordmakers' who enable others to cross the ocean of rebirth and gain enlightenment. Almost uniformly rejected, however, is the idea that bathing at a sacred *tīrtha* will result in spiritual purity. Nevertheless, the Jains created elaborate water structures and constructed temples in the centre of tanks and reservoirs. The marble temple at Pavapuri (Pāvāpurī, Āśāpurī), Bihar, which is surrounded by water on all sides, seems removed from this world

<sup>91</sup>Cole in Hinnels, 1991, p. 254.

<sup>92</sup>Carithers in M. Carrithers & C. Humphrey, 1991, *The Assembly of Listeners: Jains in Society*, pp. 165, 188-189.

<sup>93</sup>J. Laidlaw, 1995, *Riches and Renunciation: Religion, Economy, and Society among the Jains*, p. 271.

<sup>94</sup>P. Dundas, 1992, *The Jains*, pp. 1-2, 141.

and corresponds well to the Jain ideal of purity and seclusion from earthly life (Plate 41).

There is a general belief that for Buddhists water has no strong religious connotations, and in several passages in Buddhist literature the Buddha or his followers preach against the Hindu belief in the purifying aspects of water. In the Buddhist *Sūtras*, however, the image of water, and particularly that of the lotus pool, is used frequently as a metaphor for the Buddha nature and *nirvāna*. Water is an important aspect of Buddhist cosmologies and especially in South East Asia, large scale architectural projects incorporating water as a major element in their layouts were constructed to provide a material expression of abstract religious and cosmological visions of the cosmos and the paradise. Projects clearly related to the structure of the universe and expressing the importance of water in it, are Borobodur in Java and Neak Pean at Angkor, Cambodia<sup>95</sup>. Water also plays an important role in Buddhist perceptions of time and cyclic world eras, and in *Mahāyāna* Buddhism purification rituals gained a new importance in temple rituals and festivals<sup>96</sup>. Like the followers of all other Indian religions, the Buddhists created technically and artistically impressive water monuments during all periods and in every region of South Asia.

Much of the rejection of water as a purifying element and of Hindu ablution rites by Sikhs, Jains and Buddhist seems to have been based on a simplified view and misunderstanding of Hindu purification rituals. While such rites are frequently portrayed as merely external and physical washings, they actually refer to an inward state of the soul. Purification and liberation only come from wisdom, and in the same way as ceremonial washings are part of purifying pilgrimages, so are the notions of truth, charity, patience, self-control, celibacy

<sup>95</sup>R.E. Fisher, 1993, *Buddhist Art and Architecture*. pp. 22-23.

<sup>96</sup>For a more detailed discussion of the meaning of water in Buddhism and the Buddhist water architecture of the Kathmandu Valley, please refer to my article 'The Lotus Pool: Buddhist Water Sanctuaries in the Kathmandu Valley.', *South Asian Studies*. No. 13, pp. 145-159.

and wisdom. All have to be followed to achieve a purification of the heart, a process which may only be enhanced by the sacred power of the Ganges<sup>97</sup>.

### 3. Death and Ancestral Rituals

The most polluting and ritually dangerous of the life crisis events is death. This is not only because it involves contact with a decayed and often sick body, but also because it breaks social bonds and brings chaos and disorder to the wider family or community<sup>98</sup>. Not only the family members who come into direct physical contact with dead bodies, but also those who are merely related to them, have to perform special purification rituals. In most Indian cities the cremation grounds are found outside the densely inhabited area, and the dead have to be brought to the cremation sites on routes which are strictly prescribed by the dead person's religion and social status, to prevent other people from unnecessarily coming into contact with this major source of pollution. Only in Benares are the burning grounds located in the centre of the city, because death in Benares leads to salvation.

Because the total immersion or the symbolic sprinkling of water onto a dead body, dissolves form and leads to a new beginning, funerary rites involving water are believed to assure a rebirth of the dead<sup>99</sup>. Water is regarded as the primordial substance from which all life evolves and to which it all recedes at the time of death. To remove the ritual pollution of the dead, and to assist them in a new birth, they are cremated on the banks of a river or, if that is not possible, near some other source of water. This is one reason why the banks of rivers were firmly constructed in stone and furnished with steps and cremation platforms. Particularly the Ganges, as the prototype of the sacred waters, plays an important mediating role between this world and that of the dead. Hindus believe that dying while being immersed in the Ganges, or sipping Ganges water before one's death

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<sup>97</sup>Eck, 1981, p. 340.

<sup>98</sup>Preston in Eliade, 1987(a), Vol. 12, p. 94.

<sup>99</sup>Eliade, 1993, p. 188.

will lead to final liberation, a rebirth in heaven without a further return to earth. Final liberation can, however, only be reached through wisdom (*jñāna*)<sup>100</sup>, and it is the wisdom a dying person gains while uttering the right *mantras*, which liberates the soul. After the cremation, the bones and ashes of the dead are sprinkled into the river, and especially if it is the Ganges, this will safely dissolve and lead the dead to heaven<sup>101</sup>. This belief plays a prominent role in the story of the descent of the Ganges, which was needed to dissolve, purify and liberate the sons of King Sāgara. The safest place to gain liberation from the cycle of rebirth is Benares, and this is why it is the desire of most pious Hindus to die at the most sacred of all *tīrthas*, and many come to spend their final years or days in the *dharmasālās* (Sanskrit. *dharmasālā*) along the sacred river. The fourteenth-century traveller Ibn Batūta reported on people voluntarily drowning themselves in the Ganges to reach salvation from the cycle of rebirth (*samsāra*)<sup>102</sup>, and the ashes of people who died in other parts of India, are frequently brought to Benares to be dispersed in the Ganges or some other body of water regarded especially sacred.

Even if a person's ashes were not sprinkled into the Ganges, almost every pilgrimage to Benares will involve the execution of rites for one's dead ancestors. Some relatives travel to Benares during *pitṛpakṣa*, the 'fortnight of the ancestors' during the month of Āśvina (September-October) to perform the yearly ancestral rituals, called *pitṛtarpaṇa* or *śrāddhayajña*. Although these rites can be performed at any river, and many tanks or ponds all over India, Nepal and Sri Lanka are used for the ceremonies, the three northern Indian *tīrthas* Allahabad, Benares and Gaya (Gāyā), Bihar, referred to as the *tristhālī*, are especially renowned for ancestral rituals. The rites performed at the three sacred places differ from the rituals carried out immediately after death, and are believed to result in the final delivery of the dead to their new state of existence. *Śrāddha* ceremonies last for several days and involve the recital of sacred texts, ablutions and the offering of

<sup>100</sup>Eck, 1993, p. 333.

<sup>101</sup>Kinsley, 1987, p. 193; Amado, 1971, p. 206.

<sup>102</sup>Mahajan, 1984, p. 20.

balls made of the flower of rice or grain (*piṇḍas*) to the ancestors. The *piṇḍas* are thrown into a river or pond and are regarded as food for the deceased.

The Law of Manu states that these complicated ancestral rites can be replaced by simple libations with water which are addressed to the dead after a purifying bath<sup>103</sup>. The offering of water to the dead (*tarpaṇa*) aims at stopping their 'thirst', an expression of the fear that they may not have been completely dissolved and extinct<sup>104</sup>. Such libations are carried out in the hope of safely and completely delivering the dead to their final rest, and preventing them from haunting the living as ghosts, *bhūts*. This is also why the dying take a last sip of water, why dead bodies are immersed in water before their cremation, and why their ashes are sprinkled into it. Particularly in connection with the Ganges, the belief prevails that the dead stay as long in heaven as their bones remain in the sacred waters of the Ganges. *Tarpaṇa* rituals are usually followed by purifications, such as *ācamana* rites, because even ritual contact with the dead results in impurities<sup>105</sup>.

Also in ancestral rituals cows play an important role. On the eleventh day after death, the soul of the deceased is believed to have to cross the Vaitarṇī River of blood which divides our world from the lower regions ruled over by Yama. In order to assist the soul on this dangerous journey a special ritual is performed. Holding onto each other, the chief mourner, a funerary priest, and a cow or calf have to step over a ditch of red coloured water, representing the Vaitarṇī, because the soul of the deceased is believed to cross the river by clinging to a cow's tail. While some relatives bring calves which subsequently are sacrificed, funerary priests working along the sacred waters of India often have their own cows or calves (Plate 38). In a simplified version of the ritual, the cows are merely worshipped<sup>106</sup>.

<sup>103</sup>*Manu-smṛiti*, III. 283 (Amado, 1971, p. 206).

<sup>104</sup>It is interesting to observe that also in Islamic rites, holy water from the spring in Mecca is given to the dying to stop their thirst (Sharma, 1988, p. 77).

<sup>105</sup>Amado, 1971, p. 208.

<sup>106</sup>J.P.Parry, 1994, *Death in Banaras*. p. 223; Gutschow & Michaels, 1993, p. 199.

Over the sacred spots, where important spiritual and worldly leaders were cremated at the banks of rivers and tanks, often elaborate cenotaphs or *chattrīs* have been constructed. Fourteen *chattrīs* along the bank of the Betwa River in Madhya Pradesh commemorate the rulers of Orchha (Orchhā), while those of the rulers of Datia line a lake outside Datia (Sonāgir) in Madhya Pradesh. An example of cenotaphs next to artificial tanks may be seen at the Kusum-vāṇ Sarovar near Govardhan (Govardhana), Uttar Pradesh, and at the southern end of the Sāgar Tank at Alwar, Rajasthan. Where the financial means did not suffice to construct such elaborate structures, simple hero, *sati* or other commemorative stones were set up which line many rivers, lakes and tanks, such as the Ganges, the lake at Pushkar (Puṣkara, Padmāvati) (Plate 35), and the Sabirna-dha-kā Kuṇḍa at Bundi.

Also in Islam, there is a strong relationship between water and death, or more precisely between water and paradise, which is believed to contain streams and pools. In the later Mughal period the tombs of rulers, noblemen and their wives were commonly set in spacious gardens including water courses and pools. Such arrangements express the belief that the dead person has been reborn in paradise. Islamic tombs were also set on islands into water tanks, such as Sher Shāh Sūr's tomb at Sasaram (Sasarām), Bihar, and constructed along rivers, such as the tomb of Abdu'l Wahab at the Tungabhadra River at Kurnool, Andhra Pradesh. Many simpler Muslim graves are also found next to water, such as those next to the Mānasar Tālāb at Viramgam, Gujarat, and the grave adjacent to the Bija Maṇḍal Bāoli, a stepwell at Vidisha (Vidiśā, Bhilsa), Madhya Pradesh. Elaborate mortuary baths were constructed for the washing and preparation of the royal and noble dead before their placement into tombs.

#### 4. Bathing Festivals

While the bath in any river, lake or tank is always considered purifying, certain days or periods, predominantly based on favourable constellations of the stars, are

considered most auspicious and effective for ritual bathing. During such periods, many people will try to take a purifying bath at a particularly important and sacred *tīrtha*, leading at times to the congregation of thousands of people at religious fairs called *melās* or *parvas*. Such fairs are for example held during the solar and lunar eclipses at Kurukshetra (Kurukṣetra), Haryana, when the invisible Sarasvati River is believed to fill the tank<sup>107</sup>, during October-November at Pushkar, and during Vaiśākha (April-May) at the Pool of Immortality at the Golden Temple at Amritsar.

North India's largest and most important fair is the Kumbha Melā, the fair of the sacred pot. The tradition is based on the story of the churning of the Milky Ocean, when the gods (*devas*) and the demons (*asuras*) were churning the cosmic ocean to extract the elixir of life. When the precious substance was received first the *asuras* got hold of the pot and then, depending on the version, either Indra's son Garuḍa, or one of the gods who took the shape of a bird, usually a crow, saved the pot and flew away with it. On his flight from the Milky Ocean to heaven, he rested four times and set the pot onto the earth, each time spilling a little bit of the life giving elixir. According to different versions, drops of *amṛta* fell from the pot, or the pot itself fell, onto four places in northern India during the flight, sanctifying them forever. The four places are modern Allahabad, known as Prayag, Hardwar (Haridvāra, Māyāpurī) in Uttar Pradesh, where the Ganges breaks out of the mountains into the Indian plain, Nasik (Nāsik) on the Godavari in Maharashtra, and Ujjain (Ujjaynī) on the Sipa in Madhya Pradesh<sup>108</sup>. Because the flight took twelve days, and each day equals one year on earth<sup>109</sup>, the Kumbha Melā is held every twelve years in turn at one of the four places. The *melā* at Allahabad ranks highest amongst them, Hardwar second, and Ujjain third. Every six years, an intermediate Ardha Kumbha Melā or simply Ardha Melā (half full pot fair) is held at Allahabad and Hardwar. Every year during the month of

<sup>107</sup>P. Thomas, 1989, *Festivals and Holidays of India*. p. 21.

<sup>108</sup>At Ujjain and Nasik, the fair is locally known as Simhastha (S. Rai, 1993, *Kumbh Mela: History & Religion, Astronomy & Cosmobiology*. p. 17).

<sup>109</sup>Bonn in Frey & Bonn, 1991, p. 147.

Māgh (January-February), a river-side fair called the Māgh Melā takes place at each of the four sites. Māgh Melās are also held at other places, such as Gangasagar where the Ganges enters the Bay of Bengal, and where according to legend, the 60,000 sons of King Sāgara were burned and eventually liberated by the Ganges. While the fair at Gangasagar, usually held in mid-January, lasts only one or two days, at Allahabad, thousands of people bathe for an entire month in the sacred confluence (Plate 39).

The south Indian equivalent of the northern Kumbha Melā and its related fairs, is the Mahāmakham festival. While people gather every year, during the month of Kumbha (February-March), for a bathing festival in the Mahāmakham tank at Kumbakonam (Kumbhakōṇam), Tamil Nadu, a great fair is held only once every twelve years. According to the *Sthāla Purāṇa* of Kumbakonam, Brahmā collected the essence of all India's sacred waters and mixed it with *amṛta* in a pot which was kept on Mount Meru. During a great deluge, when the world was destroyed, the pot floated on the cosmic waters and when the water subsided, it settled at Kumbakonam. The pot broke and the elixir assembled in a depression, which was later constructed in stone and furnished with steps to create the Mahāmakham Tank<sup>110</sup>. Therefore, a bath in the sacred tank is equivalent to a bath in all of India's sacred *tīrthas* at once. The bath during the Kumbha Melā is considered even more purifying because on this occasion, an underground current of the Ganges is believed to flow into the tank<sup>111</sup>. A further related *melā* is the Puṣkaram Festival, held every twelve years at Rajahmundry (Rājahmundrī), Andhra Pradesh, on the banks of the Godavari<sup>112</sup>.

<sup>110</sup>S.M.N. Sastri, 1988, *Hindu Feasts, Fasts and Ceremonies*. pp. 69-70.

<sup>111</sup>Ibid., pp. 72, 75.

<sup>112</sup>Ibid., p. 77; Valliappa, 1992, p. 30.

## V. Water-related Beings and Gods

### 1. Symbols and Animals associated with Water

References to aquatic cosmogonies and water-related motifs are found not only in connection with water architecture, but also in religious and palace architecture and in the decorative arts. A common South Asian symbol of water and its aspects of fertility are water pots or vessels known as *kalāśa*, *ghaṭa* or *kumbha*, which filled with water (*pūrṇa kalāśa*) are auspicious symbols (Plate 45). In temple reliefs, plants and flowers are shown growing out of pots representing the source of life (Plates 42-44). Similar growth can also be shown originating from the mouth of a *makara*, a mythical sea animal (Plates 46, 47), or the mouth or navel of a *yakṣa* or gnomon, a further symbol of growth and fecundity.

Another water related image is the lotus (*padma*), and lotus flowers, leaves and rosettes commonly adorn tanks, *kunḍas*, wells and pleasure pools of all periods and religious denominations (Plates 48-50), and water structures were constructed on lotus plans (Plate 51). Because lotuses grow out of water, they are closely associated with its creative and life-giving qualities, and with the purity of water. This is why deities are frequently supported by lotus pedestals. The opening of the lotus flower is an image for the spread of creation from a central point, and in various stories of the cosmogony a lotus is the foundation and support of the world. Also closely related to water is the symbol of the spiral (Plates 52, 53), and it is interesting to see that water channels shaped as spirals or labyrinths in Indian water architecture, as discussed in Chapter Seven, directly combine the symbol with the element it represents.

Many animals, real and imaginary, are connected with water. These animals are usually believed to be born from the waters, to represent the primordial or divine essence concentrated in them, and to have the power to regulate the waters. Probably most closely related to water are fish, which cannot survive without it, and whose representation indirectly invokes the presence of

water. Fish are frequently carved on the walls or pillars surrounding tanks, as may be seen in the tanks in the second and the first enclosure of the Aruṇācaleśvara Temple at Tiruvannamalai (Tiruvaṇṇāmalai), Tamil Nadu, respectively (Plates 54, 58), and on the walls of *kuṇḍas*, as for example that in front of the Rāmacandra Temple at Vijayanagara (Plate 55). While most fish are highly stylised and simplified, those flanking the central steps on the western side of the Teppakuḷam at Madurai are unusual for their large size and elaboration (Plate 56). Carvings may also be seen on platforms supporting water pavilions, two examples of which are found at Vijayanagara. The first is located in the centre of the ceremonial tank belonging to the Kṛṣṇa Temple (Plate 57), and the second is believed to have carried a water pavilion in the so-called Zenānā-enclosure<sup>113</sup>. Part of the first arrangement is a scene where a large fish swallows a smaller one, which may be a visual representation of a political theory in which it was the duty of an Indian ruler to prevent 'larger fish from eating smaller ones'.

Particularly interesting, however, are representations of fish on temple buildings not obviously connected with water. In central and southern India, they are frequently found on or adjacent to temple gateways (*gopuras*) as for example on the inside of the eastern *gopura* of the Kṛṣṇa Temple at Vijayanagara (Plate 59), on the front of the eastern *gopura* of the Temple at Guruvayur (Gurupavanapurā) in Kerala (Plate 60), and adjacent to the first *gopura* on top of the hill at Sravana Belgola (Śravaṇa Belgolā), Karnataka (Plate 61). The fish can be up to two metres long, are carved in high relief, and are clearly differentiated from the Pāṇḍyan emblem which comprises two fish and a staff which also sometimes adorn *gopuras* as for example those at the Raṅganātha Temple at Srirangam (Śrīraṅgam) (Plate 63), Tamil Nadu. Fish were also carved onto the ceiling of the closed pavilion (*maṇḍapa*) of the Bṛhadiśvara Temple at Gangaikondacholapuram (Gaṅgaikoṇḍacōlapuram), Tamil Nadu, on the inside of the first temple enclosure on top of the hill at Sravana Belgola (Plate 64), and on

<sup>113</sup>'Zenānā' is the Indian way of spelling the Arabic word 'zanāna'.

the inside of the enclosure wall of the Malyavata Raghunātha Temple at Vijayanagara. Large fish also adorn the columns supporting the roof of the circumambulation path (*pradakṣiṇā patha*) around the Sundareśvara Shrine at Madurai (Plate 62). The fish carvings are therefore either found at thresholds, throughfares or transitional parts of temple complexes, such as *gopuras* or *maṇḍapas*, or in the most sacred precinct, such as on the inner enclosure wall or the *pradakṣiṇā patha*. Therefore, it may be assumed that like the depictions of the river goddesses Gaṅgā and Yamunā flanking temple doorways (Plates 98, 99), fish which stand in close relationship to the sacred waters have a purifying and guarding significance. Visitors to a temple should have conducted proper ablutions to be in a ritually pure state before entering, and the fish may remind them that they are embarking on a fording. Particularly fish carved on the inside of *gopuras* and closed *maṇḍapas* through which the devotees pass convey the feeling of an underwater passage into the temple, which dissolves form and life, and results in a new birth in the pure environment of the temple. Close to the centre of the temple, the presence of fish may also visualise the fact that one has entered a different and purer sphere in which an encounter with the cosmic unity may be possible. Since most carvings of fish on temple structures are found on later structures, dating from the sixteenth and seventeenth centuries<sup>114</sup>, and considering that total immersions of the body or more extensive bathing rituals at temple sites seem at least in northern India to have diminished at many temple sites, it may also be suggested that the fish decorations are representative of a stage of religious development, where people are still aware of the religious importance of ritual bathing, but where the custom has become more simplified and abstract. Full immersions of the body have frequently been replaced by the ritual sprinkling of water, and by representations of water-related fish.

Also closely related to the waters are amphibian animals such as frogs, turtles (or tortoises), snakes (*nāgas*), elephants, crocodiles, and the mythical

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<sup>114</sup>Only the temple at Gangaikondacholapuram, dating from the mid-11th century, is earlier.

*makara* (Plate 65). Frogs are believed to have cooling qualities and are therefore frequently employed in rituals<sup>115</sup>. They are invoked to send rain and are associated with water structures, where they may adorn water spouts, and are intended to guarantee a regular water supply (Plate 66). More frequently associated with water architecture are representations of turtles. A *kuṇḍa* in turtle shape is part of the Aśvamedha complex at Nagarjunakonda (Nāgārjunakoṇḍa), Andhra Pradesh, and depictions of turtles are commonly found adorning the walls of tanks and *kuṇḍas*. Examples may be seen in the *kuṇḍa* in the village of Kamalapuram near Vijayanagara, around the tank of the Mahākāleśvara Temple at Ujjain (Plate 70), and near the sluice of the large tank of the Sarkej Rauzā<sup>116</sup> outside Ahmedabad. Sculptural representations of turtles are also frequently found in connection with shrines and temples. The turtles vary between ca. 20 and 30 cm and are usually made of stone, but also brass sculptures exist, as for example at Pandharpur (Plate 69). They face the entrance to a temple or shrine, as they do at the Viṭhobā Temple at Pandharpur, Maharashtra, a side shrine at the Mūl Dvārakā Temple at Visavada (Visavāḍa), Gujarat, and on top of Brahmagiri at the source of the Godavari (Plate 68). At other times, they may indicate the direction towards an important tank or temple. An example of this may be seen half way up Brahmagiri at Trimbak. In one version of the cosmogony, it is Prajāpati in the shape of a turtle who creates the world, and turtles are seen as an image of the cosmos with the lower part representing the earth, and the upper the vault of heaven. In the story of the churning of the cosmic ocean, Viṣṇu in his turtle *avatāra* (*kūrma*) supported Mount Maṇḍara on his back (Plate 71), and the entire cosmos is believed to be upheld by a turtle. The association of support and steadiness with turtles found visual expression particularly in Kerala and Nepal, where turtle sculptures are frequently employed as the foundation of pillars and *dhvaja* and *dīpa stambhas* (Plates 72, 73).

<sup>115</sup>Keith, 1925, pp. 142, 194.

<sup>116</sup>*Rauzā* comes from Arabic *'rauza'*.

A particularly important role in the relation to water is played by snakes (*nāgas*). Carvings of snakes frequently adorn the sides or steps of water structures as for example those carved onto the steps on either side of the risalit<sup>117</sup> in the *kuṇḍa* at Kamalapuram near Vijayanagara (Plate 74). In Nepal, they commonly adorn the top of water spouts (Plate 67). While many representations are true to nature, others depict the *nāgas* as semi-divine beings, half snake half human (Plates 76, 77, 80). Many of them are regarded as subsidiary deities or attendants to more important gods, and are believed to dwell in water which they regulate. Therefore, snakes are regularly propitiated and worshipped to ensure the advent of a good monsoon at the right time. The Nāgapañcamī Festival, held in the Hindu month of Śrāvaṇa (July-August), is only one example of the veneration of snakes. The names of many water structures, as for example the Nāga Kūpa in Benares, refer to snakes who are believed to inhabit them, or to carvings of snakes on their walls as for instance the large multi-hooded cobra carved onto the rock face adjacent to the Nāga Pokuna at Mihintale, Sri Lanka (Plate 78). Stones with snake carvings, so called *nāga-kals*, are frequently found next to tanks and rivers, and under trees (Plates 75, 81) particularly in eastern, central and southern India, which are regions with strong traditions in snake worship. In Sri Lanka, *nāga-kals* are also commonly employed for the protection of the dams and sluices of large reservoirs. These snakes are symbolic representations of Mucalinda<sup>118</sup>, and are employed as guardians and protectors of the reservoirs and the waters in general. In Nepal, representations of snakes are also frequently found as balustrades encircling water structures, as for example around the royal baths in Bhaktapur (Bhādgaon) and Patan (Pāṭan), and in the centre of tanks and lakes in the form of snake poles, the *nāgakaṣṭhas* (or *nāgadhvajās*) (Plate 79). Plain pillars are also found in eastern and western India, where they are driven into the centre of tanks as part of consecration rituals<sup>119</sup>. They represent the *axis mundi* and the residence

<sup>117</sup>For a definition and discussion of risalits, see Chapter Five '*Kuṇḍas*'.

<sup>118</sup>Brohier, 1965, p. 5.

<sup>119</sup>Jain-Neubauer, 1981, p. 9.

of the *nāgas* who rule over the water structure<sup>120</sup>. Snakes also have negative connotations because they live in the earth where they guard treasures, and are as such also associated with the underworld and death<sup>121</sup>.

While frogs, turtles and snakes are often carved onto the walls or other parts of water structures, elephants, crocodiles and *makaras* are more typically fashioned to form water spouts. Water spouts in the shape of elephants are mainly found in what is today the modern state of Karnataka, at places such as Vijayanagara and Belur (Belūr) (Plates 82, 83). Crocodile spouts may be found in connection with water structures, such as the Teppakulam at Madurai (Plate 84), although they are more typical of *prañāli* spouts associated with temples, especially in Orissa (Plate 85). Most typical of water architecture are spouts in the shape of cow heads, discussed above, and *makaras*. Because the *makara* is the vehicle (*vāhana*) of the river goddess Gaṅgā, water pouring out of the mouth of a *makara* spout is generally equated with Ganges water. In Nepal, this link is further reinforced by depictions of the sage Bhaghīratha underneath the spouts (Plate 90). Frequently, spouts are made up of a telescoping series of animals emerging from each others mouths, representing the abundance of creation (Plate 86). Water, however, is not only associated with positive and life giving qualities: in heavy rains, storms and floods, it can be destructive and threatening, and is regarded as a punishment of the gods. This expresses the ambivalence of the sacred which both creates and destroys, and which is powerful and unpredictable<sup>122</sup>. Also the hostile powers of water have been represented in water spouts in the shape of monstrous mythical creatures. A further reason for water spouts in the shape of monsters may be the belief that the waters of life, which are *amṛta*, are difficult to reach and obtain, and that gaining enlightenment is about struggle and sacrifice. Therefore, the sacred waters are believed to be guarded by demonic creatures<sup>123</sup> which have frequently been given artistic shape in imaginative water spouts as

<sup>120</sup>Rötzer in Couté & Léger, 1989, p. 92.

<sup>121</sup>W. O'Flaherty, 1973, *Asceticism and Eroticism in the Mythology of Śiva*, p. 26.

<sup>122</sup>Rudhardt in Eliade, 1987(a), Vol. 15, pp. 356-357.

<sup>123</sup>Eliade, 1993, p. 193.

may be seen in the spout of the Hema Puṣkarinī of the Kūṭal Aḷakar Temple at Madurai (Plate 87), or the lion spouts of the Siṃha Pokuna at Mihintale<sup>124</sup>. The largest and probably also most varied and imaginative spouts adorn the western side of the Teppakuḷam, also at Madurai, and incorporate gnomons, crocodiles, fish and fantastic creatures into their designs (Plates 88, 89). Water spouts are found as inlets into tanks and pleasure pools, as *praṇālīs* emerging from Hindu temples, and at the edge of terraces carrying temples and stupas, to carry off rain water.

Also associated with water and frequently depicted in water structures or shaped as spouts, are birds such as geese, swans and peacocks (Plate 91). Geese may be linked to Brahmā's *vāhana* the *haṁsa*, which is either translated as goose or swan<sup>125</sup>. *Haṁsas* are also the *vāhanas* of Sarasvatī, Candra and Varuṇa, and the peacock is the vehicle of Kārttikeya. Geese and swans are symbols of spiritual transcendence and purity, and are seen as the creative principle<sup>126</sup>. In the same way as swans and geese are related to the lotus seat of deities, and suggests their purity and aloofness, rows of water birds can replace a lotus moulding running around a water basin (Plates 92, 93), and express the purity and sacredness of the water contained.

## 2. Water Divinities

Water may be viewed as the abode of sacred powers and gods, or may itself be regarded as being divine and an object of worship, and frequently both versions coexist. To represent the divine powers in water, religious images were frequently placed in tanks and rivers, such as a painted stone in the Betwa river at Orchha which is venerated as the river god (Plate 94), or an image of Sūrya in one of the

<sup>124</sup>The presence of lion sculptures in the Siṃha Pokuna may also be related to the royal nature of lions.

<sup>125</sup>Although swans are not indigenous to or believed to have inhabited India during the early period, W. Doninger (in S. Sneed (ed.), 1989, *Animals in Four Worlds: Sculpture from India*, p. 16) and T.A.G. Rao (1993, *Elements of Hindu Iconography*, Vol. II, Part 2, p. 503) translate *haṁsa* as swan.

<sup>126</sup>E. Schleberger, 1986, *Die indische Götterwelt: Gestalt, Ausdruck und Sinnbild. Ein Handbuch der hinduistischen Ikonographie*, p. 193.

tanks at Shesh Narayan (Śeṣ Nārāyaṇ) in Nepal (Plate 95). Images carved onto rock faces of tanks, such as the cobra of the Nāg Pokuna at Mihintale, or the large carving of Kāl Bhairava who seems to emerge from a small tank near the Nīlakaṇṭha Temple in Kalinjar Fort, over the surface of which runs the water of a spring (Plate 96), are even clearer in their message. But the presence of iconic images representing the divine powers of the waters are not necessary, and the element water is also worshipped directly. This has already been described in connection with the Ganges, and further examples will be encountered in the following chapters, the most striking example being probably wells located in the *garbhagrha* of well-temples, which developed alongside temples in which anthropomorphic images of river goddesses or water gods are worshipped. As such, divine associations with water exist on various levels.

A group of water divinities already mentioned in the section on rivers, are river goddesses. Because of their purifying aspects and their association with Idā and Piṅgalā, two major 'channels' (*nāḍīs*) in the human body, the river goddesses Gaṅgā and Yamunā have been depicted on either side of temple doorways, since the fifth century AD<sup>127</sup>. But also entire temples have been built for the worship of the river goddesses, as the one in the north-western corner of the Kailāsa Temple complex (cave No. 16) at Ellora, housing Sarasvatī, Gaṅgā and Yamunā, or the many shrines dedicated to separate river goddesses. It is surprising that while so many temples which have no direct cultic link to water were set into tanks or on islands, the large Gaṅgā Mandir at Bharatpur (Bhāratpur), Rajasthan, has no literal architectural water connection. Images of Gaṅgā Devī are frequently found next to tanks, as for example next to the Mārkaṇḍeśvara Tank at Puri (Plate 100) or the Mallikār Guṇḍam well (also called Manohara Guṇḍam) in the compound of the Mallikārjuna Temple at Srisailam. Such images invoke the presence of the Ganges at a water place far away from the course of the Ganges, and provide the opportunity to worship Gaṅgā Devī in other parts of the subcontinent. It is

<sup>127</sup>H. Stietencron, 1972, *Gaṅgā and Yamunā: Zur symbolischen Bedeutung der Flußgöttinnen an indischen Tempeln*. p. 103.

interesting that at Benares, where no images of Gaṅgā would have been needed because there the sacred river itself can be worshipped, numerous shrines with anthropomorphic images of Gaṅgā nevertheless line the *ghāṭs* and alleys leading to the river (Plate 101). The same phenomenon can be encountered at the source of the Godavari on Brahmagiri, where next to the actual source in a rock cleft, a personified image of the goddess Godāvarī is worshipped in a small shrine (Plate 102). The worship of an abstract element or actual river may be less easily comprehensible to some people, than the worship of iconic deities, so common and widespread over the whole of South Asia.

In the iconography of the river- and mother-goddesses many of the symbols, animals and mythical creatures associated with the sacred waters, discussed above, are re-encountered. The *vāhana* of Gaṅgā is usually the *makara* (Plate 108), of Yamunā the tortoise (Plate 97), and of Sarasvatī the peacock, goose or swan (Plate 109), while all of them may also be represented standing on a fish or lotus. More important than the connection with a specific animal or emblem seems to be the association with a water-related animal or plant in general, which expresses spiritual purity and elevates the goddess from the ordinary world. Originally, Sarasvatī seems to have been connected with the goose (frequently closely resembling a swan, see Plate 106) because initially, she was regarded as Brahmā's first wife (later on as Viṣṇu's), and was herself often called Brahmānī. It is interesting to note that in popular prints of the goddess, she may either be represented with a peacock (Plate 104), with a goose or swan (Plate 105), or with both animals simultaneously (Plates 106-7). While in some cases it may be possible that the swans really are beautified geese, in others such as the life-size sculpture of Sarasvatī in Chyāsāl Hiṭī in Patan, Nepal, the long swan neck is unmistakable (Plate 103)<sup>128</sup>. Gaṅgā and Yamunā are normally represented carrying a water pot, a fly whisk (*cāmara*) and a lotus, while in some

<sup>128</sup>More research would be needed to outline the modification of geese or to trace the introduction of swans into the visual arts in India which would, however, go beyond this study.

representations Gaṅgā carries a plate of food. Sarasvatī is easily distinguished from them by holding a *vīṇā*, a book and a string of prayer beads (*akṣamālā*).

Among the male gods associated with water, Viṣṇu holds a prominent position. This importance may be derived from his role as the preserver of life, and he is closely connected with several versions of aquatic cosmogonies. As Viṣṇu Nārāyaṇa, he is shown floating on the cosmic ocean between two world eras, and he has several water-related incarnations, the fish (*matsya*) who saves Manu from the deluge (Plate 110), the tortoise (*kūrma*) in which form he assists the churning of the Milky Ocean (Plates 11, 111), and the boar (*varāha*) as whom he dives into the sea to rescue Bhū Devī (Plate 112). Sculptural representations of Viṣṇu are typical especially of Nepal, and most *dhārās*, the local form of deep stepped tanks, contain at least one image of the god, either free standing or placed in a niche (Plate 113). Sculptures of Viṣṇu in connection with water structures are also found all over India.

Śiva too is commonly associated with water architecture, and although anthropomorphic images of the god, his consort and Nandi are not uncommon, there are more representations of his phallic emblem the *liṅga*. These can be carved reliefs of *liṅgas* or sculpted three-dimensional versions placed in the centre or a corner of tanks and along rivers and larger reservoirs (Plate 115) (Buddhist stupas may be found in the same position, Plate 116). The *liṅga* is ritually hot and closely associated with the female and cooling element water. The unification of the two polar opposites is considered to create cosmic order and harmony. Also Śiva's emblem, the *triśūla* is frequently found in a water context (Plate 114).

A further male god associated with the waters, is the Vedic God Varuṇa. During the pre-Vedic and the Vedic period, he was connected both with the sun (which was believed to be his eye)<sup>129</sup> and the waters. He was the leader of the *asuras*, the guardian of the cosmic law, and belonged to the powerful triad of Varuṇa, Indra and Agni, the three main gods of the period. His son is Soma, who

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<sup>129</sup>Schleberger, 1986, p. 149.

is equated with *amṛta* and the moon, both again linked to water. Varuṇa was regarded as the guardian of cosmic and ethical order (*ṛta* and *dharma*), and as such closely related to worldly kings who were to enforce the sacred laws of Varuṇa. Except for the fact that Varuṇa is still the guardian (*dikpāla*) of the western direction and the lord of the water, he lost most of his importance at the end of the Vedic period. As god of the waters, the ocean, and in the south of India, also of rain<sup>130</sup>, his *vāhana* also is the *makara* or a chariot drawn by four or seven geese (*harīśas*), and in rare cases also a fish or swan. He is identified by a lasso (*pāśa*), and attributes of fertility such as a lotus (*padma*), a shell (*śaṅkha*), and a vessel containing gems (*ratna-pātra*)<sup>131</sup>. In sculptural representations, the river goddesses Gaṅgā and Yamunā are frequently depicted standing on his right and left sides respectively. Although images of Varuṇa are relatively rare in water structures, shrines adjacent to water architecture, or for example the Varuṇa temple set into the waters of the Naval Sāgar at Bundi are more typical. As part of the consecration ceremonies of water structures, images of Varuṇa are frequently immersed in their waters<sup>132</sup>.

Further Vedic gods who are more frequently depicted in sculptural panels contained in water structures, are the sun god, Sūrya, and the god of fire and the sun, Agni. Both are believed to have been born from the waters, and to return to it at night, when the sun sets. There are many examples of Sūrya temples in front of which lie tanks and deep *kuṇḍas*, as at Gwalior, Delhi, Kapadvanj (Kāpadvañj), Gujarat, and Modhera. Additionally, one also finds depictions of the sun and moon, and of anthropomorphic images of the sun god in water structures (Plates 117, 118). Although some other gods, such as Indra, the bringer of rain, and Kubera, the guardian of wealth, are closely connected with the waters in religious texts, they are not typical of water architecture.

<sup>130</sup>A. & P. Keilhauer, 1990, *Die Bildersprache des Hinduismus: Die indische Götterwelt und ihre Symbolik*, p. 224.

<sup>131</sup>Rao, 1993, Vol. II, part 2, p. 530.

<sup>132</sup>Jain-Neubauer, 1981, p. 8.

The central importance of water for life, coupled with the religious tradition associated with the purity of body and spirit through ritual washing and immersions in water, led to the construction of steps along rivers, and of tanks, *kundās* and wells all over South Asia, to collect and preserve the divine waters, and to make them accessible to the people. These technically and aesthetically impressive structures, are an expression of the achievement of engineers and agricultural specialists to manage water in a region with extreme changes of climate, of the creative minds of gifted artists, and also of the deep religious feelings connected with the waters as the source of creation, the abode of gods and spirits, and as a manifestation of the divine. These religious aspects, which are described in religious texts and performed in rituals, have been given permanent visual shape in countless water structures and images associated with them, found in every, even the most remote, part of South Asia. The water structures are visual representations of religious beliefs, whose artistic forms are comprehensible to all the people of South Asia, despite differences in language, caste and the ability to read.

# Sites mentioned in Chapter 3: *Ghāṭ s*



## Chapter 3: *GHĀṬS*

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### I. Introduction

*Ghāṭs* are flights of steps permitting access to water<sup>1</sup>. They can make up the sides of a water reservoir or lead down to a well, and as such they are also inherent in most other types of water architecture, studied in later chapters. The *ghāṭs* discussed in this chapter, however, stand by themselves as independent well defined water structures, not being part of another type. *Ghāṭs* as an individual type of architecture do not contain or completely enclose water, but rather guide or channel it. They are found in association with running or moving water, such as rivers, streams or the ocean. Also discussed in this chapter will be *ghāṭs* at dammed rivers, natural lakes and larger artificial tanks, whose banks have not been architecturally shaped or transformed as a whole. Their sides are largely natural (*kaccā*), and artificially constructed *ghāṭs* (*pakkā*) are only found in certain parts or on the dam embankments. Being an architectural discussion, this study will focus on *pakkā ghāṭs*.

*Pakkā ghāṭs* are usually paved with stone slabs, sometimes coating a brick or mud core. Often, they contain larger tiers of wider terraces or pavements. Occasionally, they are interrupted by resting platforms, bastions, pavilions or temples. Particularly along rivers, the upper terrace is often lined by some kind of building, and staircases or lanes connect the upper pavement with a street behind the building unit on top. *Ghāṭs* are found all over the Indian subcontinent<sup>2</sup>. River

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<sup>1</sup>*Ghāṭ* means variously 'a landing-place', 'a wharf', 'a slope to water', 'a river bank' or 'a ford'.

<sup>2</sup>River *ghāṭs* are not so common in Sri Lanka which has more reservoirs. Due to a more balanced climate, the difference in water level between the seasons does not vary so much, and complicated step formations adapting to various water levels were not needed. There are, however, for example extensive *ghāṭs* at the Kelaṇi Temple (Kelaṇiya Vihāra) near Colombo.

*ghāṭs* are more typical of the north than the south of India, because the northern rivers, being fed not only by the rains but also by springs and the melting snow of the Himalayas, are perennial, while south Indian rivers are mainly torrential, and do not contain sufficient water all year round. But also in the north, due to strong evaporation in the dry season and heavy rains during the monsoon, rivers and lakes are subject to extreme changes in water level. The main concern of *ghāṭs* therefore, is to secure settlements situated at water, and to permit safe and easy access to the water at whatever its level. To achieve this, the flights of steps are often steep and very long and furnished with resting platforms at various levels to be utilised at different heights of water.

During the ancient and the medieval period, the role of rivers or the sea was paramount in the location and founding of new settlements<sup>3</sup>. Particularly favoured were sites situated slightly above the general flood-level of a river, providing a natural protection from the water<sup>4</sup>. Such towns as Benares and Allahabad are of considerable antiquity because they were well protected against devastating floods and changes in river courses. Particularly in the cities of the north, *ghāṭs* usually occupy the entire water front<sup>5</sup> and like most cities, the *ghāṭs* are situated on only one side of the river. Exceptions, where *pakkā ghāṭs* line both banks of a river, include Ujjain and Nasik, and Pashupatinath in Nepal (Plate 119). Although it has been assumed that as a rule, settlements were generally sited on the right bank of a river<sup>6</sup>, this is not always the case. At important places such as Calcutta in West Bengal, at Benares, Mathura (Mathurā) and Vrindavan<sup>7</sup>

<sup>3</sup>D.N. Shukla, 1993, *Vāstu-Śāstra - Hindu Science of Architecture* (Vol. 1), p. 263, D. Schlingloff, 1969, *Die Altindische Stadt*, p. 22.

Through the introduction of modern roads and railway lines, their importance as determinants for the location of towns has been undermined.

<sup>4</sup>S.C. Singh, 1973, *Changes in the Course of Rivers & their Effect on Urban Settlements in the Middle Ganga Plain*, p. 125.

<sup>5</sup>It is so typical of the sacred towns of Braj, the area around Mathura where Kṛṣṇa dwelled, to be situated on a river, that in Govardhan, where this is not the case, a large water reservoir, the Mānsiṅgaṅgā, was constructed in the centre of town which conveys the impression to be a river and imitates the layout of sacred river sides (D. Anand, 1992, *Krishna: The Living God of Braj*, p. 53.).

<sup>6</sup>B.B. Dutt, 1925, *Town Planning in Ancient India*, p. 28; J. Pieper, 1979(a), 'Water Architecture in Hindu Urban Architecture', p. 41.

<sup>7</sup>Occasionally, also spelled 'Brindavan'.

(Vṛndāvana), the latter three in Uttar Pradesh, the settlement and the *ghāṭs* are situated on the left banks of the rivers. In old river-side or water-related towns, the main bazaar street runs almost invariably at some distance parallel to the river or the *pakkā ghāṭs* of the tank or lake, being connected with the water-body by narrow perpendicular lanes. Because the *ghāṭs* are important public spaces, most cities located at a river, lake or the sea, show a strong orientation towards the water which usually occupies a prominent location in the layout of the town.

Closely connected with the sacred waters of rivers and lakes, *ghāṭs* are often considered sacred themselves. In the same way as devotees will take off their shoes when entering a temple, one does so at many *ghāṭs*, as for instance at Pushkar or when stepping onto *ghāṭ*-platforms at Mathura and Vrindavan. The sacredness of *ghāṭs* is often marked by painting them red, or red and white stripes, as may be seen at Kedār Ghāt, Pañcagaṅgā Ghāt, and Mīr Ghāt, all at Benares. Most *ghāṭs* are lined by large temples and small shrines, often built into the steps, and also by mosques.

It is generally difficult to date *ghāṭs* securely. Because they are continuously exposed to the changing water levels between the dry season and the floods of the monsoon period, but also because of changes in the courses of rivers, erosion, and the depositing of silt, *ghāṭs* continuously had to be repaired and rebuilt. The dating of *ghāṭs* and other water structures is made yet more difficult through the widespread practice of reusing old building materials, often from ruined or demolished temples, for their construction or repair. The earliest remains of South Asian *ghāṭs* known to us were unearthed in the excavations in the Nagarjunakonda. A *ghāṭ* excavated at nearby Yelleshvaram (Yelleśvaram), and later submerged when the River Krishna was dammed, dates from the first or second centuries AD, and the elaborate bathing *ghāṭ* near the Puṣpabhadrasvāmin Temple at Nagarjunakonda (Plate 120) has been dated to the mid or late third

century AD<sup>8</sup>. Also of an early date is the *ghāt* excavated in 1995-96, at the Shore Temple at Mamallapuram (Plate 121). It is situated south-west of the early eighth-century temple and is likely to be contemporary with it. Because the four steps of the *ghāt* are each about seventy-seven centimetres in height, about three times the size of normal steps, the *ghāts* may have served rather as a means to secure the embankment than to facilitate access for people to the water. The *ghāts* at Nagarjunakonda and at Mamallapuram were constructed in a technique which is not typical of other *ghāt* constructions in South Asia, possibly testifying to their early age. Instead of the usual way, where relatively thick slabs of stone were employed, and where the thickness of the slabs dictated the height of the steps, at those early sites, thin slabs alternately set vertically and horizontally, cladding the embankment, make up the steps. At Nagarjunakonda, the slabs cover a brick and lime core<sup>9</sup> and low balustrades with linear dragon or snake carvings line smaller flights of steps. At Mamallapuram, in order to stabilise the construction, the vertical large thin slabs were firmly kept in place through horizontal stone anchors (Fig. 1).

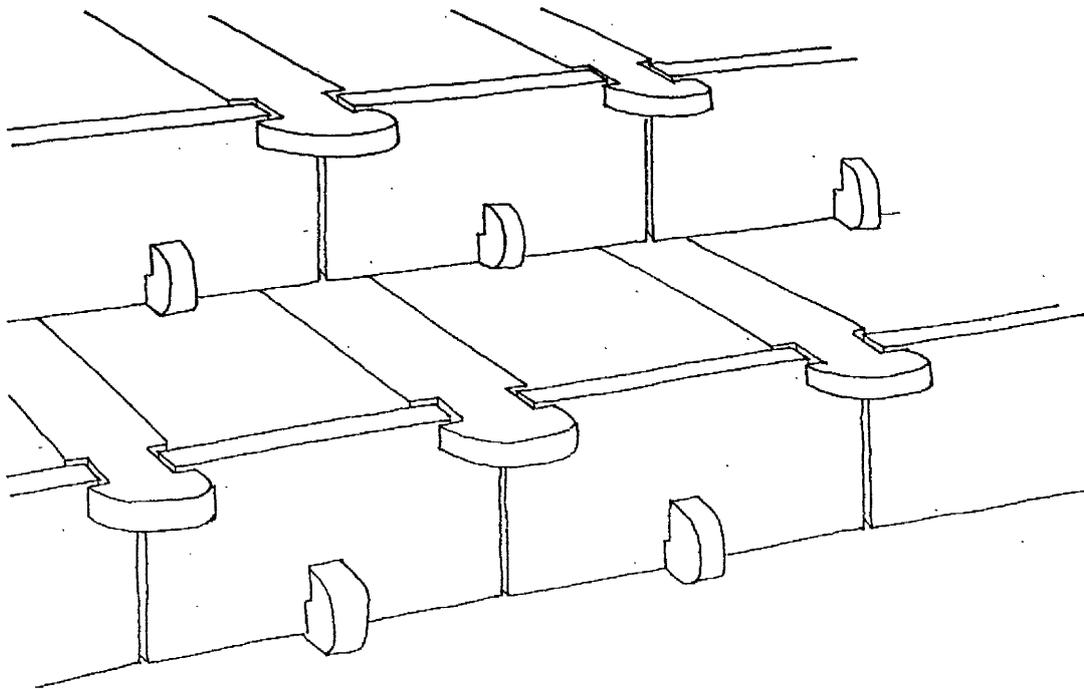


Fig. 1: System of *ghāts* constructed with stone anchors.

<sup>8</sup>E. Rosen Stone, 1994, *The Buddhist Art of Nāgārjunakoṇḍa*, p. 9.

<sup>9</sup>K.K. Murthy, 1977, *Nāgārjunakoṇḍā: A Cultural Study*, p. 223.

*Ghāṭs* usually fulfil various functions simultaneously and are used for a whole range of religious and mundane purposes. First of all, *ghāṭs* permit easy and safe access to the water-edge and to boats at often considerably changing water levels. A further important function is to secure and stabilise the bank and the buildings situated upon it. *Ghāṭs* are used for the physical cleansing of the human body, for the washing of clothes, and also for refreshment, leisure and rest. Shallow ramps facilitate access to water for animals.

*Ghāṭs* are also used for religious bathing and purification rituals (Plate 122) concerned with the metaphysical level of a person's soul and *karma*. They are also places of religious festivals which either take place at the bank of a river, lake or sea, or at least end there. The Kumbha Melā, the Ardha Kumbha Melā and the Māgh Melā are particularly big fairs taking place on the *ghāṭs* of India's sacred rivers. Dīvālī (Dīpāvalī), the festival of lights, Kārttik Pūrṇimā (the full moon in October-November), Durgā and Lakṣmī Pūjā and the birthdays of various gods, such as Kṛṣṇa or Gaṇeśa, are celebrated at night at the *ghāṭs* when thousands of lights are lit on the steps, being multiplied by their reflection on the water's surface. Lamps are also set up on long poles at the *ghāṭs* at Ākāś Dip, the lantern festival, for the *pitṛs*, one's deceased fathers or ancestors<sup>10</sup>. On a smaller level, people, and particularly women, assemble on the *ghāṭs* at holy water sites in the evening on ordinary days for evening *āratī*. *Āratī* is the offering of prayers and little leaf-boats, filled with flower petals and carrying small lit oil-lamps, to the sacred rivers or lakes, until the whole surface of the water is dotted with lights (Plate 123). Other festivals, such as Durgā Pūjā or the Sarasvatī Festival (Plate 124) end at the river *ghāṭs* or the sea, when the festival images, made of straw and clay or other perishable materials, are handed over to and submerged in the water to dissolve their shapes until they are 're-born' the coming year. *Ghāṭs* also witness many domestic rituals such as weddings and fertility ceremonies. They are also used for cremations (Plate 125) and the performance of funerary rites,

<sup>10</sup>E.B. Havell, 1905, *Benares the Sacred City: Sketches of Hindu Life and Religion*. p. 151; H. Wilson, 1985, *Benares*, p. 95.

and were therefore also places witnessing many self-immolations (*satī*) of widows, commemorated by *satī*-stones lining many rivers and tanks, particularly near burning places. Through the wide variety of usages, the *ghāṭs* become one of the focal spaces of public life in South Asian cities on water.

In larger towns and at particularly sacred places, specific parts of the *ghāṭs* may be dedicated to individual functions. There may be separate washermen- (*dhobī*), bathing- or cremation-*ghāṭs*, as is the case at Benares and at Pashupatinath in Nepal. At Hardwar, there are special sections on the *ghāṭs* where the ceremonies of casting the ashes of the dead and that of *pindadāna* (offerings to one's ancestors) are conducted. Although particularly on the Ganges, there are no caste restrictions for the use of the *ghāṭs*, Munsī Ghāṭ at Benares is reserved for the Muslims of the city<sup>11</sup>, and near Hari-kī Paiṛī Ghāṭ at Hardwar there is a *ghāṭ* reserved for women. In the late eighteenth century, the building of a *zenānā-ghāṭ*, a screened-off ladies' *ghāṭ*, next to Manikarnikā Ghāṭ at Benares was started but never completed<sup>12</sup>. In other cases, individual *ghāṭs* are said to be infused with particular qualities or capacities. At Gau (Gāy) Ghāṭ at Hardwar, people having killed a cow may be freed from their sin, and a bath at Cor Ghāṭ at Benares, purifies the souls of thieves.

When examining pilgrimage sites situated on rivers or the sea, it is interesting to see that several important religious sites which, particularly on certain festivals, are frequented by thousands of people, have not been artificially edged or architecturally designed, and have mud or sand-embankments which are entirely *kaccā*. Examples along the Ganges are its source at Gomukh (Plate 126), Allahabad, some of the most important *ghāṭs* at Benares, such as Assī Ghāṭ (Plate 127), Ādikeśava Ghāṭ and parts of Maṇikarnikā Ghāṭ along its course, and also its mouth at Gangasagar Island where it meets the Bay of Bengal. At Kalahasti,

<sup>11</sup>Havell, 1905, pp. 100, 115.

<sup>12</sup>These building activities were initiated by the Rānī Ahalya Bāī of Indore, in 1791 (J.P. Parry, 1994, *Death in Banaras*, p. 44.).

although there is a prominent *gopura* pointing towards the river, there are no *pakkā ghāṭs*. A similar situation also prevails at Kanyakumari (Kanyā Kumāri) at the southernmost tip of India in Tamil Nadu, where the Arabian Sea and the Indian Ocean meet.

A possible explanation for the absence of man-made architecture particularly at Gomukh, Allahabad, Gangasagar Island, and at Kanyakumari is that at these places in particular, the power of the river or the ocean, and of nature in general, is so overwhelming that man may not have dared to intervene. At these places up to this day, water is venerated in its natural unbound form, and not substituted in rituals by temples or images, leading the attention away from the divine river or ocean. Moreover, due to the force or the changeable nature of water at those sites, it would have been extremely difficult to construct *pakkā ghāṭs*. Although there are firmly constructed flights of steps made of rubble along the sea at Rameshvaram (Plate 128), at least at low tide, the beach is still visible. This place, called Agni Tīrtha (Fire Tīrtha)<sup>13</sup> is the site where after the return from Sri Lanka, Sītā is said to have formed a *līṅga* out of sand which then was worshipped by herself, Rāma and Lakṣmaṇa. At the site, this practice is continued by women until today<sup>14</sup> and with respect to this practice, a *pakkā ghāṭ*, entirely covering the consecrated sand, would probably have been unthinkable.

Assī Ghāṭ, the confluence (*saṃgama*) of the Rivers Assī<sup>15</sup> and Ganges, and Ādikeśava Ghāṭ (Varuṇāsaṃgama), the confluence of Varna and Ganges, are the southernmost and the northernmost *ghāṭs* of Benares respectively. Today, a continuous row of eighty-four *pakkā ghāṭs* exists between these two points. In 1930, not even half of them were built in stone. With more financial support and an expansion of the town of Benares along the Ganges, perhaps the *ghāṭs* at the

<sup>13</sup>This sacred bathing place is called Agni-tīrtha, the *tīrtha* of the god of fire, because like Agni destroys everything, the bath in the sea is meant to destroy all human sins (C.V.R. Ram, no date, *Arulmigu Ramanathaswamy Temple Rameswaram: Short Notes*. p. 7.).

<sup>14</sup>The practice of forming *līṅgas* out of sand is also very common at Gangasagar Dvip.

<sup>15</sup>The river Assī owes its name to the goddess Durga who is said to have dropped her sword (*assi*) at this place. Where the sword penetrated the earth, a stream burst forth flowing into the Ganges.

edges will one day be constructed in stone, and the area of *ghāṭs* may expand even beyond. The fact that today Maṇikarnikā Ghāṭ looks *kaccā*, may be due to the fact that it is not properly cleaned when the floods subside and the river retreats to its normal bed after the monsoon, leaving behind a thick layer of silt, augmented by the ash of the funerary pyres which entirely covers its steps. In the case of Kalahasti, it seems very probable that earlier *ghāṭs* were washed away or covered by silt because the bank is badly eroded and the raised river bed highly silted up. There are many examples where *ghāṭs* either subsided, as at Sindhiyā (Scindia) Ghāṭ at Benares, or where severe erosion has devastated *ghāṭs*, as in the west of Ayodhya (Ayodhyā) or at Bithur, both in Uttar Pradesh.

Lining most sacred sites and towns, however, are *pakkā ghāṭs* embanking the sandy cliffs bordering rivers, lakes and the sea. Interestingly, particularly with regard to the natural sites discussed above, other sacred sites of equal religious importance have not only been edged, artificially shaped and continuously rebuilt, but they often show bulky modern constructions in concrete, sometimes covered with thin marble slabs which, to a Western observer, may at times look somewhat sterile. The *ghāṭs* and its buildings were quickly put up, often just before a major *melā* was going to take place, and some lack the feeling of an unbroken religious and architectural tradition at the site. Examples of such strongly modernised *ghāṭs* are found at Hardwar (Plate 129) and Rishikesh (Plate 130), at Nasik, and at Dakshinkali (Dakṣiṇa Kālī) in the south of the Kathmandu Valley, Nepal. Particularly in the north of India, drastic renovations were partly made necessary by the Islamic invasions of the eleventh to the seventeenth centuries, and most Indian pilgrims will probably prefer neat and modernised *ghāṭs*. The look of the *ghāṭs* is not what makes the place sacred to them.

## II. Long Stretches and Short Sections of *Ghāts*

*Ghāts* may be long stretches of continuous steps, sometimes along the entire water front of a town, or they may be short areas of firm stone-built steps on a long mud-embankment or a beach. Most northern Indian cities situated on rivers show continuous lines of *ghāts*. Probably the best known town displaying *ghāts* along its entire river front over a distance of almost six kilometres, is Benares (Fig. 2). Nowadays, there are eighty-four named *ghāts* along the Ganges at the site.

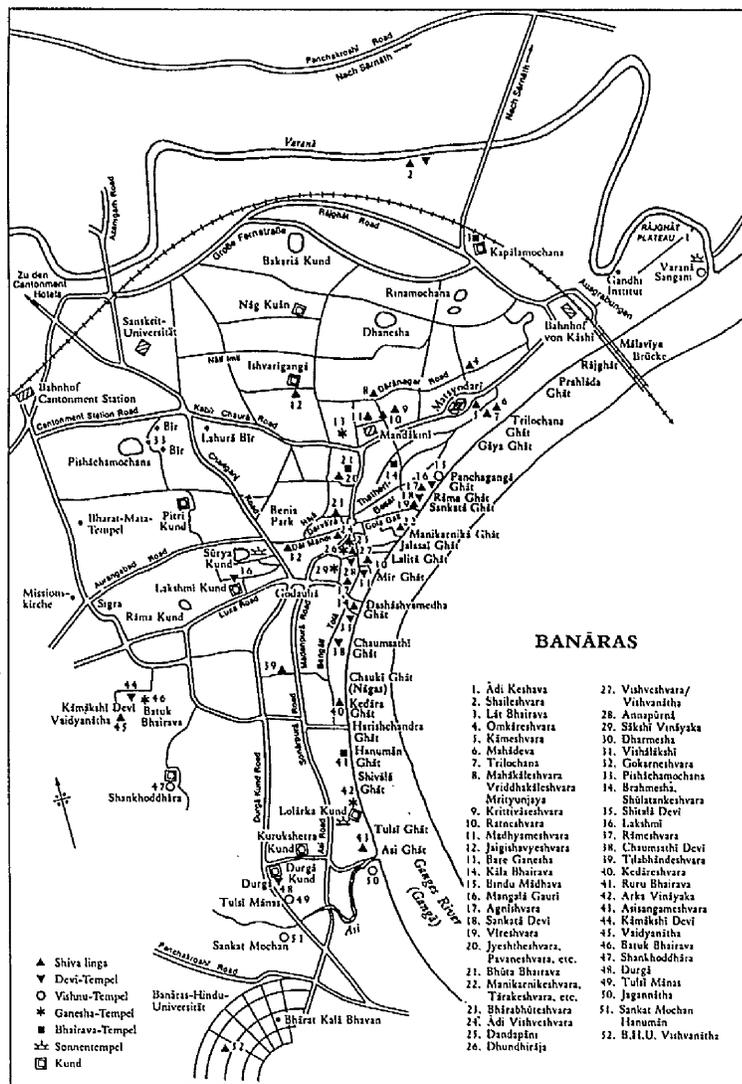


Fig. 2: *Ghāts* line the Ganges along the entire river front at Benares (D. Eck, 1993, p. 2).

We do not know when the first *ghāṭs* were constructed, but there have been human settlements at the site since at least the eighth century AD<sup>16</sup>, and the oldest firmly dated *ghāṭ*, based on inscriptional evidence, is Maṇikarnikā Ghāṭ, constructed in stone in 1302 AD<sup>17</sup>. Maṇikarnikā Ghāṭ, being ritually the most important *ghāṭ*, is also particularly well equipped with exact dates for restoration and rebuilding works<sup>18</sup>. Being the religious capital of India, Benares attracted the attention of the Muslims very early on. Aḥmed Nialtgin is said to have plundered the town as early as 1033 AD, and the worst destructions followed under Quṭb-ud-dīn Aibak in 1194<sup>19</sup>. Muslim raids to the town continued for the entire period of Islamic rule in India and in 1669 AD, the ruler Aurangzeb, who renamed Benares Muhammabad (Muhammabād), had some of the most important temples destroyed and mosques constructed overruling the Hindu *ghāṭs*. In the following period, it was the Rājput rulers, particularly Jai Singh II of Amber (ruled 1699-1743), and later on the *navābs* of Oudh<sup>20</sup> and the Marāṭhā *peśvās*, who funded the reconstruction of the *ghāṭs* and strongly influenced their present shape. Under British rule, Benares continued to flourish as an important religious and trading centre, and many rulers had their palaces or residences constructed along the Ganges, which often led to the firm edging and paving of the sandy embankment in front.

Long stretches of *pakkā ghāṭs* are also found at three of the four places where the Kumbha Melā, north India's most important and largest religious fair is held<sup>21</sup>. The exception is Allahabad referred to above. At Hardwar on the Ganges,

<sup>16</sup>Benares is believed to be older than Babylon or Athens and may go back to the Aryan invaders around 1000 BC (Wilson, 1985, p. 11). Excavations on the Rājghāṭ-Plateau, north of the modern town, have revealed objects dating from the eighth century AD (N. Gutschow & A. Michaels, 1993, *Benares: Tempel und religiöses Leben in der heiligen Stadt der Hindus*, p. 23.).

<sup>17</sup>Ibid., p. 46; Parry, 1994, p. 44.

<sup>18</sup>Maṇikarnikā Ghāṭ was rebuilt in 1735 by the Marāṭhā *peśvā* Bāji Rāo, in 1791 by the Rānī Ahalya Bāi of Indore who contributed also to the rebuilding of many other *ghāṭs* at the site, and then again in 1912, when high up on the *ghāṭ* a new burning platform was constructed which could also be utilised during high flood level of the river (Ibid., pp. 44-45.).

<sup>19</sup>Gutschow & Michaels, 1993, p. 28.

<sup>20</sup>Ibid., p. 31.

<sup>21</sup>According to S. Rai, the southern equivalent of the north Indian Kumbha Melā, is the Mahāmakkham Tank festival at Kumbakonam (S. Rai, 1993, *Kumbh Mela - History & Religion, Astronomy & Cosmobiology*, pp. 37, 57.).

at Ujjain on the Sipra, and at Nasik on the Godavari, *ghāṭs* line the entire water front of the town. The Kumbha Melā is held every three years rotating between the four sacred places and Hardwar and Allahabad also hold an Ardha Kumbha Melā (half full pot) between two Pūrṇa Kumbha Melās (full pot). Every year in the month of Māgh (January-February), a fair known as Māgh Melā is held at the confluence at Allahabad. All these fairs attract thousands of people and long stretches of firmly constructed *ghāṭs* were desirable to provide the pilgrims with plenty of space to bathe in the sacred rivers. Also the *ghāṭs* at Hardwar were severely destroyed in Muslim raids during the fourteenth to seventeenth centuries. Hardwar ranks highest in importance amongst the places of the Kumbha Melā and a modern rebuilding of the *ghāṭs* was inevitable. Being less important than Benares, which also attracted the attention of influential rulers and wealthy merchants, the *ghāṭs* at Hardwar are less elaborate and mainly date from the nineteenth and twentieth centuries. Despite the antiquity of the sites, most *ghāṭs* and shrines at Ujjain and Nasik date from the eighteenth century's Marāṭhā period and from later centuries. Nasik is one of the places where Rāma is believed to have spent part of his exile. Allahabad, which probably never had *pakkā ghāṭs* remained in its original shape.

Further clear examples of continuous *ghāṭ*-like steps along rivers are found at Pashupatinath, at Ṭeku Maśān in the south of Kathmandu (Kāṭmāṇḍu, Kāṭmāraṃ) (Plate 153), and at Khware<sup>22</sup> at Panauti, all three in Nepal. Pashupatinath is the most important *śaivite* pilgrimage centre in Nepal, and like Prayag at Allahabad, it is said to be a *trivenī*, a confluence of three sacred rivers<sup>23</sup>. The main *ghāṭ* at Pashupatinath, Ārya Ghāṭ, was rebuilt under Candra Shamsheer in the early twentieth century, and the *ghāṭ* building along the Bagmati at Kathmandu was also initiated during that period. Their construction was based on the example of Benares in India, where the wives of King Rājendra Vikram Shāh and the Prime Minister Jaṅga Bahādur Rāṇā had set up a residence at Lalitā

<sup>22</sup>It is frequently spelled 'Kvane'.

<sup>23</sup>M. Hutt, 1994, *Nepal: A Guide to the Art and Architecture of the Kathmandu Valley*, p. 183.

Ghāt (also called Nepālī Ghāt). Kvané, the sacred confluence of the rivers Roshi Khola, Pungamati Khola and a third invisible river, at Panauti, has been regarded as a sacred *tīrtha* since ancient times and also annually houses a big Māgh Melā. Less continuous in nature, due to interruptions by *kaccā* parts, are the *ghāṭs* along the Yamuna at Mathura and Vrindavan. The towns and their *ghāṭs* are closely connected with the story of Kṛṣṇa and most constructions along the river date from the seventeenth to the nineteenth centuries. A similar situation where the entire water front of a city is lined by *ghāṭs*, but where the sections of *pakkā ghāṭs* are continuously interrupted by *kaccā* parts, is found at Bithur.

An important *samudra tīrtha*, a sea or ocean *tīrtha*, with continuous rows of *ghāṭs* is Dwarka (Dvārakā) at the Arabian sea in Gujarat. At the site, a sandy island situated close to the main land creates a channel where the waves of the ocean are broken and slowed down, and the construction of *pakkā ghāṭs* was possible (Plate 151). The *ghāṭs* predominantly date from the nineteenth century, when the Gaekwad Rulers of Baroda (Vadodara) developed the site as a popular pilgrimage centre connected with the story of Kṛṣṇa, who settled here after fleeing from Mathura.

Two examples of long stretches of *ghāṭs* along lakes and artificial tanks, are Badami (Bādāmi), Karnataka (Plate 207), and Pushkar (Plate 192). Badami is situated on the western bank of an artificial lake. Running along the entire side of the town, is an unbroken line of stone *ghāṭs*. Pushkar is the sacred place where the lotus of god Brahmā dropped when he flew through the air searching for an abode on earth. Where the lotus touched the ground, water sprang up in form of the holy lake, and Brahmā settled on its bank<sup>24</sup>. There are fifty-two continuous *ghāṭs* mainly along the northern and eastern sides of the lake and a bath in the sacred waters is believed to extinguish all sins. The large *melā*, held in November-December at the site is partly religious, being connected with extensive bathing

<sup>24</sup>Pushkar is one of the few place in India where today, Brahmā is still actively venerated in a large temple.

rituals, and partly commercial as one of north India's largest camel and cattle fairs.

An example of relatively small areas of *pakkā ghāṭs* along a river which otherwise has mud embankments, is Rishikesh on the Ganges. Rishikesh is an important pilgrimage centre with several areas of bathing *ghāṭs*. Because it is situated in a deep gorge in the upper Ganges valley where the river is rough and dangerous, no long stretches of continuous *ghāṭs* lining the town were constructed. The most sacred bathing *ghāṭ* at the site is Trivenī Ghāt, which is believed to be the confluence of the Ganges, the Yamuna and the invisible underground Sarasvati river. The *ghāṭ* has been heavily modernised in this century. Similarly situated on a river, Kumbakonam, has small sections of *pakkā ghāṭs* lining the Kaveri River (Plate 131). During the rainy season, the river fills up considerably. Such brief sections of *pakkā ghāṭs* are also found at Gaya. In the area where the Phalgu river passes along the Viṣṇupāda Temple complex, the natural embankment was artificially edged and firm bathing *ghāṭs*, dating mainly from the eighteenth and nineteenth centuries, were constructed (Plate 132). The Phalgu river, particularly where it flows through Gaya, is said to be filled with the essence of Viṣṇu and the *ghāṭs* are regionally known as a place for special bathing on Kārttik Pūrṇimā, the full-moon in January-February. Gaya is an important national pilgrimage centre for the performance of *śrāddha-yajñā* (ancestral sacrifice) and *piṇḍadāna*, the offering of rice balls, observed in honour of one's dead fathers and ancestors<sup>25</sup>. Being performed in a sacred public, rather than a local domestic place, and resulting in the final liberation of the deceased, Gaya Śrāddha is distinguished from other funeral rites. In Nepal, temple complexes situated outside towns on rivers, often have sections of prominent *ghāṭs* just in front of their delineated compounds. Clear examples are the Jal Vināyaka Temple on the Bagmati river just below the gorge outside Chobar (Cobār) (Plate 133), and

<sup>25</sup>L.P. Vidyarthi, 1961, *The Sacred Complex in Hindu Gaya*, p. 33.

the Gokarna Mahādev Temple at Gokarneshvara (Gokarṇeśvara), also on the Bagmati, near Bodnath (Bodnāth, Baudha) in the east of Kathmandu (Fig. 3). Probably constructed on earlier sites, the present temples date from the early seventeenth and late sixteenth centuries respectively and although the *ghāṭs* were continuously repaired, considerable parts still are original.

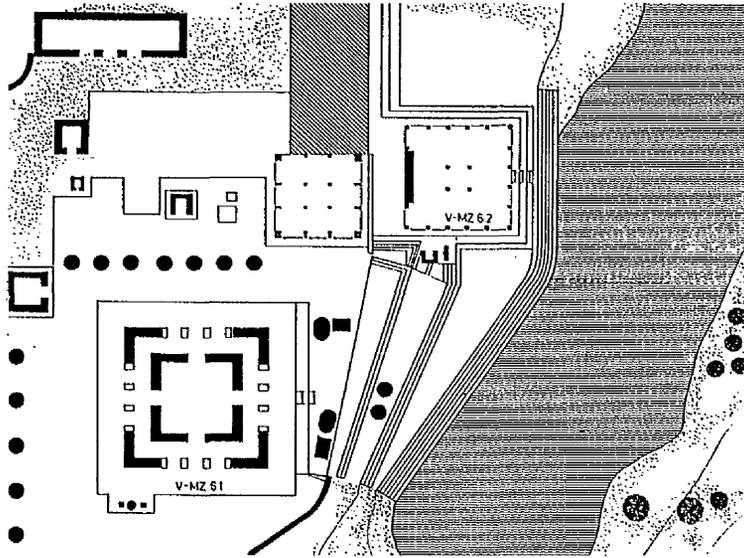


Fig. 3: A small area of *ghāṭs* in front of the Gokarna Mahādeva Temple (C. Pruscha, 1975, Vol. 1, p. 30).

Particularly interesting examples of very short sections of *ghāṭs* are found at Ghazipur in Uttar Pradesh, and at Pandharpur. At Ghazipur, spread out at intervals along the entire river front of the town, are six stone built ramps, each about twenty metres wide, with seven flights of steps and wide intermediate terraces, sticking out into the river like long tongues (Plate 134). At the top of each *ghāṭ*-ramp is a temple overlooking the steps and the river. The main central *ghāṭ* at the site is called Citnāth Ghāṭ. Similar to this, also at Pandharpur on the Bhima River, there is a whole sequence of spaced out *ghāṭ* ramps leading from the town down to the river (Plate 135). The ramps are slightly wider than at Ghazipur, and have continuous steps without intermediate terraces. Because they are long and slope gently, the ramps are also utilised for the watering of cattle and sheep. The river bed at Pandharpur is so wide and shallow, that continuous steps

along the ridge on which the town is situated would hardly ever be reached by the river water. Therefore, long protruding ramps were constructed which jut out into the river and provide access to the sandy bed or the water-edge of the river, depending on the season.

Examples of *ghāṭs* along embankments damming up rivers and creating lakes, are notably found in Rajasthan. The earliest example is found at Ajmer where an embankment at the south of Ana Sāgar Lake was constructed by Rāja Anajī between 1135 and 1150 AD. The artificial bund was built in stone but does not provide access to the water by steps. During the late reign of Jahangir or early under Shāh Jahān, a row of marble pavilions was constructed on the bund. A similar arrangement, with proper *ghāṭs* and on a larger scale is found at Kankroli, sixty-five kilometres north of Udaipur (Plate 136), Rajasthan. Commissioned by Mahārāṇa Rāj Singh, in 1676 AD, Rājasamand Lake (also called Rājasamudra) has an embankment of over two miles covered with *ghāṭs*. A similar arrangement is found at Jaisamand (Plate 145), Asia's largest artificial lake, forty-eight kilometres south-east of Udaipur. The lake, formed by the dammed River Gomati, was created as a summer retreat by Mahārāja Jai Singh in 1685 AD. The dam is 366 metres (1202 feet) long and covered by marble *ghāṭs*. Although the firmly edged marble embankments at the three sites are long, compared with the enormous size of the lakes they are situated upon and which otherwise are entirely *kaccā*, the area they cover is very small.

Small areas of *pakkā ghāṭs* may also be found at natural lakes. Examples include Indra Lake at Eklingji (Ekliṅgī), where the corner nearest to the Ekaliṅga Temple complex was built in stone (Plate 137), and the lake at Nagda (Nāgdā), both in Rajasthan. In the case of Nagda, a platform jutting out into the water of the lake was constructed in front of the Sās-Bahu Temples (Plate 217). This feature is also found at Badami, where the platform on which the Bhūtanātha Group was constructed protrudes into the artificial lake. Again, the three sides of the platform are lined by stone steps. Through the construction of platforms

jutting out into the water, more space for the construction of *ghāṭs* along embankments was created.

### III. Top and Side Delineations of *Ghāṭs*

In order to enliven and structure often long and monotonous stretches, *ghāṭs* were frequently interrupted and divided into bays. A bay can be created by introducing a platform, often resembling the form of a bastion, at either end. Such platforms may be built into the steps of the *ghāṭ* or protrude out into the water (Plate 149). Alternately, a *ghāṭ* may be delineated through actual walls, often in continuation of a house lining the upper terrace, which firmly end the *ghāṭ*. An example of this is the *ghāṭ*-bay on the south side of Indra Lake at Eklingji (Plate 137). Usually however, although the feeling of a bay is clearly conveyed, one can, at least at low water level, walk from one bay into the next along the entire water front uninterruptedly. Each bay will usually be called by a distinct name. The effect of bays may also be achieved through low platforms built into the steps of the *ghāṭs*, which really only structure and interrupt the steps particularly if they are constructed in an uninterrupted line rising up from the water's edge to the upper terrace of the *ghāṭ* (Plates 137, 145).

The tendency to create bays is not always equally strong. Although the *ghāṭs* at Benares probably cover the longest uninterrupted stretch of river front, the delineation of separate *ghāṭs* is not always clearly visible in the steps, but more frequently in the walls of the buildings at the top. Particularly the *ghāṭs* in front of palaces, such as Chet Singh (Cet Siṃha) Ghāṭ with the palace of the Mahārāja of Benares (Plate 206), are so dominated by the palatial buildings they carry, and the buildings seem so closely connected with the *ghāṭs*, that the steps are often not again demarcated by bastion-platforms (Fig. 4). Pañcagaṅga Ghāṭ,

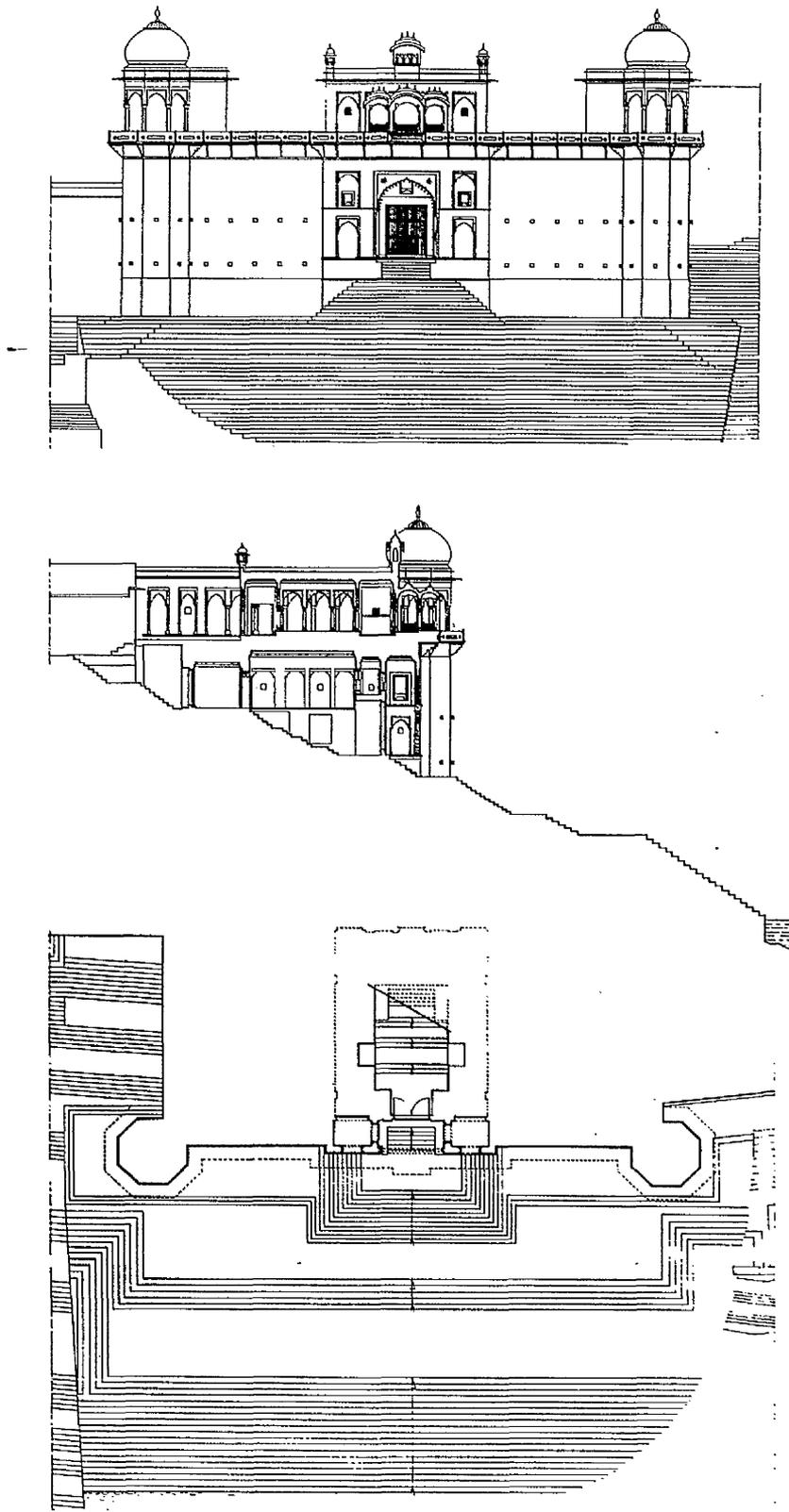


Fig. 4: Benares, Cet Singh's Palace with *ghāt* in front (P.D. Couté & J.M. Léger, 1989, pp. 6-7).

which for the first time was securely edged in stone in 1580, also called Pañcanadī Tīrtha because it is believed to be the place where the five rivers Ganges, Yamuna, Sarasvati, Dhutpapa and Kirana converge<sup>26</sup>, also does not have platforms as structuring devices. Nevertheless, it sticks out clearly as a distinct *ghāṭ* because its steps create a pyramid soaring up to the temple half way up the embankment, and because it is painted in red and white stripes, clearly distinguishing it from the surrounding *ghāṭs* (Plate 138). Pañcagaṅgā Ghāṭ was so clearly emphasised, shaped, painted and crowned by a Hindu temple, because the highest point of the embankment is topped by the overtowering Ālamgīr Mosque<sup>27</sup>, constructed by Aurangzeb in 1669 on the ruins of what had been one of Benares' largest and most sacred temples, the Bindu Mādhava Temple in order to proclaim the Muslim conquest of the religious capital of the Hindus<sup>28</sup>. None of the three cities with *pakkā ghāṭs* at which the Kumbha Melā is held show a strong tendency towards the creation of bays either. It seems that they are more strongly developed in places where the *ghāṭs* cover only a comparatively small area. Small intimate bays do not lend themselves well for the bathing of large numbers of people which are attracted by the Kumbha Melās or at Benares. Where there are only small areas, however, the presence of the *ghāṭs* was further emphasised by strictly delineating their edges and by creating several small bays of different character and often distinct use. Such clear bays can be found for instance around Keśī Ghāṭ<sup>29</sup> in Vrindavan, at Bithur, in front of the Viṣṇupāda Temple at Gaya, and at the Kaveri in Kumbakonam. An exception is Pushkar, where two sides of the sacred lake are completely lined by long continuous *ghāṭs*, and which show probably the highest and most elaborate development of *ghāṭ*-bays. Although Pushkar is an important pilgrimage centre and its *melā* attracts large numbers of people, it is not comparable in size and importance with Benares or the places of

<sup>26</sup>P. Sheshadri, 1925, *Benares*, p.35; Wilson, 1985, p. 22.

<sup>27</sup>'Ālamgīr' is a further name of Aurangzeb.

<sup>28</sup>Wilson, 1985, p. 22.

<sup>29</sup>'Keśī' is the name of the *asura* (demon) killed by Kṛṣṇa.

the Kumbha Melā, which attract pilgrims all year round and therefore show a wider and more open layout.

An important role in the creation of bays is played by the buildings within the bays on top of the steps, making up its uppermost delineation. Although many *ghāṭs* are lined by buildings on the upper terrace this is not, as Fergusson assumed<sup>30</sup>, always the case. There are often arcades in the back of bays high up on the embankment. Arcades are also found alongside or surrounding other water structures such as tanks and *kuṇḍas*, and are used for various purposes. Pilgrims may use them as changing rooms after a bath, priests conduct their ceremonies in them, they are used as places of final rest for the dying who desire to be close to sacred rivers or tanks, and as a general shelter, often used by *sādhus* and sacred cows. Because an arcade is more an ante-building or link between two building units than an independent edifice in itself, they often establish a close link with the *ghāṭs* in front, and delineating walls at their ends protrude into the *ghāṭs* to further link the two building units, and so contribute to the creation of bays. One of the clearest examples of an arcade, which is really just a thin façade, associated with a strongly delineated *ghāṭ*-bay in front, and not with a solid building behind, is found at Pata Ghāṭ<sup>31</sup> at Bithur (Plate 139). The arcade has pointed arches at the ground level and also in the fragile screen set on top. The *ghāṭ* was constructed by Rāja Tikait Rai, a minister of the Navāb of Oudh<sup>32</sup>. A double storeyed arcade connected both with a building behind and with the *ghāṭs* in front, is found at Gaya in front of the Viṣṇupāda Temple (Plate 132). At the end of the bay, the ground floor arcading is continued slightly around the corner, embracing the *ghāṭ*. Arcades are found along most Nepali *ghāṭs*, particularly at burning places, such as Pashupatinath (Plate 141) and at Ṭeku Maśān, south of Kathmandu.

<sup>30</sup>J. Fergusson, 1967, *History of Indian and Eastern Architecture*, Vol. 2, p. 181.

<sup>31</sup>Possibly also spelled Paṭha Ghāṭ.

<sup>32</sup>P. Davies, 1989(a), *The Penguin Guide to the Monuments of India: Islamic, Rajput, European*. p. 207.

The space within a *ghāt*-bay may be filled by domestic houses which, at the end of the bay, slightly protrude and grow into the steps of the *ghāts* to indicate a more domestic and local neighbourhood bathing area. Examples of this are found at Bithur, where a long stretch of the river was edged, but where most individual *ghāts* are quite small and the line of *ghāts* is continuously interrupted by sand embankments. Most *ghāts* have houses on their top which expand into the *ghāts*, and often down to the water edge and create an intimate place in front of the house, comparable to a courtyard in a *haveli* (Plates 142, 144). Often, such *ghāts* do have public access gates on their sides, but still the feeling is very different from the long stretches of public bathing *ghāts* at major pilgrimage sites. Particularly noteworthy examples of such 'domestic-bays' at Bithur are Bārahdarī Ghāt and Chāpā Ghāt. Most buildings around Puṣkar Lake are domestic houses or temples built into the steps of the unbroken line of *ghāts* on the northern and eastern banks. At low water level, it is possible to walk along the entire water edge in and out of the small individual bays created in front of houses, temples and at public access points to the lake. Nowhere else has the creation of bays been followed up so consistently and to such a high degree, such that particularly on the east side, the protruding flights of the houses, framing a bay, are three to four storeys high embracing narrow bays with steep steps in a continuous rhythm of in and out, of sun and shade, of vertical high walls and horizontal steps, all painted crisp white against the blue of the lake and the sky (Plate 143). At Benares, many domestic houses and *dharamśālās* line the upper terrace of the *ghāts*, but the more dominating form of domestic living along the Ganges at Benares are the palaces and residences of *mahārājas* and wealthy merchants. Due to the desire to build a palace in a picturesque location, but also through concerns for protection, transport and communication, palaces were often situated on *ghāts*. Particularly picturesque examples of palaces creating bays at water are found at Keśī Ghāt on the Yamuna at Vrindavan, constructed by the princely houses of Bharatpur, Jaipur

and Gwalior<sup>33</sup>. The palaces are built extremely close to the *ghāt*-steps, only leaving a narrow passage along the house walls. Where the houses protrude even further over this path, movement on the ground level is directed through arcades straight along the river under the palaces, which swell in and out of the river (Plate 140).

There are practically no bays at all on the *ghāts* at the places of the Kumbha Melā, at Hardwar, Ujjain and Nasik, and this may partly be so because the *ghāts* are not lined by a strong vertical building unit on top which relates to the *ghāts*. At Hardwar, a high plain modern wall was put up behind Hari-kī-Pairī Ghāt on top of which runs the main road east out of Hardwar (Plate 129). Only the area of Brahmā-kunḍa, the most sacred bathing area at the *ghāt*, is slightly framed by temples built into the water of the Ganges. At Nasik, the upper terrace of the shallow *ghāts* is too wide, and the houses are set too far back from the steps, to interact with the *ghāts*. At Ujjain, there is no continuous line of buildings at the upper terrace, and again a wide path runs along the steps, facilitating the bathing of thousands of people. Here, the monotony of the long stretch of *ghāts* is occasionally interrupted by small temples built close to the edge of the river, which do not, however, convey the feeling of delineated bays. In these examples, which were all rebuilt and modernised in recent centuries, the *ghāts* feel slightly disassociated from the town, which may be due to the wide upper terrace which like a road separates the water from the civic building area of the towns. At Pushkar and Benares, passage along the entire water front is possible, but not in the form of a wide paved horizontal path. The steps continue uninterruptedly to the water edge and wider terraces will be found at different levels within the individual *ghāts*. A further reason why the *ghāts* are less developed at places such as Ujjain or Nasik is that the river bank is not as steep and pronounced as it is for example at Benares, and also because the cities are smaller<sup>34</sup>. At Mathura, an actual road runs between the houses lining the river and the *ghāts*. But because

<sup>33</sup>Anand, 1992, p. 103.

<sup>34</sup>Pieper, 1979(a), p.40.

there is an uninterrupted row of houses, clearly oriented and opened up towards the river, *ghāt* bays are still visible, although they do not directly relate to the building unit on top.

There are a few examples of sites where there is no façade or building unit at all on top of the *ghāts*, but the steps are still divided into bays. This is the case at Rām Ghāt and at Lakṣmaṇ Ghāt, both at Bithur. Rām Ghāt is small, and clearly delineated by two- and three-storeyed building units on either side of the steps. Lakṣmaṇ Ghāt is bordered by high walls with bastions on either side. The upper terraces of the *ghāts* are open, providing direct access to the public and also more easily to animals because the opening to the *ghāt* is wider than is usual at the site. Lakṣmaṇ Ghāt is also the major landing place for boats visiting the mosque situated next to the *ghāt*. Longer stretches of *ghāts*, not lined by any buildings on top, are found at Rājasamand Lake at Kankroli and at Jaisamand (Plates 136, 145). In both cases, the straight *ghāts* are interrupted by low stone platforms. At Rājasamand Lake, the steps are horizontally grouped into three large tiers of steps, and at Jaisamand Lake into four such tiers. At regular intervals platforms of the height of a tier of steps were inserted into the *ghāt*-steps, three at Rajasamand and four at Jaisamand Lake. Each platform was exactly aligned to the one above and below. Through this, seven regular bays were created at both sites. At Rājasamand Lake, three of the seven bays are more emphasised because the platforms are larger and protrude into the water of the lake. On a smaller scale, again contained within a larger clearly delineated bay, such platforms are found at the south side of Indra Lake at Eklingji.

#### IV. Ghāt-Platforms

*Ghāt*-platforms, mentioned briefly before as delineating and structuring devices of *ghāts* and particularly of bays, are usually octagonal, stone built (or at least stone-

clad) structures, formally reminiscent of bastion towers (Plate 146). Not all eight sides of the regular octagon are necessarily always developed, and platforms made of half octagons or multi-faceted examples exist. Less frequently, platforms may also be square, rectangular or circular (Fig. 5).

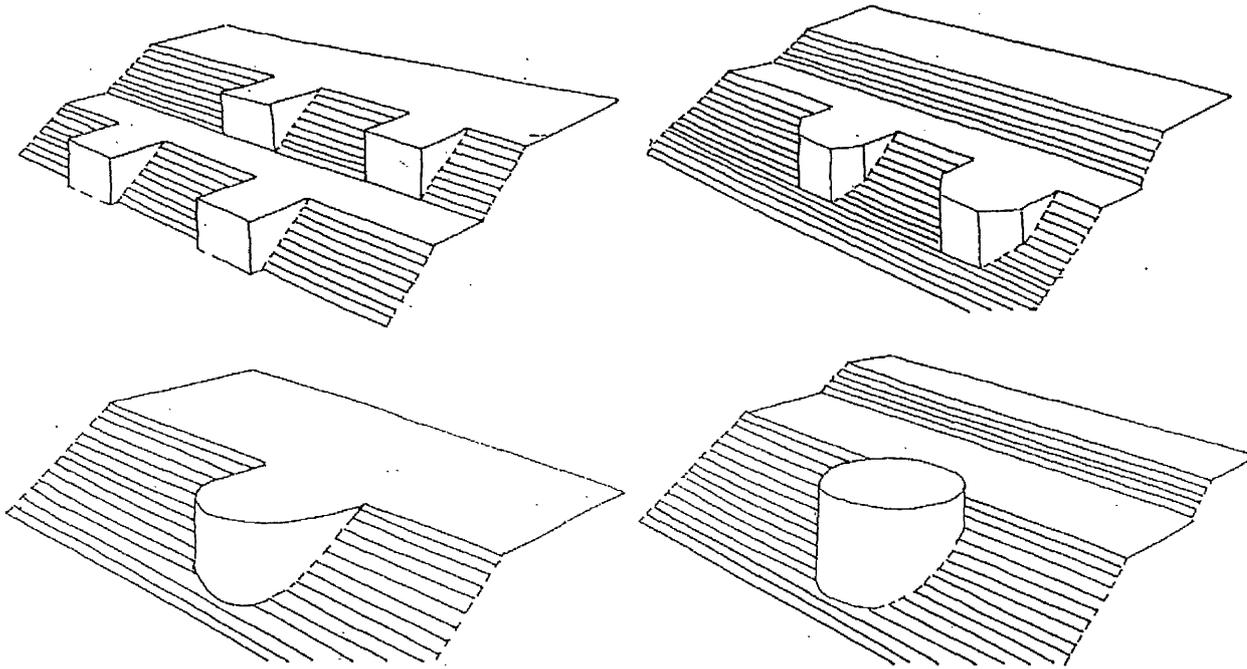


Fig. 5: Square and octagonal *ghāt* platforms.

The simplest and purest functional version of *ghāt*-platforms are found at the corners of a *ghāt*. The platforms protect the steps and buildings of the *ghāt* against the destructive and eroding power particularly of running water, and demarcate the boundaries of a bay or *ghāt*. Typical examples of bays framed by octagonal platforms are Kedār Ghāt, Bālaji Ghāt, Rāṇa Mān Ghāt, Daśāśvamedha Ghāt and Gāy (Go) Ghāt<sup>35</sup>, all at Benares. Octagonal bastion-platforms are also typical of Bithur, where practically every single *ghāt* is protected by this means and still the river managed to destroy a considerable number of them. The embankment at Benares is generally much higher than at Bithur, and the platforms at Benares are quite low and situated down at the water edge, but may also be repeated on various levels adaptable to different heights of water

<sup>35</sup>'Gāy' and 'Go' both mean 'cow', referring to a sculpture of a cow found on the *ghāt*. The same *ghāt* is, however, also referred to as Gāyā Ghāt, relating it to the sacred town of Gaya in Bihar.

(Plate 149). At Bithur, the platforms are usually as high as the entire embankment, and although they are shaped like an octagon at the water side, on the back towards the *ghāt*, they continue as a massive wall (Plate 142, 144). The walls start high at the water in the form of bastions and, adapting to the rising steps, they diminish in the form of a wedge, creating a wall which frames the *ghāt* until it is level with the lowermost edge of the building on top of the *ghāt*. At Benares, a similar effect may be achieved by narrowly spaced platforms in a row, continuously rising to the upper terrace of the *ghāt*, as may be seen at Rāṇa Mān Ghāt (Plate 148). At Ghazipur, the *ghāt*-ramps are secured at two levels by octagonal bastion towers. The fact that the corners of the lowermost edge of the ramp are not protected by stone platforms, may be more an aesthetic than a protective device. Alternatively, it could be argued that at low water level, the river is less forceful and bastions at the bottom are not needed. At higher water levels the *ghāts* are protected by bastion-platforms. The architecturally related *ghāt*-ramps at Pandharpur, however, are not protected by bastion platforms at all. Since the river bed of the Bhima is wide and shallow, the power of the water does not constitute a threat to the architecture. Octagonal and square stone platforms nevertheless exist at the site, and like the temples, they were built straight into the river bed (Plate 150). They are detached structures, which resemble large truncated minarets and are scattered between the temples and pavilions. Platforms in the shape of half an octagon only, are found along the water front at Ujjain, and in front of the Viṣṇupāda Temple at Gaya (Plate 147). Square platforms are typical of the ocean *ghāts* at Dwarka, in Gujarat (Plate 151). Rectangular platforms are less common but are also found for instance at Pushkar (Plate 152), Ujjain, at Karṇāṭaka State Ghāt at Benares, and on one side of Bārahdarī Ghāt at Bithur. Probably the largest rectangular platforms along *ghāts* are found at Rājasamand Lake at Kankroli (Plate 136). Added to the platforms on the side of the lake are further rectangular extensions carrying pillared halls. Often, however, the corners of rectangular oblong platforms were cut off, creating irregular

octagons, such as at Nirañjanī Ghāt, Benares. Sharp corners are the easiest target points for the force of the water and therefore the weak-spots within the construction. Platforms with several smaller corners are more effective. Circular platforms which should be most efficient, are however not so common. This may partly be because it is more complicated to carve stones with accurately rounded edges than to cut angular shapes. Circular platforms are, however, frequently found in Nepal, at Teku Maśān at Kathmandu (Plate 153), Rām Ghāt at Bhaktapur, at the Jal Vināyaka Temple at Chobar, at Śaṅkhamūla Maśān or Ghāt at Patan, and at Pashupatinath (Plate 119). In India, circular platforms are found at Assī Ghāt and the modern Śrī Niṣādarāja Ghāt, both in Benares. At the latter, only the top pavement is made of stone and the body of the bastions is cast in concrete. At Śrī Niṣādarāja Ghāt and at the left bank at Pashupatinath, platforms not only secure and demarcate the corners of the *ghāt*, but are found in narrow intervals along the entire side of the *ghāt*.

Platforms do not only protect the edges of *ghāts* against the water, they are also used as resting platforms, providing a larger even surface in the long sloping flights of steps. Such resting platforms can be found contained within a bay or running along the side of a *ghāt*. They are used by the pilgrim priests, called the *pandās*, *ghāṭiās* or *tīrtha purohitas*<sup>36</sup>, who sit on the platforms, often shaded by umbrellas, and conduct purification and ancestral rites for pilgrims (Plate 154). The main focal places for the priests working on the *ghāts* at Benares, are Rāja Ghāt and Daśāsvamedha Ghāt. The platforms are also much favoured places to sit in the fresh breeze of the river surrounded by water on three sides, but safe and dry. They are used for fishing, for washing and to draw up water in a bucket. A further important use of platforms on rivers is to burn the dead in a dry place close to the sacred rivers to which the ashes of the deceased are submitted after

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<sup>36</sup>D. Eck, 1993, *Banaras: City of Light*. pp. 11, 21, 226.

the cremation is finished<sup>37</sup>. Generally in South Asia, cremation grounds are situated outside towns and cities, because they are believed to pollute the ground. At Benares, however, they are in the centre of the city close to the bathing *ghāts*. There are two main burning places, Maṇikarṇikā Ghāṭ for the higher and Hariś candra Ghāṭ for the lower castes. Maṇikarṇikā Ghāṭ is situated midway along the Ganges between the two confluences. It is the centre and navel of Benares, the place where the world was first created and where it will be destroyed. Through the burning corpses whose souls are reborn in heaven, Maṇikarṇikā symbolises the beginning and the end of life and of the world, and perpetually reactualises the cosmic events of death and birth on the *ghāṭ*<sup>38</sup>. In the Kathmandu Valley, the cremation platforms are found outside the cities along the rivers. While most platforms are circular, those used for cremations are often rectangular, presumably because this shape is more conducive to an elongated body. At Bhasmeśvar Ghāṭ at Pashupatinath, there is a special cremation platform reserved for members of the royal family (Plate 141).

More often than corner platforms, those situated along the water front of a protected bay, house shrines and small temples. Such shrines have access either from the side via the steps (Plates 157, 173), as is the case at Lāl Ghāṭ and Sindhiyā Ghāṭ, or from the river side (Plate 155), as exemplified by the Shrine of Gaṅgā at Lalitā Ghāṭ, all at Benares. As the water level rises, the shrines become submerged and the images are lustrated by Gaṅgā water. Often, we also find *śiva-liṅgas*, *nandis*, the foot prints of Viṣṇu (*pādukā*) or images of Viṣṇu Nārāyaṇa on top of platforms (Plate 156). Such platforms are then treated like a temple and may not be walked upon with shoes. Examples of *śiva-liṅgas* are found at most Nepali *ghāṭs*, all around Puṣkar Lake, and particularly many were assembled at Gāy Ghāṭ at Benares (Plate 158). Also at Benares, a *liṅga* at Karnāṭaka State Ghāṭ

<sup>37</sup>If the water level of the rivers is too low to reach the *ghāṭs*, the cremations are often conducted in the river bed next to the last remaining water of the rivers, where the remains of the body will be washed away. But floods too can cause problems to cremations, and at Maṇikarṇikā Ghāṭ a massive concrete platform was eventually constructed in 1912 which stands above the flood level of the river (Parry, 1994, p. 45.).

<sup>38</sup>J.P. Parry, 1981, 'Death and Cosmogony in Kashi', pp. 337-339.

was raised on two more high tiers built onto the *ghāt*-platforms and painted in black and yellow stripes to elevate and further mark its sanctity (Plate 159). There are particularly famous sacred *pādukās* at Hari-kī-Paiṛī Ghāt at Hardwar and at Maṅikarnikā Ghāt at Benares. Images of Viṣṇu Nārāyaṇa placed on platforms are found at Pañcagaṅgā Ghāt at Benares, but they are particularly common in Nepal. Examples are found at Rājarājeśvarī Ghāt at Pashupatinath (Plate 160), at Śaṅkhamūla Ghāt at Patan, and at Gokarneshvar. In Nepal, we also find special sloping slabs or small ramps integrated into the *ghāts* and often carved on top, called death stones (*bramhanāḥ*)<sup>39</sup> (Plates 161, 163). Dying people are placed onto the slopes with their feet immersed in the water, and are finally purified by a last sip of holy water. Examples are found at Pashupatinath, at Śaṅkhamūla Ghāt and at Kvane at Panauti. Sometimes, such simple open-air shrines developed into small roofed temples situated on platforms between the steps (Plate 162) or protruding out into the water. At Benares there are several examples of this feature. At Bāljāī Ghāt, for instance, there is a small domed Śiva temple which was built onto a platform down at the water edge of the Ganges (Plate 138), and at Indore State Ghāt there are two temples raised on platforms built into the steps and against the palace wall lining the uppermost terrace of the *ghāt* (Plate 164). At Dwarka, there is a long row of various small temples built over the square platforms sticking out into the ocean water (Plate 151). Also at Pandharpur, where *ghāt*-bastions, not linked to the bank, were scattered in the river bed, temples and pavilions were placed onto them (Plate 168). At high water-level, the temples and pavilions are reached by boat (Plate 167). At Udaipur, where private royal *ghāts* line extensive parts of the east bank of Lake Pichola, but also occasionally on the west bank, white lofty pleasure pavilions were set onto octagonal *ghāt*-platforms.

A further building type related to *ghāts* and platforms, are small square cells, similar to hollow cubes, built into the steps close to the river, and open on the side facing the river. They are found at Benares, particularly at Daśāśvamedha

<sup>39</sup>N. Gutschow, B. Kölver & I. Shresthacarya, 1987, *Newar Towns and Buildings: An Illustrated Dictionary Newārī - English*. p. 130.

and at Pañcagaṅgā Ghāt, where there are two tiers of such cubical cells facing the river (Plate 165). Similar to the bastion-platforms, mentioned above, they are used as small shrines, and as platforms by the priests who work on the *ghāṭs*, but mainly they accommodate *saṃnyasins* who lead their lives on the *ghāṭs* at Benares. A larger and more elaborate rectangular example of this type, with three openings facing the Ganges, is found on Jatāra Ghāt at Benares (Plate 166). It has a wide terrace in front situated under which is a balcony or porch, carried by two square pillars on the river side. Balconies like this are commonly associated with *kunḍas*, discussed in Chapter Five.

A further development of *ghāṭ*-platforms within bays or along long stretches of *ghāṭs* is the addition of a small bridging-element in-between the steps and the resting-platform which enables the platform to reach out further into the water (Fig. 6). Because such constructions are less stable and therefore less

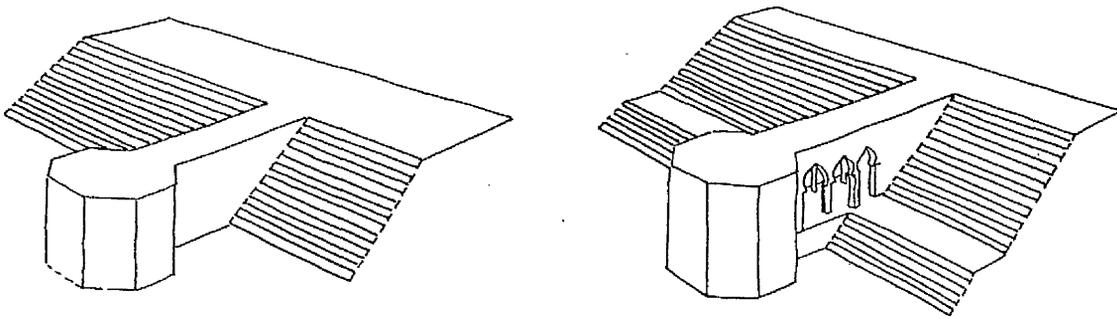


Fig. 6: *Ghāṭ*-platforms with bridges.

suitable to protect a *ghāṭ*, their main purpose is to work as resting platforms. This kind of construction seems to have developed out of bastion-platforms which continue behind as a wall and frame the *ghāṭ*. Examples of this intermediate state of development are found at Bithur, described above, and at Benares, for instance at Rāṇa Mān Ghāt (Plates 169, 170) and Sindhiyā Ghāt. At Mīr Ghāt, where there is a whole row of platforms lining the *ghāṭ*, the fashioning of a bridge proper, narrower and more distinguished from the steps around, becomes visible (Plate

171). More modern versions of this type exist at Hari-kī-Paiṛī Ghāṭ at Hardwar (Plate 172). The square platforms and narrow bridges were cast in concrete and paved with white marble slabs. Because the platforms and bridges were not conceived as independent three dimensional shapes but were all cast in one piece, absolutely level and simplified, the examples from Hardwar seem to be imitations and flat bodiless versions of an earlier type which developed out of the massive bastions reminiscent of Indian fort architecture. Nevertheless, the platforms and bridges at Hardwar fulfil their purpose in providing space for *sūrya-namaskāra* and bathing and are highly frequented in the early morning hours. A very large version of a rectangular platform connected by a narrow bridge with the bank of a lake is found in front of the Sās-Bahu Temples at Nagda. The platform carries a triple arched *torāṇa*.

This feature of platforms and bridges reaching out into a river found particular attention and development in the towns of Braj, lining the Yamuna. At Mathura, south of Baṅgālī Ghāṭ, there is a massive octagonal bastion-platform reaching out into the water away from the bank which towards the *ghāṭ* has a bridge of the width of one side of the octagon. Into the sides of the solid bridge, which has the same depth as the platform itself, was cut a shrine niche (Plate 173). In similar platforms with bridges, found at Keśī Ghāṭ at Vrindavan, the bridges which again have the depth of the platforms, have been hollowed out even further. The bridges consist of three slender carved columns carrying cusped arches (Plate 174). Here, the entire construction has become much lighter and more playful. Although the massive octagonal bastion is still reminiscent of the original fortifying and protective character of the platforms, in connection with lofty bridges, they have been turned into pleasure places with decorated arches along the river. A similar arrangement of three light arches carrying a thin bridge towards an octagonal platform is found at Gaū Ghāṭ and Baṅgālī Ghāṭ, both at Mathura. The platforms are smaller in diameter but carry lofty pavilions similar to the ones described at Udaipur above (which however did not have bridges). An

interesting development of this idea can be found at Kaliyā Ghāt, slightly west of the Madana Mohana Temple at Vrindavan, where much wider bridges have two small octagonal platforms topped by pavilions at their corners jutting out into the water (Plate 175). Although the pavilions are still large enough to sit in, they have become more a decorative than a functional feature, and it is the wide bridge which is mainly used as a resting place, while in earlier stages of the development, bridges were merely a means to reach the platform used for rest. There are also small temples built onto platforms with bridges. In those cases, examples of which are found between Baṅgālī Ghāt and Viśrām Ghāt at Mathura, the platforms carry the temples proper, and the bridges constitute the foundations for the elongated porches leading towards the temples (Plate 176). The platforms and bridges, which initially existed by themselves, are entirely over built and obscured, and have been fused with the building unit on top. This is particularly so since the substructure made of platform and bridge is in form and decoration closely related to the temple on top. Both the bastion below and the *vimāna* above have the same shape and seem to be solid blocks. Also the substructure of the bridge and the porch above are both fashioned into open arches. The substructure of platform and arched bridge seems almost to be a reflection on the water's surface, of the temple above. In such cases it is difficult to tell if the temple is a later addition or if the structure was conceived and built as a whole. *Ghāt*-platforms with bridges found the highest development in size and elaboration in tank architecture discussed in Chapter Four.

As we have seen already in the previous part, the initial need for protection of the *ghāṭs* through bastion-like platforms developed into an aesthetic feature of the architecture along the water fronts of rivers and lakes. Therefore, we do not only find bastion-like elements in their original place, down at the water edge, but also in the buildings lining the *ghāṭs*. Although, during devastating floods such defensive protection of the buildings nearby may actually

still have a functional purpose, this does not seem to have been the first incentive for the design, which seems more to be an aesthetic choice. Particularly interesting with respect to fortified architecture along water is Benares, where the idea of bastion-like platforms, on an enlarged scale, is also found in the architecture on the upper edge of the *ghāt*. At Tulsī Ghāt, in the south of Benares, a larger platform carrying a tree protrudes into the stairs in the upper part of the *ghāt*. It is an enlargement of the platforms used by the pilgrim priests with their umbrellas which, like the tree, provide shade to a resting place. Even larger rectangular platforms with corner bastions, protruding out of the buildings on top of the *ghāt* into the steps, often carry temples. Examples of this are found at Vācdharāj Ghāt (Plate 177) and at Gāy Ghāt. Lalitā Ghāt is a good example, showing that octagonal bastions may be found at the corners not only of protruding, but also of recessing building blocks (Plate 178). Also the palaces and residences along the Ganges follow the same aesthetic. They are either, like the temples mentioned before, a massive fortified block protruding into the steps, as can be seen in Chet Singh's Palace or the palace of the Mahārāja of Nagpur at Bhoṃṣalā Ghāt; or, their façades, although they do not protrude forward into the *ghāt*, are structured by high bastion-like elements (Plates 179, 180). Examples of this are found at Rāja Ghāt (Fig. 7), at the neighbouring Prabhū and Pañckoṭa Ghāts, and at the Digpatiyā and Rāṇa Mān Ghāts, all at Benares. At the latter two, bastion towers, at regular intervals of about ten metres, run from the bottom of the building up to its top along the façade, and reach, in the shape of a dome, even further out above the roof line. Brij Rāma Palace at Rāṇa Mān Ghāt also has a tower set onto its platform which soars up even higher. The façades seem to strive upwards, but due to the strong contrast in sun and shade created by the protruding bastions, they form a clear rhythm which is also mirrored on the water and connects architecture and water closely (Plate 181). Similarly at Puṣkar Lake, the façades of the surrounding white-washed buildings have references to bastions (Plate 182). This is surprising since the platforms built into the *ghāts* at the site

are rectangular and plain, and do not resemble bastions. The lake at Pushkar is still and although its banks are exposed to changing water levels, it does not need fortification and bastions comparable to sites located at powerful rivers. Nevertheless, the surrounding architecture, particularly on the east bank, follows the same aesthetic encountered at Benares, if in a somewhat more open and playful manner.

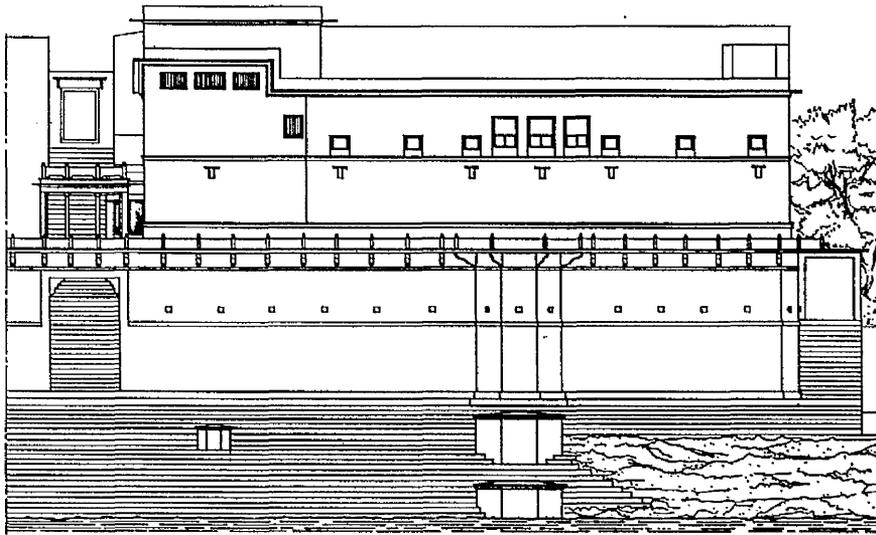


Fig. 7: Benares, façade with bastion-like elements at Rāja Ghāt (P.D. Couté & J.M. Couté, 1989, p. 22).

The tendency to strive upwards and to juxtapose the horizontality and flatness of a sheet of water and of parallel steps by a strong vertical axis is a feature associated with *ghāṭs* not only at Benares and Pushkar. A tall thin clock-tower was set onto the artificial island in front of Hari-kī-Paiṛī Ghāt at Hardwar (Plate 195), and towers commemorating the self immolation of widows, such as Satī Burj at Mathura, show the same tendency towards the emphasis of the vertical. The temples closely related to *ghāṭs* often have particularly high and pronounced superstructures. The temples built into the Bhima River at Pandharpur, particularly the Puṇḍarīka Temple, have unusually tall pointed spires, and there is a similar example at the *ghāṭs* at Nasik (Plates 168, 197). A further example from Benares is Aurangzeb's Ālamgīr Mosque which used to have particularly high minarets (which however fell down, and survive only in a

truncated form). This is a feature common not only to *ghāṭs* but also to tanks discussed in the following chapter.

In addition to a vertical movement, there are also few instances where the horizontality of the water and the *ghāṭs* is picked up again on a raised level. Brahmā Ghāṭ at Bithur, has a long flying walkway with balustrades along both sides, which runs in between the second storeys of the neighbouring buildings, parallel to the *ghāṭs* (Plate 183). At Bithur there is no access for the general public to this 'bridge' from where the *ghāṭ* and the ceremonies on it are particularly well observed. It may have served a ceremonial function or could have been used by the leading families of Bithur on certain festival days. An example of two such bridges running parallel along the same *ghāṭ* on different levels both above human height, is found in the centre of the north side of Puṣkar Lake (Plate 184). While the lower bridge, nearer to the water, is supported on square columns, the upper one is supported by pierced screens which are also used in the balustrades of both bridges. At Pushkar, the thoroughfare over the bridges is open to anybody. Seen from the water of the lake, the *ghāṭ* looks not just like an empty bay but like a structured body, a volume of three dimensionally structured space. On the *ghāṭs*, the bridges provide shade on the stairs, and a feeling similar to that encountered when descending a step well. At Bābū Ghāṭ at Calcutta, a similar bridge, running parallel to the *ghāṭ*, is used to facilitate the loading and unloading of ships from a raised level.

#### V. Basins on *Ghāṭs*, and Compartments and *Ghāṭs* in Water

There is an interesting tendency found along with *ghāṭs*, but also with other water structures, particularly tanks, in which artificial pools or fountains were built right next to a sacred natural water site, or where smaller geometrical compartments are constructed within a larger natural water body. Although in Hinduism, a self

created divine image (*svarūpa*, *svaparakāśa*) usually ranks higher than a man-made sculpture, in water architecture, the artificially built structures are often preferred as bathing places to the natural sacred sites. Several reasons may explain this tendency.

Although *ghāts*, leading down to water, are inevitably connected with the element, there are several examples throughout the subcontinent where further water structures were constructed on or closely linked to *ghāts*. At Kedār Ghāt at Benares, a rectangular oblong platform secured by two bastion-towers was constructed on the lowermost terrace next to the Ganges. In the northern part of the platform is a 7.5 by 10 metres stepped water basin (*kuṇḍa*) (Plate 185). It has steps on three sides, and a plain eastern wall with an empty shrine niche, which may be used to drain off the water. It is called Gaurī Kuṇḍa<sup>40</sup> and is closely linked to the Kedāreśvara Temple on the upper terrace of the *ghāt*. At Maṇikarnikā Ghāt a similar *kuṇḍa* was constructed (Plate 186)<sup>41</sup>. It is painted white, measures about thirteen and a half by seventeen metres and has steep steps on all four sides. For the pilgrims, Maṇikarnikā Ghāt is the beginning and the end of many processions. Both the Pañcatīrtha pilgrimage and the Pañcakrośī procession end there. Maṇikarnikā is such a sacred place because it is there that the waters of creation, the Ganges, mingle with the fire of the pyres of death and destruction<sup>42</sup>. For the pilgrims, Maṇikarnikā Kuṇḍa is the focal point of the *ghāt* and their pilgrimage. According to the *Kāśī Khaṇḍa*, the legendary history of Benares, Viṣṇu carved out the *kuṇḍa* with his discus and filled it with the perspiration of his austerities<sup>43</sup>. This happened at the beginning of creation and Maṇikarnikā Kuṇḍa is therefore the first water pool or *tīrtha* that existed on earth. The name refers to Śiva's earrings covered with jewels, or to Śiva's crest-jewel '*maṇi*' and to Pārvatī's

<sup>40</sup>Gaurī' is a name of the goddess Pārvatī, and there is also a lake on the eastern flank of Mount Kailāsa which is called Gaurī Kuṇḍa (S.M. Ali, 1973, *The Geography of the Puranas*, p. 65.).

<sup>41</sup>The part in which the *kuṇḍa* is found sometimes is called Sindhia Ghāt, the *ghāt* north of Maṇikarnikā Ghāt.

<sup>42</sup>Gutschow & Michaels, 1993, p. 46.

<sup>43</sup>Eck, 1993, p. 240-243.

earing '*karnikā*' which fell into the *kunḍa*. Maṅikarnikā Kuṇḍa is such a sacred place that it is said that all the other *tīrthas* of India come there at mid-day to bathe in order to be purified from the defilement which human beings wash off when bathing in them<sup>44</sup>. Allegedly, however, Gaurī Kuṇḍa on Kedār Ghāt is the 'true' and original place of the creation of the world and rivals Maṅikarnikā Kuṇḍa in importance<sup>45</sup>. Whichever of the two is the 'true' place of the cosmogony does not seem as important as the fact that two sacred *kunḍas* were created right next to the Ganges, the prototype of all sacred waters, and that the artificial pools are given such high importance. A reason for this may be that in contrast to the eternally flowing divine Ganges, the *kunḍas* are places chosen and created by the gods in our world, where the pilgrims can take part in mythical history, the creation of the world, and re-enact the bathing of the gods and all divine *tīrthas* in the sacred waters.

At Rām Ghāt at Ujjain, there is a small Śiva temple built right at the water's edge of the *ghāt* facing away from the Sipra River. In front of the temple is a shallow, nine metres square water tank (Plate 187). The tank is surrounded by a low wall, with pyramidal steps in the corners. Here again, an artificial tank provides water right next to the sacred purifying river. A similar temple is found at Nasik on the Godavari River. The Godavari has been closely connected with the Ganges, and both are believed to have a common underground source. Other stories tell that the sage Gotama brought the Ganges to the south. Therefore, the Godavari is also called Dakṣiṇā Gaṅgā, the Ganges of the south. The temple at Rām Ghāt is opened every twelve years when Jupiter is in Leo, and when it is believed that the original waters of the Ganges issue from the temple<sup>46</sup>. Also at Pandharpur, where temples and platforms were built right into the bed of the shallow Bhima River, the same idea is encountered. Inside the gateway-pavilion built in front of the Puṇḍarīka Temple, is a shallow basin, about three and a half

<sup>44</sup>Gutschow & Michaels, 1993, p. 47.

<sup>45</sup>Ibid., p. 118.

<sup>46</sup>Rai, 1993, p. 46.

metres square. According to an inscription on the wall the basin is called 'Gaṅgā Tīrtha', and the river Ganges itself is meant to fill it on particular occasions. Although there are many sacred rivers in India, the Ganges is the most purifying, and the archetypal form of all sacred waters; hence attempts to make other rivers relate to the Ganges and partake in its particular holiness. This may be done by providing separate tanks in which 'real' Ganges water is provided. Gaṅgā tanks will not diminish the divine power of the rivers next to it, but add extra sacredness to the site. Within the southernmost of the platforms protruding into Rājasamand Lake at Kandroli is a small deep tank resembling a well (Plate 188). The platform is surrounded by water on three sides, and the well is contained within an open pavilion, also found on the other three platforms sticking out into the lake.

In other examples, special tanks or compartments for bathing were provided because the natural water is very rough or needed to be dammed to be deep enough to allow the immersion of the entire body. Examples of this are Kanyakumari, the *samudra tīrtha* at the southernmost tip of India, where due to the rough nature of the sea, pilgrims will normally only sprinkle the sacred water on their heads. A purifying bath will be taken in a sheltered rock pool nearby<sup>47</sup>. Also at the island of Rameshvaram, although pilgrims do bathe in the sea when it is calm, there are twenty-one artificially created bathing places within the temple next to the sacred ocean. In this case it could also be argued that the sacredness of the sea was integrated into the temple, to link the man-made building to the divine waters. Similarly, the temples on the island of Srirangam have several artificial tanks although the island itself is set in water. Many sacred mountain rivers have specially protected compartments where pilgrims can bathe in the sacred waters which would otherwise not be possible due to the force of the stream. This is the case at Sahasradha near Dehra Dun, where a naturally shaped basin was built right next to the river (Plate 189). It is used especially after the melting of the snow, when the river is particularly forceful. The site is famous for its hot sulphuric

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<sup>47</sup>Davies, 1989(a), p. 439.

springs which nowadays issue out of metal funnels on the bank. At Tatopani (Tātopānī), a village on the western branch of the Annapurna Circuit, and at Syabrubensi in the Langtang Valley both in Nepal, there are hot springs next to the Kaligandhaki and the Langtang Khola Rivers respectively. Because the rivers are too rough at all times of year, bathing pools were carved out of the rocks next to the rivers which are filled by the hot springs. Dakshinkali, in the south of the Kathmandu Valley, is a temple site at a river *saṃgama* dedicated to Kālī. Twice a week animal sacrifices are made to the goddess in the temple. People do not usually bathe in the sacred confluence at Dakshinkali, the waters of which are coloured red by the blood of the sacrificial animals; they can, however, purify themselves under a row of *makara* spouts running along a wall parallel to the river issuing pure river water from above the temple (Plate 190). At the Gaukareśvara Mandir at Dhulikhel in the far east of the Kathmandu Valley, a small mountain rivulet runs through the entire temple compound. There are two tanks collecting the water and providing proper basins for ablutions, and two places where the spring water issues out of *makara* spouts. The shallow rivulet itself is also made accessible by a few steps of *ghāṭs*, and its bed was paved, but most people use the artificially collected or channelled water for their ablutions (Plate 191). Also at the bathing *ghāṭs* at Srisailam, the water of the Krishna River, which at this place is called Pātāla Gaṅgā (the Lower or Underground Gaṅgā), is not deep enough for bathing. Next to the temple, the river passes through a deep rocky gorge and some of the water issues out of pipes high up in the rock under which people bathe. In different bends of the river, there are separate compartments for men and women.

Water basins were not only constructed in the *ghāṭs* next to water, but also within lakes and rivers. Three clear examples of *kuṇḍas*, about ten metres square, were built into Puṣkar Lake. The first two are adjacent to each other, situated in the north-eastern corner of the lake, which is the main access point to the *ghāṭs* (Plate 192). The third basin is found further south on the east bank (Plate 193).

Since the lake is still, these compartments cannot be explained on the basis of protected bathing. The reason here seems to be the fact that since the lake is so large, during the dry season the water becomes very shallow and eventually does not reach the banks, because it assembles at the lowest point, a depression in the centre of the lake. The three *kuṇḍas*, being deeper than the surrounding bed of the lake will fill up during the rainy season when they are submerged by the water of the lake, and will keep it even when the surrounding waters of the lake recede towards the middle. Although the *kuṇḍas* are subject to evaporation, bathing at certain points on the *ghāṭs* at Puṣkar Lake remains possible practically all year round, even if the lake is about to run dry. Outside Datia, next to the cenotaphs of the rulers, is a lake into which a small tank was built. Only the bank to the left of the cenotaphs was firmly edged in stone, and it has *ghāṭ* steps constructed in blocks of double pyramids, like those typically found in *kuṇḍa* constructions<sup>48</sup>. In the middle of the side, adjacent to the steps, a rectangular basin was built in front of the *ghāṭs* (Plate 194). Its walls are higher than at Pushkar and the corners jutting out into the water are pronounced by small round bastions with miniature shrines or *chattrīs* on top. Although the lake is silted up and partly overgrown, the same explanation as at Pushkar seems reasonable at this site.

Similar compartments were also constructed within rivers. Sites with basins, having a clearer religious importance or meaning although the basins themselves are less pronounced than in the examples mentioned before, are Brahmā Kuṇḍa or Brahmāpurī<sup>49</sup> at Hardwar (Plate 195), and Rām Kuṇḍa, also called Brahmā Vaivart Kuṇḍa<sup>50</sup>, at Nasik (Plate 196). The most sacred bathing *ghāṭ* at Hardwar is Hari-kī-Pairī Ghāṭ in front of which, running parallel to the *ghāṭ*, is a long thin island connected to the land by bridges at either end. The water framed between the *ghāṭ* and the island is Brahmā Kuṇḍa. Sometimes, not the entire enclosed water body, but only the western part of Hari-kī-Pairī which is

<sup>48</sup>Similar pyramidal steps are found on the west side of Karna Sāgar, the tank at the Govind Mandir Palace at Datia.

<sup>49</sup>A. Singh, no date, *The Gateway to the Gods: Hardwar, Rishikesh, Kankhal*, p. 17.

<sup>50</sup>Rai, 1993, p. 35.

framed by temples built into the water, is referred to as Brahmā Kuṇḍa. Allegedly, it is the spot where the celestial waters flow into the Ganges and where Brahmā welcomed the Ganges on its way down from heaven<sup>51</sup>. This statement rivals any other town situated further up the Ganges, such as Rishikesh or Gangotri, since allegedly the river is only divine from here on. Every year, on the first day of Vaiśākh (mid-April), the *kuṇḍa* is believed to be filled with *amṛta*, the elixir of life. Similarly, Rām Kuṇḍa at Nasik is just a protected area of the Godavari, bordered by a small island and surrounded by temples. Clearer compartments at Nasik can be seen slightly further down the river, where two narrow gangways, cast in concrete and without balustrades, bridge the river and are interconnected by a further long pathway running in the centre parallel to the *ghāṭs* (Plate 197). The modern constructions in the river create two large protected areas for bathing, and enlarge the space for *ghāṭs* on the river, because bathing is also facilitated on the bridges in the middle of the river. In this way it is related to Hardwar, where the large island built into the Ganges has a similar effect. Extra bathing space is needed particularly during the large Kumbha Melās, held at both sites.

Three compartments were constructed in the Narmada River, just in front of its source at Amarkantak (Plate 198). The river is born in a tank contained in a walled temple compound on the outside of which these *ghāṭs* are found. The small compartments are created by walls connecting the opposite banks. The basins have *ghāṭs*, a pavilion set onto a bastion and a pedestal to hold a *tulasī* tree at certain festival days. Being still small, so close to its source, the river had to be dammed to allow the pilgrims to bathe not only inside the temple compound but also in the actual river. Probably the most complicated and advanced development of compartments in rivers is found in front of the Kāliyādeh Mahal, a fifteenth-century palace on an island in the Sipra River, north of Ujjain. The palace was built on the site of an earlier sun temple, and Akbar, who stayed there in 1601

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<sup>51</sup>Singh, no date, pp. 36, 37.

AD, built a long low stable for horses on the bank of the river. Between the bank and the island, over several hundred metres, the river was dammed and divided into about a dozen basins of various sizes. Several pavilions are scattered over the dammed river area, mainly situated on the walkways between the water, but one octagonal pavilion was also set into the water and connected with a pathway on one side by a bridge (Plates 199, 200). There are also ornamental pools, water games in the shape of mazes<sup>52</sup>, and platforms where the rulers could reside in the middle of the river in fresh air, cooled and refreshed by the evaporation of the river.

We do not only find water basins on *ghāṭs*, but also *ghāṭs* in the middle of rivers or lakes. To a certain extent this is what happened at Nasik and Hardwar, where islands and pathways were constructed in the rivers to create more space for the bathing. In other cases, such as at Pandharpur or at Besnagar, Madhya Pradesh, square pyramidal blocks of *ghāṭs* with steps on all four sides and only a small square level platform in their centres were constructed within rivers. At Besnagar, there are ordinary *ghāṭs* on the south bank of the Betwa River, and built into the water are three *ghāṭ*-blocks which run in a line parallel to an old stone paved bridge (Plate 203). The *ghāṭs* are detached from the bridge and were set into the river independently. They have steps on all four sides. A similar but larger, if also more decayed, square platform with steps running all around, is also found in the centre of the Bhima River at Pandharpur (Plate 202). The *ghāṭ* is reached by boat. 'Floating' *ghāṭs* such as this, which look like islands or rafts in the rivers, facilitate bathing and washing at very low water level when the *ghāṭs* along the bank are not reached by the water. The *ghāṭ*-blocks are situated in the middle of streams where they are deepest and where even in the dry season water assembles. At Benares, at Sindhiyā Ghāt, the opposite effect can be observed. On the bank of the Ganges stands a square temple, called Śrī Motīlāl Voḍhā. At

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<sup>52</sup>These will be discussed in Chapter Seven.

particularly high water level, when the lower part of the temple is altogether submerged and only the pyramidal superstructure of the temple sticks out of the water of the Ganges, the temple roof becomes a 'floating' *ghāt* (Plate 201).

Not only *ghāṭs* are found in the middle of rivers and lakes but also pavilions or small shrines. The most sacred place for bathing is a rocky cliff or island in the middle of a stream<sup>53</sup>, which in the widest sense includes sites such as Srirangam and Rameshvaram, or the palaces at Orchha, which are all situated on islands in the middle of rivers. There is a small pavilion on a bastion in the middle of the Kaveri opposite the main *ghāṭs* at Kumbakonam (Plate 131), a further one in the northwest corner of Puṣkar Lake (Plate 152), and an example of a similar pavilion in the sea is found near the Rukmiṇī Temple at Dwarka. Open *maṇḍapas*, like that found in the Tungabhadra at Vijayanagara or in the Vaigai River at Madurai, are also very typical. At Pandharpur, whole temples were built straight into the middle of the shallow river.

#### VI. Steps and Gateways to Water.

In the towns and larger cities situated on rivers and lakes with *ghāṭs*, access is usually provided by narrow perpendicular lanes which connect the *ghāṭs* in front of the building unit with a road and the town behind. The road running parallel to the *ghāṭs* is often the main bazaar or market road of the town. It is an overwhelming experience to step from the narrow and often dark alleyways out onto the *ghāṭs* of a river or lake which are usually wide and open, bordered by a flat sheet of water, and flooded with light which is enhanced by its reflection on the water surface. Seen from the water, the lanes cut deeply into the mass of the houses lining the embankment. Examples from Benares are Jānakī Ghāt (Plate 204), Rāṇa Mān Ghāt, Lāl Ghāt and Lalitā Ghāt, but also at Udaipur and Pushkar

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<sup>53</sup>Pieper, 1979(a), p. 40.

(Plate 205), such clear cuts can be seen. Usually, the steps of the *ghāṭs* continue into the lanes uninterruptedly, and connect the long band of *ghāṭs* with the town behind. Sometimes, the stairways leading up are treated as distinct architectural forms and are consciously distinguished from the steps of the *ghāṭs*. This is the case in front of Chet Singh's Palace where the steps create a body slightly raised above the ordinary *ghāṭs* around (Plate 206). Also the steps at the south end of Kēdār Ghāṭ, Benares, and in front of the Yellamā Temple at Badami (Plate 207), stand out above their surroundings. Sometimes, after having left the narrow channel between the houses and entered the open space of the *ghāṭ*, steps fan out into a wide pyramide (Fig. 8). This can clearly be seen in Benares at Rāṇa Mān

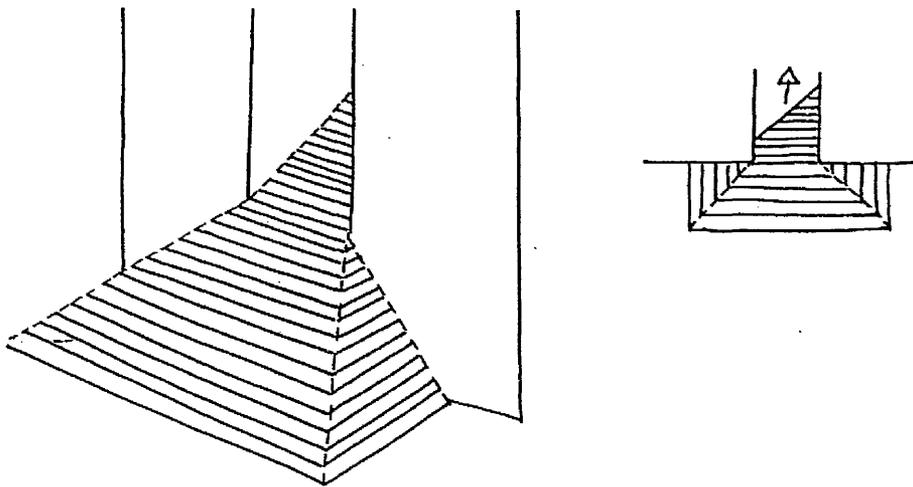


Fig. 8: Flights of steps fanning out into a wide pyramide.

Ghāṭ, at the south end of Pañcagaṅgā Ghāṭ with two such fan-staircases, and at Digpatiyā Ghāṭ (Plates 208, 209). Sometimes, however, the *ghāṭs* are so monumental and steep that they seem like walls surrounding the town above. In the south of Benares in general, and at Jaina Ghāṭ in particular, steep monumental ramps with occasional flights of steps separate water and town (Plate 210). A similar effect can be observed at Pashupatinath, opposite of Paśupati Temple

where the *ghāṭ* steps seems to have been enlarged and blown up to monumental size. Three terraces larger than human size lead from the Pandhra Śivālaya down to a narrow band of ordinary sized steps (Plate 211). The monumental steps are intersected by two narrow stairways allowing human beings, who seem like toys here, to reach the water between the steps of such distorted but striking proportions<sup>54</sup>.

Steps leading to the *ghāṭs* are not only connected with the town, but also often with temples situated high up on the bank of the river<sup>55</sup>. Examples mentioned already are the temples found on top of each *ghāṭ*-ramp at Ghazipur, the temple at Pañcagaṅgā Ghāṭ, Benares, and the steps leading up to the Yellamā Temple at Badami. Further clear examples are the extremely steep steps leading up to the Kedāreśvara Temple at Kedār Ghāṭ, Benares, at the Rukmiṇī Temple at Dwarka, at the Paśupati Temple at Pashupatinath (Plate 212), and at many more sites. This phenomenon is also common to other types of water architecture, discussed in the following chapters. The practical reason for the siting of temples high up above the flood level is to protect the edifices and to make them accessible to people all year round. But there is also a religious explanation whereby the physical ascent of a person towards the temple visualises the spiritual ascent towards enlightenment and salvation which may be gained in the temple.

The ascent from water towards a temple is often further emphasised by the presence of a gateway through which a person has to pass, and which clearly marks a threshold. On the one hand it is the threshold from one state of being into a new and higher one, relating to the symbolic ascent of a person's soul, but it also

<sup>54</sup>The same aesthetic can be encountered in Manga Hiṭī (Maṇi Dhārā) at Patan Darbār Square, where the steps of the *dhārā* are again blown up in size, and only narrow steps on human scale lead down to the water at the bottom of the pit (For an introduction to *hiṭīs* and *dhārās*, see Chapter Five, 'Kunḍas').

<sup>55</sup>If the temples are larger complexes situated on water, they usually have doors providing direct access from the temple compound to the water, as is the case at the Viṣṇupāda Temple at Gaya, and at the Kālahastīśvara Temple at Kalahasti. In cases where the temple is situated further inland, they are often connected by axial roads with the water front. Examples of this are the Rāmaṅgeśvara Temple at Rameshvaram, and both major temples on Srirangam Island.

marks the end of the sacred sphere of the *ghāt*, and that of the bordering temple compound. Gateways on *ghāts* are not always necessarily connected with a temple, and can be found by themselves. Since a purifying bath leads to salvation, and the bathers are meant to sacrifice their old life while submerging themselves under water, the gateways through which they pass after a bath visually expresses their spiritual process which is a journey of several thresholds and stages of consciousness. When found on their own, gateways delineate or indicate the sacredness of the *ghāt*. Containing or bordering water, the *ghāts* are intrinsically connected with the divine.

Examples of single free-standing gateways connected with both *ghāts* and a temple are found at Indra Lake at Eklingji, facing the ocean at Kanyakumari, and at Kalahasti. The Indra Lake example is a carved ornamental gateway, a *torāṇa* (Plate 137), while the gateway at Kanyakumari is monumental and modern but still within the tradition of *torāṇa* design. The gateway at Kalahasti follows the southern Indian temple tradition and is a *gopura*, a high gateway tower facing the river (Plate 213). It was constructed by Kṛṣṇadeva Rāya in 1516 AD and is a detached structure. While *torāṇas*, found in the temple architecture of north and western India are often found detached from a wall, *gopuras* were not usually constructed as independent free-standing structures. An example of a gateway to water connected with an Islamic religious structure, is found at the tomb of Abu'l Wahab (Abd al-Wahhāb) at Kurnool. The tomb is situated on a high embankment and steep steps lead down to the river. At the top of the steps stands a prominent gateway which may originally have been connected with a ruined building nearby.

Single gateways not connected with temples are found on the *ghāts* at Ujjain, where two *torāṇas* face the river on the east bank. On the opposite bank of the Sipra, a monumental ceremonial archway, made of concrete and several storeys high, was erected for the last Kumbha Melā. Unusually in this example, the gate does not face the river but is set at a right angle, providing a prominent

entrance for the large number of pilgrims to the whole length of the bathing *ghāt* (Fig. 9)<sup>56</sup>. This example shows the continuation of the theme of gateways to water into the twentieth century. A further interesting example is Rājasamand

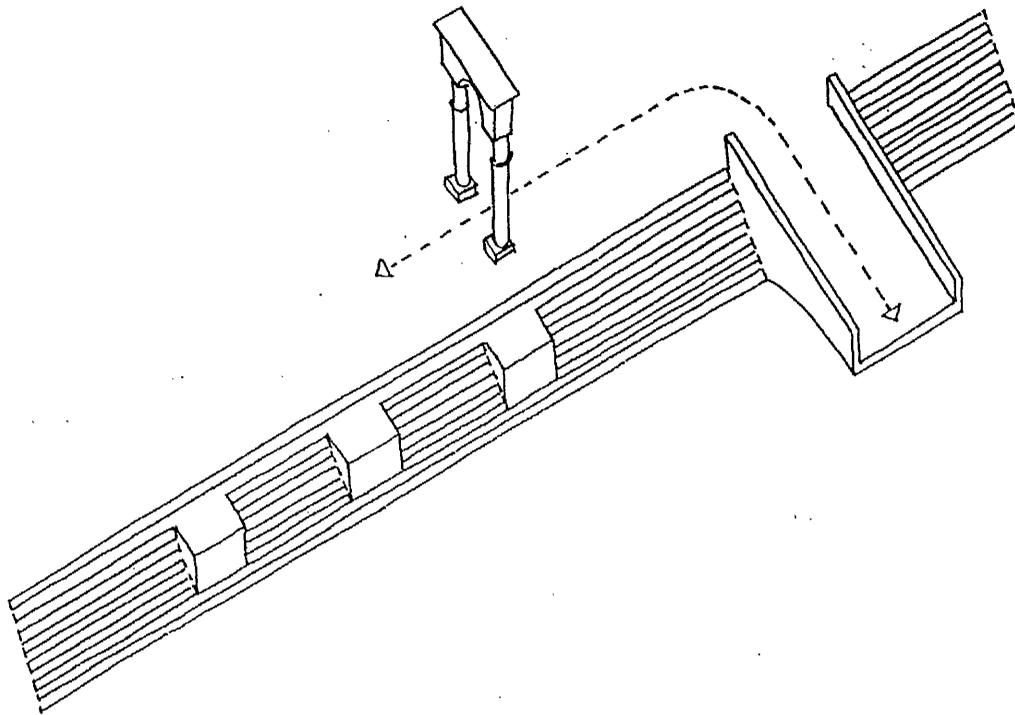


Fig. 9: Ujjain, location of the monumental gateway with regard to river and bridge.

Lake at Kankroli, where four decorated *toranas* set at regular intervals along the *ghāts* face the water of the lake (Plate 214). The lake was commissioned by Mahārāṇa Rāj Singh in the seventeenth century, when a terrible drought affected Rajasthan, to prevent further similar disasters. Although the lake is predominantly functional, providing water for the people, there is a conscious effort in the design to link the lake to earlier religious traditions and also to Ana Sāgar at Ajmer.

<sup>56</sup>A further example where the movement of pilgrims was directed parallel to the *ghāt* and through a gateway, is found at Benares. At Lāl Ghāt, where half way up the *ghāt* a level walkway runs parallel along the *ghāt*, the main stream of people is directed through an arched opening in a particularly high *ghāt* platform. As described earlier, shrine rooms were often cut into platforms, but in this case an actual thoroughfare was created.

To further emphasise the ritual axis from a temple towards the water, several gateways were sometimes set behind each other. This is the case at Viśrām Ghāṭ at Mathura, where five independent *toranas* of different heights and shapes were constructed at different times in front of the door of the small central temple (Plate 215). After having purified themselves, people pass through the five gateways and worship at the small shrine. In connection with *ghāṭs* as a distinct type of water architecture, it is more common to find several archways set side by side, connected to form one gateway structure with three openings. These are mainly found in the north of India, where clear examples exist at Gangotri (Plate 216) and at Trivenī Ghāṭ at Rishikesh. Both examples are modern structures although they may have replaced earlier gateways or are at least based on an earlier tradition. A late tenth-century example of a triple gateway is found on a platform reaching into the lake in front of the Sās-Bahu Temples at Nagda (Plate 217). The gateway is of the *hiṇḍolā*- or swing-type<sup>57</sup>, used on festival days, when the images of the gods were swung accompanied by music and the recitation of hymns. Of a slightly later date, about the late eleventh century, is a similar gateway at Menal (Mēnāl), Rajasthan. Menal is a temple site at the edge of a deep gorge with a water fall. The gateway points towards the water but is set away from the edge, which has no stone *ghāṭs*. The gateway seems to point towards the water and to indicate that the temple is not the only sacred object at the site. It is a place sanctified by the presence of water, and this is why the temple was built there. Many of the pilgrims climb down the hillside to reach the plateau above the waterfall where they bathe, but due to the extreme location of the site and the dangerous current above the waterfall, water and gateway seem to establish more an ideal or spiritual connection. A similar situation is found at the large Mānsiṅgā reservoir at Govardhan, where a single *torana* was set onto a platform protruding out into the water. The platform is walled and there are no steps at that

<sup>57</sup>India Tourism Development Corporation, 1975, *Guide to Rajasthan*. p. 154.

point leading down to the water (Plate 218)<sup>58</sup>. One cannot pass through the gateway to reach the water but, standing within a long tradition of such gateways, it points towards the purifying and redeeming properties of the sacred waters. A further free-standing triple gateway faces Ana Sāgar at Ajmer (Plate 219)<sup>59</sup>. At Gaṅgaur Ghāṭ at Udaipur, a triple gateway, integrated into the houses lining the lake, leads into town. It echoes the form of the Tripolia, the triple arched gateway at the entrance to the Udaipur city palace.

Free-standing gateways convey the idea of a threshold, of rebirth and of spiritual advancement more clearly because they have no practical function, such as protecting or enclosing a compound, and are purely symbols of spiritual ideas. Nevertheless, gateways along *ghāṭs* were also often integrated into the façades of the buildings lining the upper terrace of the *ghāṭ*. This is very typical of Benares and of Pushkar, where several gateways are often found lined up behind each other under the various levels of houses bridging over the narrow thoroughfares to the water. At Pushkar such alleyways are sometimes covered passageways in the form of narrow tunnels (Plate 220). Gateways along the waterfront are typical of most cities located at water, and further clear examples can be seen at Pandharpur and at Śaṃkhamūla Ghāṭ at Patan, Nepal.

An interesting development of the gateway idea can be seen at certain sacred water places, where the idea of a two dimensional, flat and bodiless gateway, consisting only of two columns and a lintel, was transferred into three dimensions through the addition of a further parallel pair of columns. An example of this is found at Dwarka in front of the Rukmiṇī Temple. At the site, two gateways were set one behind the other, similar to Viśrām Ghāṭ at Mathura, and then connected up by a common flat roof structure which connects the two archways to a small pavilion (Plate 221). Seen frontally from the sea side, when

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<sup>58</sup>Although the Mānsigaṅgā is a reservoir, it has been included in this chapter on *ghāṭs*, because the design of the Mānsigaṅgā clearly imitates a river, and is therefore closely related to river *ghāṭs* with gateways.

<sup>59</sup>Although the gateway seems to be purpose-built, it could be that the 'façade of three arches' originally was part of a further pavilion.

ascending the steep steps towards the raised temple site, it looks like an ordinary gateway, and only upon arrival at the gate does one realise that it is a kind of *maṇḍapa*. Particularly in this instance, where the gateway-pavilion is found in a place so typically associated with a ceremonial gateway, the structure is not conceived as a pavilion. There is a further example of such a double gateway in front of the Puṇḍarīka Temple at Pandharpur. Although the columns are thicker and the roof is more pronounced, the gateway, as an earlier stage of development, is still implicit. Contained within the gateway-*maṇḍapa* is the small basin called Gaṅgā Tīrtha in which true Gaṅgā water may occur (referred to above). This fact may further support the idea that although the building also resembles a *maṇḍapa*, it was probably meant as a gateway, containing Gaṅgā water. This is so because the divine river Ganges is seen as a direct gateway or a straight bridge to heaven and salvation. Having both together, the Ganges as a symbol of a gateway, and an actual gateway structure containing it, makes the threshold symbolism mentioned above even more explicit. A further step away from a gateway, but strongly echoing this antecedent in its multiple arches, is the modern circular pavilion near Rām Kuṇḍa at Nasik.

To summarise, *ghāṭs* are a well defined type of water architecture found all over the Indian subcontinent. Its core element are steps permitting access to water at changing water levels. A whole range of variations on this theme, concerning their length and their top and side delineations, and a choice of additional parts such as bridges, platforms, temples, pavilions and basins are available, and provide the material for elaborate experimentation. The initial need to secure unbound water edges was turned into a field for artistic expression, and the *ghāṭs* became the religious and social centres of pilgrimage sites and cities. *Ghāṭs* are inherent in most other types of water architecture where they provide access to

water in tanks, *kundās* and wells. Several themes, such as platforms, gateways and basins at water, will be encountered again in subsequent chapters in association with other types of water architecture.

# Sites mentioned in Chapter 4: Tanks



## Chapter 4: TANKS

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### I. Introduction

In the Indian subcontinent there are two main types of water reservoirs, which in this study have been called 'tanks' and '*kunḍas*'. First of all, the two are distinguished by their construction technique. Tanks generally are shallow structures and usually have quite a large surface area, while *kunḍas* are deep and have a small water area in relation to their top delineation. These differences in construction techniques are related to their distinct methods of drawing water. While tanks usually collect rain water or are fed by channels, *kunḍas* are normally fed by ground water (Fig. 10). The difference between tanks and *kunḍas* becomes

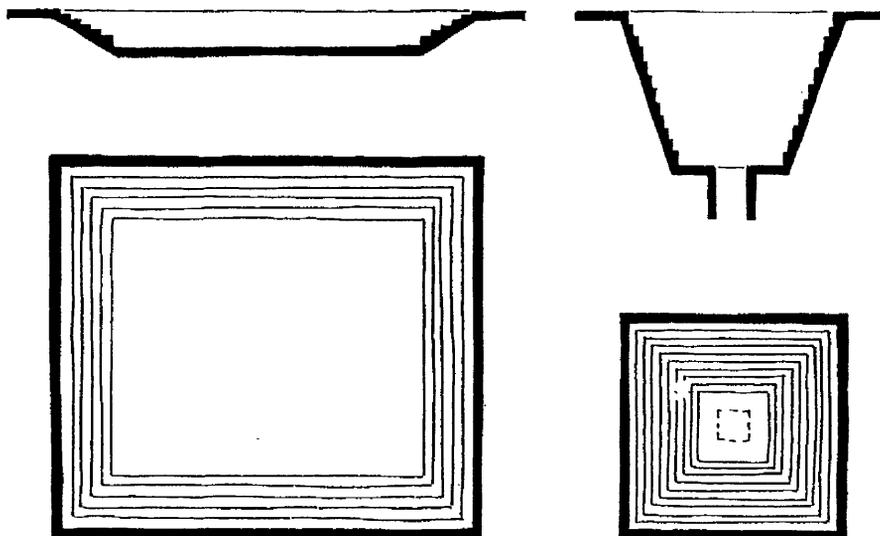


Fig. 10: Section and plan of a tank (a) and a *kunḍa* (b).

particularly visible in their step formations. While tanks are lined by short shallow flights of parallel steps, the sides of *kunḍas* are steep and long and their steps are often arranged in triangular sets to counterbalance the inward thrust of the

strongly sloping walls. The terms locally chosen to describe or name water structures do not necessarily identify their building type: *kuṇḍa* may refer to a sacred water site in general, and the term *bāoli*, meaning 'well', may at times be given to a larger reservoir. Despite these inconsistencies there is an indigenous tendency to distinguish between tanks and *kuṇḍas* as building types, and their formal characteristics have been applied in this study to differentiate between the types in order to enable a detailed study of the examples. Hybrids of tanks and *kuṇḍas* are also encountered.

Tanks may for example be called *tāl*, *tālāo* or *tālāb*, *sāgar* or *sarovar*, *pokharā*, *pokharī* or *pokuna*, depending on the region or local language. They are usually large, relatively shallow water reservoirs with an extensive catchment area to collect the maximum amount of rain water. While smaller tanks frequently depend exclusively on the rains, larger tanks may additionally be fed by springs and rivers, they may be formed by dammed rivers, and occasionally also draw subsoil water<sup>1</sup>. Ground water is the most reliable water source. Due to the large surface area exposed to sunlight, tanks have the highest evaporation amongst the various types of water architecture. Excess water is drained off to other reservoirs or streams. Larger tanks are usually constructed in natural depressions in the ground while smaller examples are more likely to be completely man made constructions. As a consequence, smaller tanks will usually have *ghāṭs*-like steps along all sides, while large reservoirs often have these limited to certain parts which provide access to the water. Steps in tanks are normally long and parallel, and stepping is directed straight downwards, parallel to the slope (unlike that of *kuṇḍas* where it is directed in a series of diagonals across the side). Sometimes the steps are broken at intervals by small protruding steps or outcropping platforms (Plate 222) which create patterns and break up the monotony of the horizontal steps (Fig. 11). Although less commonly, tanks may have parallel steps combined

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<sup>1</sup>This is only possible in regions where the ground water table is near the surface.

with pyramidal step formations, more typical of *kuṇḍas*. Examples may be seen on the north side of the Naval Sāgar at Bundi, and on the north side of the tank of Padminī's Palace at Chitorgarh. As with the *ghāṭs* along rivers, there are also tanks

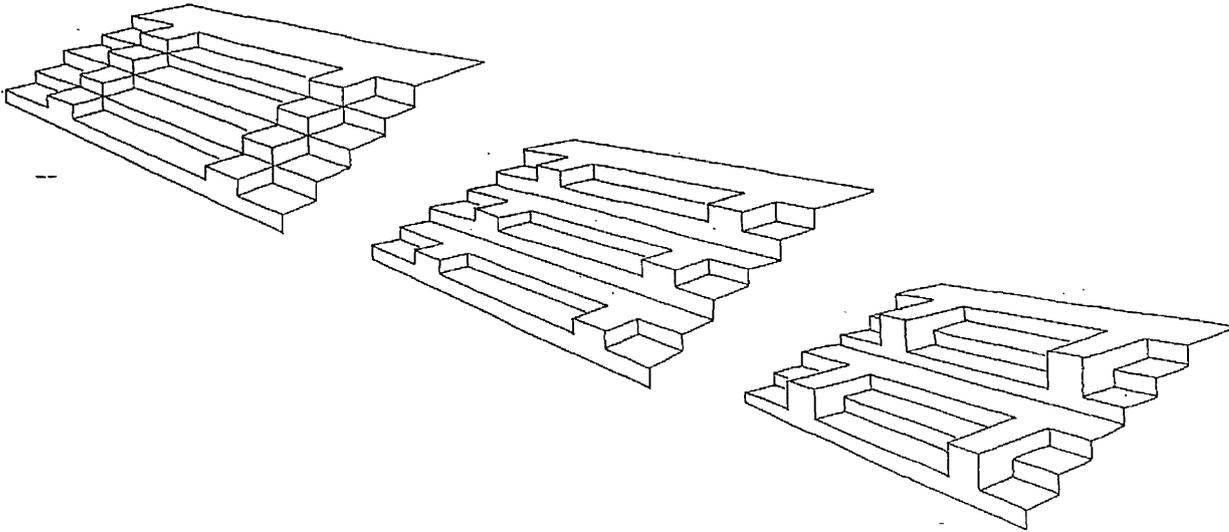


Fig. 11: Steps along tanks with small outcropping platforms.

with wider terraces, platforms and temples which may be integrated into the steps. Further elements interrupting and enlivening the long sides of reservoirs are ramps for cattle and boats, and sluice gates for inlet of fresh and outlet of excess water. Much attention was paid to the design and execution of these primarily functional parts (Plate 223). Because tanks do not penetrate deep into the ground, their sides slope gently and provide easy access to the water. The average slope of the steps will usually be parallel to the angle of the natural slope of the ground<sup>2</sup>. Tanks are frequently surrounded by walls which may be of various heights. They delineate the sacred precinct and protect it against excessive flooding during the monsoon or from surface dirt being blown into the tank.

The majority of tanks described in this chapter have been given a formalised often geometrical shape. This is usually done by enlarging the original size of a natural depression and dressing its sides. These tanks are usually

<sup>2</sup>P.K. Patel, 1973, 'Structural and Constructional Aspects of Water Reservoirs and their Relationship with Religious Buildings in Gujarat.', Diploma thesis, p.85.

rectangular or square, being the shapes easiest to plan and construct. But examples of relatively small circular tanks may be seen at Shesh Narayan in the south of the Kathmandu Valley, at the Abhayagiri Dāgaba at Anuradhapura (Anurādhapura), Sri Lanka, and in the twelfth-century Rudra Kūpa at Patan (Plate 224), Gujarat, while the Niyāi Malāo Tālāo (Circular Malao Tank) at Dholka, Gujarat, which measures about 320 metres in diameter (Plate 280), and the Būrhā Tank at Raipur, Madhya Pradesh, with a diameter of circa 550 metres, are circular tanks of considerable size. Other examples such as the Tāl Bīja Tank at Gwalior combine a circular central part with two rectangular side sections. There is also a semi-circular tank, with an approximately thirty-seven metres radius, in the compound of the Mahādev Temple at Ettumanur in Kerala. More frequent and found all over the Indian subcontinent are octagonal tanks, the Bhīngoda Tālāo at Hardwar (Plate 225), and the Khān Tālāo at Dholka, Prayāg Tīrtha just outside Trimbak, and the octagonal tanks of the Viṣṇu Temple and the Islamic Dargāh at Tirumayam, Tamil Nadu, being representative examples. Sometimes the corners of a square tank are cut off to produce an octagonal shape with four long and four shorter sides, as seen in the festival tank of the Govindarāja Temple at Tirupati (Plate 305), Andhra Pradesh, whilst the Kankariya Tank at Ahmedabad is a regular thirty-four sided polygon. Examples of the less common oval shaped tanks are the Candra Puṣkariṇī (Tank of the Moon) in the Raṅganātha Temple at Srirangam, and the tank of the Dādā Gurūdeva Mandir Jain temple at Calcutta, whilst the tank of the neighbouring Śītalnātha Jain Temple, constructed in 1867, has a rather unusual shape modelled on European baroque architecture (Plate 226)<sup>3</sup>. The Narmadā Tank at Amarkantak was constructed on the design of the falcon-shaped altar of the vedic Agnicayana Ritual (Fig. 12)<sup>4</sup>. This is one of the earliest geometric cosmological designs and also later developments of *maṇḍala*

<sup>3</sup>Also the interior of the temple is decorated in European baroque and Italianate styles, with mirrors, gold decorations and Venetian glass mosaics. It was commissioned by a wealthy jeweller.

<sup>4</sup>For further information on the plans of water structures and their relationship to the cosmos see J.A.B. Hegewald, 1996, 'Depictions of the Cosmos in South Asian Water Architecture'.

designs provided ground plans for tanks and particularly for *kuṇḍas*, which secured the water structures on the foundation of the universe.

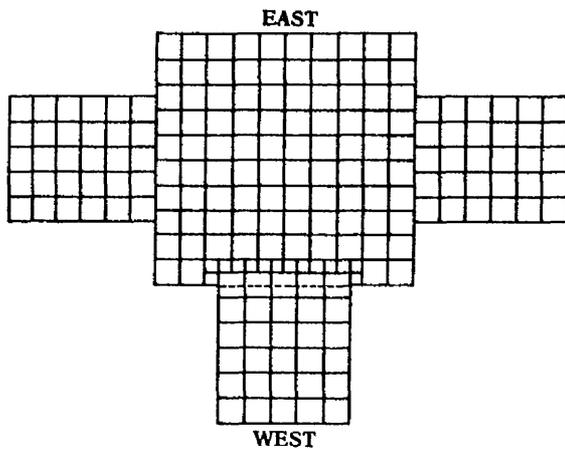


Fig. 12: Falcon-shaped altar design (M. Eliade, 1987(a), Vol. 9, p. 153).

Other tank constructions, though firmly bound, follow the natural contours of the ground. This can be seen in the tank of the Gauḍarguḍi at Aihole which dates from about the seventh-century AD, and the circa twelfth-century tank of the Thousand Pillared Temple at Hanamkonda (Hanamkoṇḍa), Andhra Pradesh. Such irregularities can also be caused by the expansion or repair of a tank. In other examples, the tank had to fit a given terrain as for instance in the Gomukh Kuṇḍ<sup>5</sup> on the western edge of Chitorgarh (Plate 227), and in several of the deep tanks in fort at Golconda. At a later stage irregularly shaped tanks were sometimes reappropriated or altered to fit ideal geometric or iconic shapes. In other instances, existing forms were discovered to have a resemblance to an object of transcendental significance. The asymmetric shape of the Mānasarovar, also called Mānasa Sarovar or Tālāo, at Viramgam, which was constructed by Queen Mayaṇalladevī, was believed to resemble the shape of a conch shell, an attribute of Viṣṇu<sup>6</sup>. Such religious images symbolically connect the water structures with

<sup>5</sup>All the water structures in this chapter which in their local names are called 'Kuṇḍ' or 'Kuṇḍa' have, from an architectural point of view, been classified as tanks.

<sup>6</sup>J.A.S. Burgess, 1905, 'Muhammadan Architecture of Ahmadabad.' 2 Vols., *Archaeological Survey of Western India*, No. 8, Vol. 2, p. 91. A similar tendency can be encountered in city planning. The ground plans of the three royal cities in the Kathmandu Valley were brought into connection with auspicious symbols. Kathmandu with its dominating diagonal road was

the cosmos and the world of the gods, and indicate that they were created by the gods and have to be discovered or recognised by man as divine creations in nature.

It is difficult to make general statements about the location of tanks, depending as it does on the local geography, town and temple layouts, and the particular use of a water structure. The *Mānasāra śilpa śāstra* recommends that within a temple compound, a well or tank should be dug in the north-east, which is the *īśa*-plot, and in a palace, a tank should be placed in the north-west or the south-west<sup>7</sup>. In a city or village there should at least be two tanks or reservoirs, one of which should be located in the south-west<sup>8</sup>. Bathing tanks will usually be found in front of or on the approach to a temple, normally from the east, because the visitors to the temple are expected to purify themselves before entering. The orientation of the tank depends therefore on which direction the temple faces or from where the main approach to the temple is directed. In south Indian temple complexes which frequently have gateways facing all four directions, the tank is usually found opposite the front of the temple. In order not to obstruct processional routes or to upset the axial layout of temples and town, the tanks are frequently positioned to one side but in front of the temple. However, tanks may also be found behind temples, as for example the Candra Puṣkariṇī in the Raṅganātha Temple at Srirangam, and the tank of the Mukteśvara Temple at Bhubaneshwar.

As has already been pointed out with *ghāṭs*, the exact dating of tanks is made difficult through continuous alterations and repairs<sup>9</sup>. The Śivagaṅgā Tank in the Naṭarāja Temple complex at Chidambaram (Cidambaram), Tamil Nadu, for instance is known to have been renovated in the sixth century AD by

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conceived as the sword of Mañjuśrī or Kālī, the circular Buddhist Patan as the wheel of the Buddha, and Bhaktapur as Śiva's hour-glass shaped drum (*damaru*) or the conch of Viṣṇu.

<sup>7</sup>P.K. Acharya, 1995, *Architecture of Manasara*, Vol. IV, pp. 299, 428.

<sup>8</sup>R. Raz, 1972, *Essay on the Architecture of the Hindus*, p. 42.

<sup>9</sup>Tanks were already constructed and rivers were dammed during the Mauryan period. A rock inscription by Candragupta Maurya at Mount Girnar, shows that some of them were complicated constructions with proper embankments, sluices, and drains (J. Jain-Neubauer, 1981, p. 2).

Hirayavārma. As late as the twelfth century AD, its banks are said to have been 'well constructed'<sup>10</sup>, and most of its present appearance dates probably from the thirteenth and later centuries.

Being an architectural study, this survey of tanks will focus on *pakkā* tanks which have been firmly contained by walls, or with steps at least in parts, or which have buildings or islands in their middle. No attempt has been made to provide an encyclopaedic collection of tanks in South Asia. The aim of the study is to outline general tendencies in tank building and to show their widespread application in every region of the Indian subcontinent, setting out guidelines for the understanding and interpretation of tanks not mentioned here. Miniature tanks, ornamental pools or baths located within palace complexes and gardens have not been considered in this chapter; although these derive from the general tradition of tank building, they developed in a way which is specific to palace and pleasure architecture, and will be treated in detail in Chapter Seven.

## II. Forms and Functions

In the hot and often arid climate of India, water is a precious and at times rare substance. It is needed for a variety of functions such as temple rituals, ablutions, bathing, washing, the watering of animals, and irrigation. For these reasons, and because building a water tank was an expensive and often difficult undertaking, it was necessary for the construction to be adaptable to a whole variety of simultaneous uses, and not exclusive to one particular function. At first glance, what appears to be a simple and utilitarian storage tank, will almost invariably have a small temple or shrine associated with it and will also be used for ablutions and religious ceremonies. Nevertheless, different functions may be dedicated to particular parts of a tank, and bathing places or temples may be found at some

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<sup>10</sup>T. Satyamurti, 1978, *The Nataraja Temple: History, Art and Architecture*, p. 23.

distance away from access to animals. An example which illustrates this point particularly well is the Sarkej Rauzā south-west of Ahmedabad, which was constructed between 1446 and 1451 AD. At the centre of the site is a 212 by 250 metres tank surrounded by pleasure palaces, tombs and mosques. Access is also provided for the bathing and watering of cattle, and the water was used to irrigate the surrounding gardens<sup>11</sup>. The two palaces are found both in the south-western corner of the tank, while the mosques and tombs occupy the north-eastern corner on the opposite diagonal. The cattle ramps are found between and at equal distance from the pleasure and the religious and mortuary complexes (Fig. 13). Although tanks usually fulfil several functions at once, one particular use may dominate or may be the main reason why such a reservoir was initially constructed. Tanks as a type may be divided into seven subgroups according to their primary use.

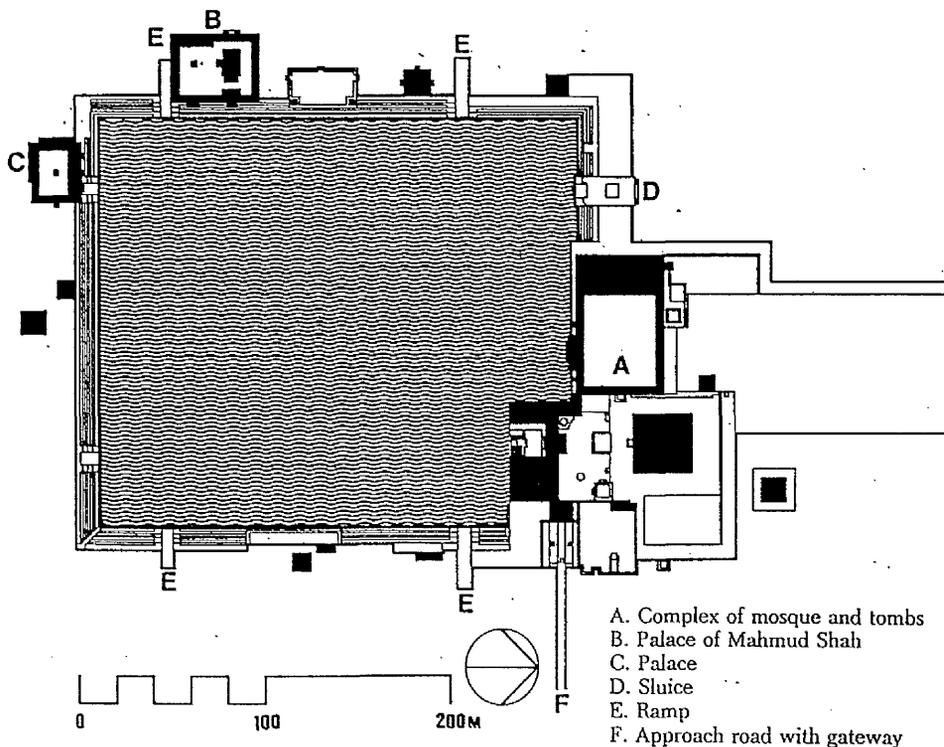


Fig. 13: Clear separation between the sacred and the royal at the Sarkej Rauzā  
(G. Michell & S. Shah, 1988, p. 48).

<sup>11</sup>K. Herdeg, 1990, *Formal Structure in Indian Architecture*, p. 24.

## 1. Small Ablution Tanks

The first sub-type are small ablution tanks. They are only a few metres long and wide, not deep enough for a proper bath or immersion, and found in connection with temples of various faiths, and with mosques and tombs. These tanks are not large enough for a complete bath but are used to clean hands and feet, and to sprinkle water onto one's head, a ritual which is considered as purifying as a full bath. Small ablution tanks are typical of Sikh gurdwaras which normally have a shallow basin, only about ten centimetres deep, about one metre wide and a few metres long inserted into the pavement in front of most doors of access to gurdwaras. Visitors to the gurdwara must walk barefoot through the basins, because they are positioned across the entrances, and thus clean their feet before entering the sacred precinct (Plate 228). At Baba Bakala (Bābā Bakālā), Punjab, further water taps are provided next to the shallow basin. The gurdwara at Goindwal, Punjab, probably has the largest number of such walk-through ablution basins, which are found not only in front of all gateways giving access to the temple compound, but also in front of all stairs leading up to the raised temple and down to the sacred well inside the complex. Also most gurdwaras outside the Sikh homeland follow this convention, as for example the Harmandir (Pāṭna Sāhib), the second most important gurdwara of the Sikhs, at Patna (Pāṭaliputra), Bihar. Here, a walk-through basin is found on the *pradakṣiṇā patha* encircling the temple. Small ablution tanks are also typical of Sri Lankan Buddhist temples. There are walk-through ablution basins in front of the stairs of access to the monastic complex at Mihintale, and at the steps leading up to the compound containing the Vaṭadāgē at Polonnaruva (Plate 229)<sup>12</sup>. Many other Buddhist and Hindu temples in Sri Lanka have small circular or square stone basins on one side of the temple door providing clean water for ablutions at least through a sprinkling of water. In a Hindu context, early examples of small ablution tanks are found at the Upper Śivālaya at Badami (seventh century AD), in front of the

<sup>12</sup>The basin at Mihintale measures 0.23 by 1.56 metres, and the one at Polonnaruva is 0.6 by 4.5 metres long.

Candra Śekhara Temple at Pattadakal (Paṭṭadakal) (eighth century AD), both in Karnataka, and in front of several cave temples at Ellora (late sixth to ninth centuries AD). At Mamallapuram, there are two interesting examples of small ablution tanks. The first one is a relatively deep circular monolithic stone trough carved out of a natural boulder in front of the early eighth-century Trimūrti Cave Temple. The second is an early example of a Hindu walk-through basin, found in front of the seventh-century Varāha Cave Temple (Plate 231). The basin is about one and a half metres wide, six metres long and 0.67 metres deep. It runs along the entire front of the cave and has steps leading up to the temple on the cave side. Although walk-through basins did not become a standard feature of Hindu temple architecture, there is a further, modern, example at Ujjain in the complex of the Mahākāleśvara Temple. The temple houses one of the twelve *jyotir-liṅgas*, enshrined in an underground chamber. The pilgrims are first directed to the temple tank, then down to the *liṅga* and up via a steep staircase which emerges in the middle of the temple courtyard. To make sure that those pilgrims who enter the shrine from the courtyard side are also in a pure state, a walk-through basin was placed in front of these stairs (Plate 232). The Bṛhadiśvara Temple at Gangaikondacholapuram, and the Govindarāja Temple at Tirupati (in front of the second *gopura* on the east) have small ablution basins axially aligned with the temples. In the latter, an iron fence through which the pilgrims have to pass to reach the water prevents people from actually bathing or washing in it and animals from drinking, making it clear that this basin was designed for ritual ablutions only, where the washing of hands and feet and the sprinkling of water onto one's head is sufficient. It is typical of south Indian temple complexes that certain parts near the central shrine are not roofed-over. Underneath these openings are small depressions in which rain water is collected. Often, the basins are also equipped with taps for use during the dry season, which enable ablutions to take place before entering the sanctum. Examples may be seen in the Naṭarāja Temple at Chidambaram, in the Jambukeśvara Temple at Srirangam, and in the

Nāgarāja Temple at Nagercoil (Nāgakōvil), all three in Tamil Nadu. Although less often, small ablution tanks are also found in connection with Jain temples, as at the early ninth-century AD Choṭā Kailāsa Jain Temple at Ellora, and the rock-cut pools in front of the Jain temples on Hēmakūtam Hill at Vijayanagara which were excavated in the fourteenth century<sup>13</sup>.

It is also essential for Muslims to be in a state of ritual purity before prayer and almost every mosque has one or two ablution tanks called *wuḍū'*, *hauz* (*hawd*) or *mīda'a*<sup>14</sup>. The ablution tanks in mosques may be larger than the ones discussed above, but are invariably very shallow. They are found within the courtyard of the mosque, usually centrally located in front of the *īwān*. There is, however, no strict rule about their location, and the Motī Masjid (1860) at Bhopal, Madhya Pradesh, for instance has two basins in the corners furthest away from the prayer hall. Frequently, one finds fountains in the centre of tanks such as that in the early fifteenth-century Atāla Masjid at Jaunpur, Uttar Pradesh. Almost invariably, such tanks are rectangular or square, and examples such as the lotus shaped tank of the small mosque west of the tomb of Qulī Quṭb Shāh at the sixteenth to seventeenth-century Quṭb Shāhī Tombs at Golconda, are rare. Some tanks are adorned with corner *chattrīs*, as in the Jāmi Masjid (1648 AD) in Agra (Āgra), Uttar Pradesh, and others are partly roofed over to provide shade. The ablution tank of the fifteenth to sixteenth-century Rauzā of Shāh 'Ālām at Ahmedabad has a roofed colonnade along its north and south sides, while in the *dargāh* at Ajmer (commenced in the thirteenth century), one ablution tank has a colonnade all around, and the second is entirely roofed over (Plates 230, 233). The eastern tank of the Tāj-UI-Masjid at Bhopal (late nineteenth century) has an unusual arrangement whereby a large square basin was divided by narrow bridges into four sub compartments, and the partitions were roofed over. Through this device,

<sup>13</sup>G. Michell, 1990(a), *The Penguin Guide to the Monuments of India: Buddhist, Jain, Hindu*, p. 398.

<sup>14</sup>Mīda'a' may also be spelled 'mīḍā'a' (I.R. Netton, 1992, *A Popular Dictionary of Islam*, p. 169).

access to the water can be provided to more people at the same time<sup>15</sup>. A further interesting case is found in the Jāmi Masjid at Dholka where a modern raised platform, almost the size of the ablution basin itself, was built into the small tank (Plate 234). The water can still be reached from the edges of the basin, and the platform in the middle is a comfortable resting and meeting place, cooled by the evaporating water underneath. Because the platform slightly obstructs the bathing, a further narrow basin, shaded by a roof, was constructed along its northern side.

It is typical of Gujarati mosques to have in addition to a small ablution tank, a large vaulted underground reservoir of stone masonry beneath the mosque courtyard. The reservoirs have small openings in the pavement to catch the rain water, which is also collected from the roofs and directly channelled to these inlets. Usually, they have steps leading down to the basin and a draw well in one corner of the courtyard. The cisterns are known as *tānkā* or *barkā*<sup>16</sup> and may be found in the Jāmi Masjid, in the Shāh 'Ālām Rauzā and the mosque of Dastūr Khān, all in Ahmedabad. It is interesting that at Fatehpur Sikri which generally shows strong Gujarati influences, the Badshāhī Mosque too has such a cistern under its courtyard (Plate 235). In this case, particularly the rain water from the roof of Shaykh Salīm Chishtī's tomb is led through hollow columns, supporting its roof, into the large tank beneath<sup>17</sup>. The water which has passed over the *shaykh*'s tomb is considered particularly pure and sacred. Mosques are frequently situated on one side of a large tank and may, as in the Khān Mosque at Dholka, provide a view over the large octagonal tank through openings in its *qibla* wall. Small Islamic ablution tanks are also found in tomb complexes where the tanks are often positioned between tomb and mosque. Examples of these may be seen at the Gol Gumbaz at Bijapur (Bijāpur), Karnataka, and at the cenotaphs at Ahar (Āhār), Rajasthan. Since the Muslim concept of paradise is closely connected with water, simple Muslim graves are frequently found next to tanks.

<sup>15</sup>On a larger scale this idea has been encountered at Nasik, Maharashtra, in Chapter Three.

<sup>16</sup>S.A.A. Rizvi, 1992, *Fatehpur Sikri*, p. 58; Burton-Page in G. Michell & S. Shah (eds), 1988, *Ahmadabad*, pp. 129, 59, 87; R. Nath, 1985, *History of Mughal Architecture*, Vol II, p. 170.

<sup>17</sup>M.M.A. Husain, 1937, *A Guide to Fatehpur Sikri*, p. 66.

## 2. Bathing Tanks

The second sub-group of tanks are those used for proper bathing. Their use and significance is similar to that of the small ablution basins, but bathing tanks are much larger and may be used for an immersion of the entire body and are usually designed for large numbers of people. Bathing tanks may be found in association with mosques, as for example in the Baṛī Dargāh at Pandua (Plate 236), Bihar, or in the Dargāh at Raichur in Karnataka. Most Sikh gurdwaras have a bathing tank and particular attention was paid to the aesthetic effect of the white marble buildings being mirrored on the surface of the water (Plate 237). Probably the largest Sikh bathing tank, which is about 240 by 310 metres long, is to be found at Tarn Taran, Punjab<sup>18</sup>. Its water is believed to have healing properties especially for the cure of leprosy. The gurdwara in Gwalior Fort has three large bathing tanks. The tank directly behind the it, called the Gaṅgola Tank, predates the construction of the gurdwara and has two eleventh-century inscriptions on its floor<sup>19</sup>. The sixth Gurū Hargobind (born 1595 AD) used to meditate and lecture at the tank<sup>20</sup>. The two modern tanks to the west of the gurdwara have arcading on four sides and are sunk into the ground so that the roofs of the colonnades are level with the courtyard.

Buddhist bathing tanks may be seen at Vaisali (Vaiśālī) in Bihar where the Markaṭa Hṛda or Monkey Tank is found next to the Aśokan stupa and the monastery complex of Kolhuā (Plate 303)<sup>21</sup>. There is a large tank between the main Stupa and the Great Monastery No. 51 at Sanchi, and Bakariā Kuṇḍā is a large bathing tank next to a Buddhist temple outside Benares. The Buddha himself is said to have bathed in the tank at the Mahābodhi Temple at Bodhgaya

<sup>18</sup>The tank of the Golden Temple at Amritsar is about 150 by 165 metres long.

<sup>19</sup>There are many tanks of considerable age in the fort at Gwalior. Most of them are believed initially to have been quarries for the construction of the fort and were later converted into tanks (Y. Singh, 1994, *History of Gwalior Fort*, p. 14).

<sup>20</sup>K.K. Chakravarty, 1984, *Gwalior Fort: Art, Culture and History*, pp. 27-28.

<sup>21</sup>Allegedly, the tank was dug by monkeys for the Buddha, and the Chinese pilgrim Hiuen Tsiang reported that it was at the stupa next to the tank, that the monkeys offered honey to the Buddha (Y. Mishra, 1962, *An Early History of Vaiśālī*, p. 175).

(Bodhgayā) and in the Karaṇḍa Tank at Veṇuvana, Rajgir (Rājgīr, Rājagṛha): both tanks, situated in Bihar, are heavily modernised. Jain temples also have bathing tanks, as may be seen in the Śitalnātha (Plate 226)<sup>22</sup> and the Dādā Gurūdeva Mandirs at Calcutta, and in the several bathing tanks on the way up the mountains Shatrunjaya (Śatruñjaya) in Gujarat, and Sonagiri (Sonāgiri) in Madhya Pradesh.

In Hindu temples, a small ablution tank may often be found at its entrance, mainly for the washing of the feet, while a larger bathing tank is found nearer to the temple. Hindu temples in all parts of India in dry and wet areas have bathing tanks which vary considerably in size and material. In West Bengal, where the main building material is brick, this material was also used for the construction of bathing tanks, as may be seen in the Lāl Bāndh (Red Tank) of the Rādhā Mādhava Temple at Bishnupur (Biṣṇupur). The style of the tanks is often closely related to that of the temple or other buildings next to them. Although every temple has its own water source, which might be a river, the sea, a well or a *kuṇḍa* (or nowadays a water tap), certain bathing tanks gained importance outside their district or state, as places where special merit may be gained through bathing. Probably the best known example connected with a major bathing festival is the Mahāmakham Tank at Kumbakonam (Plate 238). Although bathing on a small scale takes place every year in February-March, the major Mahāmakhana Parva (festival), like the Kumbha Melā, is celebrated only once every twelve years. In addition, the mythology of the large *melā* at Kumbakonam is also related to a *kumbha*, a sacred water pot, and has therefore frequently been compared with the Kumbha Melā of north and central India<sup>23</sup>. On the day of the Mahāmakhana Parva, the Ganges is believed to run into the tank by a subterranean channel called Antarvahini<sup>24</sup>. All principal Śiva images of the town are set up in the *maṇḍapas* around the tank and their *trisūlas* are immersed in the water<sup>25</sup>. Of similar importance in the north, is the Brahmā Sarovar at Kurukshetra. Although the site is of considerable antiquity

<sup>22</sup>Śitalnāth is the Lord of the Water.

<sup>23</sup>S. Rai, 1993, *Kumbha Mela: History & Religion; Astronomy & Cosmobiology*, pp. 37, 57.

<sup>24</sup>S.M.N. Sastri, 1988, *Hindu Feasts, Fasts and Ceremonies*. pp. 72, 75.

<sup>25</sup>Ibid. p.73.

and is known as the final battleground of the Mahābhārata, the vast rectangular tank has been extensively modernised and today resembles more a municipal swimming pool. On the other hand, early bathing tanks which do not seem to have altered their shape considerably may be seen in the seventh-century tanks of the Mallikārjuna Temple at Mahakuta (Mahākūṭa), Karnataka, and in the eighth-century tanks of the Kailāsanātha and the Vaiṣṇāṭhaperumaḷ Temples at Kanchipuram. Lesser known examples of pilgrimage tanks which, none the less, within their own region are of great importance and attract numerous Hindus for bathing, are the Bindu Sarovar at Siddhpur, and the Mānsigaṅgā or Mānasa Gaṅgā reservoir at Govardhan. The latter is said to have been created purely by divine will, *mānasa*, and it is believed to be filled with Ganges water<sup>26</sup>. To bathe in it is equivalent to an ablution in all of India's sacred *tirthas* put together. Bathing tanks may be much larger than the temple complexes next to them, as may be seen in the large tank called Durgā Kuṇḍ next to the Durgā Temple at Benares (Fig. 14, Plate 239). Access from within the temple courtyard is provided to the tank.

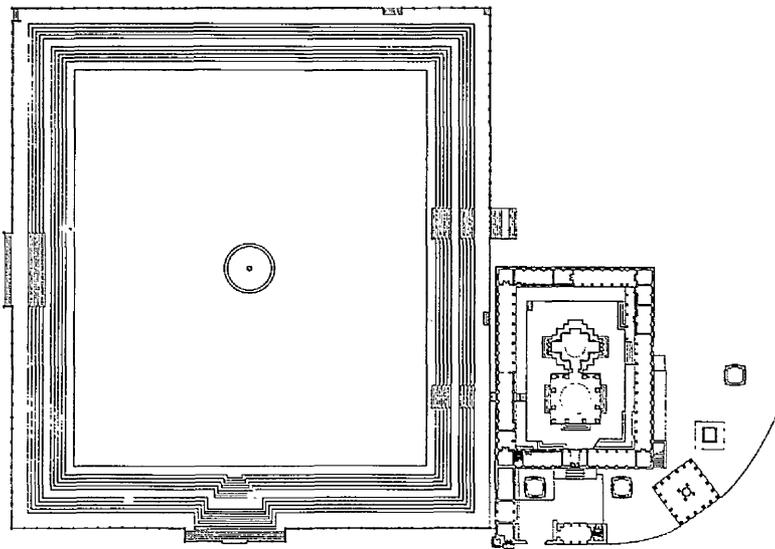


Fig. 14: Benares, the large bathing tank of the Durgā Temple (P.D. Couté & J.M. Léger, 1989, p. 94).

<sup>26</sup>F.S. Growse, 1979, *Mathurā: A District Memoir*, p. 303; D. Ananad, 1992, *Krishna: The Living God of Braj*, pp. 48-49.

Also the tank of the Kṛṣṇa Temple at Guruvayur is of equal size to the whole adjoining temple complex. Again, the tank can be reached from within the walled compound via small bathing units. Similar apartments are found at Trivandrum (Thiruvananthapuram), Kerala, at the western side of the bathing tank of the Padmanābhasvāmi Temple. It is typical of Kerala bathing customs to have separate steps and bays for women and men, as in the tank of the Temple at Irinjalakuda. As with certain *ghāṭs* which had particular qualities attributed to them, tanks may also be imbued with special virtues. They are often connected with fertility cults, as for example the tank in the innermost temple enclosure at Tiruvellarai, in which childless couples come to bathe. Many south Indian temple complexes have several bathing tanks within different enclosures. The Aruṇācaleśvara Temple at Tiruvannamalai has two large bathing tanks, located within the first and the second enclosure walls together with a festival tank in town, and the Jambukeśvara Temple at Srirangam has a small ablution tank, two bathing tanks, and two festival tanks, one inside and the other outside the temple compound.

### 3. Festival Tanks

Festival tanks make up the third sub-group of tanks. They are especially typical of central and southern India but are also to be found in northern regions. The gods of South Indian temples are frequently, some even daily, involved in processions and festivals within and outside their temple compounds. Once a year they participate in a float festival, and most south Indian towns have a large tank called *teppakuḷam* built specifically for this purpose<sup>27</sup>. Sometimes, the *teppakuḷam* is found adjacent to the walled temple enclosure, as in the Sāraṅgapāni Temple at Kumbakonam, and the Kāpāleśvara Temple at Madras, both in Tamil Nadu. More typically, however, the *teppakuḷam* is located separately at the end of the main processional road leading to the temple entrance. Examples of this may be

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<sup>27</sup>J. Pieper, 1979(b), 'A Note on South Indian Ceremonial Floats.', p. 47.

seen at the Kantimati Nellaiyappar Temple at Tirunelveli (Tirunelvēli), Tamil Nadu, the Jambukeśvara and the Raṅganātha Temples, both at Srirangam and at the Viṭṭhala, the Tiruveṅgalanātha (Acyutadevarāya) and the Kṛṣṇa Temples at Vijayanagara. In other cases, such as the festival tank of the Kālahastīśvara Temple at Kalahasti, and the Teppakuḷam at Madurai, the float tanks are found at a considerable distance from the temple complex. The tanks are rectangular, often square structures, usually oriented, with a square stone pavilion or platform in their centre. In Tamil, these central *maṇḍapas* are called Nīvāḷi Maṇṭapams<sup>28</sup>. During festivals, the float with the divine images and the main priests encircles the pavilion (Plate 240), whilst a drummer who dictates the rhythm for the punting boatmen may be seated in the pavilion<sup>29</sup>. At the climax of the festival, the deity is placed within in the central *maṇḍapa* and a *pūjā* ceremony is conducted. After this the god returns to his shrine. The ceremonial floats (*teppam*) (Plate 241), which have developed into a distinct type of mobile architecture, and the small pavilions in the centre of the tanks, are small replicas or models of the main shrine in the temple compound<sup>30</sup>. Most float festivals, the *teppotsavas*, take place during January and February, at the end of the festival season of the month of Tāy which marks the coming of spring. They are conducted after dark, usually on the night of Tāy Pūsam<sup>31</sup>. The floats and the *maṇḍapas* are lit with oil lamps, or more commonly today with a profusion of neon lights. The tank pavilion at Suchindram (Śucīndram), Tamil Nadu, has particularly beautiful 'lamp holders' in the form of stone sculptures of women who hold the lights in their hands<sup>32</sup>.

Many festival tanks have small, usually triangular, niches along their sides in which small oil lamps are placed to illuminate the tank. The reflections of the lights on the water's surface creates a festive and sacred atmosphere. Such triangular niches may be seen in the *teppakuḷams* at Tiruchirapalli (Tiruccirāpaḷli)

<sup>28</sup>K.V. Sastri, 1958, *Viśwakarma Vāstuśāstram. A Treatise on Town-planning etc.*, p. 51.

<sup>29</sup>Ibid., p. 47.

<sup>30</sup>K. Fischer, M. Jansen & J. Pieper, 1987, *Architektur des indischen Subkontinents*, p.62.

<sup>31</sup>N. Thiagarajan, 1994, *Om Siva Siva - A Guide Book of Rameshwaram Dhanushkodi*, p. 46.

<sup>32</sup>Such sculptures are not unique to tank architecture but are also typical of the temple and palace architecture of southern Tamil Nadu and Kerala.

and at Tirunelveli, both in Tamil Nadu. The *teppakuḷam* at Suchindram and the Agni Tīrtha at Tiruvannamalai have circular depressions for oil lamps on the top of their low retaining walls. Similar to *āratī*, the offering of lights to rivers described in Chapters Two and Three, oil lamps are also set afloat on tanks at certain festivals. This is common practice during the float festival at Madurai which was initiated by Tirumalai Nāyak and annually takes place on his birthday in April (Plate 240), and during the Marriage Festival of Śiva and Pārvatī in July, which for instance is celebrated in the tank in the first *prākāra* enclosure of the Jambukeśvara Temple complex at Srirangam. The tank in the outer enclosure wall of the Aruṇācaleśvara Temple at Tiruvannamalai has iron lamp-holders attached to the columns and corridor roofs and further ones were placed into the water at the corners of the tank. Triangular lamp holes may also be found around small ablution tanks, as in the tank in the second enclosure wall of the Nāgarāja Temple at Nagercoil. The tank is divided into two parts by the second enclosure wall running through it. Niches for lights are also found around bathing tanks, as for example in the second enclosure wall of the Jambukeśvara Temple at Srirangam and the tank of the Amman Shrine at Tirunelveli. The niches of the latter are square. Similarly, in the north of India, lights are set onto the steps around tanks on festival days (Plate 242). Such occasions include Divālī and Lakṣmī or Durgā Pūjā, when ceremonies and offerings take place at the tanks connected with the goddesses. Float festivals are also typical of Orissa and the Bindu Sāgar at Bhubaneswar and the Narendra Tank at Puri are the most important festival tanks. They have large islands set into the water and carry pavilions and entire temples, where the gods remain for up to fifteen days. The festival tank at Tiruvarur (Tiruvārūr) in Tamil Nadu also has a larger island with a small walled temple built on it. Although less common in other regions, the lake at Kandy in Sri Lanka is used during festivals and has an island with a platform belonging to the Temple of the Tooth (Plate 337). In the north of India, the Śrī Raṅganātha Temple at Vrindavan has a float festival tank. The temple is built in the southern Indian

tradition of temple architecture (*drāviḍa*), and the tank, the Gajendra Muḡ Kuṇḍ combines southern and northern elements. Because of its depth and the angle of its strongly sloping sides, it is a tank-*kuṇḍa* hybrid. Further north, an annual float festival takes place in the tank of the Kumbheśvara Pagoda at Patan, Nepal. It coincides with the major pilgrimage to the holy lakes at Goainkund (Gosainkuṇḍ) and acts as a substitute for those who cannot travel to the sacred mountain *tīrtha*<sup>33</sup>.

Not all temple tank festivals are, however, float festivals. An important bathing festival referred to above is the Mahāmakhana Parva at Kumbakonam. Here, not only people, but also gods bathe on festival days. The oval shaped Candra Puṣkariṇī in the Raṅganātha Temple at Srirangam was built for a special bathing ceremony of the god in the month of Mārkaḷi<sup>34</sup>. As soon as the image of the god is immersed in the water of the tank, and instantly imbues it with divine energy, crowds of devotees plunge into the water. This tank is used almost exclusively for this bathing festival and remains locked up for the rest of the year. Another distinct type of festival tank was designed for the exclusive celebration of the Vasanta or Spring Festival (Vasantotsava<sup>35</sup>) in April. This is the hottest time of the year before the arrival of the monsoon, and the gods are comforted in the cool environs of a shaded tank. The Vasanta Maṇḍapa at Tiruvellarai has a large pavilion set into the middle of a relatively small water basin surrounded by arcading on all sides (Plate 243). There are bridges on the north and the south sides leading to the pavilion which make the use of a float unnecessary. At Tiruvellarai, the god remains in the tank for nine days. Similar in layout is the Vasanta Maṇḍapa in the Perumāl Temple at Alagarkoyil (Aḷagarkōvil) in Tamil Nadu, and the one in the Amman Temple at Tirunelveli, although the latter is entirely roofed over. The Vasanta Maṇḍapa at Sri Villiputtur (Śrī Villiputtūr),

<sup>33</sup>M Hutt (ed.), 1994, *Nepal: A Guide to the Art and Architecture of the Kathmandu Valley*, p.161. The *kuṇḍa* in Patan and the lakes at Gosainkund are believed to be connected by a subterranean channel.

<sup>34</sup>p. Younger in G. Michell (ed.), 1993, *Temple Towns of Tamil Nadu*, p. 84.

<sup>35</sup>G.R. Welbon & G.E. Yocum (eds), 1982, *Religious Festivals in South India and Sri Lanka*, p. 61.

Tamil Nadu, has no arcading around the basin. The Puḍu Maṇḍapa of the Mīnākṣī Sundareśvara Temple at Madurai provides another example of a pavilion used for the celebration of the Spring Festival. In this case the water channel does not surround the entire building but runs only parallel to its long sides. Unusually for south India, the steps on the *maṇḍapa* side of the channel are arranged in pyramids (Plate 244).

It is interesting to see that the Keśav Bhavan pavilion in the pleasure palace at Dig (Dig) in Rajasthan, and the water pavilion in the Hardaul-kā-Baiṭhak Garden at Orchha, follow in their layout the religious design of Vasanta Maṇḍapas. In the palatial and garden context, the tanks are not surrounded by arcading, and at Dig, the roof of the pavilion extends over the channel around it (Plate 245). Although the pavilion in the formal garden at Orchha was first used as a secular building, it was later transformed into a shrine containing several venerated hero stones, suggesting that the pavilion's original design in the religious tradition of India was still obvious to the people who later sanctified it.

#### 4. Tanks of Power

Furthermore, we find water tanks in connection with palaces and government buildings. In this context, the water constructions establish a zone of separation between the ordinary public and the private or secret areas of rulers and governments. In the same way as temples are clearly delineated and marked as distinct areas, the ruling centre of society was often singled out and distinguished by a line of water. This served also as a means to protect palatial or government buildings and made it easier to defend them. Further important aspects in the planning of such complexes were the aesthetic qualities of water tanks, and the possibilities to play with mirror images and reflections on its surface. The citadels or palaces of most larger Indian forts were situated adjacent to large water tanks. Examples are the palace in Kalinjar Fort situated at the Koṭ Tīrth, and the palace in Raigarh (Raigarh), Maharashtra, at the Gaṅgā Sāgar. Smaller forts or city

palaces often overlooked artificial water tanks such as the fort at Amber (Āmbēr), Rajasthan, the City Palace at Bundi (Plate 246)), or the Govind Mandir Palace at Datia. Although it is also a feature of European palatial architecture, one could argue that the integration of water tanks into British colonial government buildings in India was a reference to an indigenous Indian tradition. Examples illustrating this point are the long water channels in front of the Viceroy's House (Rāṣṭrapati Bhavan), in New Delhi, and the Victoria Memorial Hall in Calcutta (Plate 247), which is surrounded by large water basins. Water also played an important role in the design of the government buildings at Chandigarh as the modern capital of the Punjab, designed by Le Corbusier between 1951 and 1964. Here, there are water tanks in front of the Palace of Assembly (Plate 248) and behind the High Court. Perhaps the clearest statement about the separation and protection of the government headquarters through water was made by the Sri Lankan Government in 1977, when they built a new Parliament building situated on an island in the Diyawannā Oya, a lake in Kotte near Colombo (Plate 690). The complex was designed by the Sri Lankan architect Geoffrey Bawa. Water tanks within palace compounds will be discussed in Chapter Seven.

During the consecration ceremony of a king (*rājasūya*), the ruler had to be anointed with various types of water, by which he received the power and legitimation to rule. There are certain tanks in South Asia, which were primarily constructed for this ritual. One such tank, and its particular function is attested to in the Jātakas, is the Coronation Tank, also called Kharauna Pokhar or Abhiṣeka-maṅgala Puṣkariṇī, at Vaisali, which was the coronation tank of the Licchavis<sup>36</sup>. The close link between the king and water derives from the fact that water is linked to the law, *dharma* (see Chapter Two), with which the king was also equated.

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<sup>36</sup>Mishra, 1962, pp. 148, 193, 284.

## 5. Storage Tanks

A fifth group can be described as plain water storage tanks. They are predominantly utilitarian, and comparatively simple in design. Found in the plains or on level ground, they usually have large dimensions to collect the maximum amount of rain water, often in addition to a spring or river feeding the reservoir. The large storage tank at the village of Lakkundi is a good example, which also illustrates how the dating of tanks is made difficult by constant repairs and alterations, and by the reuse of building material from damaged temples (Plate 251). The large Bēgam Tank to the south of Bijapur, was the main source of water supply for the entire town. Other large storage tanks were formed by dammed lakes in the surroundings of Bijapur, notably the Rāmlīng Tank and the tank at Kumatgi. Although they are predominantly utilitarian, a pavilion was constructed in the centre of the tank at Kumatgi, and the entire area behind its dam was transformed into a pleasure and hunting resort, while that of the Rāmlīng Tank was laid out as a formal garden. The point to emphasise here is that water storage reservoirs were hardly ever exclusively functional.

When associated with forts, plain water storage tanks are often found to have a relatively small perimeter and to be quite deep. Storage tanks were necessary to make hill top forts independent from the surrounding plain and to prepare them for long sieges. Water also had to be provided to animals, and elephants in particular often had their own watering tanks, as may be seen in the elephant tanks at Raigarh and outside Adavad, both in Maharashtra. Palaces required their own substantial water supplies, which as discussed above, were often designed to create a picturesque setting for the seat of power. At Maṭṭāncheri Palace at Cochin-Ernakulam, Kerala, no such attempt was made and the plain water tank to one side appears to be somewhat detached from the overall design of the palace itself. This is however unusual, and examples like the Tāl Kaṭorā<sup>37</sup>, a large storage tank to the north of Jaipur City Palace, shows how

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<sup>37</sup>Also spelled 'Tāl Kaṭhora'.

beautifully such tanks could be integrated into the overall layout and axial arrangement of the formal gardens and the palaces. Although the primary function of some tanks was to store water, they were often connected with gardens and palaces as well as with religious images or institutions. The Hāthi Tālāo (Elephant Tank) in Raigarh for instance has several niches along its outer south side containing religious images. Often, the dams of tanks were secured by constructing small temples onto them, as may be seen on the dam of the Sāgar Tank to the north-west of Amber village, Rajasthan. A second dam for the same tank is crowned by a small pleasure palace. It is typical of Sri Lankan water reservoirs to have protective snake stones, *nāga-kals*, on their embankments and dams. Although one function may predominate, tanks are hardly ever used exclusively for one purpose.

There are two related kinds of tanks within the group of storage tanks which are closely linked to wells and stepwells, discussed in Chapter Six. The first kind is a relatively small and very deep storage tank with straight walls and typically without steps (Fig. 15 b). They are representative of Muslim Dargāhs as may be seen at Nizām-ud-dīn and in the Dargāh of Quṭb-Sāhib (Plate 249) both in Delhi<sup>38</sup>. These tanks are related to wells, because their surface area is too small to collect rain-water efficiently, and must also be fed by subsurface water. Both examples are just called 'Bāoli', meaning 'well', but as the surface of the tanks measure about fifteen by twenty metres, and twelve metres square respectively, they are too large to classify as wells. In a way they function rather as a *kuṇḍa*, drawing ground water, but have no steps around the perimeter. A smaller Jain example which is actually used as a well, is the sacred tank north of the Candra Prabhu Temple on top of Sonagiri. At Rajgir there are several examples of such deep tanks connected with the hot springs around Brahmā Kuṇḍ. Narrow flights of steps provide access to the water. A particularly interesting example is the

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<sup>38</sup>The tank at Nizām-ud-dīn has a few steps on the north side, and the tank in the Quṭb-Sāhib Dargāh has a narrow flight of steps leading underground to the tank. These steps are, however, not open to the people to descend to the water.

Makhdūm Kuṇḍ which is found in the courtyard of the local mosque. The tank's high walls together with a pavilion almost entirely obscure the prayer hall, located immediately behind the tank, and make the obvious statement that it is the sacred hot spring which is of paramount religious importance at the site. The close

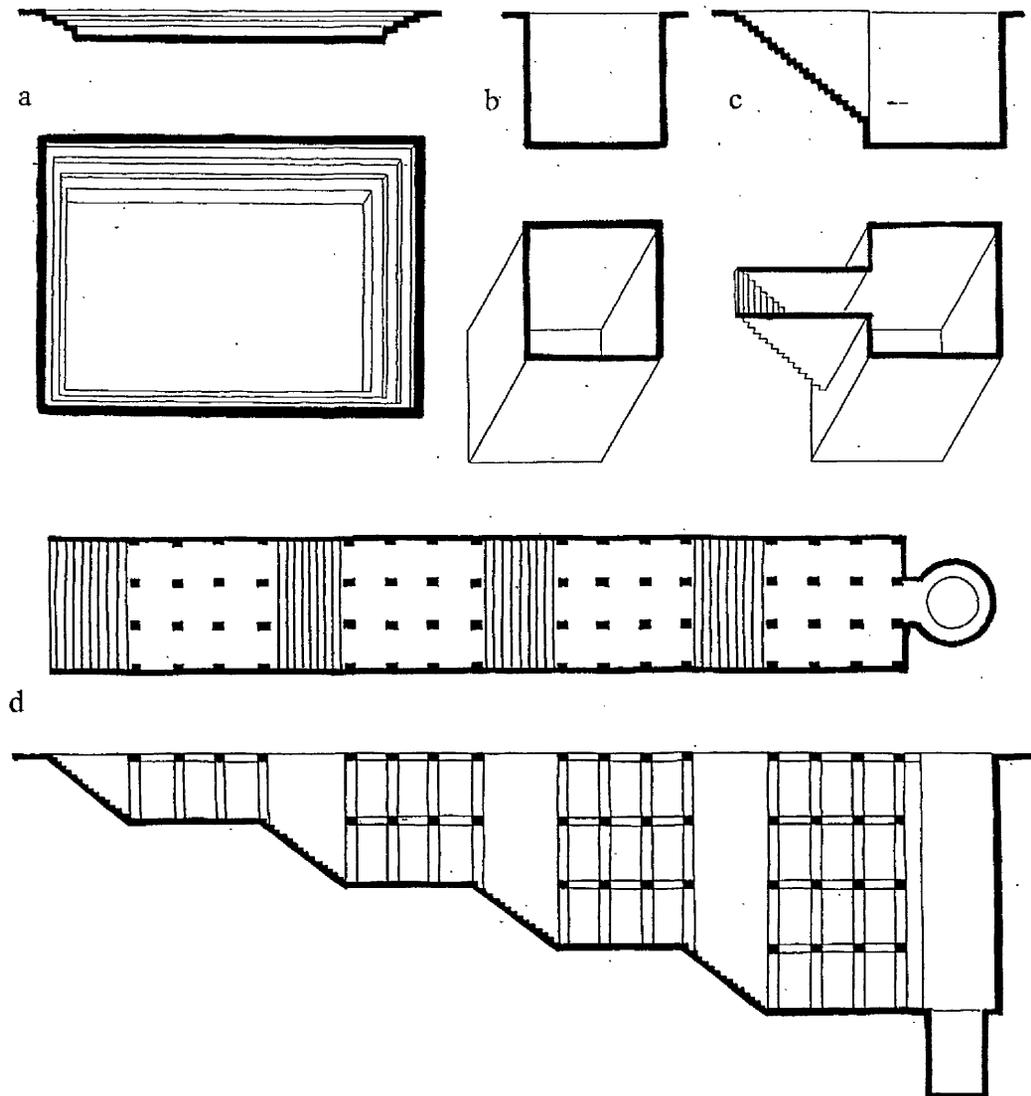


Fig. 15: Difference between an ordinary tank (a), a well-tank (b), a stepwell-tank (c), and a stepwell proper (d).

relationship to wells becomes particularly clear in the tank in the first *prākāra* enclosure of the temple at Tiruvellarai, which at high water level looks like an ordinary tank with a narrow flight of steps leading down from the south. In the dry season, however, a proper draw well is revealed on the bottom of the tank

(Plate 250). Here, a water structure combining two types within each other like a Russian doll may have been needed because of extreme changes in the height of the ground water table between the seasons. The well could also have been constructed at a later stage after the ground water table of the area had dropped, but it appears to be contemporary with the tank.

A further development of well-tanks, but more closely related to stepwells are especially typical of the Deccan<sup>39</sup>. Central Indian tanks are often very deep and connected to underground water sources. Normally, they have just one narrow flight of steps leading down to the water in the centre of one side. Because the water level is often considerably lower than the ground level, and because the steps descend gently, the flights can be up to twenty metres long. As such, they resemble stepwells where long flights of steps in the shape of wedges were dug into the ground and meet a well shaft at the bottom. The difference between a step-well tank and a step-well proper is that in the latter the wells and their steps usually go deeper, and that the diameter of the well shaft or basin at the bottom is smaller than that of the tanks (Fig. 15 c and d)<sup>40</sup>. A small but clear example of a stepwell tank is located on the south side of the Gol Gumbaz at Bijapur. In the same town, a larger arrangement of the same idea may be seen in the Cānd Bāvli which is about forty metres square and has a flight of steps of about twenty metres leading towards the basin from the east (Fig. 16 a). Tanks of this group are often found in association with temples and were used as bathing tanks as well as water sources for the villagers. Two examples of this type exist at Aihole. One of them, situated south-east of the Durgā Temple (Fig. 16 b, Plate 252), has a small protruding wall section with a pulley mechanism, typical of *kuṇḍa* constructions, on its south side. The sides of the tank and the flights of steps on the north,

<sup>39</sup>J. Jain-Neubauer classifies these structures as stepwells proper, but of a *kuṇḍa* or *kuṇḍa-vāpī* type. The only example she mentions is the tank in front of the Huchimalligūḍi at Aihole, and by describing its basin as a "square, relatively large well" which "resembles a pond, *kuṇḍa*", she indicates that it is a border case, more closely related to tanks than to wells (J. Jain-Neubauer, 1981, *The Stepwells of Gujarat in Art-Historical Perspective*. p. xiii).

<sup>40</sup>In large stepwells, the well shafts can also be of considerable size, but they are usually not much wider than the stepped corridors, while the basins of stepwell-tanks are much wider in comparison to their narrow flights of steps.

measure nine metres each. The second, slightly more elaborate example which is of about the same dimensions, is found in front of the Huchimalligudi. It has carved string courses and narrative friezes on various levels along its walls and the stairs (Plates 253, 254).

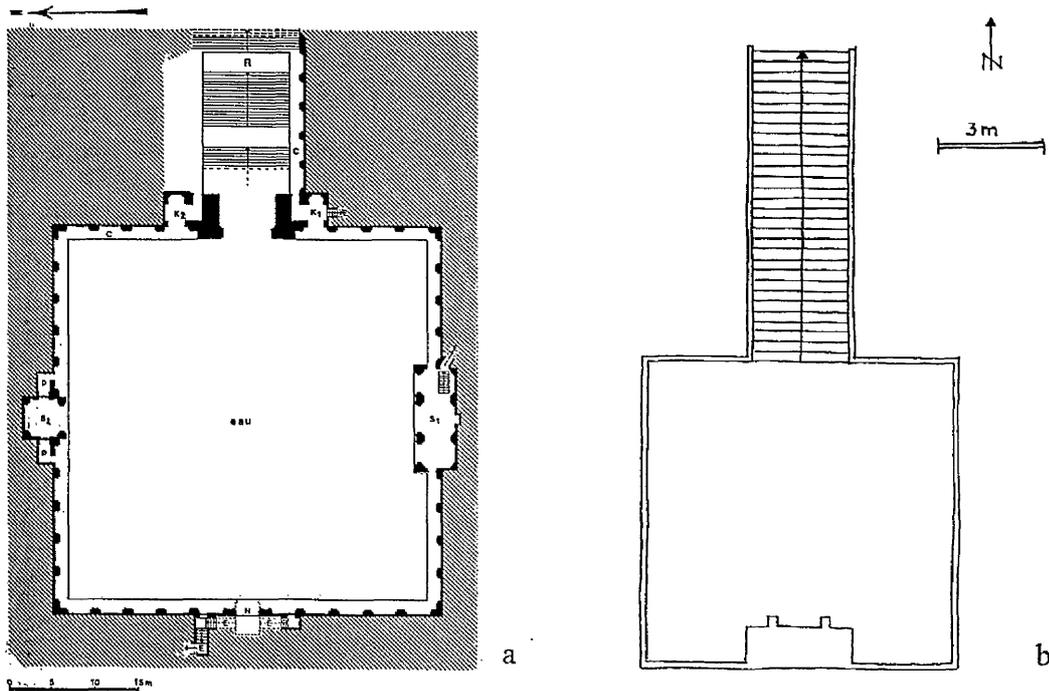


Fig. 16 The Cānd Bāvlī, Bijapur (a) (K. Rötzer, 1984, p. 143), and the tank of the Durgā Temple at Aihole (b).

A particularly interesting example with respect to its wall treatment is the Nāgagonda Kuṇḍa at Sudi in Karnataka. This tank, built with blocks of schist, dates from about 1060 AD and its inside walls imitate the façade of later Karnataka style temples (Plates 255, 256). It is as if a temple were turned "outside in" and made to contain water instead of a religious image. An example from Tamil Nadu is the Hema Puṣkariṇī in the compound of the Kūṭal Aḷakar Temple at Madurai<sup>41</sup>. It is a deep tank with plain walls. While the tank proper is located in the compound of the neighbouring Amman shrine, access is from the courtyard of the main Viṣṇu temple leading under the compound wall. Stepwell tanks are also related to *kuṇḍas* particularly those of the Deccan, but to classify as a *kuṇḍa*, the

<sup>41</sup>'Kūṭal Aḷakar' means 'the beautiful man of the water'.

tanks need to have stepped sides even though not all of them may actually be used to descend to the water. An example of a large rock-cut tank with a long flight of steps on the south is located to the north of the Tomb of Jamshed Qulī Qutb Shāh in the tomb complex at Golconda. Similar but larger is the Bhīm Koṭhī Tank in the Fort of Chitor (Plate 257). It is located on about the same height as Rām Pol (gate) but on the eastern edge of the ridge. The large and particularly deep basin measures about twenty-five by fifteen metres and relatively wide steps descend over about fifteen metres down to the tank. Where the steps meet the tank, a narrow terrace runs along the northern side of the tank, and niches containing religious images were inserted into the northern wall and along the steps. In front of the terrace, a large pyramidal staircase leads further down to the water.

## 6. Tank Temples

While water reservoirs are frequently seen as principally utilitarian structures, there are tanks which are predominantly religious and not used for washing or bathing. They are objects of worship and may be termed 'tank temples'. Often, the tanks become equivalents to temples by housing or containing a religious image. There are many examples of miniature 'tank temples'. Particularly *Viṣṇu-pāda*, the revered footprints of the god Viṣṇu, are often carved onto the bottom of small pools which may either be filled with rain water, by priests or by the changing levels of a river or lake. On the north side of the Cenna Keśava Temple at Belur (constructed in 1116 AD), raised on the temple terrace, is a circa 1.2 metres square shallow water basin which contains two *Viṣṇu-pāda* (Plate 258). A similar, although simpler, pool containing two sets of such feet is carved into the boulder in front of Sogrīva's Cave at Vijayanagara. They are also typical of Nepal where an example of a single footprint is contained in a small basin (0.45 metres square) on the *ghāṭs* in front of the Gokarna Mahādev Temple at Gokarneshvara (Plate 259). According to a popular print showing the sanctum of the Viṣṇupāda Temple at Gaya, which is closed to non-Hindus, one *pāda*, encircled and protected by a

golden multi-hooded *nāga* is contained within an octagonal basin (Plate 260). Similar small tank temples, typically found along *ghāṭs*, contain images of Jalaśayana Viṣṇu ( Plates 156, 160). At the centre of the Jambukeśvara Temple complex at Srirangam is a shrine housing the Āp or Āpaḥ (water) *liṅga* which is immersed in a water basin that is continually fed by a natural spring<sup>42</sup>. Also the Ekaliṅga Temple at Eklingji has a pool, half under ground, which contains a small *liṅga* shrine. A further interesting example of a *liṅga* is contained within a small tank on the north bank of the large water reservoir called the Śāleśvar Mahādev Tālāo at Ghumli (Ghumli) in Gujarat (Plate 261). The basin is about four metres square and contains a large *liṅga* in its centre. Because a small flight of steps leads down on the east side, it may also have been used for ablutions. At the Buddhist stupa of Svayambhūnāth near Kathmandu, is a small water basin directly next to the stupa on its north side. The small basin is called Nāg-Pur or Vaśiga (Snake Sanctuary), and contains a rectangular stone. The stone represents the water spirit and is associated with the Buddha Amoghasiddhi who is guarded by a snake which is said to dwell in the basin<sup>43</sup>. The stone is an object of deep veneration. Although the innermost sacred pool in the water sanctuary at Godavari (Godāvāri) in the south of the Kathmandu Valley does not contain an image, the tank itself is the main object of reverence at the site. In the last few years the pool has been enclosed by a metal cage of fine meshing to keep out animals and dirt, but also to prevent people from bathing in this most sacred source. From the small pool, the spring water is channelled out into a larger basin with five *makara* spouts where bathing is permitted. Several more examples where bathing in the most sacred pool of a site is prohibited will be illustrated later in the chapter. Perhaps the best examples of 'temple tanks' where a tank contains a major religious icon and as such becomes a place of worship, may be seen at Buddhanīlkaṅṭha and Balaju (Plate 262) in the Kathmandu Valley. At Buddhanīlkantha, a monumental stone

<sup>42</sup>Michell, 1990(a), p.479.

<sup>43</sup>For further information and a photo of this example, or for a more details on Buddhist water structures in Nepal, see J. Hegewald, 1997(b), 'The Lotus Pool: Buddhist Water Sanctuaries in the Kathmandu Valley.', pp. 154-155.

image of the god Viṣṇu reclining on the cosmic snake Śeṣa or Ananta (Jalaśayana Nārāyaṇa) has been set into an eighteen metres square tank. It portrays the god as floating on the cosmic ocean between two world eras, *kalpas*. The image was consecrated in 641 AD and is the largest of its kind in Nepal. The Balaju image is a Jalaśayana Harihara<sup>44</sup> contained in a twelve by fifteen metres tank. There is a further image of Jalaśayana Nārāyaṇa in a tank in a closed section of the Hanumān Dhokā Palace at Kathmandu.

### 7. *Praṇālī* Tanks

The seventh and final sub-group of tanks which must only be mentioned very briefly because it would extend beyond the scope of this thesis, are *praṇālī*- or channel-tanks. When a mixture of milk, pure water and other substances, called *tīrtha*, is poured over a sacred *liṅga* in the sanctum of a temple, the fluid falls into the *yoni* at the base and runs out of a spout and into a small basin outside, usually on the north side of the *vimāna* (Plate 263). The channels, called *praṇālī*, are often carved to resemble a *makara*, a mythical water animal, or crocodiles, and may be supported by an image of the sage Baghīratha, who through severe austerities caused the Ganges to descend to earth, or by a conch playing *gaṇa*. The basins usually are quite small, but they can be very elaborate and carved into many steps and facets, sometimes resembling *kuṇḍas* (Plate 377). They are particularly common in central and southern India and deserve a detailed study of their own.

### III. The Development of Bastion-Platforms into Islands

Bastion platforms, which have been considered in detail in Chapter Three, '*Ghāṭṭs*', are also to be found on the sides of tanks. Since tanks are enclosed on all sides (despite small in- or outlet channels), the platforms are not used as delineating or

<sup>44</sup>K.R. van Kooij, 1978, *Religion in Nepal*, p.6.

containing devices against running water, but more as decorative structures interrupting and enlivening the horizontal features of long parallel steps or the plain walls of tanks. They are also used to provide seating and working spaces along the water. Platforms are to be found both with and without bridges, and it is interesting that frequently the platforms are found in the corners of tanks as if to secure the edges. The *pokharās* outside Benares for example, typically have octagonal platforms in their four corners<sup>45</sup>. At Prayāg Tīrth, three kilometres from Trimbak on the road to Nasik, there is a large octagonal tank with sides forty metres long, and with plain octagonal bastion platforms in the corners of its northern and the southern sides; the platforms are used as resting places, particularly in the evening, and also provide a clear north south orientation to the tank. There are several small shrines along its edge and a cattle ramp on the south-west. Kurukṣetra Kuṇḍ at Benares is a shallow tank about sixty-two metres square, and has six half octagonal platforms along each of its sides, and a quarter of an octagonal platform in each corner (Plate 264). The platforms interrupt and enliven the long and straight sides of the tank and provide seats to people and space to put their clothes or washing. There are no steps running around Kurukṣetra Kuṇḍ, and the platforms are found in their place. The Octagonal Tank at Champaner, Gujarat, has plain square platforms in the middle of four sides. In the centre of the other four sides are steps arranged in a pyramidal shape. During festivals such platforms are used to place offerings and lights. A detached octagonal platform, similar to those encountered in the Betwa River at Pandharpur (in Chapter Three), can be seen in the artificial lake at Amber Fort, north of the dam of the Dil-i-Ārām.

Bastion-towers are also often located at the corners of water channels feeding tanks. Several examples may be seen in the *pokharās* along the pilgrimage route surrounding Benares. Also on the eastern side of the Bhārat Tālāo at Rewari, Haryana, there is a wide water inlet channel which may also be used as a

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<sup>45</sup>P.D. Couté & J.M. Léger (eds), 1989, *Bénarès - Un voyage d'architecture - An Architectural Voyage*, p. 92.

cattle ramp. The inlet is adorned by a screen of five pointed arches and the corners of the channel are protected on either side by massive bastion platforms (Plate 266). On the opposite side of the tank, a mirror image of this arrangement with only three arched openings is to be found. Instead of the channel or ramp on the east, wide steps provide access for people on the west side. The top of the octagonal bastions are level with the ground around the tank and can be used as resting places at the tank, which is surrounded by temples and pavilions with *baṅgālā* roofs. On a lower level, about two to two and a half metres below the ground level, a narrow terrace runs around the basin. The bastions have small arched bridges to permit movement around the entire tank. On the level of this walk-way, the platforms are hollowed out into arched pleasure pavilions at the water level (Plate 265). Although the platforms at Rewari clearly derive from a long tradition of defensive architecture along powerful and changing rivers, their massiveness has been broken up and transformed into more open pleasure architecture.

Platforms at river *ghāṭs* frequently carry temples, and although this is not so commonly the case with small platforms in tanks, examples such as the Koṭi Tīrtha at Bhubaneswar and the Ambā Tālāo at Raipur show that they do exist. While there is only one small platform crowned by a temple in the Koṭi Tīrtha, the Ambā Tālāo has rectangular platforms topped by a small temple at each of its four corners (Plate 267). It is more typical of tanks to find large platforms, carrying several temples and other religious structures, jutting out from one corner into the water of a large tank. This is the case in the Mānsīgaṅgā reservoir at Govardhan which was dressed in stone by Rāja Mānsingh of Jaipur in the sixteenth century AD<sup>46</sup>. The main temple of the town, the large Girirāj or Govardhana Temple, and several other shrines were constructed on a large roughly triangular shaped platform which protrudes into the reservoir in its south-eastern corner (Plate 218). An even larger platform, measuring about 30 by 40

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<sup>46</sup>Anand, 1992, p. 55.

metres, was constructed in the south-eastern corner of the immense Kamalāya Tank (circa 215 by 315 metres) in front of the temple complex at Tiruvarur (Plate 268). The platform carries half a dozen small tenth and eleventh-century shrines, a well, and a large columned hall which is used during the float festival. The difference in the development of platforms carrying temples at river *ghāṭs* and at tanks may be explained by the fact that *ghāṭs* on river banks are long and linear. Therefore, it is typical to find several small platforms protruding along the entire length of a *ghāṭ*. It would have been impossible to construct such platforms on a larger scale because of the strong current of the rivers. In the case of tanks, *ghāṭs* run around and enclose a stagnant water body, and the entire length of these *ghāṭs* may usually be seen at one glance. Therefore, the attention was often concentrated on one large platform protruding further into the tank.

Tank designs which include platforms with bridges often achieve a degree of elaboration which is unprecedented in the construction of river *ghāṭs*. This was possible because the water in tanks is still, and therefore the bridges could be much longer and have more complicated and fragile constructions. Along rivers, protruding long and slender bridges would have been destroyed and pulled away by strong currents. While bridges and platforms at rivers rarely protrude more than six or seven metres, examples found in tanks frequently extend by ten to twenty metres. An example of such strongly protruding bridges can be seen in the large octagonal Premsarovar at Barsana in Braj, Uttar Pradesh. In its overall layout, although it is smaller, the tank is closely related to Prayāg Tīrth, mentioned above. The Premsarovar, however, has steps along its sides and octagonal platforms with long bridges reaching out into the water from all eight corners. These bridges are solid constructions and start from the upper edge of the tank. As such, the bridges appear as massive wedges on the sides of the steps and create intimate bathing areas and strongly pronounced bays. The tank is connected with the story of Rādhā and Kṛṣṇa and is said to have been filled by their tears<sup>47</sup>.

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<sup>47</sup>Ibid., p. 57.

More elaborate examples of bridges can be seen at Kusum Sarovar, also called Kusum-vāṇ Sarovar, on the road from Govardhan to Radha Kund (Rādhā Kuṇḍ), also in Braj. At the site, which is said to be the spot where Rādhā liked to collect her flowers<sup>48</sup>, the rulers of Bharatpur constructed a tank 100 metres square, lined by a row of pavilions on its western side. The largest central building is the cenotaph to Rāja Sūrajmal of Bharatpur. There are twelve long slender bridges, each about twelve metres long, leading to small octagonal platforms in the tank (Plate 269). They are constructed from red sandstone blocks and are decorated with carved panels of shallow ornamentation, similar to the platforms described at Keśi Ghāṭ at Vrindavan (Plate 174) which were built by the same clan. Also the bridges at Kusum Sarovar have three arches under the bridges, but because the bridges are much longer, the arches are not so prominent. The bridges at the Yamuna at Vrindavan were much shorter but more broken up into arches, while the Kusum Sarovar bridges are long and slender but more solid in themselves. On the whole the latter seem more elegant. The view across the tank in front sets the cenotaph into a picturesque setting and provided space for walks along water.

Further examples of long bridges with platforms are found at Dig, the eighteenth-century stronghold of the Jāṭ Rulers. An impressive fort and a garden and water palace between two artificial lakes survive at the site. The eighty-two metres square tank to the east of the palace, the Rūp Sāgar, is amongst the earliest structures at the site. It is also called Pakkā Tālāb and was constructed in about 1730 AD<sup>49</sup> by Rūpsingh, the brother of Badansingh. The Rūp Sāgar has twelve circa fifteen metres long bridges, none on the east side but two each towards the corners of the other three sides. In common with the Premsarovar, the bridges are solid stone structures. M.C. Joshi, in his discussion of the tanks at Dig, suggests that the galleried bridges in the Rūp Sāgar have been designed to strengthen the fabric of the tank<sup>50</sup>. In the centre of its western side is the Keśav Bhavan, a water

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<sup>48</sup>Ibid., p. 56.

<sup>49</sup>M.C., Joshi, 1971, *Dig*, pp. 3, 29.

<sup>50</sup>Ibid., p. 29.

pavilion overlooking the tank. Similar to certain larger platforms carrying temples which protrude into the *ghāṭs* at Benares, the Keśav Bhavan also extends into the water and its corners show the typical bastion platforms. However, it is interesting that in this example, being even further removed from the need for protection than riverside buildings, the 'bastions' at the corners of the Keśav Bhavan are entirely broken up and hollowed out (Plate 270). They are part of the arched lower storey of the pavilion which is almost level with the water surface. The corner arrangement, formally reminiscent of bastion towers, presents only a skeleton of the former massive bastions where only the edges of the octagon in the form of slender columns survive. To the west of the palace lies the rectangular Gopāl Sāgar. It was planned by the most famous Jāṭ ruler, Sūrajmal, and completed before his death in 1763 AD. It is also called Kaccā Tālāb because until 1866 AD it had earthen embankments. This tank has only two bridges, located in the centre of the north and the south sides, ending in small octagonal platforms. These are far more developed and of particular interest. The bridges are about twenty metres long and start at the upper edge of the tank. As is usually the case, one can walk from the bank over the bridge and onto the platform, all on one level. In addition to this, however, there is also a second lower level. The bridges and the octagonal platforms, which are about two metres high, are entirely hollowed out and take the shape of open arched galleries protruding into the water (Plate 271). The lower gallery is reached from the steps and provides a shaded resting place extending out into the water. The platform arrangements at Keśī Ghāṭ at Vrindavan, where the bridges were transformed into open galleries but the bastion-platforms remained solid blocks, may be taken as an earlier step in the development. The tendency towards several storeys and loftier constructions of bridges and platforms also found expression in the Sāgar Tank to the west of the City Palace at Alwar. The buildings were commenced by Mahārāja Bakhtavar Singh in 1793 AD, and the palace, several temples and the cenotaph of the founder face the central ornamental tank (Plate 272). The tank measures about 82

by 135 metres, and has two bridges each on the short sides, and four bridges each on the long sides protruding into the water. While the sides of the bridges are constructed in red sandstone, the paving and facing of the steps are in grey stone. The bridges are about nine metres long, but because the tank is relatively deep and has long sloping sides, the platforms do not protrude far into the water (Plate 273). At Alwar, the bridges have again two levels, with an open gallery in the lower storey. Of special interest is that the upper walkway, which is on a level with the surrounding ground, has a domed pavilion built onto the octagonal platform demonstrating the dual purpose design of such double bridges even more emphatically than the example in the Gopāl Sāgar. Moreover, as can be seen from the step formations at Alwar, the platforms were planned to extend higher above the water, while the design at Dig was to bring the construction as close to the water surface as possible. Here, because the bastion platform underneath the gallery and the upper pavilion is comparatively high, the impression of a three-storeyed construction is conveyed. Due to the pyramidal step-formations and the depth of the tank at Alwar, it is closely related to *kuṇḍas*, discussed in Chapter Five, and could also be classified as such. Of more simple construction but also being two-storeyed and following a similar aesthetic as the platforms encountered at Alwar, are the eight pavilions in the Tāl Bija Tank at the Italian Gardens at Gwalior. Here, the platforms with their short bridges are built into the steps of the tank and at low water level have little or no contact with the water (Plate 274). Therefore, the octagonal bastion-platforms are usually fully visible. Although not as obviously as in the previous examples, the platforms are hollowed out and have narrow doorways in its three sides open to the tank. Above the rooms contained in the platforms, on a level with the upper edge of a tank, are again domed pavilions similar to the ones at Alwar. In the last two examples, more emphasis was put on a playful elaboration of the platforms into pavilions, than on the elongation of the bridges.

Although in contrast to platforms and bridges at rivers, these examples demonstrate a process of considerable design development and a high degree of elaboration, this was by no means the culmination of the theme of bridges and platforms in tank architecture. The next development was to experiment with scale and to construct bridges and platforms in much larger dimensions, whereby the bridges became long causeways and the platforms were blown up into islands often carrying religious buildings, tombs or palaces. Such constructions are by far the most common within this type of South Asian tank architecture. Although tanks with bridges and islands are found in association with all major religions in the Indian subcontinent, they are particularly associated with Hinduism and with Islam. A Hindu example, though with a very short bridge, is to be found on the north side of Agni Tīrtha at Tiruvannamalai. Although the bridge is shorter than some associated with bastion-platforms, it is distinct by having a comparatively large protruding 'island' construction at the end. While the former type of bridge and platform is more linear and slender as a whole, the next type consists of two clearly distinguished parts, a thin straight bridge and a much wider square or rectangular island. Agni Tīrtha at Tiruvannamalai is the probably simplest version of such an island arrangement having a seven metres long bridge and a five metres square island supported on a natural boulder in the tank (Plate 275). The square platform is used in tank festivals to hold a religious image, but can also be used for more mundane purposes such as washing and bathing. A tank with a similarly short bridge, but leading to a pronounced island carrying a temple of Macche Nārāyaṇa, is located at Macchegaon near Kirtipur in the Kathmandu Valley (Fig. 19). The bridge in the Narendra Tank at Puri is about twenty metres long and leads to a circa twenty metres square island (Plate 276) The island carries several small shrines and a temple in which Lord Jagannātha remains for fifteen days during the annual tank festival. The island is located in the south-eastern corner of the 200 by 250 metres tank. It is interesting that the orientation of the tank is two degrees off north but that due to a small bend in the bridge, the

island carrying the temple of Lord Jagannātha, ritually the most important part of the tank, is exactly oriented. Although the island in the Bindu Sāgar at Bhubaneswar is very similar in layout, it is not connected to the bank by a bridge and has to be reached by boat. Slightly longer is the wide modern bridge leading to the island carrying the Śrī Sarveśvara Mandir in the Brahmā Sarovar at Kurukshetra (Plate 277). Although it is quite probable that an earlier island existed at the site, the construction as it stands today dates from the twentieth century, and shows the continuation of the theme of bridges and islands into modern water architecture. An even longer bridge, about thirty-five metres long, but very narrow, leads from the eastern bank of the Sūraj Kuṇḍ in Gwalior to a miniature pavilion, almost in the centre of the tank (Plate 278). The pavilion houses a four-faced *śiva-linga*, while the shrine of Sūrya is located on the western side of the circa sixty by eighty-five metres long tank. The tank is one of the earliest in the fort and is the venue for a large *melā* and bathing festival every year in the month of Kārttik. The bridge leading into the middle of the large oval-shaped tank at the Tilasvaṃ Mahādev Temple at Taleshvar (Tilasvaṃ) in Rajasthan is about forty metres long. The circa eight by ten metres long island in the middle carries a water basin and a pavilion which is used in tank festivals and for bathing (Plate 279). In autumn 1996, the pavilion was replaced by a modern marble construction. An example from Nepal is the Rāni Pokharī at Kathmandu which is the largest tank in the Valley. A circa sixty metres long bridge leads to a small white temple (Plate 283). The tank was consecrated in 1670 AD by the wife of Pratāp Malla, and the temple which commemorates her deceased son was reconstructed after the earthquake in 1934. An arrangement with an even longer bridge (circa ninety metres) which leads to an enormous island measuring almost eighty by ninety metres, is found in the Siddheśvar Lake at Sholapur. Probably the longest bridge associated with a Hindu building, measuring circa 155 metres and leading to a relatively small 24 metres square island was constructed in the large circular Niyāi Malāo Tālāo outside Dholka (Plate 280). A very similar but

slightly smaller version can be seen in the Sūrsāgar Lake at Gunja, also in Gujarat. In both cases, the islands are situated in the centre of the lakes.

While most bridges were properly constructed in stone, the bridge in the Kṛṣṇa Temple at Udipi, Karnataka appears to be an improvised construction and is only about half a metre wide (Plate 282). It seems that the central *maṇḍapa*, showing a strong Keralan influence in its double pyramidal roof, was originally only a festival *maṇḍapa*, reached by float. Later on it seems to have gained in importance and access was also provided to the devotees via a simple bridge. The tank forms part of an extensive temple complex where access to the deities and the tank is below ground level. An interesting example of an octagonal island reached by two bridges is found in the Tāl Bīja Tank at Gwalior (Plate 274). The tank has a circular central part, in the middle of which is the island, and two rectangular side parts. These are wide and elongated inlet and outlet channels. The platform is used as a stage for the annual performance of the Rāmlīlā. At that time, the circular tank with its stepped slopes becomes an amphitheatre with rows of seats to accommodate the spectators, while the actors, the gods, easily visible to every body and separated by a ring of water, perform on the island in the centre of the tank. The performances take place at night and the reflections of the candles on the water surface make the legend come alive. The steps around festival tanks are also used as seats for the audience during float festivals. In this context it is interesting that E.B. Havell in his description of Benares often used the term 'amphitheatre' to describe the *ghāṭs* along the Ganges<sup>51</sup>. Islands in general provide a stage or platform for the display of a religious object. Buildings on islands are set into a clean and sacred environment, protected and separated from the ordinary world. Temples on islands, which seem to emerge from the tanks, are materialised forms of the divine energy of the sacred waters.

In an Islamic context one frequently finds pavilions on islands in tanks. Probably the best known example is the Kankariya Tank (Hauz-i-Quṭb) in the

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<sup>51</sup>E.B. Havell, 1905, *Benares the Sacred City: Sketches of Hindu Life and Religion*, pp. 93, 108.

south-east of Ahmedabad. The tank, which was built in 1451 AD by Sultān Quṭb-ud-dīn, is a regular thirty-four-sided polygon over 1.6 kilometres (1 mile) in circuit<sup>52</sup>. A circa 255 metres long bridge leads from the south bank into the centre of the tank where a square island carries the Ghattāmaṇḍal Pavilion. There are several platforms, on the north side, and an elaborate inlet sluice on the east side of the tank. The sluice has triple arched openings and is elaborately carved showing many references to the local mosque architecture. Similar sluices may be seen in the Mānasarovar at Viramgam, the Sarkej Rauzā (Plate 223), and the Sahasra Liṅga Tank at Patan. A lesser known example of a pavilion set onto an island, is found in the Hauz-i-Shamsī, in Mehrauli, in the south of Delhi. The large tank (circa 100 by 170 metres) was built by Shams-ud-dīn Iltutmish in about 1230 AD and has an interesting story connected with it. According to a legend, the Prophet appeared to Iltutmish in a dream and told him to construct a tank at the site. The next morning Iltutmish found a print of the Prophet's horse in a stone and built a domed platform for it around which he excavated the tank<sup>53</sup>. The pavilion which originally stood in its centre is now located in the south-western corner and reached by a circa seven metres long bridge (Plate 281).

There are also examples of Islamic tombs on islands in tanks. The tomb of Ghiyās-ud-dīn Tughluq, dating from about 1325 AD, once stood in a large artificial lake reached via a long causeway still visible on its north side. The roughly triangular shaped island is a fortified enclosure and probably predates the tomb. It is interesting, however, that an existing island was chosen as the site to construct the tomb. A further example, dating from the mid-sixteenth century, is the tomb of Sher Shāh Sūr at Sasaram (Plate 284). As with the island in the Narendra Tank at Puri, an orientation error was later corrected by a twisting of the tomb. At Sasaram, both the tank and the island are slightly off the cardinal direction, and only the tomb itself is oriented correctly. At the tomb complex of

<sup>52</sup>P. Davies, 1989(a), *The Penguin Guide to the Monuments of India: Islamic, Rajput, European*, p. 343.

<sup>53</sup>Y.D. Sharma, 1964, *Delhi and its Neighbourhood*, p. 64.

Firūz-Shāh Tughluq, at Hauz-Khās in Delhi there is a further tank which was excavated by Alāu'd-dīn Khaljī in the early thirteenth century. Although the tank contains an island and a bridge, it is silted up and overgrown and no obvious traces of building survive on the island. Not directly set into water, but following a similar idea, is the Tomb of Daryā Khān (circa 1526 AD) at Mandu (Māndū), Madhya Pradesh. A circa seven metres wide water channel runs around its northern, eastern and southern sides. In front of the western side, although at a few metres distance, is a large water tank, creating the illusion that the tomb was actually surrounded by water. A tomb on an island in a river is Shaykh Farīd's tomb near the Rānī Vāv at Patan<sup>54</sup>.

Other examples, though less common, are the islands and bridges from a Jain background. A small, almost model version of the theme is found on Sonāgiri, where the Mahāvīra Meru Temple housing a *caturmukha* Jain image is set onto a circular island surrounded by a balustrade (Plate 285). The island is reached via short bridges from the south and the west. Building still continues at the tank-temple sponsored by the film-maker Tarachand Barjatya. A large version of the theme is the Jalamandir (Water Temple) at Pavapuri (Plate 286). The tank is the place where Mahāvīra bathed and on whose bank he was cremated. It has a circa 170 metres long bridge leading to the white marble Jalamandir on the square island at the centre of the tank. There is a perforated red sandstone wall around the tank, the causeway and the island. Buddhist examples of this type are found in Nepal and in Sri Lanka. The Karuṇāmya Temple at Nala, in the east of the Kathmandu Valley, has a circa five and a half metres long bridge which leads to a four metres square island in the centre of a rectangular tank (Plate 287)<sup>55</sup>. On the island is a stone slab with a carving of the Bodhisattva Avalokiteśvara, to whom the temple is dedicated, and a small stone trough in lotus form in front. The devotees make offerings to the image on the island and bathe in the tank. An early example from Sri Lanka is the much decayed octagonal tank in front of the gate

<sup>54</sup>H. Cousens, 1926, *The Architectural Antiquities of Western India*, p. 40.

<sup>55</sup>For a more detailed description see Hegewald, 1997(b), pp. 156-157.

to the Issurumūṇiya Vihāra complex (which has a further tank) at Anuradhapura (Plate 288). The allegedly hexagonal island is reached by a causeway from the west. A fund has been established to reconstruct the reservoir and the island.

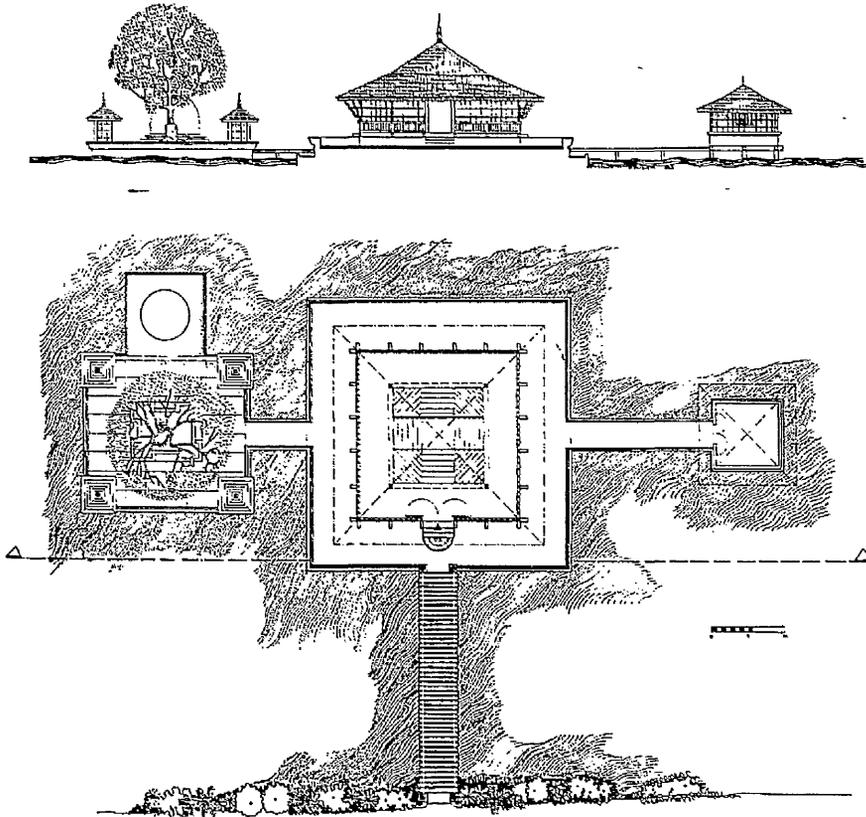


Fig. 17: Colombo, the three islands of the Simā Mālaka Temple (B.B. Taylor, 1995, p. 163).

The modern Simā Mālaka Temple in Colombo has a far more complicated arrangement (Fig. 17). A circa thirty metres long bridge with a small square platform carrying the Buddha's footprints in the middle, leads from the east bank of the Beire Lake to a twenty metres square island (Plate 289). The island carries a large chapter house where priests from the nearby Hunupitiya Buddhist Temple are ordained<sup>56</sup>. From the substantial central platform, two bridges lead to smaller islands situated to the north and south of it. The southern island (circa 13.5 metres square) carries a sacred Bodhi-tree and four corner shrines. To the west of it, a further platform with a small stupa protrudes into the water of the lake. The island

<sup>56</sup>B.B. Taylor, 1995, *Geoffrey Bawa*, p. 162.

podium to the north of the central element carries a small shrine. This sacred island complex was planned by Geoffrey Bawa and inaugurated in 1976. Parallel to the modern island construction, to its north, is an older wooden walkway leading to a former Buddhist monastery on an island, now used as a boarding house. In another example of temple islands in Sri Lanka, there was a large stupa on an island in the Parākrama Samudra or Topa Veva, meaning the Sea of Parākrama, at Polonnaruva. The decayed stupa is still visible, but it is difficult to make out if it once was connected to the bank by a bridge.

Although Sikh use of islands with bridges is quite unusual the well known example of the Golden Temple (Harmandir Sāhib, Darbār Sāhib) at Amritsar (Plate 290), Punjab, is a striking exception. The temple at the centre of the tank was destroyed several times and the building as it stands today dates mainly from the eighteenth century. The tank, the Amṛt Sarovar (Pool of Immortality), is a bathing pool and there are bathing *ghāṭs* at the east sides of both the tank and the island. The land containing a lake was given to the fourth Gurū, Rām Dās, by Akbar in 1577 AD<sup>57</sup>. Allegedly, the Golden Temple was modelled on the tomb of Saint Miān Mir of Lahore which also stands in the centre of a vast tank (now dry) reached by a causeway, situated three miles east of Lahore<sup>58</sup>. In addition, the Bahā'i Temple in Delhi, completed by Fariburz Sahba in 1986, is surrounded by four water tanks separated by narrow bridges which provide access to the temple. There is a water palace built onto an island with a bridge in a tank outside Datia, and a further one is the Farah Bakhsh Palace at Ahmadnagar (Aḥmadnagar), Maharashtra (Fig. 18). There are several more examples of islands of no obvious religious attribution, which no longer carry a structure or may never have been intended to do so. They are very common in the Raipur area, and the circular Būrhā Tank at Raipur with its circa 265 metres long bridge, is probably the largest among them.

<sup>57</sup>P.S. Arshi, 1989, *The Golden Temple: History, Art and Architecture*. p. 4.

<sup>58</sup>Ibid., p. 42.

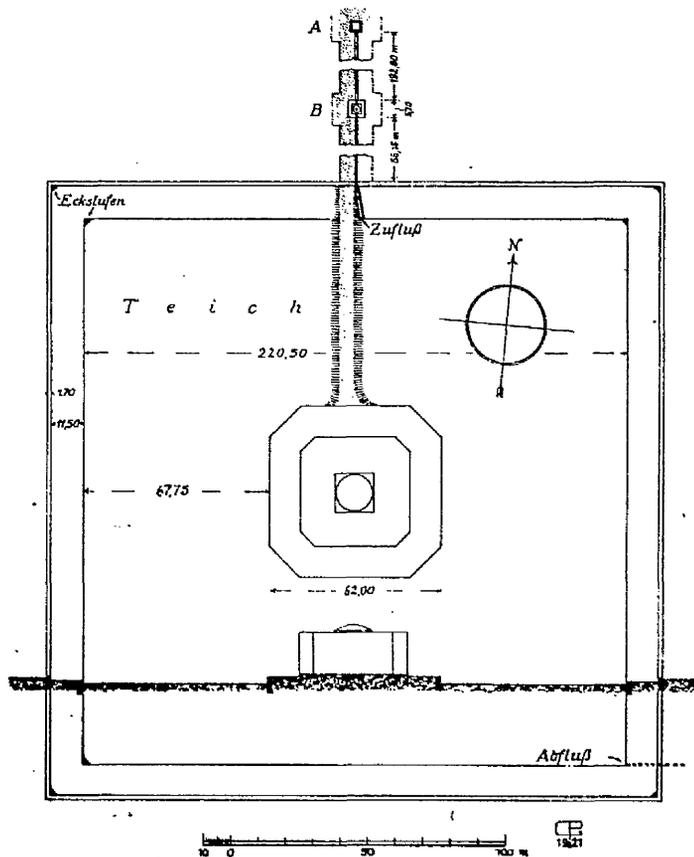


Fig. 18: Ahmadnagar, Farh Bakhsh Palace built into a tank (O. Reuther, 1925, p. 76).

The combined theme of bridges and islands is found throughout India, Nepal and Sri Lanka, and is associated with all major religions. Examples such as the tank at Kurukshetra, the Buddhist temple at Colombo and the modern Sri Lankan Parliament show that even today it is used and understood as a strong cultural image. As discussed above, the theme of bridges and islands evolved out of predominantly utilitarian bastion-platforms which secured the banks of rivers and lakes. The contained environment of tanks enabled the design of more elaborate and elongated constructions. It is not a linear development which is clearly discernible over the centuries because tanks were continuously repaired and rebuilt and many were lost altogether. Tanks silted up, and islands whose edges were not continuously cleaned and repaired often disappeared, as the few remains in the Prem Sāgar at Khajuraho, the lake at Nagda, and the tank of the Issurumūṇiya Monastery at Anuradhapura all show. Furthermore, comparatively

large tanks were required for islands to be constructed within them, and the building of long bridges and secure islands were complicated undertakings. Aesthetically, bridges with platforms or islands interrupt the monotony of the long sides of tanks and may transform a plain tank into a picturesque water landscape. Platforms or islands in tanks are comfortable places to rest in the cool fresh air surrounded by water and were therefore favoured by men and gods. The further a bridge reaches out into an area of water the more cooling the effect will be. Islands are used for washing and bathing, particularly when the water during the dry season cannot be reached from the edge of the tank. Isolated by a sheet of water, religious structures such as temples or tombs stand out and seem detached from our world. They appear to rise from the tanks and to be materialisations of the gods who dwell in the water or of the divine powers of water itself. The transitional nature of the bridge visualises that one is about to enter an area which is qualitatively different from our world on the bank, and the length of the bridge represents the long path towards the centre of the cosmos and of creation, in which lies salvation. In a Hindu context, such tanks may be related to cosmogonic mythology, where it is generally believed that the cosmic waters predated all creation. The first substance to arise frequently is said to be a clod of earth or a mountain at the centre of the cosmic ocean. From this centre, creation can emanate which in tanks may be visualised by bridges spreading from a central island. The Golden Temple at Amritsar which is found in the centre of the 'Pool of Immortality' is an obvious analogy to the emergence of the nectar of immortality (*amṛta*) from the churning of the Cosmic Ocean<sup>59</sup>. In an Islamic context it is reasonable to suppose that examples of the bridge and island theme provide a reference to water as an image of eternal life and to the garden of paradise which contains water, although the idea of the Islamic paradise garden, a *cār-bāgh*, visualises the *qur'ānic* image more accurately. Examples of tombs set on

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<sup>59</sup>Ibid., p. 46. In this respect it is interesting that the panel above the main entrance to the Bābā Atal Tower in the Gurūkā Bāgh next to the Golden Temple depicts the churning of the cosmic ocean.

islands in tanks are also found in Pakistan as for instance the Hiran Minār at Sheikhupura (Shaykhupura) near Lahore, which was built to commemorate Jahāngīr's most favoured pet antelope.

#### IV. Pillars, Pavilions and Temples in Tanks

Mythologically closely related to the islands mentioned above, are pillars found in the centres of tanks. In Hindu mythology, the first island or mountain which floats on the cosmic waters has to be fixed, pierced or opened up, which leads to the centring of the cosmic waters and the world. It is from this central pole or peg, which often is associated with a god's weapon, such as Indra's peg (Indra-*kīla*), or the upright body of a god, that creation can emanate. In the creation stories, this *axis-mundi* symbolism takes various images such as a tree, a lotus, the rising sun, a thunderbolt (*vajra*), a mountain or a god, often Indra himself, who props apart heaven and earth. Many tanks in South Asia have a plain pillar or one topped by a certain emblem, in their centres relating to this part of the creation story. A plain square pillar, which may have lost its crowning finial, is found in the three metres square tank in front of the eighth-century Candra Śekhara Temple at Pattadakal (Plate 291). It is decorated with a lotus on the south, a king on an elephant with two attendants on the north and a seated man with jewellery on the west. The eastern face is plain. An octagonal pillar without any decoration is in the centre of the circa seven metres square water tank in front of the Chānd Minār in the fort of Daulatabad (Daulatabād, Devagiri), Maharashtra. Pillars topped by emblems may assist sectarian attributions and favour more specific interpretations of the pillars. Although the little shrine or lantern on top of the octagonal pillar in the Ek-khambhā Tāl in Gwalior Fort does not now contain an image, it seems, its typical *mānastambha* shape suggests it to be Jain (Plate 292). The *stambha* in the tank of the principal *vaiṣṇava* temple at Kanchipuram, the Varadarāja Temple (circa

twelfth century), is topped by a Garuḍa, the emblem or vehicle of Viṣṇu, while the Bhīmgoda Kuṇḍ at Hardwar has a central pillar with a Nandi, showing its *śaivite* association. The Bhīmgoda Kuṇḍ is an octagonal tank filled by Ganges water and is said to have been created by Bhīma the second Pāṇḍava from the Mahābhārata<sup>60</sup>. In the north-western corner of the tank of the Mahākāleśvara Temple at Ujjain is a metal reproduction of Śiva's *triśūla*. Attributes or *vāhanas* of the gods which stick out of the water of tanks indicate that the water is imbued with, or is the dwelling place of, the respective gods, and express the sacred nature of the water. The same attributes, and also small images of Gaṇeśa, of peacocks (*vāhana* of Subrahmaṇya), and *nāgas* were often placed on the walls surrounding tanks where they delineate and protect the tank and mark them as sacred precincts. The same attributes are also found next to the temples of the respective gods and identify them with a particular religious sect. Behind the island in the tank of the Karuṇāmaya Temple at Nala is a pillar carrying an ever burning flame, which refers to Avalokiteśvara as Lord of Light, to whom the temple is dedicated. Also examples of the phallic emblem of Śiva, the *liṅga*, and of Buddhist *caityas* were placed in the centre or corners of tanks. This is particularly common in Nepal where this feature is associated with tanks and *kuṇḍas*. A metal pole topped by the auspicious syllable 'Om' (Ūm) placed in the flooded paddy field of a farmer outside Padmanabhapuram (Padmanābhapuram), Tamil Nadu, transforms his field into a centralised cosmic ocean and links the fortune of his harvest to the cosmos and the gods. Typical of Nepal, are central pillars topped by snake heads, called *nāgakaṣṭhas* (*nāgadhvajās*). The posts centralise the tanks, and the snakes are meant to ensure a steady water supply since the *nāgas* are believed to regulate the Valley's water supply. Examples of wooden *nāgakaṣṭhas* topped by brass snake heads may be seen in the Nāgpokharī at Naxal at Kathmandu (Plate 295), and in the Sundhārā in the Royal Palace in Bhaktapur (Plate 296). The *nāgakaṣṭha* in the lower tank at Naudhārā, the nine

<sup>60</sup>A. Singh, no date, *The Gateway to the Gods: Hardwar, Rishikesh, Kankhal*, p. 41.

water spouts at Godavari, is entirely made of wood. The *nāga*-head in the Nāgpokharī at Bhaktapur seems to have lost its pole and was placed onto a small central brick platform. P.D. Couté and J.M. Léger, in their study of the water structures of Benares, describe a similar phenomenon, where an ideal *pokharā* has a pillar in the centre of the tank: "The central pillar is a sculptured sandstone; it represents on [the] one hand the axes [axis] of the world and on the other hand the residence of [the] Naga, the divinity of the waters to whom [the] pokhara has been entrusted"<sup>61</sup>. Not only emblems but whole figures of gods may be placed on top of pillars, or the gods may be conceived as pillars themselves. In these cases, the gods are portrayed as *cakravartins*, world rulers, who reside at the centre of the world. There are three *pokharīs* in Bhaktapur which have pillars with seated stone images of Śiva in their centres (Plate 294). Two examples, the one at Chupin Ghāt and the Sūryamādhī Pokharī east of Taulāchem, are really fountains and water issues out of the top of Śivas' heads which may be an allusion to the divine descent of the Ganges through Śiva's hair. Therefore, the water of the tank is associated not only with the cosmic ocean but also with the Ganges. In Banepa, Nepal, at the turn-off to the Caṇḍeśvarī Temple, is a tank which has an image of a Rāṇā minister in the same position, making a clear allusion to the Rāṇā dynasty's self projection as world rulers and divine monarchs. The title *cakravartin* is also given to the Buddha and in the Lotus Pond at the Mahābodhi Temple at Bodhgaya we find the Buddha sheltered by Mucalinda seated at the centre of the cosmic waters. A monumental modern standing Buddha statue centralises the Hussain (Ḥusayn) Sāgar at Hyderabad (Hyderabād), Andhra Pradesh. A full-scale image of Kṛṣṇa playing the flute supported on a seven-hooded snake is found in the centre of the Kṛṣṇa Temple tank at Guruvayur (Plate 293).

Lotus pillars are also commonly associated with water tanks. In the story of Brahmā or Viṣṇu reclining on the cosmic waters between two world eras, *kalpas*, a lotus is said to have grown from the gods' navels. The lotus, having a

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<sup>61</sup>Couté & Léger, 1989, p. 92.

stalk, is on the one hand an *axis-mundi* symbol, but the open flower is also an image of the spread of creation from the centre of the universe. The Kurukṣetra Kuṇḍ at Benares for example has such a lotus pillar in its centre. In the long tank in front of the Temple of the Tooth at Kandy, which imitates a moat, a whole row of sculptured open lotus flowers is found. In Tamil Nadu, the Golden Lily Tank of the Minākṣī Sundareśvara Temple at Madurai has a floating wooden lotus tied to a brass lamp-column in the centre of the tank (Plate 297). Many lotus pillars or fountains are found in the Islamic architecture of India, such as in the western and the eastern tanks of the Gol Gumbaz at Bijapur. Further examples will be encountered in Chapters Five and Seven. Moreover, there are often fountains in the centre of tanks as for instance in the large Kalyān Tank at Sravana Belgola (Plate 298), in the Durgā Kuṇḍ at Benares (Plate 239) and in many ablution tanks of mosques and tombs all over India. The sound of sprinkling and rippling water is an important aspect of Islamic architecture not only in India but elsewhere. An interesting example of a double-storeyed circular tower is found in the centre of the circular Kaṭorā Tāl in Gwalior Fort (Plate 299). The tower is a border case to becoming an actual pavilion, and suggests that also pavilions, discussed later in this section, may be interpreted as substitutes for an *axis-mundi* or as the primordial mountain or island in the creation of the world.

As has been discussed with river *ghāṭs*, high towers and pillars are also found next to tanks. The tendency to juxtapose large flat sheets of water with strong vertical axes is a feature especially typical of Sikh water architecture. In the northern corner of the Kaulsar Tank in the Gurūkā Bāgh at Amritsar is the high Bābā Atal Tower<sup>62</sup> (Plate 300), and an even higher, minaret-like structure is located in the north-eastern corner of the enormous tank at Tarn Taran (Plate 301). The height of the towers is emphasised because their mirror images on the still water surface seem to continue their shafts, and convey the illusion that the towers were growing out of the centre of the tank. In Gwalior Fort there are two

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<sup>62</sup>Bābā Atal was the son of the sixth Gurū.

further good examples. The first high tower is found next to the Ek-khambhā Tāl which contains a pillar itself, and the Jauhar Tāl has a three-storeyed memorial tower topped by a high dome on its northern side. The tank owes its name to the self-cremation performed by the Rajput ladies of the fort in 1232 AD to avoid falling into the hands of Sultān Iltutmish when he captured the fort, and to a Muslim girl who committed *satī* in 1755 AD, at the death of Rāja Bhīm Gohad, who is commemorated in the tower next to it<sup>63</sup>. There are many tanks which are associated with the self-immolation of women after their husbands' deaths. *Satīs* could also take place next to a river, pond or even a well or stepwell. The presence of water is essential for a cremation to dissolve the body and liberate the soul of the dead. It is interesting, however, that Francois Bernier observed an incident of a woman who committed *satī* in a dry pond<sup>64</sup>; this can either be taken as an indication that the idea of liberation of the dead had become more closely linked to water structures than to the water itself, or that because it was the dry season, the woman hoped that her ashes would be dissolved and her soul be liberated when the tank was filled up with water again. *Satī* stones can be found around most lakes at Benares<sup>65</sup>. Also the large tank of the temple at Banasankari (Banaśāṅkarī, Amargol), Karnataka, has a high tower on its western bank (Plate 302), and a Buddhist example is the Aśokan pillar next to the Markaṭa Hṛda Tank at Vaisali. It is topped by a Mauryan lion capital (Plate 303) and is a victory pillar of Buddhism.

Pavilions are found in practically all south Indian festival tanks, because they are necessary to house the deity in the last stage of a float festival. They are usually found at the centre of a tank and are square, but vary greatly in size and elaboration. The tank of the Ekāmbareśvaranātha Temple at Kanchipuram has a relatively small and simple pavilion with only two columns on each side (Plate

<sup>63</sup>Chakravarty, 1984, p. 27; Y. Singh, 1994, p. 15.

<sup>64</sup>F. Bernier, 1934, *Travels in the Mughal Empire, AD 1656-1668*, p. 309.

<sup>65</sup>N. Gutschow & A. Michaels, 1993, *Benares: Tempel und religiöses Leben in der heiligen Stadt der Hindus*. pp. 71-72.

304). A particularly small pavilion, which may however have replaced a larger example because it is set onto a much larger platform, is in the first enclosure of the Jambukeśvara Temple at Srirangam (Plate 306). Equally small are the pavilions in the tanks on the large processional roads leading to the Viṭṭhala, the Tiruveṅgalanātha and the Kṛṣṇa Temples at Vijayanagara. The pavilion of the Kṛṣṇa Temple has fish and scenes where larger fish swallow smaller ones carved onto its sides<sup>66</sup>. Larger pavilions with a more massive substructure and four columns on each side, are found in the centre of the festival tank of the Govindarāja Temple at Tirupati (Plate 305) and in the tank at Suchindram (Plate 307). With its high pyramidal superstructure, the latter example very closely resembles the local temples. A further interesting aspect of the tank at Suchindram is that although the tank is again slightly off the exact cardinal directions, the festival pavilion is oriented precisely. At Kumbakonam, the tank and the western *gopura* of the Sāraṅgapāṇi Temple are connected by an intermediate *maṇḍapa* or porch (Plate 310). This phenomenon is also encountered in the Teppakuḷam of the Kantimati Nellaiyappar Temple at Tirunelveli, where a multi columned *maṇḍapa* built half into the water on the west side of the tank, connects it with a small temple on its side (Plate 309). This shows that although the festival tanks are often not located within the walled and ritually pure temple compound, they are closely connected with the temples and have to be considered as religious buildings. The tank of the Varadarāja Temple at Kanchipuram has two *maṇḍapas* and a pillar very close to each other in the southern half of the tank (Plate 308). The central pavilion with four columns on each side sticks out much higher from the water than the smaller pavilion to its east. Possibly they are used in tank festivals during different seasons when the water level in the tank is found at different heights. Interesting examples of pavilions are found in the centre of the tanks of the Pārthasārathi and the Kāpāleśvara Temples at Madras. Both *maṇḍapas* have four columns on each side and are raised on a high stepped

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<sup>66</sup> This motif was discussed in Chapter Two, 'The Sacred Waters'.

pyramid set onto a larger square platform (Plates 311, 312). Although both tanks were documented at low water level, it seems that the pyramidal substructure, which is not typical of other pavilions (Plate 313), was part of a particular design concept. Visually, the pyramids seem to grow out of the water and the *maṇḍapas* look as if placed on mountains. Probably the most elaborate arrangement of a festival tank with a central pavilion is the Teppakuḷam at Madurai. It was constructed by Tirumalai Nāyak in the sixteenth century and the pavilion is set on a large island with four smaller corner pavilions (Plate 314). The island is not connected with the land by a bridge and the god has to travel by boat. The Narendra Tank at Puri has both a bridge with an island in one corner, and a small pavilion in the centre of the tank. Because the pavilion is very small, the float with Lord Jagannātha probably moves in clockwise direction around the clearly marked centre of the tank, and he then retires to his island retreat, slightly off the centre. Very small pavilions are often mainly there to mark the centre of a tank, as may also be seen in the Kankāli Tank at Raipur (Plate 329). They visualise cosmogonic mythology but are too small to be used for the actual re-enacting of the creation of the world. The central water pavilions are so important for south Indian tank festivals, because it is important for the gods once a year to return to the centre of the world, and the origin of the cosmos in the cosmic ocean. Resting at the centre of the water, and symbolically also the centre of the universe, they are celebrated as *cakravartins*. The gods are reborn in the centre of the tank in a journey to their origin and the creation of the world and return refreshed and purified.

There are usually also *maṇḍapas* on the sides of festival tanks. On the day after the god has travelled to the pavilion in the tank, he usually once more leaves the temple to circumambulate the tank and to be placed in a pavilion on the side of the tank where frequently another bathing ceremony is conducted to end the festival. Not all pavilions in tanks are, however, connected with festivals. There is a small pavilion housing a four-faced *liṅga* (*caturmukha-liṅga*) on the

north side of the tank in the Mallikārjuna Temple complex at Mahakuta (Plate 315). Pavilions are also found in palace tanks, as in the one north of the Maota Lake at Amber, and in large storage reservoirs, as for instance the Bārahdarī in the large Nayāqilā (New Fort) reservoir at Golconda or the central water pavilion at Kumatgi outside Bijapur.

On occasions, temples were built straight into the water of tanks or set on small platforms which were meant to be submerged. A miniature votive temple set into a small water basin enshrined in a *maṇḍapa* is found at the *ghāṭs* in front of the Gaṅgā Temple at Gangotri (Plate 316). It is called the Bhāgīrathī Temple and is venerated by the pilgrims as the place where Śiva received the Ganges in his hair. A further very small shrine, housing an image of Durgā<sup>67</sup>, is found in the tank behind the Shore Temple at Mamallapuram (Plate 317). J. Marr interprets the shrine as a representation of Mount Meru<sup>68</sup>, the centre of the cosmos, which follows up the idea encountered in the pavilions above. At Amarkantak, a double line of small temples runs from north to south towards the Narmadā Tank. The last two southernmost temples are built into the water of the tank (Plate 318). The ritual axis of the temples directs the pilgrims towards the most important object of veneration at the site, the source of the Narmada River, and connects the temple architecture outside the tank with the water. At Badoli in Rajasthan, a larger temple with a small porch, dating from circa 975 AD, was set into a large stepped water tank (Plate 319). The temple has doors on all four sides and is likely to have contained a *caturmukha-līṅga*. Similar examples of temples set into water tanks are found at Loduv and Pandrethan (Pāndrethan<sup>69</sup>) in Kashmir. The late sixth or early seventh-century temple at Loduv, the earliest remaining stone structure in the region, has only one doorway facing south, while the early twelfth-century

<sup>67</sup>J. Marr interpreted the image inside as a representation of Śiva and Nandi (J. Marr, 1991, 'Note on the New Excavations at the Shore Temple, Mahabalipuram.', p. 574).

<sup>68</sup>Ibid., p. 574.

<sup>69</sup>For this site a variety of spellings exist in the literature. Further common ways of spelling are 'Pāndreṭhān' and 'Paṇḍreṭhān'.

Pāndrethan Temple also has access from all four directions. Both tanks are fed by nearby springs which sometimes even submerge the sanctums of the temples. Although today there is a narrow bridge leading to the temple at Pandrethan, this is not original<sup>70</sup>. There is some controversy about the initial existence of the tank here: the moulded face of the platform, which now remains almost constantly submerged, and the presence of a staircase in front of the temple, are taken as clues that at least initially, the temple stood in a dry courtyard<sup>71</sup>. In other tanks, however, (such as various examples at Vijayanagara) carvings or the mouldings of pavilions are found very close to the water's surface and often remain submerged for considerable periods of the year (which is regarded as auspicious). Also in front of the Varāha Cave Temple at Mamallapuram, described above, steps lead down to a water basin. These examples show that it is certainly possible that the temple at Pandrethan was originally intended to stand in water. The area near a spring is particularly sacred and favoured as a temple site, but there would not have been a need to dig such deep and all-enclosed courtyards at Pandrethan and Loduv, if it had not been intended that they should at least temporarily contain water. There may be an interesting parallel to a temple in Raigarh Fort. The Jagadīśvara Temple in the northern part of the fort is set into a circa forty-two by fifty-two metres courtyard which could be temporarily flooded, surrounded by a high wall (Plate 320)<sup>72</sup>. The inner tank is about twenty-four by thirty-five metres and is surrounded by two wide stone tiers and a wall. The first tier, which runs around the entire courtyard and is not even intersected at the doors in the east and west of the enclosure, is about 0.42 metres high. Of the same height is the platform under the Nandi image situated to the east of the temple. The second tier is a further 0.6 metres, while the plain Śiva temple is set onto a 0.87 metres high platform in the centre of the courtyard-tank. The tank was probably not meant to fill up higher than the first tier; otherwise it is not clear

<sup>70</sup>R.E. Fisher in P. Pal, 1989, *Art and Architecture of Ancient Kashmir*, p. 38.

<sup>71</sup>D. Mitra, 1993, *Pandrethan, Avantipur & Martand*, p. 21.

<sup>72</sup>Davies, 1989(a), p. 499.

how the entrances could have been firmly blocked. The tank could easily have been filled by rain water during the monsoon. The temporary flooding of temple areas in Java has been described by Roy E. Jordaan. According to Jordaan, the central temple area at Candi Prambanan (Candi Loro Jonggrang) could be flooded on certain festival days. The water was diverted from a nearby river, and the complex was intended to give visual form to the myth of the Churning of the Ocean in which *amṛta*, the nectar of immortality, was created. Through special ceremonies, the water of the tank was converted into *amṛta*<sup>73</sup>. Perhaps the temple at Pandrethan could similarly be temporarily flooded for certain festivals, but only an excavation of the area around the temple, as at Prambanan, could give evidence for any of the three possible interpretations. Also at Bundi a temple was set into the north-western corner of the Naval Sāgar located in front of the city palace (Plate 321). The temple is dedicated to the water god Varuṇa<sup>74</sup> and is set on a small platform facing east. A further interesting, if slightly obscured, example of a water temple was built into the southern water channel at the enormous Sahasra Liṅga Tank, now dried up, at Patan in Gujarat. The unusual water temple consists of an elevated podium with an underground chamber, and two rows of twenty-three columns in front, all contained within the narrow water channel (Plate 322). Further excavations are needed to gain an idea of the actual layout and function of the site. It may be related to the so-called 'Underground Temple' at Vijayanagara, which is believed to have purposely been built below ground-level so that the main sanctum with its *liṅga*, and at times also the *mandapas*, stand under water<sup>75</sup>.

In other cases, although the temples were not actually set in water, the illusion of a 'floating' temple was conveyed by constructing shallow water channels around temples which fill up in heavy rains (Plate 326) or may be filled

<sup>73</sup>R.E. Jordaan, 1995, 'Report on a Journey to Java. Prambanan 1995: A Hypothesis Confirmed.', p. 37.

<sup>74</sup>Davies, 1989(a), p. 360.

<sup>75</sup>A.H. Longhurst, 1993, *Hampi Ruins: Described and Illustrated*. p. 89; D. Devakunjara, 1992, *Hampi*. pp. 44-45.

manually on festival days. These examples should be carefully distinguished from temples around which the ground-level has been raised or courtyards which have been paved with a new layer of stone, leaving a narrow channel around the building, as for instance at the sixteenth-century Kūṭal Aḷakar Temple at Madurai. Water channels which were intentionally constructed around temples hardly ever surround the entire building. The Shore Temple at Mamallapuram, which has a very thin channel surrounding the entire temple and its immediate compound wall, is an exception to the rule. In most cases, all found in Tamil Nadu, only the *vimāna* or shrine part of the temple is surrounded by a shallow U-shaped water channel. Examples may be seen in the temples at Krishnapuram (Kṛṣṇapuram), the Tyāgarāja Temple at Tiruvarur, the Subramānya Temple at Tanjore (Taṅjāvūr) and the Airāvateśvara Temple at Darasuram (Dārāśuram), both in Tamil Nadu. The latter two are particularly interesting because the channel around the Subramānya Temple has peacocks placed on its edge<sup>76</sup>, and the channel at the Airāvateśvara Temple has large circular oil lamps around it (Plate 323). On festival days, the lights would have been reflected in the channel around the temple, and would even more strongly have conveyed the feeling that the temple as a whole was floating on water. A further connection of a water channel and lights can be encountered at the Mahādev Temple at Ettumanur. The channel at this site runs around the second compound wall whose upper part is made of wood and holds hundreds of small oil-lamps (Plate 324). The innermost *prākāra* wall of the Jambukeśvara Temple at Srirangam is also surrounded by water; there are two small channels, one sunk into the ground and the other slightly raised, similar to that of the Shore Temple. A Buddhist example is the stupa at the Kelaṇi Temple (Kelaṇiya Vihāra) in the east of Colombo, which is surrounded by a narrow water channel (Plate 325). The main intention seems to have been to convey the illusion that the stupas, *vimānas* and also *maṇḍapas* were floating on water, and to relate them to temples and festival pavilions which were set in

<sup>76</sup>It is typical of temple tanks in Tamil Nadu to find the attributes of the god, who is enshrined in the temple, on the wall enclosing tanks.

tanks. However, the channels around the *vimānas* may also have been used to channel off the excess water in a temple *abhiṣeka*. There are many more examples of water channels around particular parts of temples and 'floating' pavilions, but it would go beyond the scope of the thesis to include them all here and they really deserve a careful study of their own.

The close connection between temples and tanks can also be seen in the many tanks which are surrounded by large numbers of shrines. The Mānasarovar at Viramgam is surrounded by hundreds of small shrines which all contained a *śiva-liṅga* (Plate 327). The Sahasra Liṅga Tank (Thousand Liṅga Tank) at Patan and the Koṭ Tirth in Kalinjar Fort were once surrounded by a large number of *liṅgas* but today only a few of them survive. The Mahāmakhham Tank at Kumbakonam is surrounded by sixteen sacred pavilions, dating from the early seventeenth century, which all contain a *liṅga* (Plate 238).

#### V. Access and Gateways to Tanks

Along *ghāṭs*, access to temples was frequently via steep steps, making literal the difficult path to enlightenment and the spiritual ascent of the pilgrim. Because tanks are often found at some distance from the temples, and because their steps are usually shallow and not particularly long, this feature is not so typical of tank architecture, although there are a few clear examples expressing the same idea. At Ittagi (Iṭṭagi) in Karnataka, steep and prominent steps lead up to the Mahādeva Temple (Plate 328). The temple has a large stepped tank in front and a deep *kuṇḍa* behind. Although the steps are not particularly long, they stick out clearly because the tank wall on either side of them is designed in large tiers, similar to the super-human design described in the previous chapter at the *ghāṭs* at Pasupatinath. A further clear example of steep steps leading up to a temple can be seen at the west side of the Kaṅkāli Tank at Raipur (Plate 329). The pronounced

steps lead up to the Kañkālī Devī Temple which, sited an elevation, is raised above the normal ground level around the tank. In contrast to the examples mentioned before, the steps leading up to the temple are enlarged, measuring 0.4 metres in height and one metre in depth, and are much bigger than the ordinary steps on either side. In the centre of the square tank is a small domed pavilion. The same arrangement of steps is found in front of the temple at the Khāntī or Nayā Tālāo, nearby.

An important aspect in the approach to tanks is the presence or absence, and the height, of walls surrounding them. The tanks of most Sikh gurdwaras have no walls immediately around them<sup>77</sup>, but they are always found within walled compounds. At Pandrethan, as the site stands today, there is no wall around the *kaccā* tank nor a compound wall, which is quite unusual. Normally, there is a clear tendency to delineate a sacred tank, if only by a low wall. Often, walls indicate more the threshold to the sacred tank precinct, where through ablutions, salvation and a new life can be gained, than to actually lock them up or physically protect them. Particularly when tanks are not surrounded by steps, and where the water immediately borders the ground level, walls are quite typical. Many tanks all over the Indian subcontinent have low walls, of up to about half a metre around them. Such tanks can be small ablution tanks as for instance those in the Ajmer Dargāh, large festival tanks like the one at Suchindram, or enormous storage tanks with islands like the Niyāi Malāo Tālāo at Dholka. It is most typical, however, to find walls of about 1.2 metres in height around tanks, a comfortable height for a standing individual. Such walls do not always have to be solid stone structures, but can be pierced stone screens, as around the tank of the Jalamandir at Pavapuri, or modern metal fences, as around the Durgā Kuṇḍ at Benares, or the tank of the Śitalnātha Jain Temple at Calcutta. Particularly interesting are tanks which are surrounded by high walls (over human size) which prevent passers-by from looking into them. This is typical of Keralan tanks. Because most tanks of

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<sup>77</sup>This makes it very easy to clean the marble pavements around the tanks with a host-pipe because the waste water can run off into the tanks.

this type are bathing tanks, either in temples, as at Ettumanur or Guruvayur, or in palaces, as at Padmanabhapuram, the high walls provide privacy for the bathing people. It is also typical of Kerala to find separate bathing sections and access steps for men and women. For the same reason, high walls surround most of the hot baths at Rajgir. The tanks are relatively small, as for example the *Makhdūm Kuṇḍ*, and create intimate spaces which convey the sense of closed rooms (Plate 330). In those examples, tanks which are really negative architecture dug into the soil, grow out of the earth and create positive spaces over the ground.

A particularly interesting example of a tank surrounded by a high wall is the Śivagaṅga Tank, the bathing tank of the Naṭarāja Temple at Chidambaram. The wall is about two metres high and of the same depth, which makes it impossible to look over it and into the tank (Plate 331). On this wide wall, at the edge to the tank is a further middle sized wall which may indicate that during certain bathing ceremonies, the wide wall could be used as viewing platform. That this was not intended on a more regular basis, however, becomes clear from the fact that no steps lead up to the wall and that four pyramidal superstructures at the corners block the way around the tank. From the tank side, the depth of the wall contains an open colonnade. Thus the back of the colonnade looks like a wall on the outside. It is possible that the colonnade was a later addition which mainly had to be built over ground, because the sides of the tank were already dressed or because the tank could not be dug any deeper. At Tiruvarur, the colonnade surrounding the tank in the first enclosure wall is below the normal ground level and therefore does not obstruct the view. It would, however, have been possible at Chidambaram to leave at least parts of the back of the colonnade open, as may be seen in the tank in the first courtyard of the Jambukeśvara Temple at Srirangam. There, two colonnades surrounding the tank are found on top of each other, one below ground level and the other above. The latter goes over into the open *maṇḍapa* in front of the entrance to the next enclosure and is therefore open on that side (Plate 332). The high wall at Chidambaram therefore seems to have been

a conscious decision. Through the high protecting wall and the gateways in the middle of the northern side and in the south-western and south-eastern corners, the tank can be locked up and creates an intimate secluded bathing area sheltered from the lively temple. As with the walled compounds of south Indian temples, where one has to enter the innermost sanctum to meet the deity, one also consciously has to enter the walled tank compound and descend the steps to meet the divine water at Chidambaram. Also the large tank at Śravana Belgola is surrounded by a high wall which prevents people from looking into it. In order to prevent people from bathing or using festival tanks for other purposes, they are often surrounded by modern metal fences, although initially they only had relatively low stone walls. This can be seen at the Pārthasārathi and the Kāpāleśvara Temples at Madurai. The Pārthasārathi Temple tank even has a further fence half way down the steps, while the tank of the Govindarāja Temple at Tirupati has a fence at the bottom of the steps (Plate 305). Such modern additions have probably to be understood as a security matter to keep the people out of the tank on the occasion of tank festivals. Similar fences found in the water of the tank of the Golden Temple at Amritsar, and about three metres away from the bank of the Brahmā Kuṇḍ at Kurukshetra, prevent bathers from going too deep into the tank<sup>78</sup>, and from using the sacred ablution tank as a swimming pool. Particularly in central and southern India, the sacredness and distinctness of tanks is also indicated by painting their walls or the central pavilions in red and white stripes (Plates 309, 311), as may also be done with temples. The stripes stand for blood (red), regarded as a heating substance, and milk (white), considered cooling, which are images encountered in northern Sanskrit mythology and ritual, but which are particularly recurrent in Tamil temple myths and practices<sup>79</sup>.

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<sup>78</sup>Arshi, 1989, p. 52.

<sup>79</sup>D.D. Shulman, 1980, *Tamil Temple Myths: Sacrifice and Divine Marriage in the South Indian Śaiva Tradition*, pp. 93-94; B.E.F. Beck, 1969, 'Colour and Heat in South Indian Riutal.', p. 553.

Also important in the approach to tanks are gateways. There are several examples of single free standing gateways facing tanks. A particularly elaborate circa seventh-century AD *torana* is found at the flight of steps leading down to the tank of the Yeniarguđi at Aihole (Plate 333). The straight lintel shows two *makaras* spewing forth garlands which create arches over lions and various depictions of Viṣṇu. A further free standing *torana* at the Mārkaṇḍeśvara Temple at Puri (Plate 334) is similar to the example at Mānsiḡaḡā at Govardhan, in that it faces a tank but cannot actually be used to reach the water, because of the absence of steps. The gateway was set on a slightly protruding platform on the south side of the tank, west of the steps leading down from the temple. The tank is also interesting from the point of its orientation. The temple and the south side of the tank nearest to the temple are oriented and run exactly east-west, while the rest of the tank is slightly off the exact orientation. The angles in the south-eastern and south-western corners of the tank are therefore slightly less and more than 45° respectively. At Radhakund, there are two free standing *toranas* associated with the twin tanks at the site (Plate 335). The gateways are both found on the narrow causeway running between the tanks. The first one is in front of a small temple on the causeway and does not face the water, and the second faces the water, but because it is built so close to the wall of an adjacent building and away from the water, it cannot actually be used very easily as a gateway to the water. The gateways seem more significant as symbols of a journey to a different stage of life and indicate the holiness and different metaphysical quality of the sacred precinct. At Sravana Belgola, a prominent *gopura* faces the water on the south side of the Kalyān Tank (Plate 298). There is a smaller *gopura* on the east side, a small porch providing access on the west and a large festival *maṇḍapa* on the north side. A further *gopura* is associated with the tank of the Kamalāya Tank west of the Tyāgarāja Temple compound at Tiruvarur. The *gopura* and a small walled temple compound are situated on the island in the middle of the large tank (Plate 336). Both the *gopura* and the temple face east. Also the small island with the

ceremonial platform in Kandy Lake has a gateway. In both cases, the gateway should probably primarily be interpreted as an entrance to the temple or festival platform, but coming from the island, they also face the water. The gateways visualise the clear distinction between the water and the island as distinctive spheres. Gateways can also be encountered in connection with certain bridges leading to islands. Both in the arrangement at the Golden Temple at Amritsar (Plate 290) and the Jalamandir at Pavapuri, there are prominent gateway houses through which pilgrims have to pass to enter the causeways leading to the temples in the centre of the tanks. The two-storeyed gateway-house at Amritsar is called Darśānī Dehalī (Deorhi) (constructed in 1776 AD), and its doorways allegedly belonged to the Somnātha Temple at Somnath (Somnātha Pāṭan, Prabhās Pāṭan), Gujarat<sup>80</sup>. Although the visitors at Amritsar and at Pavapuri do not actually have to bathe to reach the temple, the passage to the island is a return to the centre of creation, an encounter with the divine; as such their movement constitutes a departure from this world, which is marked by a prominent gateway at the beginning of the sacred sphere of the tanks. Often one finds elaborate entrance pavilions leading to enclosed tanks, as may be seen at the Kāpāleśvara Tirtha at Tirupati (pilgrims have to take off their shoes before walking through the pavilion and entering the compound) (Plate 338), at the Śivagaṅga Tank at Chidambaram, and at the large processional tanks at Vijayanagara. The three pointed arches on the west side of the Bhārat Tālāo at Rewari echo earlier examples of triple *torāṇas* discussed in Chapter Three. The Tāj Bāvlī and the Cānd Bāvlī at Bijapur, both constructed by female patrons, each have a large and very pronounced single pointed arched gateway (Plate 339). There is an interesting story about the monumental gateway leading to the Gadi-sar Bāoli, also called the Gadisar Tank or the Gadi Sāgar, which is a rain water tank at Jaisalmer in Rajasthan. Allegedly, the monumental gate with its large pointed arch was built by a courtesan of one of

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<sup>80</sup>The doors were taken away to Kabul by Mahmud of Ghazni, and allegedly brought back by Mahārāja Raijīt Singh's forces from Kabul and put into the Darśānī Gate at Amritsar (Arshi, 1989, p. 55).

the Rāvals for the inhabitants of the town. Because a religious image had been installed in the upper part of the gateway the royal family who took offence at the bold statement of the courtesan, could not have it pulled down. Therefore, the members of the royal household used lesser side entrances when attending ceremonies at the tank<sup>81</sup>. It is most typical of tanks, however, to find plain gateways integrated into the walls surrounding them. Particularly when the walls reach only up to human hip-height, the gates stick out quite prominently. Examples may be seen in the Rānī Tāl at Gwalior, in the Kaṭorā Hauz in the village at Golconda, the outer tank of the Aruṇācaleśvara Temple at Tiruvanamalai, and the small Sangu Tīrtham in the first enclosure wall of the temple at Tiruvarur. Many gateways were also integrated into high walls around tanks, which further enhance the feeling of a closed room or a positive architectural shape in general. Examples of gateway-*mandapas* with four columns, already encountered along *ghāṭs* in Chapter Three, are found in the centre of the bridge leading to the island in the Narendra Tank at Puri (Plate 276), and built into the steps on the west side of the Candra Puṣkariṇī in the Raṅganātha Temple at Srirangam (Plate 340).

## VI. Multiple Tanks and Pools in Tanks

As with *ghāṭs*, where small artificial tanks are sometimes integrated into the steps next to rivers or lakes, there are examples of tanks next to larger water bodies, or of tanks next to each other, where one of them is usually smaller than the other. Kṛṣṇa Kuṇḍ is a small tank right next to the sea-water channel at Dwarka. It is really only a protected bay enclosed by high walls to break the waves, filled with ocean water. The presence of a columned *mandapa* which runs along the shore makes it more into a religious centre where the *sādhus* on pilgrimage in Dwarka

<sup>81</sup>India Tourism Development Corporation, 1975, *Guide to Rajasthan*, pp. 130-131.

meet. There are also several cases where small tanks were created on one side of a larger lake or reservoir, two examples being the Khās Bāolī next to the large Ām Tālāo at Raichur<sup>82</sup> (Plate 341), and the tank of the Uttareśvara Temple on the north side of the Bindu Sāgar at Bhubaneswar (Plate 342). According to a local legend, the goddess Godāvārī was invited to see King Liṅga Rāja in the temple. Because she was menstruating she was not allowed to bathe in the sacred Bindu Lake before her visit; therefore, the gods set up a boundary in the lake and created a small tank on the shore furthest away from the temple where the goddess was allowed to purify herself. Particularly through the line of small shrines running along its west side, the tank is a very private bathing area bordering the large festival tank. Also at Kurukshetra, there are two tanks next to each other. The Brahmā Sarovar is about 425 by 500 metres, and the tank to its west is about half its size. In the case of twin tanks, distinct functions were often given to the different reservoirs. At Nārāyaṇ Hiṭī in Kathmandu (Plate 343), and at Naudhārā at Godavari, there is one tank each with fresh running water, issuing from spouts, and a larger storage reservoir next to them which collects the overflow and rain water. Through this arrangement, fresh drinking water is readily available and is separated from the storage reservoir which is needed for dry periods, washing and animals. Also at Macchegaon there a twin tanks. The upper tank, which also contains the island carrying the Macche Nārāyaṇa Temple, is only used for ritual purposes and ablutions, while the lower tank, collecting the overflow, is used for mundane purposes (Fig. 19)<sup>83</sup>. Several tanks such as the Mānasarovar at Viramgam, the Koṭī Tirtha at Bhubaneswar and the Teppakuḷam at Madurai have a small additional tank on one of their sides. These minor tanks are located behind the sluice gates and act as settling pits for muddy water before it is channelled into the large tanks. The pit at Viramgam is an elaborate octagonal structure with

<sup>82</sup>The names mean 'Special' and 'Ordinary' respectively.

<sup>83</sup>C. Pruscha, 1975, *Kathmandu Valley: The Preservation of Physical Environment and Cultural Heritage. A Protective Inventory.* p. 200.

divine images inserted into the walls. A temple to the local goddess Munsarimā Devī was constructed on top of the sluice gates as a means of protection.

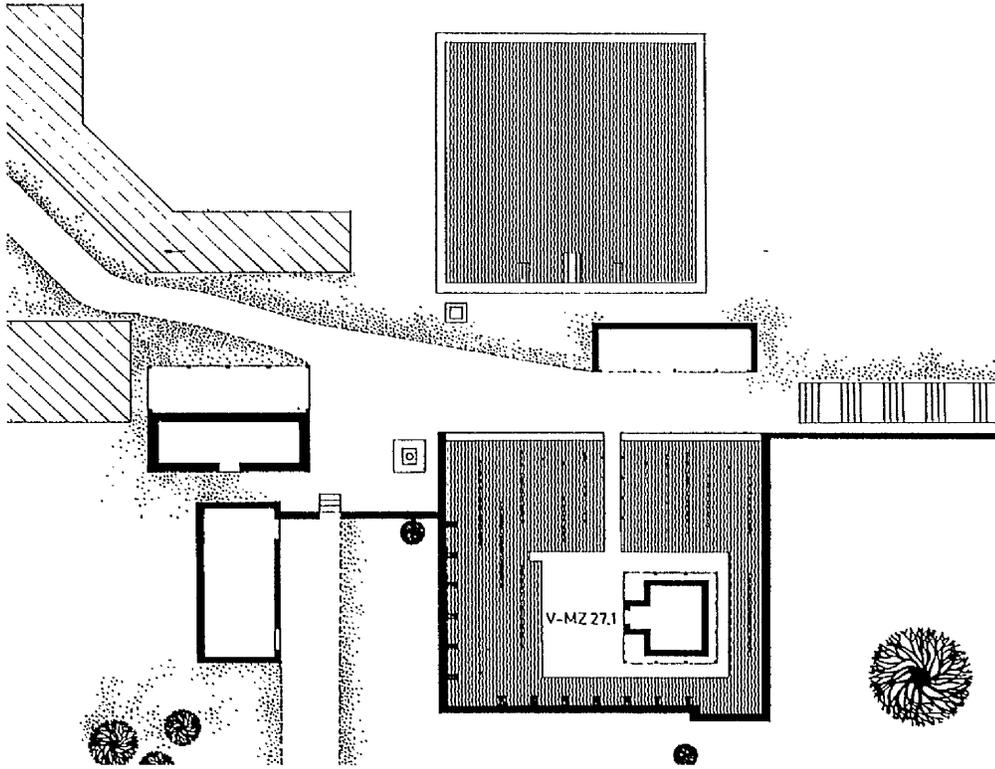


Fig. 19: Macchegaon, twin tanks and island carrying the Macche Nārāyaṇa Temple (C. Pruscha, 1975, Vol. 1, p. 201).

An example of closely related twin tanks of which one is only slightly smaller than the other is found on Brahmāgiri at Trimbak, on the pilgrimage path to the source of the Godavari. The tanks lie to the east of the small Śrī Rām Mandir. The larger tank directly underneath the raised temple has a cow spout and the inscription 'Gaṅgā Godāvarī Prasan(n)' meaning clear or pure Gaṅgā-Godāvarī. This is again an example where close to a sacred river, here the source of the Godavari, the presence of the Ganges is invoked to add to the importance and purity of the site, a phenomenon already encountered with *ghāṭs*. The smaller tank to its east has three lotus rosettes on its walls and people purify themselves in this first before entering the larger tank which is believed to contain Ganges water. Often, twin tanks have double names whereby each part is attributed to one of the tanks. There are the Buḍḍā-Buḍḍī twin tanks, in Kalinjar Fort (Plate 344)

and Śyām and Rādhā Kuṇḍ at Radhakund. In both cases, only a narrow bridge separates the tanks. Although the people inhabiting parts of Kalinjar fort believe that the Buḍḍā-Buḍḍī Tank is a Buddhist tank, and relate the sound to the spelling 'buddh-buddhi' which would translate as 'awakened', 'wise' or the Buddha, and 'intelligence' or 'understanding' respectively, the original Devanāgarī spelling 'buḍḍā' is different<sup>84</sup>. There is a palace structure on the east and a terrace with a *chattrī* overlooking the tanks in the south-west. At Radhakund, the larger section relates to Śyām, a name for Kṛṣṇa, and the smaller to Rādhā. According to a local tradition, Kṛṣṇa dug Śyām Kuṇḍ with his heel to purify himself after having killed the demon Ariṣṭasur. He insisted that Rādhā and the others who had witnessed the killing also had to cleanse themselves of the sin, and Rādhā created the small tank on its side. To fill both tanks, all the sacred *tīrthas* of India appeared<sup>85</sup>.

Water rituals and water architecture are an expression of the general Indian (and particularly strongly Hindu) need for purification, and therefore closely linked to the concepts of purity and pollution. It is not only about pollution through evil deeds and the purification through water, but also about certain lesser grades of pollution considered to exist between men and women or various castes or religions. Many village tanks in particular, were only used by the high caste members while lower caste groups had to bathe at the river or some other water source away from the village. In the course of time, such regulations were often broken up. Along with the official governmental abolition of caste discrimination, today, such rules are much less rigid than they used to be. Although all water is purifying, certain rivers, foremost among them the Ganges, and particular tanks, such as the Maṇikarnikā Kuṇḍa at Benares where even the *tīrthas* of India come to cleanse themselves of the defilement washed off by the people, have particular purifying abilities. There are differences in water and in its purity, as was seen on Brahmāgiri for example, where a bath in the tank with

<sup>84</sup>It also does not mean 'old', which would be spelled 'būḍhā'.

<sup>85</sup>Anand, 1992, p. 58.

Gaṅgā water was only taken after the major impurities had been removed in the lesser tank. In other cases, particularly where two or several tanks were built close to each other, each tank seems to have been built for a particular group, reinforcing the concepts of purity and pollution within society.

There are many examples where we find not only twin but multiple tanks at sacred sites. Through the splitting of a single water source into several independent tanks attributed to various groups of society, a sacred water site could be enjoyed by all people, regardless of their social status, without upsetting the rules of purity and pollution. The gurdwara in Gwalior Fort has three tanks. The Gaṅgola Tāl is the ancient sacred source which led to the construction of the gurdwara at the site. The second tank is for men and the third for women. At Rajgir, there are twenty-two water tanks or compartments spread over the sacred hillside generally called after its main tank Brahmā Kuṇḍa. Each tank is dedicated to a certain sex, community or caste. At Shesh Naryan in the south of the Kathmandu Valley, there are four tanks, a semi-circular and a rectangular one on a lower, and an irregularly shaped one with a semi-circular bay and a circular one on a raised level (Fig. 20). The tanks are located underneath a rock sheltering a Hindu and a Buddhist sanctuary. Also the shared Hindu and Buddhist site at Godavari has four tanks. One tank is found outside but adjacent to the wall of the sacred precinct right next to the gate, and was probably intended as an ablution basin before entering the complex. The sacred source is a rock cut pool which has lately been covered by wire netting because this pool is only meant to be worshipped and is too sacred to be bathed in. Together with a shrine to the Buddhist goddess Vasundhāra and small Hindu shrines, it is found in a small walled compound built next to the rock face of the hill. On the other site of the precinct, in the open courtyard of the complex, is a large bathing tank and a smaller stepwell tank which are meant for ablutions. While the tank outside the compound purifies, its cleansing ability would probably be regarded as being the lowest of all four. Next in the scale would be the two tanks in the courtyard,

though the one directly adjacent to the sacred walled section may be more sacred, while the most purifying and divine is the rock pool at the cliff.

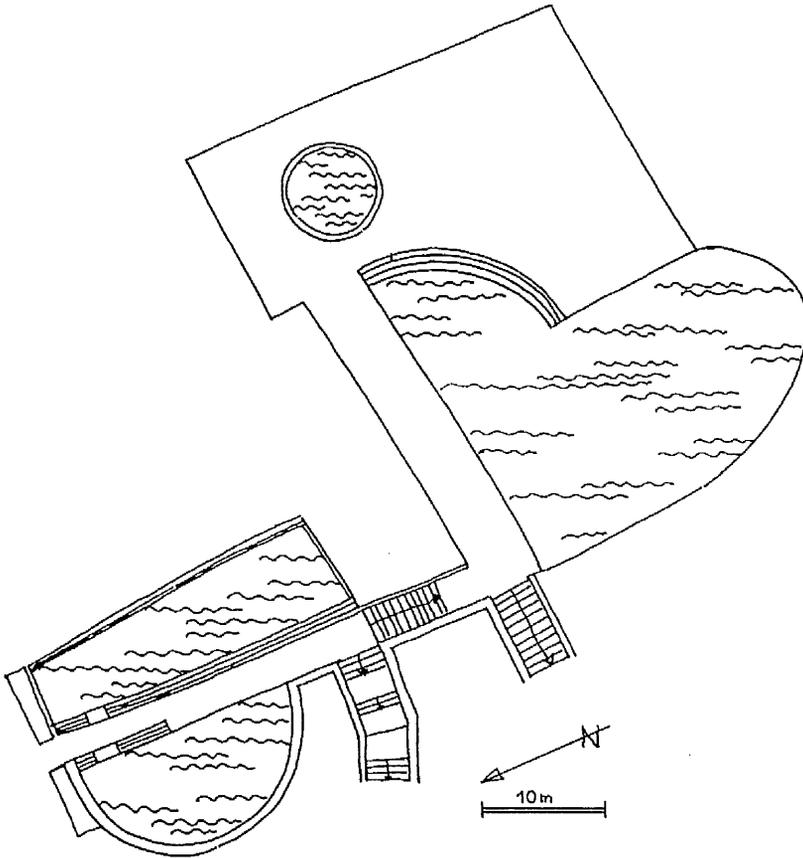


Fig. 20: Multiple tanks at Shesh Narayan

Similarly, at Talakaveri (Talakāveri), the source of the River Kaveri at the foot of Brahmāgiri in Kodagu, Karnataka, there is a small pool in front of the small Kāveri Amma Shrine situated on a platform at a larger shallow tank. The actual spring bubbles up in the small pool in front of the shrine and then collects in the large tank next to it. The pilgrims only bathe in the larger tank and after having purified themselves, they worship at the Kāveri Amma Shrine and sprinkle a little water from the small sacred pool onto their heads. This is considered as purifying as a bath in the actual source<sup>86</sup>. A site already mentioned in the previous chapter is the Gaukareśvar Temple at Dhulikhel where a rivulet, two areas with water spouts and a tank provide various possibilities of contact with the

<sup>86</sup>A. Valliappa, 1992, *The Story of Our Rivers*, Part. II, p. 10; U.R.A. Murthy, 1989, *Karnataka Impressions*, p. 45.

same sacred water at the site. At Trimbak, at the source of the Godavari, we find a whole series of tanks. While the physical source of the river is high up in the mountains on Brahmāgiri overlooking the small town, with several tanks on the way, the Kuśavart Tīrtha within the town is the spiritual source of the sacred river. 'Kuśavart' is the name of a *tīrtha* or a passage of the Ganges<sup>87</sup>, and therefore the tank is also called Gaṅgāsāgar. Many pilgrims only come to Kuśavart Tīrtha and do not make the arduous climb up the hillside, since the tank in town represents the sacred source (similar to Gangotri the sacred, and Gomukh the actual, source of the Ganges). At the sacred site in town, there is a large colonnaded tank, a small stepwell tank to its east and a further *kuṇḍa*-well hybrid to the north-east. Although the latter is found on the same raised platform as the other two water structures and various shrines, it is more detached and may have been used mainly for practical water provision while the other two tanks predominantly are sacred bathing tanks. At Amarkantak, where the River Narmada originates, are river compartments outside the walled temple compound<sup>88</sup>, and a large and an adjacent smaller water tank to its north-west. The smaller tank seems again to be used for an initial cleansing before bathing in the sacred Narmadā Tank. It is interesting that there are not only two tanks of various degrees of sanctity or purity, but three. At Amarkantak, a third tank is found within the larger tank.

This brings us to the highest degree of elaboration encountered in arrangements of multiple tanks. In the same way as individual pools were found in larger water bodies and rivers, they were also constructed in small tanks to distinguish between different qualities of water, to provide a sequence of bathing tanks increasing in purity, or to mark a particularly sacred spot within them. Pools may be contained in platforms in a tank or they may be marked by fences or walls within the water itself. In front of the Varuṇa Temple, which is set on a platform

<sup>87</sup>M. Monier-Williams, 1993, *A Sanskrit-English Dictionary*. p. 297.

<sup>88</sup>These have been discussed in Chapter Three.

in the Naval Sāgar at Bundi, is a small water tank contained within the temple platform (Plate 321). The tank is situated in front of the City Palace and serves both as a scenic backdrop to the palace which mirrors itself in the still water, and as means of defence. There is an octagonal pavilion in its centre which, although it follows the long tradition of tank festival pavilions is not connected to a temple but was used by the ruling family. To counterbalance the practical and royal usages of the tank and to distinguish the water in front of the Varuṇa Temple contained in its north-western corner from the rest of the large reservoir, a small pool was inserted into the platform carrying the temple which provides a purely religious bathing area. The opposite effect was achieved at Kandy, where a separate royal bathing area was created in the otherwise public and religious Kandy Lake. The eighteenth to nineteenth-century Queen's Bath, called Uipenge, is located near the Temple of the Tooth. It is a rectangular pool built into the water of the lake and protected by a roof. As at the Varuṇa Temple at Bundi, and also at Taleshvar, there is circa six metres square water basin inserted into the island connected by a bridge with the eastern bank of the tank (Plates 345, 279). Because the island with the basin is found right in the centre of the tank, it seems that it was intended to provide the pilgrims with the opportunity to purify themselves there in the centre, the most sacred point where the world was created and where it will be reabsorbed in mythical terms. More often, the centre of a tank was marked by a temple where salvation could be gained through an encounter with the god, or by a tomb, representing salvation. At Taleshvar, water is the divine element, and provides probably the most immediate visual form to the idea and for the re-enactment of the creation story through a bath in the cosmic waters. At Guruvayur, the central statue in the Kṛṣṇa Temple bathing tank is surrounded by a wide oval shaped fence marking the sacred centre of the tank. The water nearer to the statue, a sacred axis which is the axis of the world, would be regarded as purest. Such a demarcation was also drawn around the central pole in the tank of the Mahākāleśvara Temple at Ujjain. The pole carries a metal

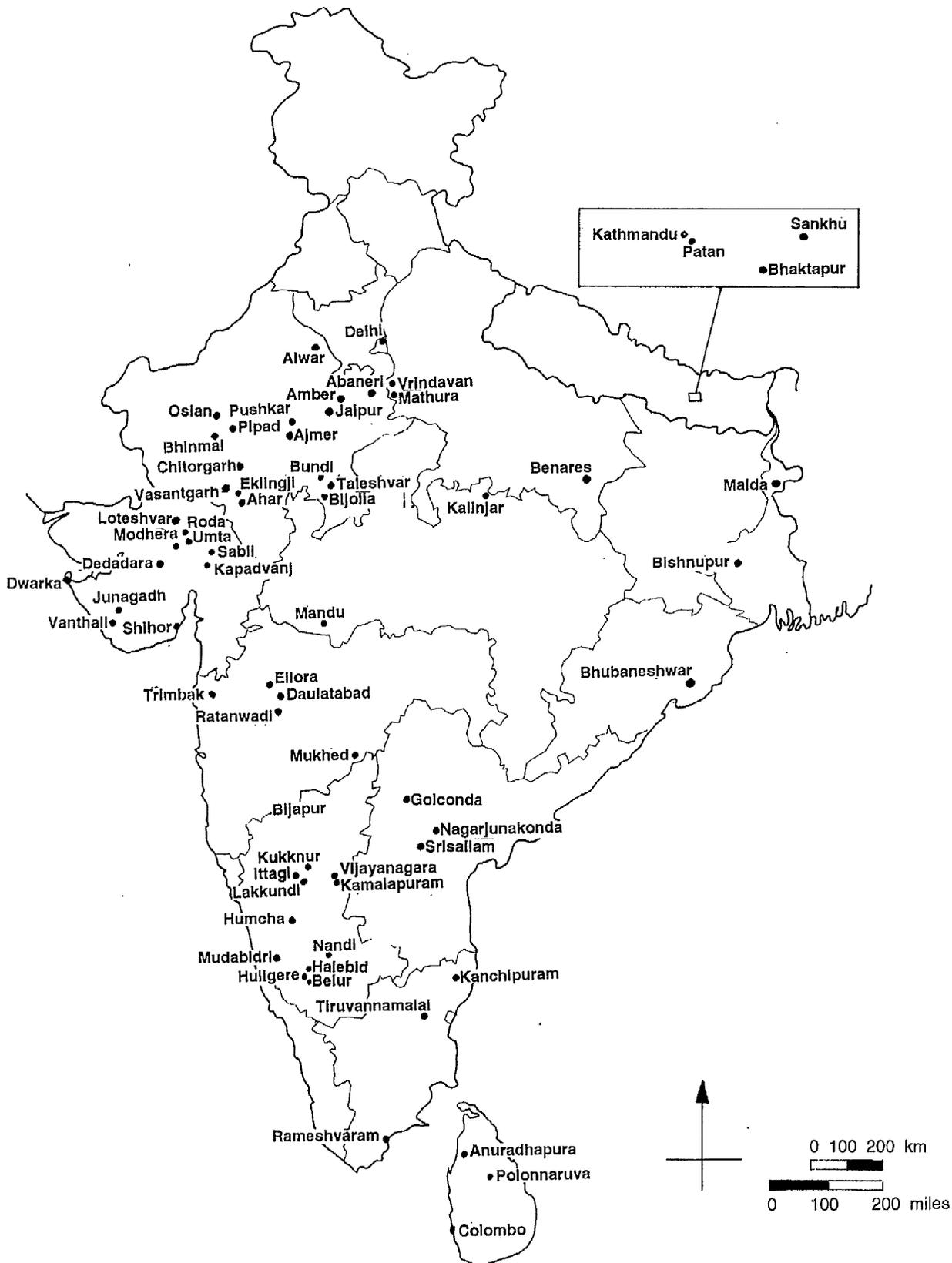
representation of a sun or star which functions as a fountain and is encircled by a small circular fence. Bathing at both sites is, however, restricted to the edges of the tank, and the centre of the tank is not to be reached by the people. The fences are merely meant to give visual shape to the divine power contained within the water. Examples, where basins were built straight into tanks are found at Madurai and Amarkantak. In the north-eastern corner of the Golden Lily Tank is a small square basin with a small Nandi figure in each of its corners, marking it as a sacred temple tank (Plate 346). A small bridge is set up during certain periods which connects the small pool in the larger bathing tank with the northern side of the tank<sup>89</sup>. The sacred pool can then be reached via the bridge. At Amarkantak, a small third tank is found within the large Narmadā Tank. It is built in front of one of the small temples set into the water at the northern bank of the tank (Plate 347). The small basin marks the exact spot where the water of the River Narmada occurs in the tank and is therefore the first and purest water to issue at the sacred source. As with the source of the Kaveri, people do not bathe in this most sacred source but only in the larger tank filled with the water of the spring. The source proper is the most sacred object of veneration at the site and its water is only used for sprinkling.

Tanks are the most frequent and widespread type of water architecture in South Asia. They show an enormous range of possibilities concerning their size, shape, layout, location and decoration. They are closely related to *ghāṭs* because, at least on one side, *ghāṭ*-like steps make up the sides of a tank. Many themes, such as platforms, gateways, and pools, encountered with the *ghāṭs*, are found too in tank architecture where, because of different conditions in a more sheltered environment, they developed in ways which are distinct to tanks. Platforms, for

<sup>89</sup>See the photograph in C. Tadgell, 1990, *The History of Architecture in India: From the Dawn of Civilization to the End of the Raj*. p. 213, fig. 245 (b).

example developed into long bridges leading to islands which may carry entire buildings. Although tanks may usually be used for a whole series of usages at once, one function may predominate, creating eight major sub-types of tanks based on their main use. Although it is the primary concern of tanks to store water, they are hardly ever utilitarian alone and almost invariably connected with shrines or religious images of some sort which protect the dams or walls of a tank or reservoir. There is also a close link with *kuṇḍas*, a deeper type of reservoir, which will be discussed in the following Chapter Five.

# Sites mentioned in Chapter 5: *Kuṇḍas*



## Chapter 5: *KUNḌAS*

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### I. Introduction

*Kunḍas*<sup>1</sup> are stepped water basins which penetrate deep into the ground, and in section resemble the shape of a funnel with a relatively small water area at the bottom (Fig. 21). Most *kunḍas* are fed by ground water, shallow aquifers or springs. The sides of *kunḍas* are usually set at a steep angle, often greater than the natural slope of the ground<sup>2</sup>. As a consequence, they need a large mass of steps, often in complicated pyramidal or triangular sets, to buttress the terraced walls. If they were of insufficient strength to counteract the inward thrust of the side walls, the stepped sides of the *kunḍas* would be likely to slip away.

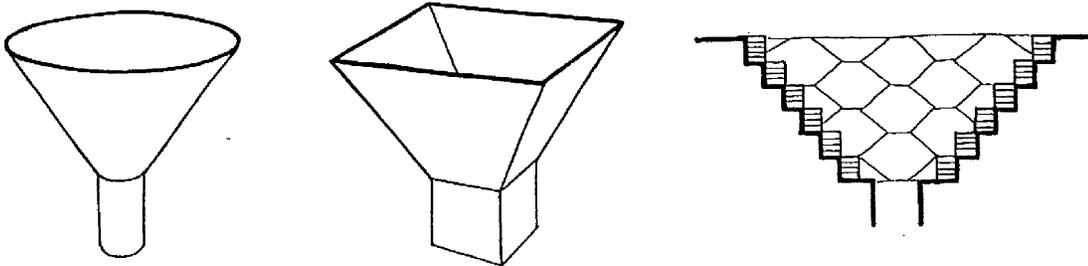


Fig. 21: *Kunḍas* have deep funnel-shaped basins.

Steep vertical sides are more easily constructed in hard soil or rock than in sandy ground, and therefore soil conditions have a strong influence on the shape of *kunḍas*. The more precipitous the sides of a *kunḍa*, the larger the water surface

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<sup>1</sup> '*Kunḍa*' is the Sanskrit version of the Hindi term '*kunḍ*'. While the type has been given the traditional Sanskrit term '*kunḍa*', most named water structures referred to in the chapter resort to the modern local terminology, usually leaving out the final '-a'.

<sup>2</sup>This is for instance the case in the *kunḍa* at Kapadvanj in Gujarat, where the angle of the sides is about 38° to the horizontal, while the natural slope of the soil is circa 32°. (P.K. Patel, 1973, 'Structural and Constructional Aspects of Water-Reservoirs and their Relationship with Religious Buildings in Gujarat.', diploma thesis, p. 79.).

can be at the bottom of the pit. The size of the water area also depends on the depth of the *kuṇḍa* and its top perimeter. Because the water level in the funnel fluctuates, the size of the water surface area is variable. Due to the considerable depth and the relatively small water area, surface evaporation from *kuṇḍas* is low in comparison to tanks. But the steep angle of the funnel-shaped sides and their multi-stepped nature are the most characteristic elements of the *kuṇḍas*, and distinguish them clearly from tanks whose gently sloping short sides frequently lead to large water basins<sup>3</sup>. *Kuṇḍas* have such a striking aesthetic that their shape and step formations have often been 'imitated' in structures which actually function as tanks by collecting rain water, or by being fed by channels (Plates 371, 426). Compared to *kuṇḍas* which draw ground water, these examples do not penetrate as deep into the ground and often have larger water basins at the bottom. They may, however, be classified as *kuṇḍas* because, when filled with water, obscuring the solid floor or the well shaft in the middle, it is impossible to detect the structure's technical function. The key factor is that the builders intended these structures to look like *kuṇḍas*. As the nature of this study is an art historical enquiry into the choice and the development of shapes, and the continuity of themes and visual forms, and not a detailed analysis of the functional engineering characteristics of water architecture, visual appearance has been the determining factor in the classification of these water structures as *kuṇḍas*.

*Kuṇḍas* which draw ground water usually have a well shaft in the centre of their basins. They are clearly distinguished from wells proper by the fact that in a *kuṇḍa*, the central well opens up into a funnel in the shape of an inverted pyramid at surface level, usually lined by precipitous steps. This funnel-shaped upper section is not a feature of ordinary wells and stepwells, and consequently is one of the most essential visual elements in the definition of a *kuṇḍa*. Some examples which have central square wells are the Sūrya Kuṇḍ at Vanthali (Vanthali) in Gujarat (Plate 348), the Amṛt Sarovar in the hillfort of Nandi north of Bangalore

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<sup>3</sup>Tanks have been discussed in detail in Chapter Four.

(Plate 362), the *kuṇḍa* outside the wall of the Mallikārjuna Temple complex at Srisailam, and the *kuṇḍa* of the Rāmeśvara Temple<sup>4</sup> at Bhubaneshwar (Plate 349). Because the ground water table at the latter two sites appears to have sunk considerably, and the water rarely reaches the funnel-shaped stepped sides of the *kuṇḍas*, modern water pumps have been installed using the old well shafts in the centres to reach the reduced ground water level. In other examples, small wells of only one or two metres in diameter, can be found in one corner of a *kuṇḍa* basin. Here, the funnel shape of the stepped sides is not open at the bottom, but has a solid floor, with a small opening through which ground water is drawn. The Sūrya Kuṇḍa at Modhera, the Maṅgala Tīrtham of the Ekāmbareśvara Temple at Kanchipuram (Plate 350), and the Kva Hiṭī at Kathmandu, follow this layout.

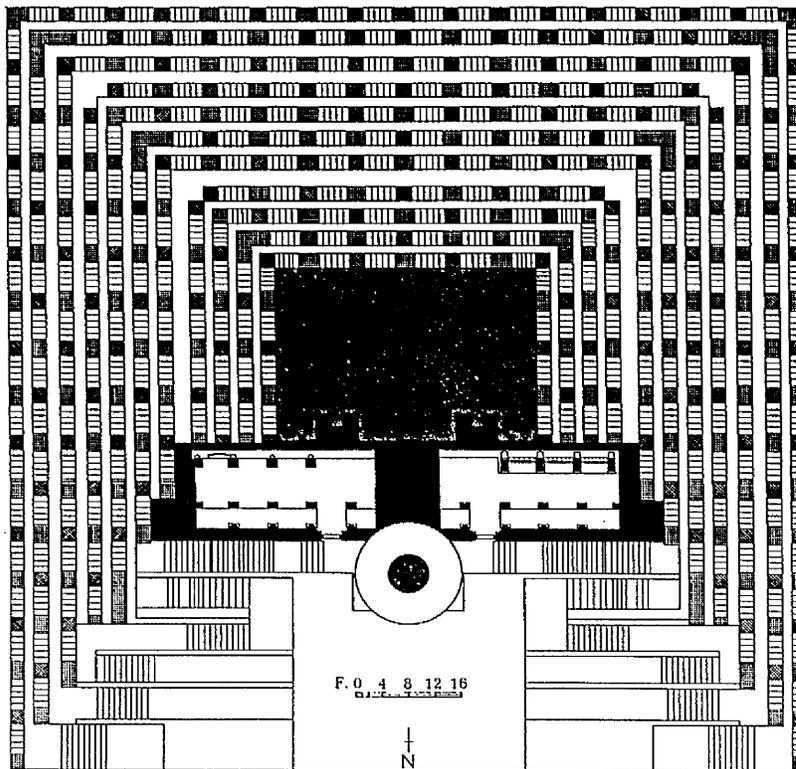


Fig. 22: Abaneri, the well shaft has been integrated into the sides of the *kuṇḍa* (M.W. Meister & M.A. Dhaky, 1991, p. 237).

<sup>4</sup>Also known as Mausimaha Temple.

In other cases, the well shaft has been sunk into one of the sloping sides of the *kunḍa* or directly adjacent to it, turning the deep basins into water storage units. From the draw wells on their sides, the ground water is pulled up and used from buckets, while the *kunḍa*-basins are used for bathing and washing, the people descending to the water by means of the characteristic steps. By having a well and a basin, clean fresh drinking water in the well is separated from water for washing and bathing. It is usual for these side well shafts of *kunḍas* to be covered at the top to keep them clean and cool, whilst access to the well is from the side, within the *kunḍa* below ground level. Whereas at the Rajasthani sites of Osian (Osiāñ) and Abaneri, the well shafts have been built into the *kunḍa* into the east and north stepped sides respectively (Fig. 22), at the Lolārka Kunḍa at Benares (Plate 421), and the Dade-li-Vāv at Bhinmal (Bhinnamāla), Rajasthan (Plate 351), the well shafts have been sunk outside, immediately adjacent to the *kunḍa*-basins proper. An example of two wells within a *kunḍa*, a well shaft at the centre and another sunk outside, is located at Kapadvanj (Fig. 23).

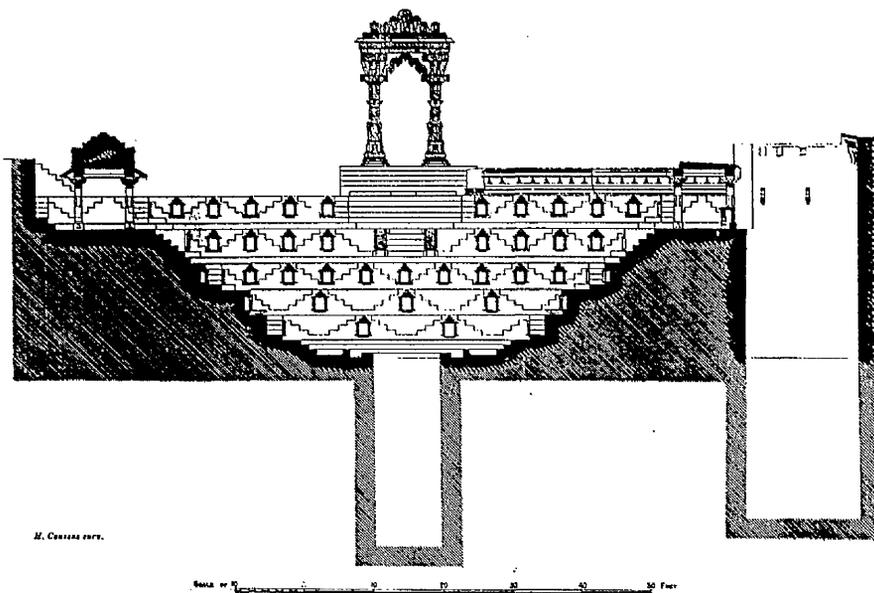


Fig. 23: Kapadvanj, the *kunḍa* has a well shaft in its centre and one sunk outside the basin (J.A.S. Burgess, 1905, plate 81).

Most *kunḍas* have a square or rectangular perimeter and their terraces or steps run parallel to the outer delineation of the structures. Several examples from

Nepal and Sri Lanka have square perimeters but contain multi-staggered terraces which in shape and in their stepped and concentric nature resemble *maṇḍalas* (Fig. 24). Elaborate examples from Nepal are the Sundhārā at Kathmandu, built by Queen Lalitā-Tripurasundarī in 1828 AD (Plate 352), and the Jaulākheḷ Hiṭī at Patan. In contrast, much simpler *kuṇḍas* can also convey a strong diagrammatic

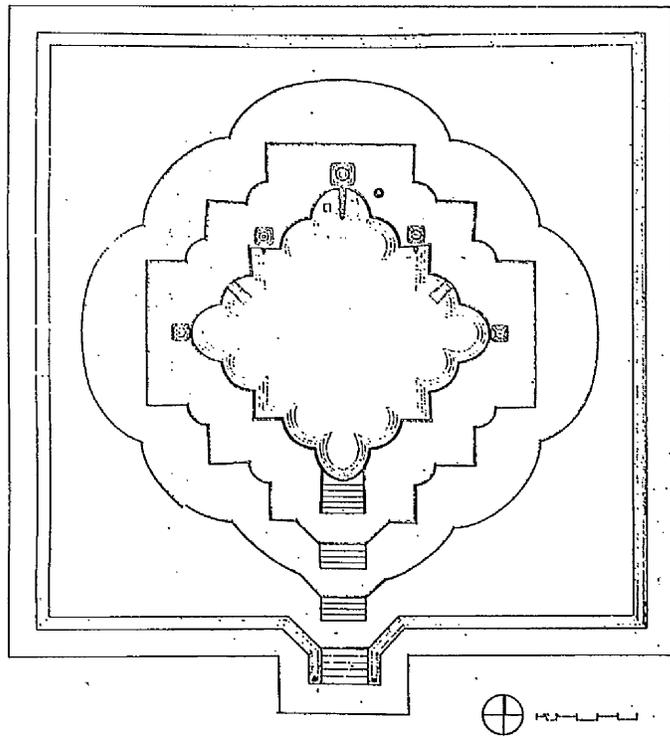


Fig. 24: Kathmandu, plan of the *maṇḍala*-shaped Sundhārā (R.O.A. Becker-Ritterspach, 1995, p. 40).

character through their rigid symmetry and repetition of forms in diminishing planes (Plate 353). The clearest example of such a *maṇḍala*-shaped basin from Sri Lanka is the Kumāra Pokuna at Polonnaruva (Plate 354). It is interesting to observe the close relationship between water structures in Nepal and Sri Lanka. Strong similarities between the water architecture of the two countries are evident not only from their choice of shapes, but also in the material, which is usually burnt brick integrating stone steps and cornices, and in the elaborate water spouts often in animal shapes. Because all the main Sri Lankan water structures and many of the Nepali ones are Buddhist, a reason for the strong similarities may lie

in the transmission of Buddhism, and in this context also the close relationship between stupas in Nepal and Sri Lanka may be mentioned. A reason for the fact that Sri Lankan water structures are so different from south Indian tanks may be that the Sri Lankan people aimed at differentiating themselves from the style of the Tamils, who over many centuries regularly invaded their country.

According to a Newārī architectural manual even the underground pipes of the local *kuṇḍas* should be arranged in the shape of a cosmic diagram such as a swastika (Fig. 25 a). Other *kuṇḍas* have been constructed in lotus shapes, as may be seen in the Lotus Pool at Polonnaruva (Plate 355), the Palikyaḥ Hiṭī on the main road of Bhaktapur (Fig. 25 b, Plate 356), and the Jagati Gahiṭī in the Vajra Yoginī Sanctuary at Sankhu (Sānkhu), the latter two in Nepal. The small ablution

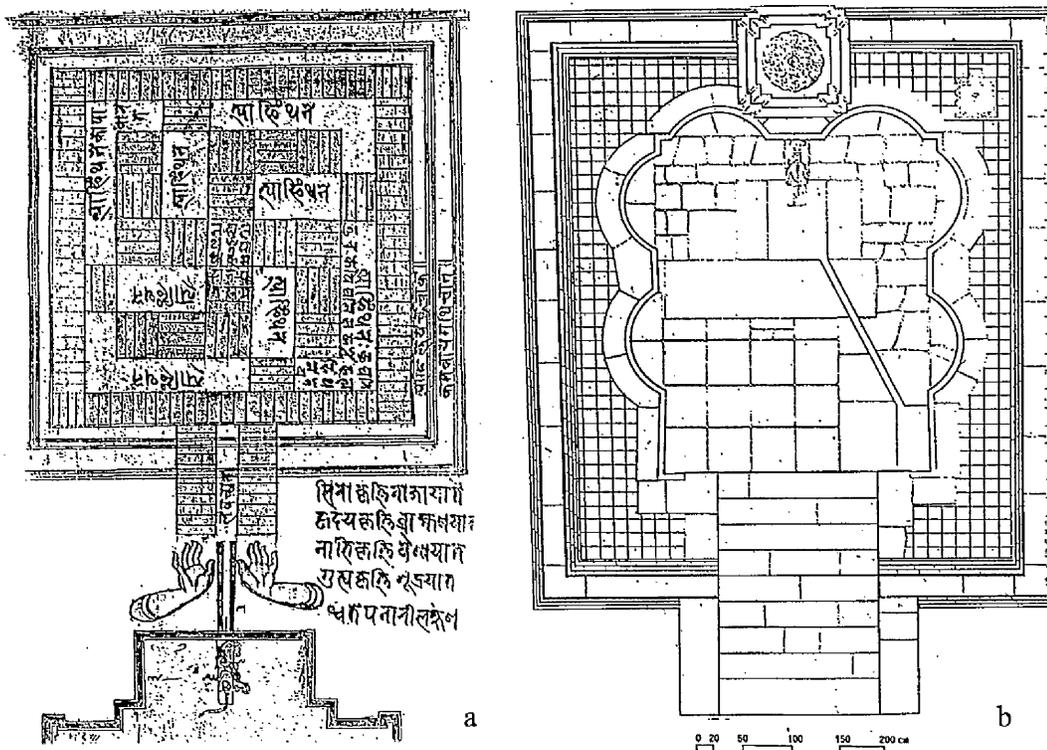


Fig. 25: Idealised plan of a *dhārā* showing the pipes arranged in swastika shape (a), and plan of the lotus-shaped Palikyaḥ Hiṭī (b) (R.O.A. Becker-Ritterspach, 1995, pp. 25, 54).

tank of the Aśvamedha Complex at Nagarjunakonda, which also resembles a lotus, is usually referred to as Kūrma Tank, meaning tortoise tank. By constructing *kuṇḍas* on *maṇḍala*, lotus or tortoise plans, which are all regarded as supports of the cosmos, the water structures were firmly related to the foundation of the universe. The Brahmā-jī-kā Kuṇḍ at Dwarka has a basin which is square at the bottom and goes over into a twelve-cornered shape at a higher level (Plates 357, 358). The Sūraj Kuṇḍ south of Delhi is an unusual example of a large oval shaped *kuṇḍa* (Plate 359), whilst other examples are irregularly shaped to fit a given terrain, particularly if located in densely constructed hilltop forts, such as the Kukadeśvara Kuṇḍa in Chitorgarh (Plate 360).

It is a significant feature that, when regularly formed, almost all *kuṇḍas* are precisely oriented on the cardinal points of direction, tying them even closer into the structure of the universe. Very few *kuṇḍas* have even a slight error from exact orientation and even fewer have no orientation at all. But an interesting example of the latter are the twenty-seven sacred water basins, most of them *kuṇḍas*, along the fourteen kilometres long *pradakṣiṇā patha* surrounding the sacred mountain at Tiruvannamalai. These are not oriented towards the cardinal directions, but towards the central mountain, the sacred centre of the site (Fig. 26). The pilgrimage site is associated with Śiva in the shape of a fire *liṅga*. The concept of indicating the four directions of space was also frequently expressed in the fabric of the *kuṇḍas* by having four ramps, as in the Potarā Kuṇḍa at Mathura (Plate 361), or four flights of steps leading up from the water, as may be seen in the *kuṇḍa* of the Kāmākṣī Temple at Kanchipuram, and in the Viśvanātha Kuṇḍ at Ellora. In the Kāpaḍvañj Kuṇḍ, three pavilions and one *torāṇa* gateway indicate the orientation of the structure towards the cardinal points, and in the *kuṇḍa* at Ratanwadi (Ratanwāḍī), Maharashtra, the central section of three sides is slightly recessed, while on the fourth side it has a central flight of steps leading up from the basin.



falling down the entire length of the stairs, and can also be used to rest water pots and baskets which can then easily be placed on the head.

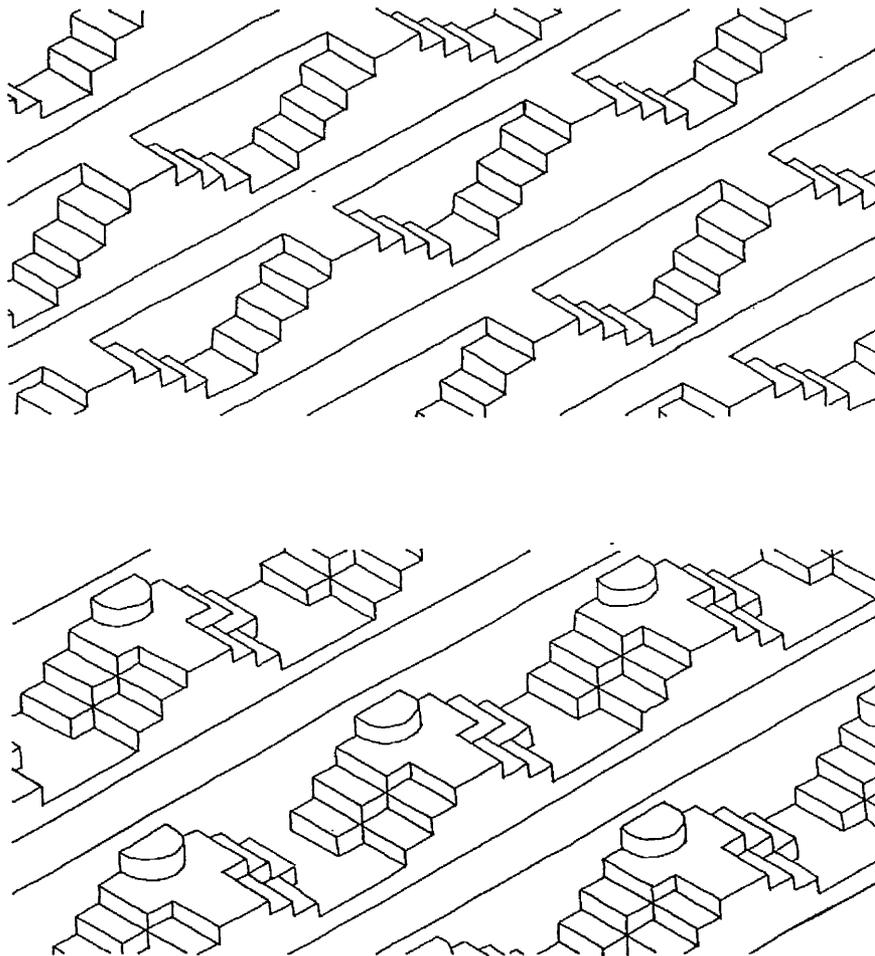


Fig. 27: Steps arranged in triangular blocks with bilateral flights of steps.

Examples of such typical pyramidal sets may be seen in the *kuṇḍas* at Abaneri and Osian (Plates 364, 401-3), in the small *kuṇḍa* in the complex of cenotaphs at Ahar just outside Udaipur (Plate 366), and in the *kuṇḍa* of the Madana-Mohana Temple at Bishnupur (Plate 367). The Sūrya Kuṇḍ at Modhera has several tiers with double sets of triangular stairs (Plate 365). In cases where the blocks of steps are so large that one triangle spans from one end of a side to the other, the steps have been positioned to describe a large diagonal cross on one side of the *kuṇḍa* as an aesthetic rather than a constructional detail. Examples

illustrating this point are the western walls of the Kuṇḍa at Roda (Rodā), Gujarat (Plate 368), and the Ujālā Bāoṛī ('Bright Well'<sup>5</sup>) at Mandu (Plate 385). Frequently, shallow niches containing religious images were placed in the triangular wall space of the pyramidal blocks of steps, as may be seen in the 'Old Kuṇḍa' at Dedadara and the Revāṭī Kuṇḍ at Junagadh (Junnārgaṛh), both in Gujarat. The niches in the Pannā Miyāṃ Kuṇḍa<sup>6</sup> at Amber, and in the Ujālā Bāoṛī at Mandu are so large and deep that they appear as a decorative design feature and it is questionable if they were ever used to contain images. Although the step-pyramids in the Nagar and Sāgar Kuṇḍas at Bundī and in the Sūrya Kuṇḍ at Vanthali are particularly large, they contain very small niches, in which images have been placed. Probably the largest number of niches within such triangles of stairs is found in the Kāpaḍvañj Kuṇḍ which has a total of 136 small shrines (Plate 370)<sup>7</sup>; but also in the Brahmā Kuṇḍ at Shihor, near Bhavnagarh (Bhavnagaṛh) in Gujarat, about 128 shrines were integrated into the pyramidal steps of the *kuṇḍa* basin (Plate 369). Sometimes, pyramidal blocks and long parallel steps were combined within one structure, as may be seen in the Sūrya Kuṇḍ at Vanthali, in the Khatan Bāoṛī in the fort at Chitor (Plate 443) and the so-called 'Ritual Bath', near the Mahānavami Platform at Vijayanagara (Plate 371)<sup>8</sup>. The *kuṇḍa* of the Ibrahim Rauzā at Bijapur has only two sets of pyramidal stair blocks positioned one above the other, on the east and the west sides (Plate 426)<sup>9</sup>. A similar arrangement is found on the north and the east sides of the bathing *kuṇḍa* of the Trymbakeśvara Temple at Trimbak (Plate 372). Here, the sets of pyramidal steps seem to go over into each other creating a large fan-shaped

<sup>5</sup>This *kuṇḍa* is called 'bright' because it is open, contrasting with another example near by which is covered and therefore called Andherī Bāoṛī, meaning 'dark well'. (D.R. Patil, 1992, *Mandu*, pp. 28-29).

<sup>6</sup>At times also spelled Pannā Mia or Mīan Kuṇḍ.

<sup>7</sup>J.A.S. Burgess, 1905, 'Muhammadan Architecture of Ahmadabad.', p. 94.

<sup>8</sup>This chlorite-lined tank is believed to be eleventh-century but to have been brought to Vijayanagara during the fourteenth and sixteenth centuries. In order to reassemble the parts properly, letters and numbers in Kannada were engraved onto each slab (D. Davison-Jenkins, 1988, 'The Irrigation and Water Supply of the City of Vijayanagara.', PhD thesis, pp. 69-70).

<sup>9</sup>Allegedly, the maze pattern decorating the sides of the doors to the tomb depict a plan of the system of water channels of the city of Bijapur (S. Gole, 1989, *Indian Maps and Plans: from earliest Times to the Advent of European Surveys*. pp. 22- 23).

design<sup>10</sup>. A further example of this feature may be seen in the large rectangular *kuṇḍa* in front of the Asar (Āthār) Mahal at Bijapur. *Kuṇḍas* whose walls are structured by large tiers of terraces which contain narrow flights of small steps can be seen in the Potarā Kuṇḍ at Mathura, the large *kuṇḍa* east of the Laṅka Tilaka Image House at Polonnaruva, and these are typical of most *kuṇḍas* at Tiruvannamalai, and in Nepal (Plates 373, 375).

The two earliest known *kuṇḍas* are part of the Aśvamedha Complex at Nagarjunakonda, dating from about 220 AD (Plate 376), but for many other *kuṇḍas* we also have comparatively early dates, such as the eighth or ninth century AD. It has been suggested that the form of the *kuṇḍas* is older than that of the stepwells<sup>11</sup>. The Ābānerī Kuṇḍ mainly dates from the early ninth century, but was rebuilt in the eighteenth century, and only the columns of the Dade-li-Vāv at Bhinmal date from the eighth century while the rest of the structure is later; but *kuṇḍas* such as the ones at Roda, Dedadara and Osian, predominantly date from the eighth century.

By comparison with tanks, there appear to be fewer opportunities to alter the design and structure of *kuṇḍas*. While tanks often originate in natural depressions or small lakes, which were later firmly bound in stone and furnished with *ghāṭs*, it was a conscious decision from the very beginning to construct a well or *kuṇḍa*, because of the necessity to locate and reach ground water. First a well was dug, and when the ground water table was reached the top of the well could be widened, or a *kuṇḍa*-basin could be constructed alongside. If no ground water was found, the excavation could still be used to collect rain water. In north-western India, a region which has been strongly associated with *kuṇḍas*, the commissioning of new *kuṇḍa* constructions seems to have declined during the sixteenth, and ceased after the eighteenth century. A reason for this may be that

<sup>10</sup>They are similar to the fan-shaped steps discussed along *ghāṭs* in Chapter Three.

<sup>11</sup>M. Livingston, 1995, 'The Stepwells and Stepped-Ponds of Western India.', p. 5. Stepwells will be discussed in the following chapter.

the Muslim rulers of the region largely supported the continued development of indigenous Hindu stepwell architecture at the expense of stepped basin designs.

*Kuṇḍas* are typically found in towns, villages and the domestic quarters of forts, where they serve as public water places and are used for washing, bathing and watering animals and fields. They also form part of palace compounds, where they are usually of a more ornamental type, not drawing ground water but simply illustrating the aesthetic of this type of water structure (Plate 371). *Kuṇḍas* are also commonly found in connection with religious institutions, such as Hindu temples and Buddhist monasteries where their sacred waters are used for ritual ablutions. They may be found in association with Islamic tombs, as for example at the Quṭb Shāhī Tombs, Golconda, and the Ibrahim Rauzā, Bijapur, and also with cenotaphs, as the *kuṇḍa* at Ahar. A few examples of *kuṇḍas* are located in mosque courtyards, as in the Jamī Masjid at Malda, Bihar. Miniature *praṇālī-kuṇḍas* are typical of Karnataka (Plate 377)<sup>12</sup>.

*Kuṇḍas* are regarded as particularly sacred among water structures, and are therefore frequently connected with religious buildings, with shrine rooms and small temples often integrated into their sides. The term *kuṇḍa* can sometimes be used to denote a sacred water site in general, and in Sanskrit sources there is often no clear differentiation between the terms '*kuṇḍa*' and '*tīrtha*'<sup>13</sup>. A reason for this emphasis on the religious significance of *kuṇḍas* may derive from the fact that they penetrated deep into the ground, and open it up in the shape of a funnel, flooded with light. The ground is believed to be inhabited by demons and supernatural beings which may be upset by such disturbances, and the well-shafts connected with *kuṇḍas* may lead to the underworld. Therefore, shrines and religious images were placed around *kuṇḍa*-basins to ward off evil powers emerging from the water. Alternatively, water is sacred and so are the structures connected with it, frequently turning water architecture into open-air shrines and important places of pilgrimage. A more practical consideration is that *kuṇḍas* are

<sup>12</sup>For a brief discussion of *praṇālī-kuṇḍas* and tanks see Chapter Four.

<sup>13</sup>A.W. Entwistle, 1987, *Braj: Centre of Krishna Pilgrimage*. p. 293.

particularly found in arid regions and desert areas, where water is a rare and precious commodity, and regarded by the people as a gift from the gods who in return have to be pleased and comforted to ensure a continuous flow of water.

## II. Variations in *Kunda* Construction and Design

*Kuṇḍas* exist in various shapes, sizes and degrees of elaboration. The simplest and most common type of *kuṇḍa* has steps along all four sides of its basin. Such regular symmetrical and concentric *kuṇḍas* can be very small as for instance the circa seven metres square *kuṇḍa*<sup>14</sup> at the Nīlakaṇṭha Temple in Kalinjar Fort, the thirteen and a half by seventeen metres Maṇikarṇikā Kuṇḍ at Maṇikarṇikā Ghāṭ in Benares, and the circa thirteen by sixteen metres *kuṇḍa* in the ruins in front of the Rāmacandra Temple at Vijayanagara (Plate 378). The seventeenth-century *kuṇḍa* at Mudabidri (Muḍabidri), Karnataka, the large circa fourteenth to fifteenth-century Elephant tank at Daulatabad, the large fourth to sixth-century Ath Pokuna (Elephant Pond) at Anuradhapura, and the early eleventh-century Sūrya Kuṇḍ at Modhera (Plate 379), are much larger, the latter measuring about 360 by 540 metres.

### 1. *Kuṇḍas* with Risalits

Other *kuṇḍas* have steps only on three sides while the fourth is a plain wall (Fig. 28). A very small and simple example of this version is the Gaurī Kuṇḍ on Kedār Ghāṭ at Benares (7.5 by 10 metres). Its eastern side is straight with a small niche in its centre which may be used as an outlet into the Ganges. A larger example is the old *kuṇḍa* at the site for the new Digambara Pārśvanātha Jain Temple at Bijolia, measuring about twenty-two and a half metres square. While three sides

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<sup>14</sup>All measurements relate to the length of the top perimeter of the *kuṇḍas*.

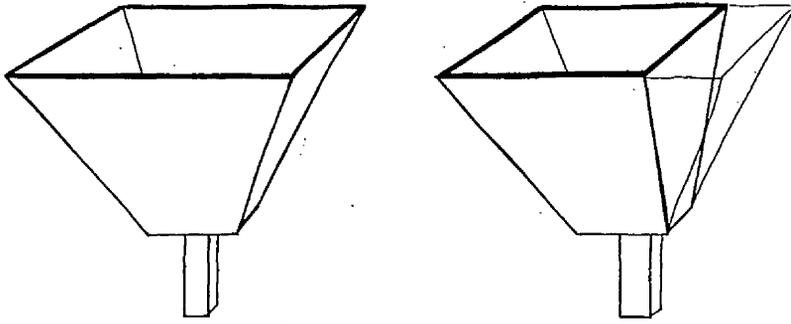


Fig. 28: *Kuṇḍa* with four sloping sides (a), and *kuṇḍa* with three sloping sides and one vertical wall (b).

have pyramidal step formations, the north side is plain with a small outlet channel in its centre. A large Digambara *mānastambha* was set next to the basin at its north-western corner. At Dedadara, one of the long sides of the rectangular 'Old Kuṇḍa' (circa eighth century AD<sup>15</sup>) is a plain vertical wall (Plate 380). This *kuṇḍa* is the place of an annual fair in which unmarried women fast at the sacred water site in the hope of finding a good husband. A similar architectural arrangement may have existed at Roda, where the long northern side of the rectangular *kuṇḍa*, dating from the eighth century AD, has entirely subsided (Plate 381). It is likely that this side wall too was a long and vertical wall<sup>16</sup>, which collapsed because it was not buttressed by a mass of steps as on the other three sides which are still in good condition. Although the water basin of the Kacchapeśvara Svāmī Temple at Kanchipuram is not very deep, three sides were furnished with steps and the fourth side, to the west, is a vertical wall, typical of *kuṇḍa* constructions. In the centre of this wall is a square recess into which was set a small plain shrine containing a *liṅga*. The space surrounding the shrine can be used as a narrow

<sup>15</sup>Livingston, 1995, p. 14. Although the dating by the AIIS, Varanasi, is slightly later (ninth or early tenth century AD), the earlier, circa eighth century dating is reasonable with regard to the similar eighth century Roḍā Kuṇḍa.

<sup>16</sup>M.A. Dhaky's plan of a reconstructed *kuṇḍa* at Roda depicts this northern wall with pyramidal steps mirroring the opposite site, but he does not give reasons for this assumption (Meister, M.W. & Dhaky, M.A., 1991, *Encyclopaedia of Indian Temple Architecture - North India: Period of Early Maturity (c. AD 700-900)*, p. 353, fig. 164).

*pradakṣiṇā patha*. Such circumambulation paths also surround the larger shrines in the centre of the sides in the Sūrya Kuṇḍ at Modhera (Plate 433).

Often, one finds a pulley mechanism positioned on these straight walls, as at the Jain temple at Bijolia and in the Roḍā Kuṇḍ, where a bucket could be pulled up over a wheel. Through this feature, a *kuṇḍa* without a separate well shaft on its side, could still be used in both ways, for pulling up buckets and for descending to the water's surface. If all four sides had been furnished with steps, the water could not have been reached vertically from the top edge of the *kuṇḍa*. It is, however, not necessary for an entire side to be in the shape of a vertical wall to allow for water to be lifted up, which, as pointed out, is an unstable construction. Therefore, there are more examples where only a relatively small protruding vertical wall, with a well-head was inserted into one of the stepped sides of a *kuṇḍa*.

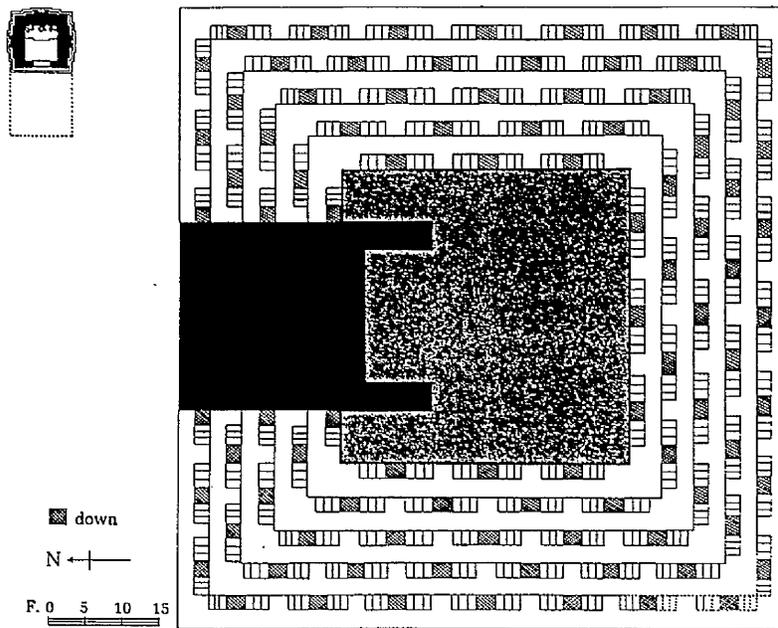


Fig. 29: Pipad, *kuṇḍa* with a projecting buttress on one side (M.W. Meister & M.A. Dhaky, 1991, p. 267).

This feature seems to have derived from much simpler versions of *kuṇḍas* which were more closely related to wells. In rural areas in India, one often finds

large wells, similar to small deep tanks, which have not been firmly constructed and are mainly *kaccā*. Because people have to step close to the unsecured edge of these well-tanks to lower their buckets, and because the earth easily breaks away, projecting platforms were constructed several metres down the side of such structures in a similar manner as those found in *kuṇḍas*. These simple constructions were built in stone or brick on one side (Plate 382), but at a later date the sides of such large wells might also be clad in stone (Plate 384). Securely constructed *kuṇḍas*, having such large projecting buttresses, include for example the *kuṇḍa* at Pipad (Pipād), Rajsthan (Fig. 29), the Bhīm Lāt Kuṇḍ in Chitorgarh, and the Ujālā Bāoṛī at Mandu (Plate 385). The late tenth-century *kuṇḍa* at Vasantgarh (Vasantgarh), Rajasthan, has an interesting variation of this feature: here, there are two such projections next to each other on the east side. Between them, supported on the protruding buttresses, is a Persian wheel turned by bullocks to lift the water (Plate 383). In *kuṇḍas*, the feature of the projecting central wall sections was developed further and often lost its former purely practical function as a secure platform to raise water. The projecting sections of the *kuṇḍa* walls, which are of the same height as the funnel-shaped basins, and typically protrude from the centre of usually only one side, will be referred to as 'risalits' (Fig. 30)<sup>17</sup>; this is an Italian term used mainly to describe the tendency of certain parts of the façades of European palace and church architecture to protrude forward from a vertical wall<sup>18</sup>.

At Bundi, there are two identical deep *kuṇḍas* on either side of the road leading to the Chogan Gate. The Nagar and the Sāgar Kuṇḍ have one shallow risalit each in the centre of their northern sides (Plate 386). These sides are almost

<sup>17</sup>P. Reclam, 1996, *Kleines Wörterbuch der Architektur*. pp. 109, 116; W. Müller & G. Vogel, 1989, *dtv-Atlas zur Baukunst*, Vol. 2, pp. 427, 457, 465, 469, 485, 495.

<sup>18</sup>M.A. Dhaky refers to these protruding wall sections once as '*pratōlī*', meaning a 'gatehouse' (Dhaky & Meister, 1991, pp. 352, 457.), and on the photographs of the Vasantgarh Kuṇḍa in the AIIIS photographic archive, Varanasi, as '*aṭṭālikā*', meaning a house of two or more storeys, or a lofty house palace (translation from: P.K. Acharya, 1993, *An Encyclopaedia of Hindu Architecture*, Manasara Series: Volume 7, p. 12). None of these terms seem particularly fitting.

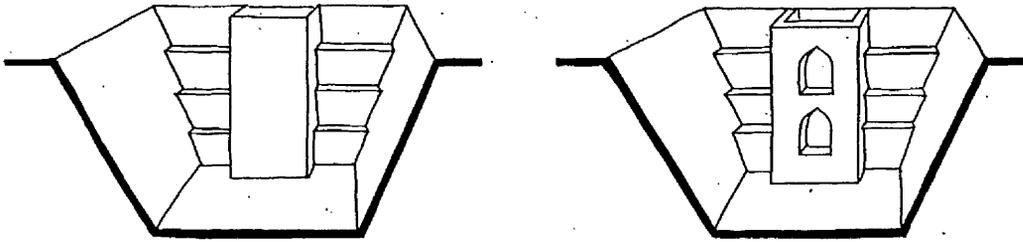


Fig. 30: *Kuṇḍas* with risalits

vertical walls with only narrow terraces and no steps. The three other sides, although they have pyramidal blocks of short steps, are also extremely steep. In both *kuṇḍas*, the façades of the protruding risalits have been decorated with string courses and small niches containing Hindu religious images. The top section of the risalit where the well-head is located, consists of a kind of throne platform supported by elaborately carved corbelled brackets which protrude slightly further over the water. The backs of the platforms have been beautifully carved with lotus designs. Within the City Palace at Bundi, in the formal garden in front of the Citra Mahal, there is a small *kuṇḍa* which has four such throne platforms in the centre of each of its four sides (Plate 387). A particularly beautifully adorned example of a central risalit can be seen in the *kuṇḍa* in the village of Kamalapuram, south of the Royal Centre at Vijayanagara (Plates 388-390). Four brackets, two carved as leaping lions, and two as corbels with lotus pendants (*puṣpabodigai*) protrude from its front, and its sides are carved with Hindu deities, the sun and the moon, *mithuna* couples, snakes and other animals in low relief. The *kuṇḍa* on the main road in Eklingji has a central, circa ten metres wide risalit (Plate 391). It is decorated with string courses and has two large corbelled openings one set above the other in its centre. The niches enable one to see into the well shaft which is contained within the projecting risalit on the west side of the *kuṇḍa*<sup>19</sup>. The *kuṇḍa*

<sup>19</sup>The location and purpose of these well shafts within the structures of the *kuṇḍas* has been discussed in the previous section.

at Eklingji constitutes an important mediating stage in the development of the risalits. It is related to the examples mentioned above, where the projecting risalits were solid and only decorated with shallow niches, but here, the central risalit has been hollowed out and the arched openings open up the well shaft behind. This looks ahead to the following developments, where the solid mass of the risalit was broken up to contain galleried apartments and shrines (Fig. 30 b).

The simplest version of this subsequent stage in the development can be seen in the Sundhārā in the royal garden behind the palace at Patan, Nepal (Plate 392). On the north side of the *kuṇḍa* is a broken up risalit. It contains a small room with a balcony in front and a platform above, which is similar to the ones in the Nagar and Sāgar Kuṇḍs and also has beautiful carvings on the back. The sixteenth-century Pannā Miyām Kuṇḍ in Amber village has a wide risalit on its south-western side (Plate 393)<sup>20</sup>, which protrudes as far into the *kuṇḍa* as it does to the back. Above is a large square platform, surrounded by a low ornamental fence, overlooking the water basin. The upper part of the risalit is solid and has two elegant well brackets. Underneath a pronounced *chajjā*, the risalit has an apartment for the women who were not allowed to bathe with the men, and who remained hidden by a green stone screen (*jālī*)<sup>21</sup>. An interesting arrangement, which seems to have derived from examples similar to the Vasantgarh Kuṇḍa, discussed above, which has two protruding risalits next to each other, is the Sabirna-dha-kā Kuṇḍa at Bundi. In the latter, the space between the two projecting blocks was filled in by a galleried apartment on the top level, and by pyramidal steps on the two levels below it (Plate 394). A further open apartment was set on top, towering above the upper edge of the *kuṇḍa*-basin. Although sections of the large risalit were opened up, it still retains a character of substantial solidity. In the Mandākinī Kuṇḍ at Bijolia, the entire risalit was opened up and transformed into an open balcony. A closed part only remains at

<sup>20</sup>This is one of the few *kuṇḍas* which are not oriented towards the cardinal points of directions.

<sup>21</sup>Livingston, 1995. p.13. On my photo, Plate 393, the apartments underneath the *chajjā* are submerged by the water of the *kuṇḍa*.

the back, containing a shaded room behind the lavishly decorated open porch facing the water of the *kuṇḍa* (Plate 395). At high water level, when the porch is almost entirely submerged, its roof can still be used to draw up water (Plate 396). An even more skeletal construction, though still reminiscent of earlier solid risalits, was constructed on the west side of a *kuṇḍa* near the so-called Underground Temple at Vijayanagara (Plate 397). In many of these cases, the function of the risalits has changed. Originally, they were designed as places from where water could securely be pulled up from a *kuṇḍa*, but they developed into cool retreats in the summer heat which were also often used as pleasure resorts for the royalty.

More closely related to *kuṇḍas* with three stepped sides and a plain vertical wall, but continuing the tendency to break up one side of a *kuṇḍa*, as was described with the risalits, are examples where apartments were constructed behind the plain wall at one side of the *kuṇḍa*. At Bundi, west of the Rānī-jī-kī Bāolī is a relatively small *kuṇḍa*, called Jaipurīyā Kuṇḍa. It has six levels of pyramidal steps on three sides, and a plain southern wall without steps. Integrated into this wall, on a level with the top of the third tier of steps, is an open pillared apartment running along the entire side (Plate 398). It is interesting that underneath this gallery, a circa one and a half metres wide central section of the wall protrudes by about ten centimetres, appearing to echo risalit constructions, and giving emphasis to the central arch. This would have been the place for the most important member of a group, possibly the throne seat of the *mahārāja*, resting above the water of the *kuṇḍa*. The sixteenth-century *kuṇḍa* at Sabli, Gujarat, which is part of an Islamic pleasure garden complex<sup>22</sup>, has apartments on two levels integrated into the west side. Similar in style to the open balcony of the Mandākinī Kuṇḍ at Bijolia, the balconies, balustrades and doors at Sabli are beautifully carved and decorated. Apartments, or at least deep niches on three levels, were constructed on the south side of the Ujālā Bāoṛī at Mandu, and a

<sup>22</sup>Haus der Kulturen der Welt, 1991, *Vistāra: Die Architektur Indiens*, p. 54.

fourth level was added through a small domed pavilion which reaches above the upper limit of the perimeter wall (Plate 374). The *kuṇḍa* in the complex of the Quṭb Shāhī Tombs at Golconda has an open arched gallery running almost around all four sides of the basin. A large pyramidal stair case is to be found underneath the gallery on the west (Plate 399). Although the central part on the north side does not protrude as the risalits discussed above, it is marked by a large pointed arch underneath the gallery, and a second apartment, three arches wide, protrudes above the upper perimeter (Plate 400). Above this highest level of the construction are two sets of well brackets with pulley mechanisms. Also in the monumental Potarā Kuṇḍ, next to the Kṛṣṇajān māṣṭamī (birthplace of Kṛṣṇa) at Mathura (circa 95 metres square), apartments run almost around the entire *kuṇḍa*, interrupted by a wide ramp on the north, and broad flights of steps centrally located on the other sides. There is a large protruding risalit with a pulley mechanism on top and three levels of apartments in the south-eastern corner. The basin was furnished with steps by Mahādjī of Sindhiyā in 1782 AD, and its name derives from Kṛṣṇa's nappies (*potarā*) which Devakī is said to have washed in the *kuṇḍa*<sup>23</sup>.

The most elaborate and complicated arrangements of this kind were constructed at Osian and at Abaneri in the late eighth and the early ninth century respectively. The *kuṇḍa* at Osian has eight tiers of steep pyramidal steps. Unfortunately, the apartments which once must have covered the entire east side, and which were connected and approached by passages from behind, are quite dilapidated (Plate 401) and the top chambers have been completely destroyed. From the centre of this side still protrudes a massive risalit which also contains the well feeding the *kuṇḍa*. Because the style of the columns and carvings remaining in situ on all levels of the east side are contemporary with the other parts of the *kuṇḍa* and the temples around, this side seems originally to have been designed in this elaborate way. Because the Chānda Bāoṛī at Abaneri has Mughal

<sup>23</sup>F.S. Growse, 1979, *Mathurā: A District Memoir*, p. 131; Entwistle, 1987, pp. 211, 319.

Period pavilions at its upper level, and was rebuilt during the eighteenth century<sup>24</sup>, it conveys a better picture of how both *kuṇḍas* may once have looked (Plates 402-3). At Abaneri, there are about eleven levels of triangular blocks of steps, and about six levels of galleries and shrine rooms were built into its north side. The lower two levels, which are contemporary with the other sides of the *kuṇḍa* and with the early ninth-century Harṣatmātā Temple built on its side, protrude and the central part contains the well shaft of the *kuṇḍa*. Two large shrines project at the lowermost level. The apartments, integrated into one side of the *kuṇḍas*, were comfortable cool places for travellers, villagers and priests during the summer heat and due to their vicinity to the holy waters and their location below ground level, in the earth, were regarded as sacred places, and as thresholds to the supernatural.

## 2. Linear *Kuṇḍas*

A further sub-group of *kuṇḍas* is more linear in nature and layout, while the ones discussed before have been mainly square and concentric. Linear *kuṇḍas* are found in hard or rocky soil where their side walls can be almost vertical because the ground is stable and cannot easily slip away. Although the sides are usually still furnished with small parallel steps to secure the structure, the steps tend to be so small, and the angle of the sides so steep, that one cannot normally use them to descend to the water. Steps permitting access to the bottom of the pit are only present on one side of the *kuṇḍa*. This side with the flight of steps has to be far more shallow than the three other sides, and therefore creates a long and deep open cut in the ground leading to the *kuṇḍa*-basin. In order to buttress the steep sides of the basin, these constructions were often built in a staggered way, reducing the width of the *kuṇḍa* basin to the size of a narrow flight of steps (Fig. 31). Because of their shared linear nature, this sub-group of *kuṇḍas* is related

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<sup>24</sup>Meister & Dhaky, 1991, p. 237.

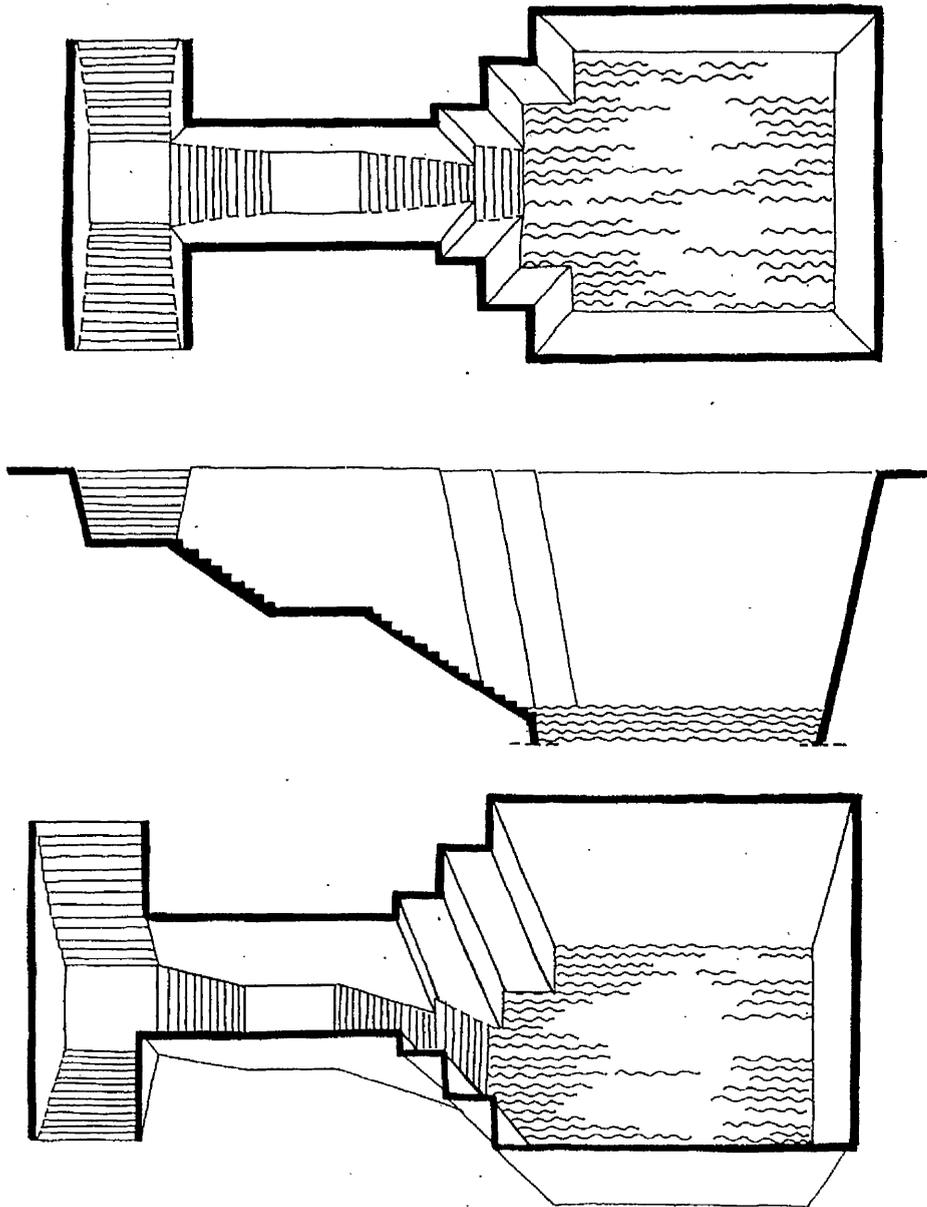


Figure 31: Schematic drawing of a linear *kuṇḍa*.

to stepwells. The differences between a linear *kuṇḍa* and a stepwell are that wells usually go down further, and therefore have longer and narrower steps; and that while in a linear *kuṇḍa*, the steps make up the fourth side of a rectangular basin with a continuous transition from the basin to the access steps, in a stepwell there is a clear distinction between the circular well shaft and the linear flight of steps (Fig. 38). Moreover, the water basins of *kuṇḍas* are larger than well shafts,

and although the sides of a *kuṇḍa* basin are very steep, they always widen towards the top, while wells have vertical walls<sup>25</sup>. As a consequence, linear *kuṇḍas* do not need supporting constructions against the inward thrust from the side walls.

Due to the hard and rocky soil conditions in most parts of the Deccan, and particularly in the modern state of Karnataka, this region has a substantial number of clear linear *kuṇḍas*. A large and elaborate example is located behind the Mahādeva Temple at Ittagi (Plates 404-5). To the north, it has a circa fourteen metres square *kuṇḍa* basin with steep sides of narrowly stepped stone. The basin tapers towards the south and goes over into a flight of steps which leads up to a terrace where the steps split into two side stairs pointing east and west, thus shortening an otherwise long flight of steps. The length of the steps is equal to the sides of the basin. A smaller but steeper example is located in the compound of the mid-twelfth-century Jain Basti at Halebid (Halebid), Karnataka (Plate 407). Today, the upper parts of the wall of the *kuṇḍa* basin have been rebuilt in rubble, but earlier photographs by G. Verardi, published in 1980, still show the original steep walls (Plate 408). A similarly deep *kuṇḍa* with very steep sides but no flight of steps, is located in Nandi village, Karnataka, in the compound of the Bhōgaṇandiśvara Temple (Plate 413). At Halebid, in order to shorten the long flight of steps, they turn from east to south after a small terrace half way up the climb. A particularly impressive and complicated example is the well-preserved eleventh to twelfth-century linear *kuṇḍa* in front of the small Manikeśvara Temple at Lakkundi (Plates 406, 409). The *kuṇḍa* basin to the north measures about sixteen metres square, and the long flight of steps to the south is of equal length. In this example, there are two more flights of steps leading down in the centre of the east and west sides of the basin, but they can only be used to reach the water at high water level, when the basin is filled to almost three quarters of its height, at which point a wider terrace runs around the *kuṇḍa*. At this level, eight small

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<sup>25</sup>In Chapter Six on wells, a few examples of open stepwells will be discussed which slightly widen towards the top, but also these are still clearly distinguished from *kuṇḍas* by having a separating device between the well shaft and the steps.

shrines, now empty, were integrated into three sides of the basin, and additional shrines were placed at the three flights of steps. The most unusual feature of this complicated construction, however, is the wide bridge which leads over the long flight of steps in the south towards the temple on the west. The bridge is supported by a construction of pillars and beams underneath. Although this construction is strongly reminiscent of stepwells where supporting constructions of posts and beams were needed to counterbalance the thrust of the vertical side walls, the walls at Lakkundi are horizontally stepped, and widen towards the top. Therefore, the bridging construction was not needed for strengthening purposes but seems to have been an aesthetic choice. At Lakkundi, the water structure is many times larger and more elaborate than the small and relatively simple adjacent temple, making a strong statement about the importance of water and its religious connotations.

There are many examples of smaller versions of this sub-type, as for instance the *kuṇḍa* in the walled temple enclosure of the Navaliṅga complex at Kukknur (Kukkanūr) in Karnataka (Plate 410). The structure dates from the ninth century AD and tapers to the west, where a flight of steps leads up to a platform and then turns south. Although this *kuṇḍa* is relatively small (circa 9 by 10.5 metres), it is not very deep, and could therefore have easily been furnished with proper steps on all sides, but the same aesthetic of a linear approach was chosen which requires slightly less building material for the walls. In the *kuṇḍa* of the twelfth-century Cenna Keśava Temple at Belur (Plate 430), the difference between the side walls and the wide flight of steps in the west is less pronounced although the narrow steps on the three sides are still higher and have much less depth but as a consequence are far more difficult to climb than those in the west<sup>26</sup>. A further example is the fifteenth to sixteenth-century Joḍ Bāvli, also called Joḍ Gumbaz-kī Bāvli because it is situated close to the tomb of Khān Muḥammad, at Bijapur. The *kuṇḍa* in the village of Kamalapuram near

<sup>26</sup>While the steps on the west measure 37cm in depth and 27cm in height, the surface of the three other sides steps 16cm in and 30cm up.

Vijayanagara, already mentioned under the former sub-type for its beautifully decorated central risalit, also follows the typical plan of the linear *kuṇḍas* by tapering towards the east (Plate 388). It is quite shallow and its steps can be descended on all four sides.

Not all *kuṇḍas* in the Deccan, however, follow this sub-type, and other examples such as the large circa seventeenth-century *kuṇḍa* at Mudabidri or the small example in the Ibrahim Rauzā at Bijapur, follow the most simple version of *kuṇḍas* with steps or large tiers on four sides. Examples of linear *kuṇḍas* can be found outside the Deccan in other parts of India, where they usually follow a layout similar to those at Kukknur, Belur or Kamalapuram, by not being so deep but having a pronounced tapering end. Good examples include Lakṣmī Kuṇḍ at Benares whose shape tapers towards the east and leads up to a flight of steps (Plate 411), and the *kuṇḍa* in front of Daryā Khān's Tomb at Mandu which tapers to the south. The Twin Pools (Kuṭṭam Pokuna) at Anuradhapura are rectangular without a tapered end but they are very deep and have the typical steep walls, which are stepped to fix the ground but are impossible to descend (Plate 412). Proper stairs with wider steps are provided at both ends of the *kuṇḍas* and at the west side of the southern *kuṇḍa*. A similar arrangement is found in the *kuṇḍa* behind the Pāpanāsi Temple at Bhubaneshwar. A particularly deep and impressive *kuṇḍa* of this subtype is the Jhālṛā Kuṇḍ in the Dargāh at Ajmer (Plate 414). It is comparable in depth and steepness to the *kuṇḍas* at Ittagi and Lakkundi and its sides were constructed using narrow stone steps.

### 3. Conduit-*Kuṇḍas*

A third sub-group of *kuṇḍas* has large tiers on all four sides but proper steps usually positioned only in the centre of one of its sides. These *kuṇḍas* are multi-stepped and often very deep. The most important characteristic of this sub-type is that the water issues out of water spouts in the lowermost retaining wall of the

structures (Fig. 32, Plate 416), and that the overflow is channelled out of those *kuṇḍas* which do not usually contain or store water.

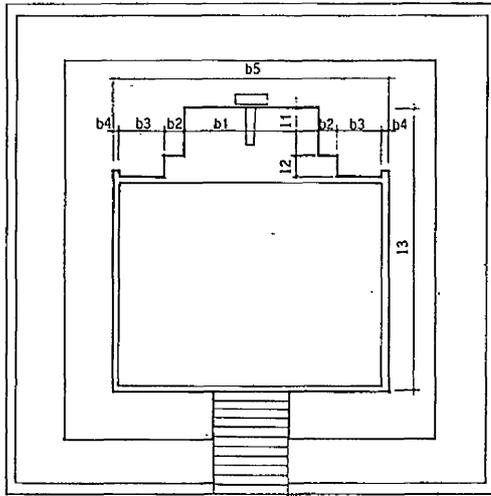


Fig. 32: Schematic drawing of a conduit-*kuṇḍa* (R.O.A. Becker-Ritterspach, 1995, p. 35).

The conduit-sub-type of *kuṇḍa* is the most common water structure of Nepal, locally called *duṅge-dhārā*, *gaihrī-dhārā* (Nepālī), *gā-hiṭī* or *lavaham-hiṭī* (Newāri) (Plate 415)<sup>27</sup>. The *dhārās* tap shallow ground water aquifers directly and distribute the water through spouts. Because the ground water table does not seem to vary so much between the seasons, and because on the slopes of the Himalayas water is available all year round, the *kuṇḍas* do not have to store water. The *dhārās* provide continuous fresh running subsurface water which is clean and more desirable than stagnant water. The overflow of some *dhārās* is channelled into storage basins (*pokharīs*) while others distribute their water into the rivers. The oldest *dhārās* surviving in Nepal date from the sixth century AD, but most of them have been extensively rebuilt and usually only the spouts, which are normally carved or cast in the forms of mythical animals or other sculptural elements, and bear the inscriptions, still date from this early period. Although most *dhārās* are public water structures, found in the squares and streets of the

<sup>27</sup>Few Nepali *dhārās*, as for example the Kva Hiṭī at Kathmandu, have small circular well shafts in one of their corners.

towns, conduit-*kuṇḍas* were also constructed inside the palaces of the Malla kings (ruled 1200-1769 AD) (Plate 417)<sup>28</sup>. An unusual example of this sub-group from Karnataka is the circa eleventh-century *kuṇḍa* near the Sūle Basti at Humcha (Humca) (Plate 418). It is a relatively shallow structure with a stone water conduit in the centre of its western side. Central flights of steps lead down into the *kuṇḍa* on the other sides, and the walls are decorated with ornamental flowers and small elephant sculptures adorn the steps. There are also several examples of *kuṇḍas* in Sri Lanka, which store water, but which are fed by decorated water spouts. The northern basin of the eighth to ninth-century Twin Pools at Anuradhapura, is fed by a stone water conduit which although it has been severely damaged, still resembles the shape of a *makara*. They were used as ritual baths by the monks. Also the Kumāra Pokuna at Polonnaruva has two stone water spouts flanking the stairs on the western side, which were carved in the shape of crocodiles or mythical *makaras* (Plate 419). These are further examples of the remarkable connection between the water architecture of Nepal and Sri Lanka, mentioned earlier.

#### 4. Examples Relating to other Types

Having both a tank in which water is stored, and in most cases also a well, *kuṇḍas* lend themselves particularly well to creating hybrid forms where the inherent aspects of tanks or wells may be pronounced more strongly. An example where the well element of a *kuṇḍa* has been thus emphasised is the small *kuṇḍa* north-east of the Kuśavart Tirtha at Trimbak (Plate 420). The *kuṇḍa* measures about nine metres square and has three parallel steps on all four sides, and a fourth step on the top of the basin, in the centre of each side. The square basin contains a central octagonal well shaft which becomes circular lower down the shaft. The sequence from a square over an octagon to a cylindrical shape creates an inverted *liṅga*. The fact that there is no perimeter wall surrounding the structure and that

<sup>28</sup>For more information on the water architecture of the Kathmandu Valley see my article 'Water Architecture of the Kathmandu Valley: Function and Faith', 1997(a).

there is no pulley mechanism to draw up water, both typical features of wells, makes the structure still more clearly a *kuṇḍa*, although the funnel-shaped basin is small in contrast to the well shaft. A further *kuṇḍa*-well hybrid is the Gaṅguā Kuṇḍa, also called the Gaṅguo Tank, at Loteshvar (Loṭeśvara) in Gujarat. It has a central circular well shaft which reaches up to the level of the surrounding ground and is surrounded by four *kuṇḍa* basins. The basins are connected to the central well, and are fed by it through openings in its side wall (Fig. 33). An example of a *kuṇḍa* relating to stepwell constructions is the Ujālā Bāoṛī at Mandu. This example has pyramidal steps on its south and west sides, but because the steps are very steep and narrow, a longer and shallower flight of steps has been constructed leading down to the water in the western corner of the northern side (Plate 385). This wedge-shaped flight of stairs is strongly reminiscent of stepwells.

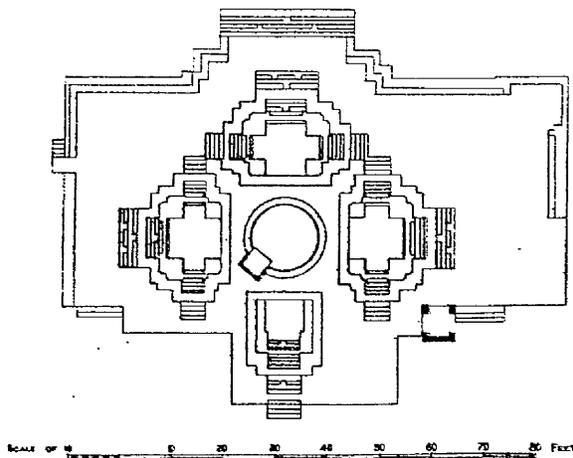


Fig. 33: Loteshvar, Gaṅguā Kuṇḍa (J.A.S. Burgess & H. Cousens, 1903, Plate 74)

The Lolārka Kuṇḍa at Benares has three long flights of steps leading down to a square *kuṇḍa* basin at the bottom (Fig. 34). A narrow flight of steep steps leads to a central deep tank with vertical sides which enabled the builders to descend quickly to a considerable depth within a smaller area and therefore more economically, than if the whole basin had been furnished with long tiers of steps. At the bottom of the narrow stairs is a typical funnel-shaped *kuṇḍa* basin and the

well feeding the basin is found next to it, on the east. In this *kuṇḍa*, the interconnection between the basin and the well shaft in the shape of a tall open pointed arch is clearly visible (Plate 421). The Lolārka Kuṇḍ is believed to be one of the oldest sacred sites of Benares and is dedicated to the Sun-god Sūrya. Annually, in the month of Bhādrapada (August-September), a large religious fair is held at the *kuṇḍa*, and married couples come to bathe in the water to gain male offspring<sup>29</sup>.

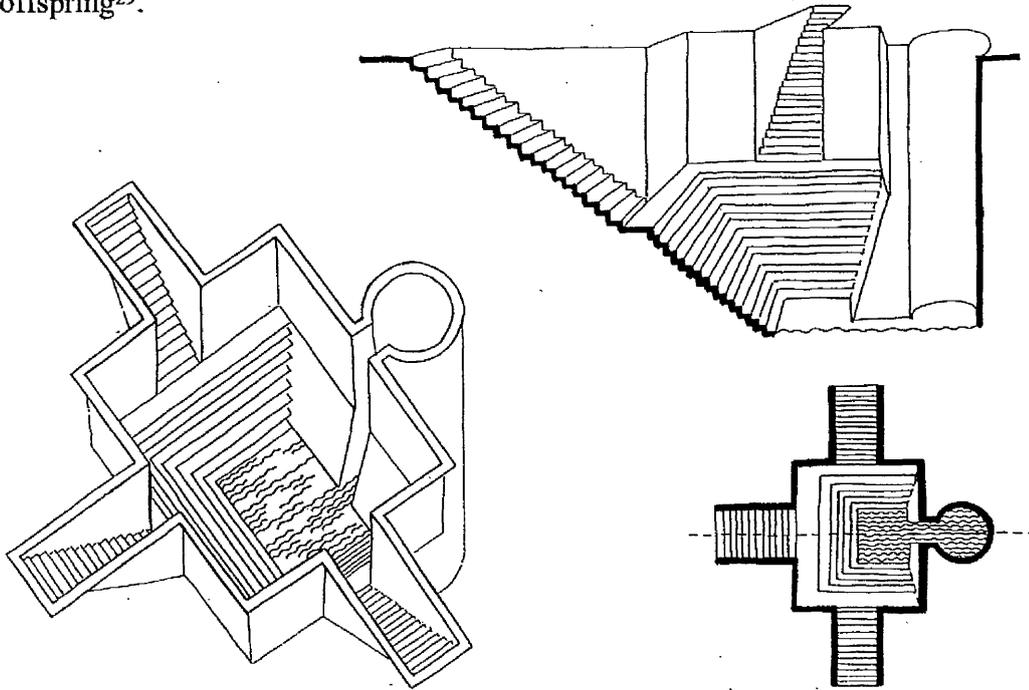


Fig. 34: Schematised drawing of the Lolārka Kuṇḍa, Benares.

The *kuṇḍas* at Bhinmal (circa eighth century AD and later) and at Umta (circa late tenth century AD), Gujarat, both have funnel-shaped *kuṇḍa*-basins with pyramidal step formations (Plate 423), and do not have long and narrow flights of parallel steps; nonetheless they resemble stepwell constructions because their fourth walls connecting the *kuṇḍa*-basins with the well shafts behind have been opened up, and in shape are similar to the supporting constructions commonly used in stepwells to withstand the substantial side thrust evident at such depth

<sup>29</sup>D. Eck, 1993, *Banaras: City of Light*. pp. 177-178; N. Gutschow & A. Michaels, 1993, *Benares: Tempel und religiöses Leben in der heiligen Stadt der Hindus*. p. 77.

(Plates 351, 422)<sup>30</sup>. Many *kuṇḍas* have plain berm walls straight below ground level forming an upper perimeter wall around the deep stepped basins, as may be seen in the *kuṇḍa* at Mukhed, Maharashtra, the Mandākinī Kuṇḍa at Bijolia, the Khātan Bāoli at Chitor, or the 'Later Kuṇḍa' at Ahar (Plates 363, 429). As a result they can easily be mistaken for tanks with straight walls at high water level when the funnel-shaped main part of the *kuṇḍa* is entirely covered by water (Plate 396). The Sabirna-dha-kā Kuṇḍa at Bundi even has three tiers of berm walls set on top of each other, before the usual pyramidal steps start their descent on all four sides.

### III. Platforms, Temples and Images in *Kuṇḍas*

Bastion platforms, which have been noticed in relation to *ghāṭs* and tanks, are also associated with *kuṇḍas*. Because *kuṇḍas* often have very steep sides and a relatively small basin at the bottom of the steps, the builders had to be inventive to integrate these additional structures into the narrow funnel-shaped basins. The Viśvanātha Kuṇḍa at Ellora, which is also called Brahmā Kuṇḍa or Aṣṭha-tīrtha, because eight heavenly rivers are believed to flow into the basin, has four platforms in its corners (Plate 424). The *kuṇḍa* has a high berm wall with empty niches, and is penetrated by steps in the centre of all four sides. Below the berm wall, the parallel steps are arranged in four large tiers. Because eight small shrines were constructed around the water basin at the bottom of the funnel, the bastion platforms were integrated into the corners of the uppermost tier of steps, furthest away from the water. The purpose of bastion platforms in their early development along river banks was to protect the edges of *ghāṭs* against the force of running water. However, the platforms in the Viśvanātha Kuṇḍa, though still massive octagonal structures, have been used as decorative features, located away from the

<sup>30</sup>J. Jain-Neubauer remarks on hybrids between *kuṇḍas* and stepwells in Rajasthan, which she either calls *kuṇḍa-vāpī* or *kuṇḍa-vāv* meaning stepwell ponds (*The Stepwells of Gujarat in Art-Historical Perspective*. p. xiii).

water. Their sides are beautifully carved with ornamental borders, rosettes and paired parrots, and religious reliefs were placed on two of them, echoing practices typical of platforms found along *ghāṭs*. The platform in the south-eastern corner has a further small platform set on the bastion which may once have carried a *liṅga*. The Pannā Miyām Kuṇḍ in the village at Amber is only partly built into the ground, and reaches out over the surface level by about two metres<sup>31</sup>. It has a raised narrow terrace running around the top of the basin which is reached from ground level by a set of stairs on the south-eastern side. Because the *kuṇḍa* has pyramidal step formations and almost vertical sides, octagonal bastion platforms carrying small domed pavilions were constructed at the outer edges of the four corners of the raised *kuṇḍa*-terrace and not within the steep narrow basin (Plate 425). Through this, both structural support and ornamentation were combined with the largest possible basin area. The Sāgar Tank at Alwar which can be classified as a tank-*kuṇḍa* hybrid due to the large size of its basin and its comparatively shallow depth, provides the most elaborate example of double-storeyed platforms with pavilions (Plates 272-3)<sup>32</sup>; this was only possible because this *kuṇḍa* has strong elements associated with tanks and enough space for these elaborate constructions.

Platforms may also be found in the centre of *kuṇḍas* with solid floors, where there is no well shaft or where it is located on one side. The Kumāra Pokuna at Polonnaruva has a circular platform carved as a lotus in its centre on which the king allegedly used to sit surrounded by water (Plate 354). Also the Sundhārā in the garden of the royal palace at Patan in Nepal, has a central platform carrying a lotus bud pillar (Plate 392). Such pillars are typical of Islamic architecture, and the *kuṇḍa* of the Ibrahim Rauzā at Bijapur also has an almost

<sup>31</sup>Further examples of *kuṇḍas* which are built into the ground, but also protrude above surface level, are to be found at the Undeśvara Temple at Bijolia (Mandākinī Kuṇḍa), and the Sabirna-dha-kā Kuṇḍ at Bundi. The small *kuṇḍa* in the Ibrahim Rauzā at Bijapur is very shallow and does not seem to go deeper than the height of the raised platform which also carries the tomb and the mosque. This feature is not unique to *kuṇḍas* and can also be encountered in tank architecture.

<sup>32</sup>The bastion platforms in the Sāgar Tank at Alwar have been discussed in Chapter Four.

identical platform with a lotus pillar in its centre (Plate 426). A plain lamp pillar is to be found in the centre of the Setumadhava Tīrtha in the temple complex at Rameshvaram. The *kuṇḍa* of the Kāmākṣī Temple at Kanchipuram is used during festivals and has the typical central platform which carries the festival pavilion (Plate 427). A further example of a central pavilion in a deep *kuṇḍa* may be seen in the so-called Choprā Tālāo to the west of the Citragupta Temple at Khajuraho<sup>33</sup>. However, it is more common to find pavilions constructed on the outer perimeter of the *kuṇḍa* basin. One such example, the Ujālā Bāoṛī at Mandu has a pavilion on its south side, which according to D.R. Patil, was used by royal watchmen to guard the water of the well (Plate 374)<sup>34</sup>. Further examples of pavilions overlooking the water of *kuṇḍas* are to be found on the north side of the Bhīm Lāt Kuṇḍ at Chitor, and in the centre of three sides of the Kāpaḍvañj Kuṇḍ. Also many Nepali *dhārās* have pavilions and resting shelters, called *pāṭis*, on their sides (Plate 428).

Although bridges leading to central islands and temples are untypical of *kuṇḍa* constructions, there are some notable exceptions. The Setumadhava Tīrtha at Rameshvaram has a short modern bridge, constructed in concrete, leading to a small platform in the centre of its eastern side. The platform does not protrude into the basin but is supported by a pillar at the level of the bottom step and is connected by a bridge to the perimeter. The water is drawn up in buckets which are then emptied over the heads of the pilgrims. This takes us back to a problem which the risalit sub-type had solved, namely how to make the water of the *kuṇḍa* directly accessible from the edge of the *kuṇḍa*. The solution at Rameshvaram was cheaper and less complicated, but unquestionably also less elegant. A proper bridge leading to an island in the centre of a *kuṇḍa* which carries a pavilion was constructed in the 'Later Kuṇḍa' (fifteenth to twentieth century) at Ahar (Plate 429). The small pavilion in the centre is a replacement of an earlier probably

<sup>33</sup>E. Zannas, 1960, *Khajuraho*. pp. 108, 168, Plate 36.

<sup>34</sup>Patil, 1992, p. 29.

larger structure<sup>35</sup>. The *kuṇḍa* is surrounded by a typical berm wall containing recesses for religious images, and pyramidal steps below, but an island can only be positioned centrally in a relatively shallow basin, as in this example. Another notable example, is the bridge found at the southern end of the *kuṇḍa* at Lakkundi (Plate 406). Because this large and linear *kuṇḍa* is located immediately in front of the Manikeśvara Temple, one would otherwise have to walk around it to reach the temple. But the bridge leading over the narrow steps provides direct access to the porch of the temple. In so doing pilgrims reach the temple by crossing water, or at least by crossing the steps of a water structure, and this arrangement gives tangible shape to the idea of a *tīrtha*, and as such can be related to bridges leading to central islands with temples, or other religious buildings in tank architecture.

Small temples were also constructed inside *kuṇḍa* basins. In the corners of the eighth-century *kuṇḍa* at Roda, at the level of the fourth landing of pyramidal steps, are four shrines (Plate 368). They were built into the stepped sides of the basin, face in different directions, and their deities guard the sacred water site<sup>36</sup>. The shrines are found at the bottom of the deep stepped basin, which is now dry, and must originally have been under water for considerable periods of the year. At Abaneri, two shrines were built against the bottom part of the central risalit which itself contains galleries and shaded apartments at a higher level (Plate 402). The shrines were constructed so close to the water surface that it appears to be intentional that they should be partly submerged for certain periods of the year. Because water is regarded as sacred, and religious images are regularly bathed and immersed in water, it is particularly auspicious for shrines and their images to be submerged and so become imbued with the sacred power of the water. In the dry season, these temples re-appear from the water and the images are worshipped by the people. The *kuṇḍa* at Dedadara, whose layout is closely related to the Rodā Kuṇḍa, has similar shrines in the corners but outside the basin, on the upper edge

<sup>35</sup>An earlier photograph from the AIIS at Varanasi shows the same site without the replacement pavilion, with only the central island carrying the *līṅga*.

<sup>36</sup>The Gaṇeśa shrine faces north-east, the Sūrya shrine faces south-east, the shrine of Viṣṇu faces south-west and that of Pārvatī north-west.

of the *kuṇḍa* (Plate 380). Also the *kuṇḍa* in the compound of the Cenna Keśava Temple at Belur has two small temples set onto the upper edge of its basin flanking the stairs on the west side (Plate 430). Nearby, in the village of Huligere, is a *kuṇḍa* (circa 1142-1173 AD<sup>37</sup>) which is surrounded by a series of miniature temples integrated into the steep parallel steps, two-thirds of the way down to the water (Plate 431). There are two shrines on each side of the central stairs, and five more on each of the other sides. A similar arrangement of eight small temples surrounding the water-filled basin above the lowermost tier of steps is found in the Viśvanātha Kuṇḍ at Ellora (Plate 432); the temples contain śiva-*liṅgas*, images of Śiva, Gaṇeśa and Durgā. At Śivarātri, a major bathing festival is held in the *kuṇḍa*, and pilgrims worship at the shrines in the water basin. Although unusual for narrow *kuṇḍa* basins, a complete *śikhara* temple with porch was built into the 'Early Kuṇḍa' at Ahar, dating from circa 1000 AD. Because the *kuṇḍa* has steep sides and a small basin, the temple fills it almost entirely and little remains of the water basin. The *prāsāda* of the temple rests on the edge of the *kuṇḍa* and a long open columned porch stretches out over the basin itself. Underneath, it is supported by further columns which rest on a lower floor set into the water of the basin. By being double-storeyed, the temple can adapt to changes in water level, the effect of which shows more clearly in a small basin than in a tank with a large surface area.

Although examples which illustrate distinct design themes, such as bridges, islands and temples in water, have previously been discussed in connection with *ghāṭis* and particularly with tanks, and have been shown to feature in *kuṇḍa* constructions, the latter must be considered as exceptions. Tanks and *kuṇḍas* both contain water and are related to each other, but they are distinct types of water basins. While tanks are generally shallow horizontal structures providing ample space and ground support for platforms, bridges, islands and temples, *kuṇḍas* usually have greater depth, are more compact constructions, and vertical

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<sup>37</sup>G. Verardi, 1980, 'La Bāoli Hoysala Di Huligere.', p. 108.

in layout. Space for experimentation with additional building elements in *kunḍas* was gained in the deep and extended stepped sides. As a consequence, structures such as temples and pavilions were generally positioned in the vertical rather than the horizontal plane. They were integrated either into one side (Plate 433) or set on the edge of *kunḍas*, but not usually into the water of the small basins. The incorporation of apartments and shrines in one side of a *kunḍa* has already been mentioned as typical of the risalit sub-group of *kunḍas*, where a vertical wall or protruding risalit was transformed into open, often multi-storeyed apartments.

The positioning of images within *kunḍas* illustrates two distinct religious aspects of this sacred water structure. On the one hand, the *kunḍa* provides the point of entry for sacred water and spiritual elements from the subterranean world which should be greeted discretely and often unseen by pilgrims and visitors. On the other, the presence of these spiritual elements must be recognised in the form of images for worship and veneration. Their appearance and disappearance with the variable water level only heightens the sense with which the images are associated with 'another' world. Generally, only reliefs or small shrine niches containing images were integrated into the side walls of *kunḍa* basins. It is especially typical of *kunḍas* of the conduit sub-group to have small shrines with religious images from a *śaivite*, *viṣṇavite* or one of the Buddhists religious sects above their spouts set into the lowermost retaining wall. These images are actively worshipped by the people using the *kunḍa*. Connected with other sub-types, however, the images are frequently either so close to the surface of the water that they remain submerged for long parts of the year, or they are positioned in inaccessible positions on the straight walls of *kunḍas*, so that they can hardly be seen by those coming to the water place. For example in the *kunḍa* above the Kukadeśvara Kuṇḍ in the settlement in the fort at Chitor (Plate 434) an elaborate figural frieze has been integrated into its vertical wall on the west side. Because the east side is a rough rock face which is not accessible to people, and there is no terrace below from which to look up at the carvings, it is impossible to

see the images clearly. The conclusion must be that it was never the intention that visitors or pilgrims should be able to read these carvings as a sacred narrative. The friezes are only accessible to the sacred waters, and please the gods who are thought to dwell within the basin, but they also shield off evil forces from the religious site including those evil elements which may come out of the depth of the waters leading to the underworld.

#### IV. Positioning of *Kundas* and Access to them

The essence of *kuṇḍas* as the means of access to fresh ground water with all the powerful religious and social connotations that surround such water structures has provided the motivation for construction, in spite of the difficulty and expense of such undertakings. Consequently, unlike the ubiquitous tank, there are few multiple examples on adjacent sites. However, there are identical twin *kuṇḍas* on either side of the road leading to the Chogan Gate at Bundi, called the Nagar and the Sāgar *Kuṇḍas*. The basins go very deep and both seem to tap the ground water. Further examples of twin-*kuṇḍas* are the deep and steep-sided Kutṭam Pokuna, Twin Pools, at Anuradhapura (Plate 435). The northern basin is fed by a fresh water spring and the southern *kuṇḍa* receives the overflow. Before the spring water enters the northern *kuṇḍa*, it passes through a small settling pit to clean the water of surface dirt. In the towns of the Kathmandu Valley, one often finds two *kuṇḍas* close to each other in city squares. In common with multiple tanks, the incentive for the construction of several related *kuṇḍas* was often hierarchical or communal religious notions of purity and pollution. At Konti in Patan, there are two relatively shallow *kuṇḍas* next to the precinct of the Kumbheśvara Pagoda (Fig. 35). The smaller Misā Hiṭī next to the compound wall of the temple has a Buddhist *caitya* in its centre and appears to be used principally

by the Buddhist Newar communities, while the larger Konti Hiṭī to its west is Hindu, and contains a large central śiva-*liṅga*.

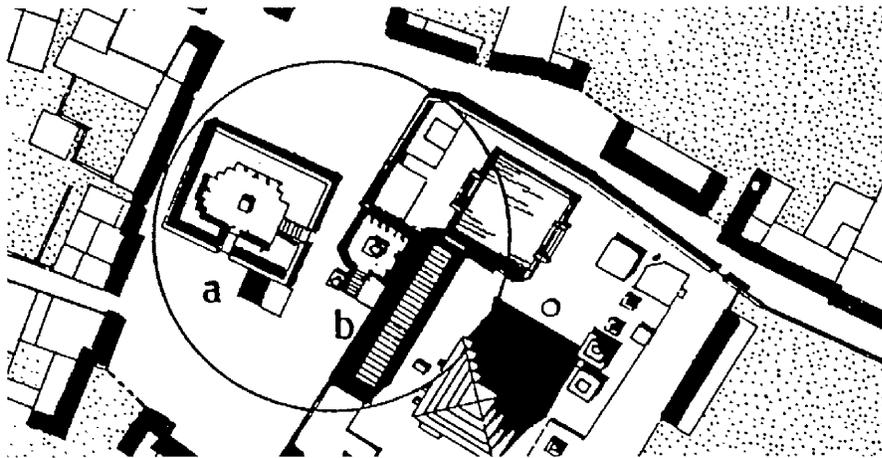


Fig. 35: Patan, twin *kuṇḍas* at the Kumbeśvara Pagoda (a: Konti Hiṭī; b: Misā Hiṭī) (R.O.B. Becker-Ritterspach, 1995, p. 13).

Chyāsal Hiṭī, in the north-east of Patan is not open to lower castes, while everybody has access to the water of Nāya Hiṭī located to its south on the same square. The latter has a large seated Buddha image set in a casket on a pillar in its centre, which was installed in 1980 as a sign against caste restrictions<sup>38</sup>. In the same way, Tāpā Hiṭī in the north of Patan has two adjoining *kuṇḍa* basins, whilst in Karnataka, the large *kuṇḍa* in front of the Asar Mahal at Bijapur, is flanked by two smaller basins in the north and the south which, however, are shallow tanks with plain walls. Both tanks are fed by beautifully decorated water spouts at their shorter western sides. Examples of *kuṇḍas* next to and within larger water bodies have already been discussed in connection with *ghāṭs*. At Benares, the small Gaurī and Maṇikarnikā *Kuṇḍas* have been built into platforms in the *ghāṭs* adjacent to the sacred Ganges, and there are three small *kuṇḍas* constructed in the water of Puṣkar Lake (Plates 192-3)<sup>39</sup>. One example of a small *kuṇḍa* basin on an island is to be found in the large oval-shaped tank of the Tilasvaṇ Mahādev Temple at Taleshvar.

<sup>38</sup>R.O.A. Becker-Ritterspach, 1995, *Water Conduits of the Kathmandu Valley*, pp. 10-13.

<sup>39</sup>For a detailed discussion see Chapter Three 'Ghats', Part V.

A feature of water structures discussed in earlier chapters which is repeated as an important design feature in the construction of *kuṇḍas* and which saw a distinct process of development, are gateways. Examples of circa eleventh and early twelfth-century ornamental gateways lead to the deep and elaborate *kuṇḍas* at Modhera and Kapadvanj (Plates 436-7) respectively. At Modhera, the gateway forms part of a long and clear east-west axis, established by the Sūrya Temple in the west, a detached open *maṇḍapa* in front of it, followed by the *torāṇa*, and the large *kuṇḍa* further to the east. Also at Kapadvanj, a Sūrya Temple once stood behind the gateway to the east. There appears to be a particular association between temples of the sun and *kuṇḍas*, a further example of which is found in the south of Delhi at the Sūraj Kuṇḍ. These have been interpreted as a representation of the fire-water dualism which is related to the birth of the sun out of the cosmic ocean, and while the temples have been seen as architectural shapes of the fire altar, the *kuṇḍas* represent water altars<sup>40</sup>. A.W. Entwistle, in his study of the sacred area of Braj, observed that Sūrya Kuṇḍas, *kuṇḍas* dedicated to the sun, are a recurrent and specific type of that area. According to his observations, they are usually the oldest water structures in the vicinity and may be relics of the ancient Sūrya cult that flourished particularly during the first millennium AD<sup>41</sup>.

An example of a late tenth-century AD gateway-pavilion is that between the small temple and the deep *kuṇḍa* at Vasantgarh (Plate 438). It is located in the centre of the west side and consists of four columns which start square on the bottom and develop via an octagonal section into round pillars at the top. The roof of the gateway-*maṇḍapa* has pronounced *chajjās* and the structure is integrated into a low wall surrounding the basin. The *kuṇḍa* at Vasantgarh shows particularly clearly the connection between religious and mundane uses of water structures. While the east side has two narrow protruding risalits and a large wheel to pull up water for irrigating the fields and for watering animals, the west side is dominated by religious aspects, and has a prominent gateway and a small

<sup>40</sup>Haus der Kulturen der Welt, 1991, p. 46.

<sup>41</sup>Entwistle, 1987, p. 293.

temple. In this way, the water of the *kuṇḍa* serves for both ablutions and temple rites as well as for domestic and agricultural needs. The nineteenth-century Gajendra Muṣṭ Tīrtha, also called Brahmā Kuṇḍ, of the Śrī Raṅganātha Temple at Vrindavan has four open gateway-pavilions located at the top of four large pyramidal staircases in the centre of each side (Plate 439). It was near this *kuṇḍa* that Brahmā is believed to have realised the divine supremacy of Kṛṣṇa. The *kuṇḍa* was frequently visited by Mīrābai, and is the setting for the annual festival of Jala Bihār<sup>42</sup>.

The feature of open pillared gateway-pavilions, which are also found along rivers and tanks, were developed further in *kuṇḍa* constructions. There are several examples where the sides of gateway pavilions were filled in and turned into closed *maṇḍapas* or small gate-houses with two doors on opposite sides. An example of a gate-house is on the western side of the *kuṇḍa* in the compound of the Cenna Keśava Temple at Belur (Plate 440). In common with many shrine entrances, the outer doorway is flanked by elaborately decorated beams with images of *dvārapālas* on the bottom, and a large lotus relief was carved on the floor in front of the doorway. This elaboration shows the religious importance of the *kuṇḍa*, and that the water basin was conceived as a sacred precinct which was entered through a gate-house similar to the porch of a temple. In the same way, the large *kuṇḍa* at Abaneri is entered through a prominent gate-house, which, however, does not seem to be contemporary with the early parts of the structure, and was probably added or replaced in the eighteenth century. Both *kuṇḍas* have enclosing walls, the one at Belur measuring about 1.2 metres in height, while the wall surrounding the Ābānerī Kuṇḍa is higher, and supports an arcaded gallery which runs along the inside (Plate 403). A similar arcade encloses the Brahmā Kuṇḍ at Shihor (Plate 369). Today, Ābānerī Kuṇḍa is the headquarters the local police because it is strong and compact and easy to defend, providing a modern military dimension to this ancient concept of a water structure. Because *kuṇḍas*

<sup>42</sup>D. Anand, 1992, *Krishna: The Living God of Braj*. p. 110; R.K. Das, 1990, *Temples of Vrindaban*. p. 172.

usually have steep sides, and are much deeper than tanks, it is more typical for *kuṇḍas* than for tanks to be surrounded by walls.

Gate-houses carry their own religious significance and there are two particularly interesting examples leading down to the water of separate *kuṇḍas*, called Simha Tirtha (Lion Tirtha) No. 1 and 2, on the *pradakṣiṇā patha* around the sacred mountain at Tiruvannamalai. The gateways are in the shape of large lion sculptures with doorways between the two front legs underneath the heads of the lions (Plates 441-2). A similar lion gate, leading down to a well at Gangaikondacholapuram was dedicated by the Zamindar of Udaiyarpalaiyam<sup>43</sup>, and it is probable that the gateways at Tiruvannamalai were also donated by him. Lion sculptures are frequently found flanking the entrances to temples, or at the base of columns, but in these *kuṇḍas*, one large lion sculpture became the gateway itself, and people seem to have to pass through the lions' bodies to reach the water. This is a forceful image giving visual shape to the idea that to bathe and totally immerse oneself in water is to represent one's death and rebirth. By being swallowed by a lion, the pilgrim can be reborn in the waters of the *kuṇḍas*.

It is typical of *kuṇḍas* to have steep and prominent flights of steps which are distinguished from the surrounding stepped sides, leading up to the temples situated on their sloping sides. Probably the best known example of this is the Sūrya Kuṇḍ in front of the Temple of the Sun at Modhera. In the centre of the long western side, steep parallel steps in the shape of an inverted triangle lead up from the deep *kuṇḍa* to the temple (Plate 437), and visualise the spiritual ascent of the soul which may be gained through a visit to the temple. Although the temple on the east side of the *Khātan Bāoli* in Chitorgarh is small, the steps leading up to it in the middle of one side are clearly defined, because the rest of the side is made up by plain vertical walls (Plate 443), while the other three sides are stepped. The monumental pyramid of steps which lead up to a temple of the sun, now destroyed, on the west side of the Sūraj Kuṇḍ south of Delhi is particularly

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<sup>43</sup>P. Pichard (ed.), 1994, *Vingt ans après Tanjavur, Gangaikondacholapuram*. p. 149.

impressive (Plate 359). The large oval *kuṇḍa* is believed to have been constructed by the Tomar king Sūrajpāl in the tenth century AD, and its steps were repaired by Firūz Shāh Tughluq in the fourteenth century.

To summarise, *kuṇḍas* are deep stepped basins which are distinguished from tanks by their steep and often pyramidal step formations, and their funnel-shaped sides. *Kuṇḍas* vary in size and elaboration and as discussed they can be divided into three prominent sub-groups. They are found in religious, palace and civic contexts. Although until now it has been commonly assumed that *kuṇḍas* predominantly exist in north-western India, in the regions today known as Rajasthan and Gujarat, and indeed no study of *kuṇḍas* outside this area has until now been undertaken, the conclusion of this study is that structures of this type, whilst showing slight variations within the limitations of the category, exist all over India, Nepal and Sri Lanka. Their emphasis of construction in the vertical plane, allied to comparably smaller basins, determined that there was less design flexibility than in tanks or along *ghāṭs* for the development of additional structures within the water. As a consequence, this process was mainly restricted to the long sides of basins, with functional structures being built into the vertical side walls, and more ornamental features around the upper edges of the basins.

Because *kuṇḍas* penetrate deep into the ground, they are considered particularly sacred, and temples, shrines and religious images are commonly associated with them. With the expansion of British colonial influence in the nineteenth century it became less common to build *kuṇḍas*, partly because in the later period Western engineering techniques introduced water provision through pipes, faucets and pumps, and partly because traditional sources of financial patronage and labour were no longer available as local rulers and elites declined in influence. While the construction of *ghāṭs*, storage tanks, and the digging of

plain draw-wells in dry regions continued, the construction of aesthetically pleasing, complicated, expensive and religiously significant *kuṇḍas* did not continue on any large scale. It is perhaps equally significant to observe that there are few specific examples of modern architecture which make a strong reference to *kuṇḍa* constructions. A notable exception is the square courtyard of the Jawahar Kala Kendra at Jaipur in Rajasthan, designed by Charles Correa in 1986-88, which is surrounded by three tiers of pyramidal steps, typical of *kuṇḍa* constructions (Plate 444). In the centre of the open courtyard at Jaipur, where in a *kuṇḍa* a well might have been located, a large circular red sandstone disc clearly marks the place of an imaginary well shaft (Plate 677). A further modern example which makes a clear reference to *kuṇḍas* is found in front of the Kelaṇi Temple (Kelaṇiya Vihāra) at Colombo. Here, a fountain has been set in the centre of a shallow multi-stepped concentric floor ornament imitating earlier diagrammatic designs of *kuṇḍas* (Plate 445)<sup>44</sup>. Although the construction of *kuṇḍas* for the provision of water for the people was superseded by cheaper and quicker methods, as water began to be transported over longer distances, the spectacular visual effect and the typical aesthetic achieved by their characteristic pyramidal step formations and their multi-stepped and concentric nature has found some echoes in modern South Asian architecture.

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<sup>44</sup>For more examples of modern *kuṇḍas* and a more detailed discussion of modern water architecture in general, see Chapter Eight, Conclusion, Part III.

# Sites mentioned in Chapter 6: Wells



## Chapter 6: WELLS

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### I. Introduction

Wells are vertical cylindrical shafts which penetrate deep into the ground and always tap ground water<sup>1</sup>, the most reliable source of water provision. Among the names most frequently used to refer to wells are *kūpa* (Sanskrit), *kuāṃ* (Hindi), *kūo* (Gujarati) and *ināra* (Nepali). The depth of the well shaft depends on that of the water table, which can at times lie as much as 100 to 200 metres below the surface. Most wells are circular, but square, octagonal and hexagonal shafts exist, and these are typical of more elaborate structures in which the well shaft is only one part of a larger well monument. At the top, the wells are usually surrounded by a parapet wall, and in an ordinary draw well, this low wall is the only part of the water structure which is visible over ground. At the well-head a permanent pulley mechanism is frequently installed to haul up buckets or leather bags (*pūrs*) by hand, or by employing bullocks turning a Persian wheel. Nowadays, electric pumps also are fitted to draw water from wells. Among the various types of water architecture, wells expose the smallest surface area to the sun and they preserve water, even during the dry season, longer and fresher than most other water structures. Particularly in desert areas, where rain falls only during a few months in the year, they are vital for the survival of men, animals and crops. Wells are found all over South Asia and coexist alongside *ghāṭs*, tanks and *kuṇḍas*.

The earliest known wells in South Asia were found in the excavations at Mohenjo-daro and Harappa in the area of the modern state of Pakistan. They are deep brick built circular structures and date from about 2800 BC. Many other

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<sup>1</sup>There are very few exceptions, such as the Champā Bāoṛī at Mandu and the 'well' in the Bolanāth Mandir at Bijolia which receive water from nearby water sources through subterranean channels.

wells have early dates, but because in a plain draw well there is not much space for architectural display and decoration, and the parapet walls are the most likely part to have been re-built, exact dating of wells is often difficult. During the early periods, wells were frequently constructed from prefabricated circular rings made of stone or burned brick. Such wells are commonly referred to as ring-wells<sup>2</sup>.

Wells are usually located in public places which are easily accessible to the people, while larger houses and palaces have private wells<sup>3</sup>. Public wells are to be found in the streets and on the squares of villages and towns where they provide water for every day domestic needs. Frequently, they have a raised stone platform surrounding the well shaft which is used for the washing of clothes and other items at the well (Fig. 36). They are also located at city gates, at cross-roads and on overland roads to provide water to travellers. Many wells have stone troughs on their sides to water animals. Situated in or near the fields, they are also used for irrigation. Wells are meeting places for the community, and believed to be sacred, turning many of them into active places of worship.



Fig. 36: Draw well in raised platform (P.D. Couté & J.M. Léger, 1989, p. 102).

<sup>2</sup>One such ring-well survives near the Council Chamber at Polonnaruva (made of terracotta), and two may be seen in the compound of the Naṭarāja Temple at Chidambaram (made of granite).

<sup>3</sup>Both the *Aparājītapṛcchā* and the *Mānasāra* state that wells should be located in places where "they can conveniently be reached by a large number of inhabitants" (L.M. Dubey, 1987, *Aparājītapṛcchā - A Critical Study*. p. 120).

Wells are frequently found in connection with Hindu, Buddhist and Jain temples and also with mosques and gurdwaras. They can either be located directly adjacent to religious monuments, or further away in their compound. In a few rare cases they are even found within a religious edifice itself<sup>4</sup>. Wells have strong religious connotations because they penetrate deep into the ground, which is regarded as the abode of gods and spirits. On the one hand, this may have benevolent effects on the people using the well, because the ground water is believed to be imbued with divine powers, to cleanse body and soul, to be regenerating, healing and fertilising, and to enhance prosperity. On the other hand, wells may be haunted by malevolent powers, particularly by the restless souls of people who died a violent death or for whom no proper death rituals were conducted by their families<sup>5</sup>. Such evil spirits (*bhūts*), may inflict disease and disaster on people approaching the wells. The close relationship between death and wells also becomes obvious from the many *satī*- and hero-stones which may be found next to well monuments, as for example the hero-stones on the side of the Jīān Vāv at Visavada near Porbander (Plate 446), or the Muslim grave adjacent to the Bija Maṇḍal Bāoli at Vidisha. Wells were frequently constructed to commemorate the dead, as for example the Rāṇī Vāv<sup>6</sup> at Patan, built by Queen Udayamati<sup>7</sup> as a memory to her deceased husband Bhīmadeva I. In order to please and retain the gods, and to propitiate the evil powers who may be present in wells, religious images are frequently installed, and religious rites are conducted at wells. The Nāga-kūpa at Benares is believed to be inhabited by a dangerous snake, a *nāga-rāja*, who is propitiated by offerings of milk. Many wells are closely connected with the cult of Jaladevī, the goddess of water, or mother goddesses, which is evident from their names. Examples are the Aṅkol Mātā Stepwell at

<sup>4</sup>See the discussion of 'well-temples' later on in this chapter.

<sup>5</sup>A.W. Entwistle, 1987, *Braj: Centre of Krishna Pilgrimage*. p. 295.

<sup>6</sup>Various spellings exist for the name of this well. 'Rāṇī' is the Sanskrit, 'Rāni-kī' the Hindi and 'Rāṇīnī' the Gujarati version of the name, while K. Mankodi, in his monograph on the well (1991, *The Queen's Stepwell at Patan*), calls it the 'Rāṅkī Vāv'.

<sup>7</sup>The spelling of the name Udayamati in the primary sources is not consistent while most resort to 'Udayamati', others spell her name 'Udayamati'.

Davad (Dāvad) and the Āsāpurī Vāv at Ahmedabad, both in Gujarat: 'mātā' means mother, and Āsāpurī is the name of a mother goddess<sup>8</sup>. It is interesting to observe that *kuṇḍas*, most of which also contain a well, are more typically associated with the male god Śiva, and some, such as the *kuṇḍa*-well hybrid adjacent to the Kuśavart Tirtha at Trimbak, take the shape of an inverted *liṅga*, while the narrow vertical shafts of the wells are predominantly connected with mother earth and female goddesses<sup>9</sup>.

There are plenty of myths associated with well monuments many of which further emphasise their religious and fertility aspects. These myths are given tangible form in the local customs, rites and religious ceremonies evolving around the wells. The Saptasamudrikā Kūp (Well of the Seven Seas) in the compound of the Museum at Mathura, for example, is traditionally visited by newly-married women<sup>10</sup>, and also in other parts of India, young brides and their husbands bathe in a well immediately after their wedding to become imbued with fertility and health. A bath in the Marīci Kuṇḍa Well<sup>11</sup> adjacent to the Mukteśvara Temple at Bhubaneswar is believed to make women fertile who cannot have children, and the tossing of coins into the same well is meant to generate prosperity. In Braj, newly born babies are taken to a well ten days after their birth to be sprinkled with sacred well water, and offerings are made to the well as they would be to a god in a temple<sup>12</sup>. Young mothers pour cow's milk on the parapet of wells to secure a plentiful supply of milk to their children, and young girls believe that pots of sprouting grain placed into a stepwell will bring good luck for their marriage<sup>13</sup>. Well water is also closely related to *amṛta*, and in Muslim areas the

<sup>8</sup>N. Gutschow & J. Pieper, 1978, *Indien: Von den Klöstern des Himalaya zu den Tempelstädten Südindiens*. p. 317; J. Jain-Neubauer, 1981, *The Stepwells of Gujarat in Art-Historical Perspective*. p.5.

<sup>9</sup>A.W. Entwistle in his study of Braj (1987, p. 295), however, describes that some of the wells of that region are associated with Varuṇa, the Vedic god of the water, who is referred to by the local people as 'Kūāmvālā', the 'well man'.

<sup>10</sup>Ibid., p. 296.

<sup>11</sup>In Orissa, 'Marīci' is frequently spelled 'Marīci' (See also W. Smith, 1994, *The Mukteśvara Temple in Bhubaneswar*. pp. 34, 42).

<sup>12</sup>Entwistle, 1987, p. 295.

<sup>13</sup>Livingston, 1995, 'The Stepwells and Stepped-Ponds of Western India.', p. 18.

village well is frequently addressed as Khwāja Khizr<sup>14</sup>. He and Alexander the Great searched for the secret location of the elixir of life, but only Khwāja Khizr is believed to have found it and gained immortality. Frequently, great wisdom and clairvoyance is attributed to wells in local myths. A well on Rājarājesvarī Ghāṭ at Pashupatinath, for example, had to be closed because it mirrored the future too faithfully. People who look into the Kāl-kūp (Well of Fate), situated near the Bhaironāth Temple at Benares, at noon and do not see their own shadow on the water are believed to be doomed to die within the next six month unless they gain the help of Mahā-kāl or Śiva to intervene with Yama, the god of death, on their behalf<sup>15</sup>.

## II. VARIATIONS IN WELL DESIGN

### 1. Draw Wells

The simplest version of a well is an ordinary draw well which consists of a vertical well shaft, which penetrates deep into the earth to reach the ground water table, and frequently also a pulley mechanism. In some cases, the women who come to the well bring their own bucket on a string and no machinery to pull up water is provided. The shafts of simple draw wells which are not connected with further building parts, such as steps or apartments which will be encountered later on in the chapter, are usually circular or square. Wells which have shafts of only about one to two metres in diameter, usually have parapet walls which are about one metre high, a comfortable height for a person to lean against and pull up water. Such wells may be seen in the towns of the Kathmandu Valley, where they are located on most squares (Plate 447). Wells which still have their original, or at least relatively old parapet walls, often have beautiful carvings displaying water-related divinities and vegetal ornamentation. Wells with such high parapet walls

<sup>14</sup>Rama (no initial), 1995, *Our water.Resources*. p. 20.

<sup>15</sup>E.B. Havell, 1905, *Benares the Sacred City: Sketches of Hindu Life and Religion*. p. 185.

often have a column, made of stone, wood or iron, on either side of the well upon which rests a beam. From the under surface of the beam is suspended a wheel or other machinery to haul up water from the well. Examples may be seen in the outer enclosure of the Naṭarāja Temple complex at Chidambaram (Plate 448), and on the south side of the Vaḍa-Kailāsanātha Temple in the compound of the Bṛhadiśvara Temple at Gangaikondacholapuram. It is typical of southern Maharashtra, for example the region around Adavad, to have square wells with two walls built on opposite sides of the shaft which are stepped and rise towards one side. Wooden poles, over which runs the rope to pull up a bucket, can be placed over the well shaft on different levels of the stepped sides to adapt to the person working the pulley (Plate 449). In other cases, two metal staffs with a further one fixed crosswise which runs through a small wheel over which the rope is pulled, reach out from the parapet wall into the centre of the well (Plate 450). Wider wells, which have a diameter of about two to three metres, often have very low or no parapet walls at all (Plate 456). Such examples frequently have narrow platforms running around the well shaft on the inside, supported underneath by beautifully carved brackets. Examples of this are the Bābūke Vāv near Ghumli and a draw well in the village of Amber. Such wide wells are often located in the middle of raised platforms which provide a firm and clean surface, raised above the dust of the ground, to wash clothing or produce. The platforms also prevent people or animals from falling into the wells which, without a parapet wall proper, would just be a hole in the ground. Wells with raised platforms can be found in towns, as for example in Bundi (Plate 451), or in the countryside, as in the *dharamśālās* on the Pañcakrośī-road around Benares or on the country road from Datia to Sirol village in Madhya Pradesh (Plate 452). The latter also has a stone trough adjacent to its well shaft which can be filled to water animals, a typical feature of wells located in villages or fields. Half way along the trough is a small shrine with a domed roof. Further examples of this, and the religious connotations of wells in general will be explored later on in this chapter. Troughs

and channels are used to direct water away from the well to irrigate the fields around. The Bābūke Vāv near Ghunli has both a cattle trough and an irrigation channel (Plate 453). Because a lot of water is needed for the irrigation of fields, wells which are used for agriculture often have a Persian wheel which can be turned by bullocks to pump up water (Plate 454).

Because ordinary draw wells do not use up a lot of space they are more often found in temple compounds than larger linear stepwells. Every temple needs water in its vicinity for the bathing of the image housed in the shrine room, for the execution of temple rituals, and for the ablutions of priests and worshippers. Although many temples have small ablution basins or proper bathing tanks<sup>16</sup>, where possible the water for temple rituals is taken from a sacred well in close vicinity to the temple. Examples of draw wells in temple compounds may be seen adjacent to the Madana Mohana Temple at Bishnupur, in front of the Sūrya Temple at Konarak (Konārak, Konārka), Orissa, and in the north-western corner of the Rāmacandra Temple compound at Raipur (Plates 450, 456). Many temples, such as the Bṛhadiśvara Temple at Tanjore, have several wells used for different occasions or rites. The water from the Suna or Sona Kuāṃ (The Golden Well) in the Jagannātha Temple at Puri, for example, is used only for the sacred bath of Lord Jagannātha on the festival of Snāna Tatra<sup>17</sup>. Out of the Twenty-two *tīrthas* in Temple at Rameshwaram twenty are wells, and even the tank and the *kuṇḍa* are used as wells by pulling up water from them in buckets and emptying them over the heads of the pilgrims. In temple compounds, wells are frequently found very close to the sanctum in the innermost enclosure. The well nearest to the sanctum of the Kālahastiśvara Temple at Kalahasti is called the Pātāla Gaṅgā, meaning the 'Underground' or 'Subterranean' Ganges, alluding to ideas encountered particularly in Chapter Two and Chapter Three on *Ghāts*, where the Ganges was believed to emerge on special occasions at sacred places in other parts of the Indian subcontinent. The well in the inner enclosure of the Sundareśvara Shrine at

<sup>16</sup>These have been discussed in Chapter Four.

<sup>17</sup>G.M. & B. Tripathy, 1992, *Sri Jagannath Puri: Past & Present*. p. 110.

Madurai is called the 'Goddess Well', and the water which priests pull up from the well next to the sanctum of the Nāgarāja Temple at Nagercoil is sprinkled over the offerings brought by worshippers to purify them before they are presented to the god. Also many Islamic mosque and tomb complexes, such as the Ṭānkā Masjid at Dholka and the Jāmi Masjid with Shaykh Salīm Chisti's tomb at Fatehpur Sikri have wells, which either tap the ground water or underground water cisterns, called *ṭānkā* or *barkā*<sup>18</sup>. An example of a rock-cut draw well connected with the Jain faith can be seen at the Jain caves on the east side of the fort at Gwalior.

Sometimes, ordinary draw wells, where the well shaft is the only element which penetrates into the ground, developed into more complicated well monuments over ground. In such constructions, the well is usually contained within a highly raised platform reached by steps. The raised terrace surrounding the well is used for washing, bathing and massaging, and excess water is channelled off the terrace and collected in storage reservoirs. In order to provide quick and easy access to people who merely want to fetch water, a second lower access to the well has sometimes been provided via a room underneath the terrace contained within the platform. These rooms provide access to the water through a window in the side of the well shaft (Fig. 37)<sup>19</sup>. In more elaborate examples, a roof is frequently constructed over the platform containing the well to provide shade to people working on the terrace. Wells of this type are typical of the region surrounding Benares: probably the most elaborate example of this kind is the well called Yūpa Sarovar in the north of Benares, which has three storeys above ground (Plate 455). The well has a high square terrace which provides a lower and an upper access to the well, and a further storey has been built on top of the roof above the terrace<sup>20</sup>. The well edifice, which has open arcading on all sides,

<sup>18</sup>For a discussion of storage tanks under mosque courtyards see Chapter Four, 'Tanks'.

<sup>19</sup>P.D. Couté & J.M. Léger, 1989, *Bénarès - Un Voyage d'architecture - An Architectural Voyage*, pp. 90-91, 118-119.

<sup>20</sup>*Ibid.*, p. 60; N. Gutschow & A. Michaels, 1993, *Benares: Tempel und religiöses Leben in der heiligen Stadt der Hindus*, p. 78.

provides direct access to the well from below, space to work near the well in the middle, and a cool area for resting and socialising above the well. While the well shaft reaches down into the underworld, the three-storeyed edifice points up to the sky, and its four open sides face the four cardinal directions, thus establishing strong cosmological links.

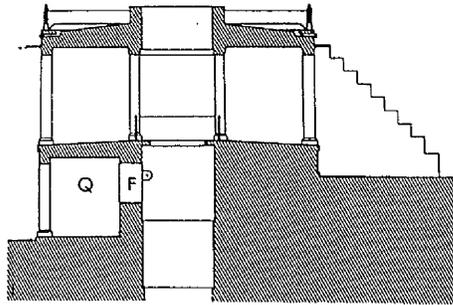


Fig. 37: Covered well near Benares with two levels, providing a lower (Q+F) and an upper access (P.D. Couté & J.M. Léger, 1989, p. 91).

## 2. Stepwells

In a stepwell, the vertical well shaft, also present in ordinary draw wells, is approached on one side by a long stepped corridor (*nāla*), which leads, frequently over several storeys, from the ground level down to the water of the well (Fig. 38). The majority of stepwells are oriented towards the cardinal directions. The

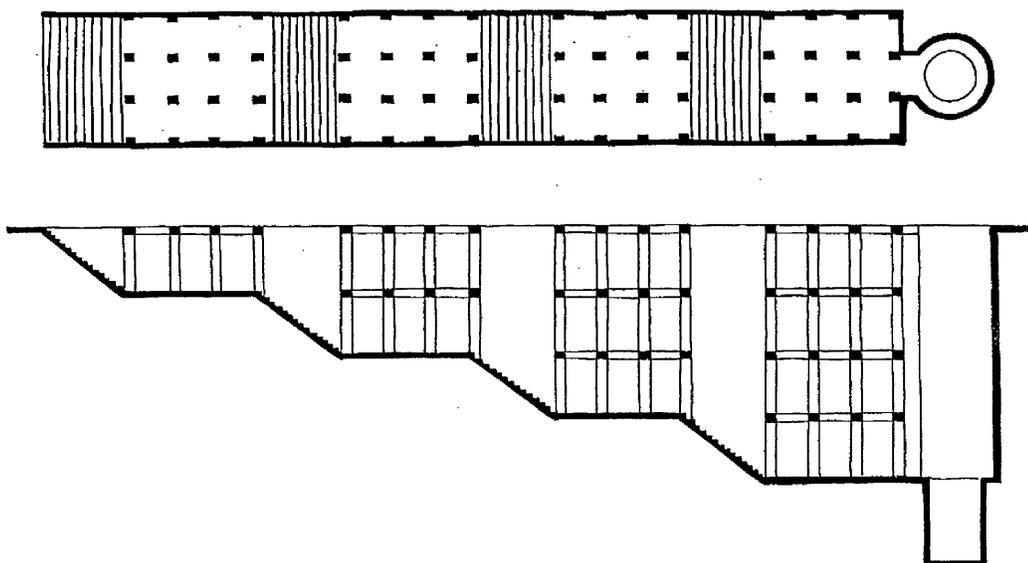


Fig. 38: Schematic drawing of a stepwell.

well shaft can still be used to simply haul up water, but the steps also provide direct access to people who descend the steps to reach the water of the well. Frequently, there is a small square or octagonal tank in front of and linked to the well at the bottom of the steps which collects surplus water from the well (Fig. 39). The basins are surrounded by a narrow terrace and are intended for washing and bathing, to keep the water of the well clean and potable (Plate 457). The area around and above the basins is open to the sky and ancient texts on architecture refer to them as '*aṅgaṇa*' (Sanskrit, 'courtyard')<sup>21</sup>. Around the shafts of these basins are platforms with parapet walls on each of the storeys which are frequently elaborately carved. *Aṅgaṇas* are usually found in larger stepwells only.

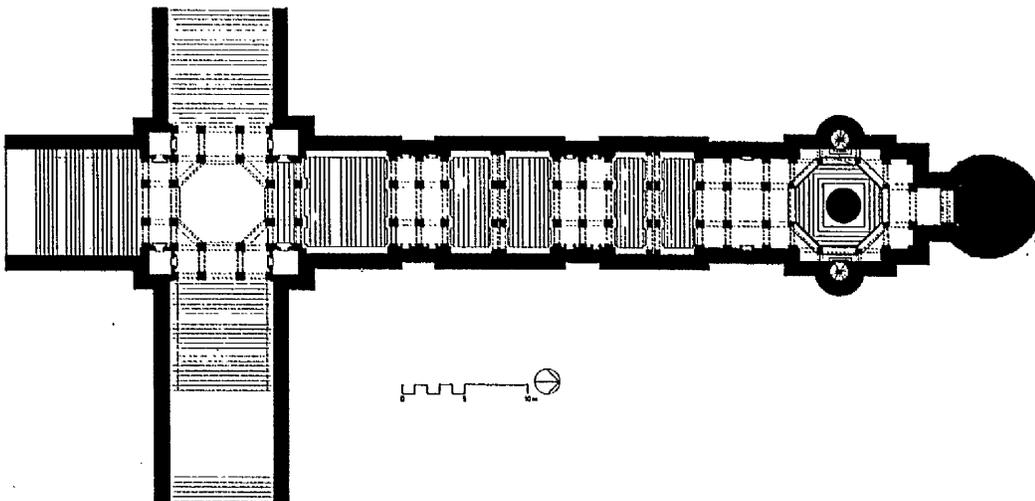


Fig. 39: Adalaj, Ruda Vāv with octagonal tank in front of the well shaft  
(G. Michell & S. Shah, 1988, pp. 140-1).

The main function of stepwells is to supply water, but because stepwells frequently have galleries built along the long corridor of steps and around the storage basins, integrating stone benches with sloping backrests into their design, they are often used as cool retreats from the summer heat by villagers and travellers. Particularly in desert areas and dry regions with few forests and shading trees, they were essential particularly to caravans. Stepwells are found at regular intervals along caravan routes where they provided water and cool resting

<sup>21</sup>Jain-Neubauer, 1981, p. 3.

places to travellers and their animals who, to avoid the heat of the day, frequently travelled by night<sup>22</sup>.

While there are rock-cut stepwells which date from the second to fourth centuries AD<sup>23</sup>, the earliest structural stepwells were probably constructed in the early seventh century AD<sup>24</sup>. Most of them, however, date from a period between the twelfth and the seventeenth century. The tradition of stepwell architecture is indigenous to India, but was adopted and refined by the Muslim rulers who constructed stepwells in north-western India, particularly during the fourteenth and fifteenth centuries. While their basic design was not altered, in many cases the use of stepwells changed from being a Hindu religious and public monument, to becoming predominantly an Islamic private palace structure<sup>25</sup>. There are, however, exceptions to this rule, such as the Islamic Jhālra stepwell at Fatehpur Sikri, which due to its location in a public place, could not be classified as a palace structure. Stepwells are found in many parts of India, and are typical of regions with long, extremely hot and dry summers. Therefore they are not typical of Nepal or Sri Lanka, where the climate is more balanced and water is available all year round.

The steps in stepwells are usually straight and parallel, but some also integrate pyramidal formations into their flights of steps, a form which is more closely associated with *kuṇḍas* (Fig. 40). Through the addition of such lateral steps, the *nāla* can be steeper and therefore shorter. It is interesting to observe that stepwells with triangular step formations, at least if also present in the upper part of the *nāla*, generally are quite early, dating from about the eleventh and twelfth centuries, and that this manner of construction seems not to have been common in later centuries<sup>26</sup>. Examples are the late twelfth-century Āsāpurnā Vāv at Nadol

<sup>22</sup>Gutschow & Pieper, 1978, p. 317.

<sup>23</sup>One example of such an early stepwell is the Nāvghān Kūo at Uparkoṭ in Junagadh. Further examples may be seen in the area around Porbander in Gujarat (Jain-Neubauer, 1981, p. 19).

<sup>24</sup>The three earliest known structural stepwells are the Bochavdi Vāv near the village of Dhank and the Jhilani (600 AD) and the Mañjuśrī Vāvs (early seventh century AD) in Dhank itself.

<sup>25</sup>Jain-Neubauer, 1981, p. xv.

<sup>26</sup>An example of a later well is the stepwell at Nimrana, Rajasthan, but here only one triangular step formation is found on the very bottom of the flight of steps.

(Nāḍol), Rajasthan, and the stepwells at the cenotaphs at Ahar, both of which have lateral steps only at the bottom of the flight of steps right in front of the well shaft. In the Bātris Koṭha Vāv at Kapadvanj, pyramidal steps are present in the upper part of the well (Plate 458), but since the lower levels are silted up and the stepwell is quite dilapidated, it is not possible at present to determine how far down they originally went. In the Rānī Vāv at Patan (Plate 459), the Mātā Bhavānī Vāv at Ahmedabad, and the Aṅkol Mātā Vāv at Davad, all three dating from the eleventh century, triangular step formations and parallel steps alternate at regular intervals over the entire length of the corridor.

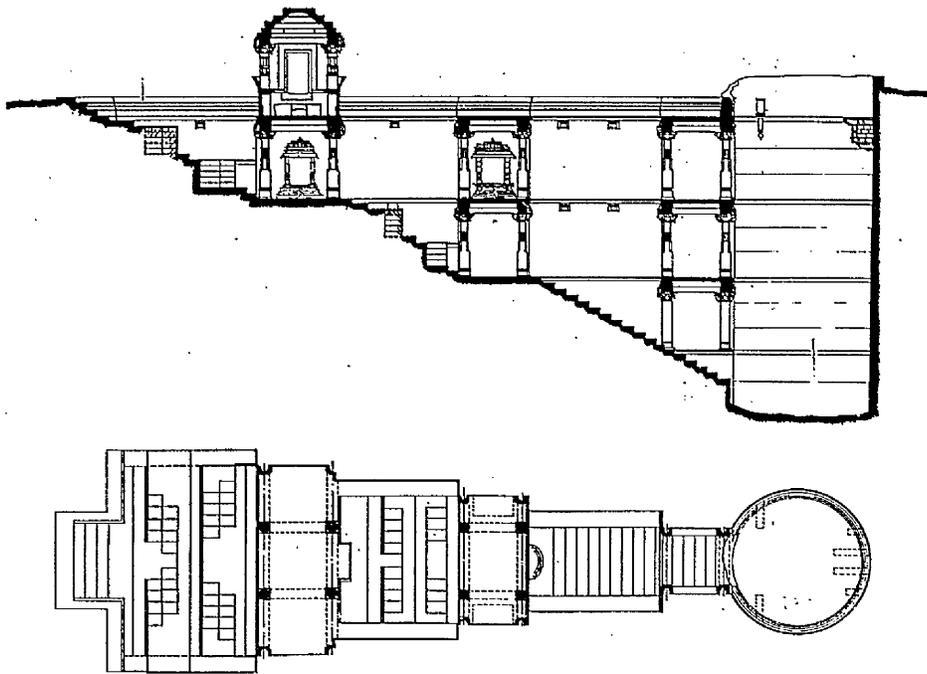


Fig. 40: Davad, Aṅkol Mātā Stepwell with parallel and bilateral step formations (J. Jain-Neubauer, 1981, plan 1).

The sub-group of stepwells can be divided into three further categories. There are stepwells with open corridors, lacking any proper supporting structures to counteract the inward thrust of the side walls, stepwells with L-shaped corridors, and some which are more enclosed by having pavilions and post and

beam constructions to strengthen the long vertical side walls of the stepped corridors.

The largest and most widespread group of stepwells are those which have an open stepped corridor leading down to the water in the well, and do not need internal constructions to strengthen the side walls. In many cases, this was possible because the ground was hard and rocky, providing sufficient strength to the vertical side walls of the corridors, because these stepwells frequently do not go down very far and therefore have comparatively short flights of steps, and because the side walls of a few stepwells are horizontally stepped and widen towards the top. Such open stepwells are distinguished from linear *kuṇḍas* by having stepped corridors which are clearly separated from the well shafts by a screening wall or archway at the end. The wall which separates the well from the *nāla* seems more to mark the end of the steps and the beginning of the well than to strengthen the construction. There are a few very early examples of this sub-group of stepwells, such as the Nāvghān Kūo and the Aḍi Kaḍi Vāv (Plate 460), both rock-cut structures in the fort of Junagadh, whose original parts date from about the second to the fourth century AD, but were expanded in the eleventh century<sup>27</sup>. A further example is the stepwell opposite the Archaeological Museum at Lakkundi (Plate 461) which seems to predate the earliest eleventh-century temples at the site.

The simplest examples of this open stepwell sub-type have very short flights of steps, only of about two metres in length and lead to small square wells, such as the one behind the Ibrahim Rauzā (1626 AD) at Bijapur, and the well north-east of the Kuśavart Tirtha at Trimbak. Larger versions, although still simple in layout, are the stepwells at Malpannagudi (Malpannagudi) near Hampi, Karnataka (Fig. 41, Plate 462), and the Jhālra directly adjacent to the Buland Darvāzā of the Jāmi Masjid (1572 AD) at Fatehpur Sikri (Fig. 42, Plate 463). The

<sup>27</sup>Jain-Neubauer, 1981, fig. 26; G. Michell, 1990(a), *The Penguin Guide to the Monuments of India: Buddhist, Jain, Hindu*. (Vol. 1), p. 292.

well at Malpannagudi has been dated to 1412 AD<sup>28</sup>, and the Jhālṛā is contemporary with the adjacent mosque<sup>29</sup>. The latter well used to be surrounded

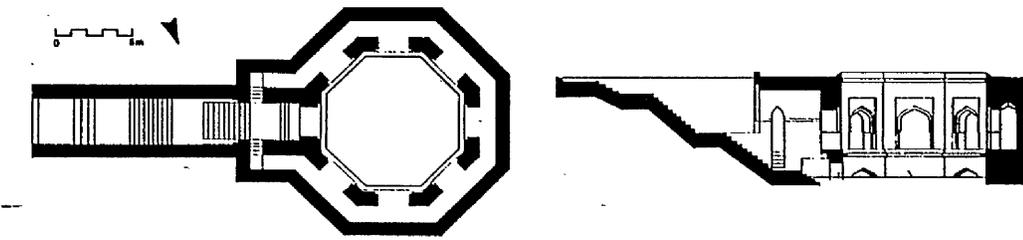


Figure 41: Malpannagudi, simple stepwell (J.M. Fritz & G. Michell, 1991, p. 111).

by a colonnade above ground, of which little survives, while the well at Malpannagudi has an arcade just below the ground, relating it also to spiral-wells, discussed later in the chapter. The octagonal well shaft of the Jhālṛā is quite large in comparison to its narrow stepped corridor, and is therefore also related to the tank-stepwell hybrids discussed in Chapter Four. The stepwell character becomes stronger, the smaller the diameter of the well shaft is in relation to the width of the corridor, and the longer and deeper the flight of steps penetrate into the ground. A clearer example of a stepwell is the one in front of the platform carrying the Kaṇḍarīya Mahādeva and the Jagadambī Temples at Khajuraho (Plate 464). It has a beautifully carved lintel above the end of the stepped corridor showing *haṃsas*, men, horse riders, elephants and lotus ornamentation. The well shaft is surrounded by a wide platform, more common with draw wells. Even clearer examples, where the well shafts are not wider than the stepped corridors, are the well at the cenotaphs at Ahar outside Udaipur (Plate 465) and the Jetānī Vāv in the fields near Ghumli. A larger and wider stepwell with stepped side walls in five tiers, is the Gandhak-kī Bāoli at Delhi (Plate 466), whose name

<sup>28</sup>J.M. Fritz & G. Michell, 1991, *City of Victory: Vijayanagara, the Medieval Hindu Capital of Southern India*. p. 111.

<sup>29</sup>A. Petruccioli, 1988, *La Città del Sole e della Acque: Fatehpur Sikri*. p. 56; S.A.A. Rizvi, 1992, *Fatehpur Sikri*. p. 72.

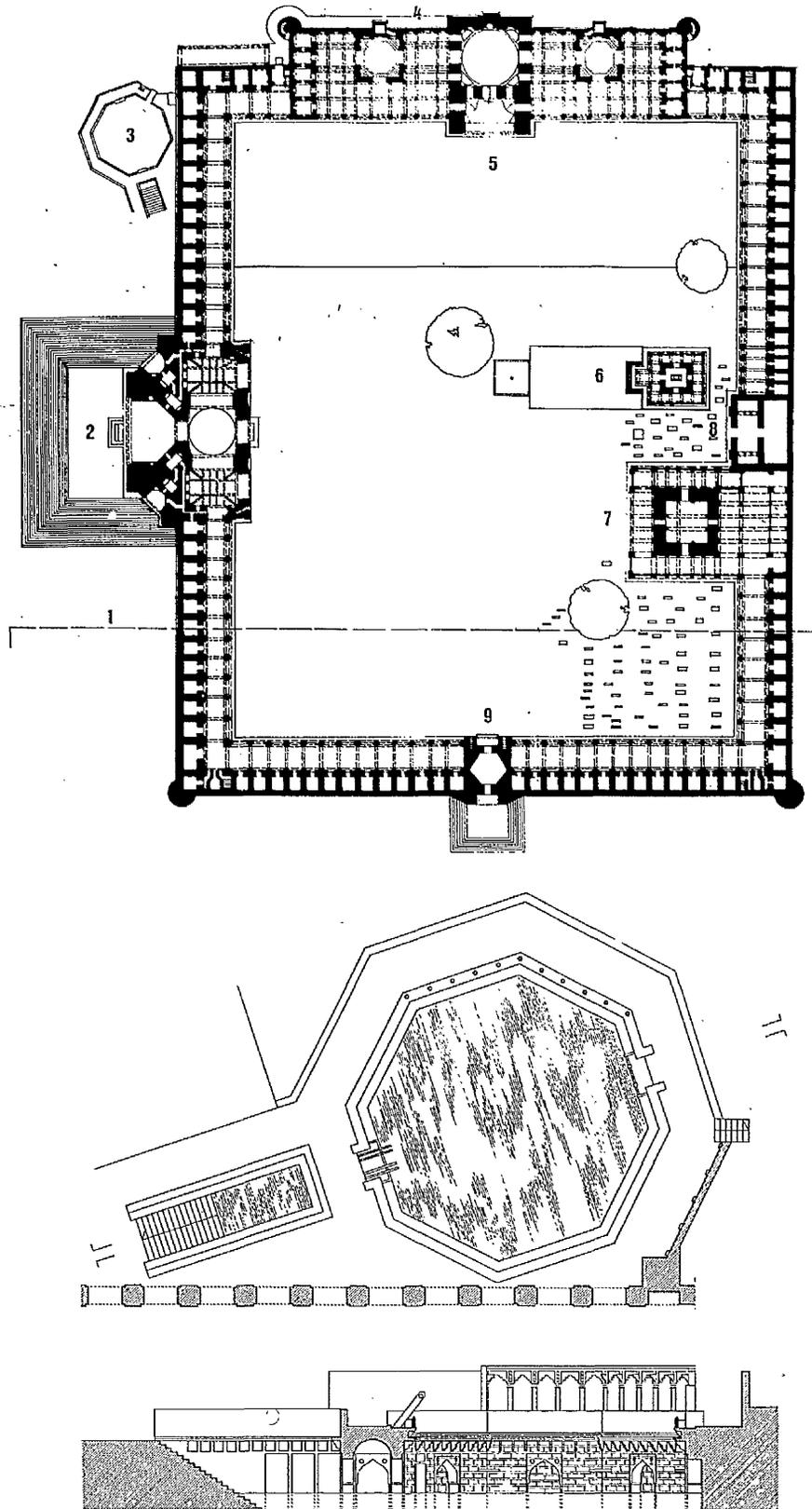


Fig. 42: Fatehpur Sikri, location of the Jhālra (3), its plan and section (A. Petruccioli, 1988, pp. 78, 96).

derives from the smell of sulphur (*gandhak*) in its waters. The stepped corridor is about forty metres long and twelve metres wide; and in front of the well, which is hidden behind a screen with a pillared gallery, is a circa twenty metres long water basin. The stepwell is believed to have been built in the reign of Iltutmish (1211-36 AD)<sup>30</sup>. A similar example also from Delhi is the Ugrasen-kī-Bāoli which dates from the late Tughluq or Lodī period<sup>31</sup>. It is about sixty metres long and fifteen metres wide, and was constructed in four tiers (Plate 467). Between the well in the north and the basin in front is a screen with two pointed arches one above the other, the one at the bottom open, and the one above more in the shape of an *iwān* of mosque architecture. In this example, the long side walls of the corridor were reinforced with blind arches. While the second level from the top and the lowest level only have decorative recesses, there are cool apartments behind the open pointed arches on the third level. Integrated into the south-western corner of the stepped corridor is a small mosque. The seventeenth-century stepwell of Bir Singh Deo in the village of Sirol (Plate 468), eight kilometres from Datia, is built in two large tiers, and has arcaded galleries along the sides of the stepped corridors, as a partition in front of the well, and surrounding the well shaft. There are small recesses in the side walls which used to hold lights. More complicated examples with apartments on various levels, both at the sides and at the end of the steps are the Purāṇa-Ghāṭ-Kanyā Stepwell (Plate 470), also called Ghāṭ-kī-Gūnī Bāoli, at Jaipur in Rajasthan, and the Rājōn-kī-Bāin<sup>32</sup> at Delhi (Plate 469). The latter probably derives its name from having been used by masons (*rājī*), and has a mosque and a *chatri*, the latter bearing an inscription dating it to 1506 AD, in the upper north-western corner of the arcade.

There are a few unusual examples of stepwells with open corridors, which have been constructed on a cross-shaped ground plan and have a relatively large central square well and narrow open flights of steps in the centre of all four sides.

<sup>30</sup>Y.D. Sharma, 1964, *Delhi and its Neighbourhood*. p. 61.

<sup>31</sup>*Ibid.*, p. 100.

<sup>32</sup>This well is at times also spelled Rājōn-kī Bāin.

An example from Gujarat is the Caumukhi Stepwell (Four-faced) at Chobari, Gujarat. Its plan corresponds to the fourth class of the *śāstric* description of stepwells, called *vijaya*<sup>33</sup>. The walls of the well and those of the stepped corridors have small recessed niches containing images of the Saptamātṛkās and other divinities. An example of a similar layout where the long stepped corridors, however, turn sideways in the middle to resemble the shape of a swastika, is the Swastika Well located behind the temple at Tiruvellarai (Plates 471-2). There are three stone beams, set at regular intervals one above the other, at each of the four openings into the side of the well-basin created by the stepped corridors. The top two beams show elaborate figural carvings of the Saptamātṛkās, Śiva and Pārvatī, Narasiṃha and others. In both these examples, the flights of steps spread out into the cardinal directions from the central well, and seem to visualise the spread of creation from a central point. That the religious connotations of these wells take precedence over practical considerations is evident from the narrow and bent corridors which do not lend themselves easily to the fetching of water, from the fact that neither well has a pulley mechanism, and from the elaborate religious carvings found at both sites.

The second group of stepwells are constructed on an L-shaped plan, where the stepped corridor does not run in a straight line, but turns at a right angle (Fig. 43). While in some stepwells, the two parts of the corridor are of equal length, there are others, where the part nearer to the ground level is shorter. Although J. Jain-Neubauer has suggested that this type "seems to be exclusive to Gujarat, as it is found nowhere else"<sup>34</sup>, the following discussion of monuments will show that this sub-group is in fact spread quite widely over the Indian subcontinent. There are a series of early examples for this sub-group, such as the rock-cut Mañjuśrī stepwell at Dhank (Dhāṅk) and the rock-cut well at Mandor (Maṇḍōr) near Jodhpur (Jōdhpur), Rajasthan, both dating from the early seventh century AD, and

<sup>33</sup>Jain-Neubauer, 1981, p. 68.

<sup>34</sup>Ibid., p. 27.

a stepwell at Choti Khatu in Nagaur district, Rajasthan, dates from the eighth century AD<sup>35</sup>.

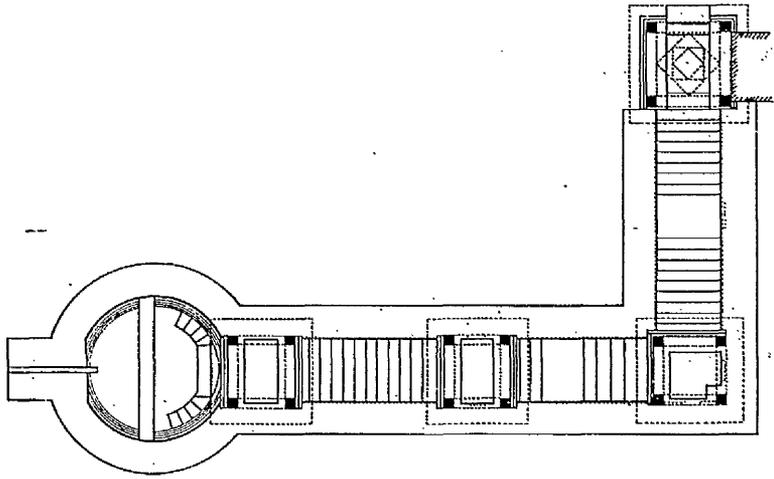


Fig. 43: Visavada, the L-shaped Jñān Vāv (J. Jain-Neubauer, 1981, plan 5).

A simple L-shaped stepwell on a very small scale, used for ablutions, is located in the temple complex at Siddhpur north of the Bindu Sarovar tank. The short flights of steps are extremely narrow and have high walls. There are no supporting constructions against the thrust of the side walls. A similar but slightly larger well belongs to the eighteenth century Ḡṛśneśvara Temple at Ellora. A short flight of steps leads to a first landing where it meets a corridor of double the length set at 90°. There is also an ordinary draw well to the north of the temple. A further small example where the difference in length between the two flights of steps is less extreme, is the brick-built Hāthū Bāoli (Elephant Well), which allegedly was used to water elephants, outside Adavad. The well is adjacent to the Lāl Bāgh enclosure and probably also supplied the water for the irrigation of the garden. An example from Karnataka is the tenth-century AD Vāpī no. 1 at Sirwal (Sirval), which has two short flights of steps of equal length<sup>36</sup>. L-shaped stepwells are frequently quite small and simple without additional basins for bathing, and

<sup>35</sup>Mankodi, 1991, p. 235.

<sup>36</sup>Ibid., p. 235.; M.W. Meister & M.A. Dhaky, 1986, *Encyclopaedia of Indian Temple Architecture: South India, Upper Drāviḍaḍēśa (Early Phase, A.D. 550-1075)*, p. 156-157.

usually without pavilions or complicated constructions against the inward thrusts of the side walls. They are often found in villages and on country roads. A slightly more elaborate example of an L-shaped village well is the Nadir-kī Vāv in Nagaka Gau (Nāgakā Gāṃv) near Ghumli. The well and the *nāla* are surrounded by a circa one and a half metres high terrace, a common feature of draw wells but unusual for stepwells (Plates 473-4). The entrance to the well, which is approached by a flight of steps, is flanked by lateral gate-towers and at the end of the first *nāla*, where the corridor turns to the north, two shrines flank the corridor at ground level. To the north of the well shaft is a large cattle trough. A more complicated example on a larger scale is the Jñān Stepwell to the west of the main Mūl Dvārakā Temple complex at Visavada (Fig. 43, Plate 496). It has a short flight of steps running from south to north, and a longer corridor leading from the west down to the well shaft in the east. The Jñān Stepwell has an entrance pavilion and, unusually for the L-shaped sub-group, three pavilions topped by pyramidal roofs were built into the stepped corridor to strengthen the construction internally. In the side walls of the stepped corridor are several niches containing images of Viṣṇu and Sūrya (Plate 515). To the north of the well shaft is a large trough to water animals.

Probably the largest and most ambitious projects of stepwells built on L-shaped plans are the so called Shāh Qulī's Bāoli<sup>37</sup> at Fatehpur Sikri, located beneath the palace buildings on the main road to Agra (Plates 475-6), and the Navalakhi Vāv in the Lakṣmī Vilās Palace at Baroda . The Shāh Qulī's Bāoli is the largest well at the site and probably the most elaborate Mughal example of a stepwell<sup>38</sup>. Its entrance is in the north and a short flight of steps leads down to a landing where it meets the long main stepped corridor, lying on an east-west axis with the draw well at the eastern end (Fig. 44). The two corridors are open and

<sup>37</sup>The well is believed to have been built by Shāh Qulī whose ruined palace is located on the opposite side of the road (Rizvi, 1992, p. 88; P. Davies, 1989 (a), *The Penguin Guide to the Monuments of India: Islamic, Rajput, European*. Vol. 1, p. 218.)

<sup>38</sup>R. Nath, 1971, 'Account of a typical Mughal Step-well (bāoli) and a Well-house (kūpāgār).', p.133.

the well descends over four storeys. The upper storey has pillared galleries along both sides of the long corridor, similar to examples at Delhi discussed in the previous paragraph. The level underneath it accommodates two large water wheels (*rehant̥s*) by which water was raised out of the well and stored in a separate deep basin to the north-west of the *bāoli*. There is a room which is open towards the storage basin and two octagonal chambers are located on the north and the east sides of the well shaft which provided cool apartments in the summer heat. As such, the well supplied water to the palaces but could also be used as a cool retreat. Unusual for stepwells with straight or L-shaped *nālas* is that the

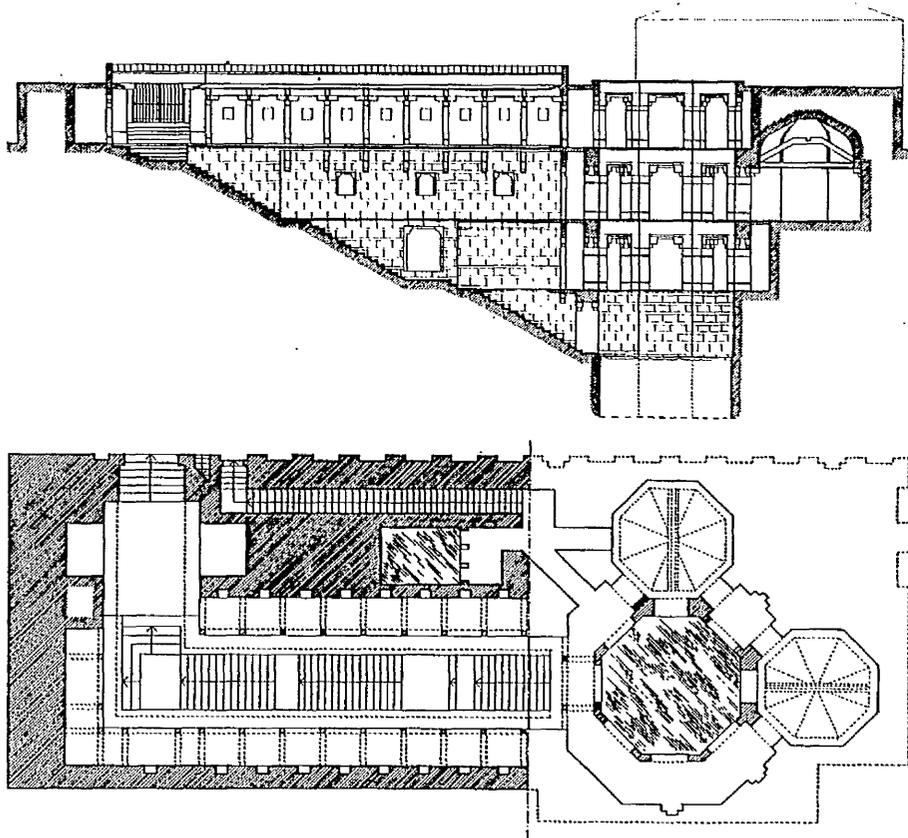


Fig. 44: Fatehpur Sikri, the L-shaped Shāh Qulī's Bāoli (A. Petruccioli, 1988, p. 98).

pillared corridors run also around the octagonal well shaft on the upper two storeys, a feature typical of spiral-wells (Plate 475). This is also the case in the Ra Khengar Vāv, also called Khingar Vāv, at Vanthali (Fig. 45 a), in the Indaravāli

Bāoli at Fatehpur Sikri (Fig. 45 b), and in Bir Singh Deo's Bāoli at Sirol which have a straight corridor and a gallery surrounding the well shaft. The L-shaped fifteenth-century Navalakhi Vāv at Baroda has four pavilion towers and four intermediate supporting frameworks against the thrust of the side walls, and penetrates into the earth over five storeys. The angle where the nine metres long stairs of access meets the thirty-five metres long main corridor is topped by a domed pavilion. Undoubtedly, this stepwell is one of the largest and most elaborate examples of the L-shaped sub-type. Although today, the dilapidated Bija Maṇḍal Bāoli at Vidisha looks L-shaped, and K. Mankodi identifies it as such (Plate 542)<sup>39</sup>, a further short flight of steps opposite the steps in the south, today only remaining in ruins, seems also to have met the main corridor leading from west to the well shaft in the east, making it a stepwell with a straight corridor and two access stairs leading down to the main *nāla*. A stepwell south-east of the Rānī Mahal at Chandragiri (Candragiri), Andhra Pradesh, has a further bend in its corridor. The first flight of steps leads from east to west, until it meets the second corridor, running from south to north, at an angle of 90°. At the landing in the north, the steps turn again at a right angle to run parallel to the first corridor and lead to the well shaft in the east.

K. Mankodi argues that L-shaped wells represent an earlier stage of stepwell architecture where the builders had to divide the corridor into two perpendicular flights of steps because they could not yet construct long straight corridors<sup>40</sup>. However, the length of the corridor does not seem to influence the stability of its side walls, which are more dependent on the local soil condition and the presence of supporting beams or pavilions. The earliest L-shaped stepwells are rock-cut structures which from a constructional point of view could equally have been straight; and the main corridors of Shāh Qulī's Stepwell at Fatehpur Sikri and of the Navalakhi Vāv at Baroda are much longer than many

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<sup>39</sup>Mankodi, 1991, p. 235.

<sup>40</sup>Ibid., p. 236.

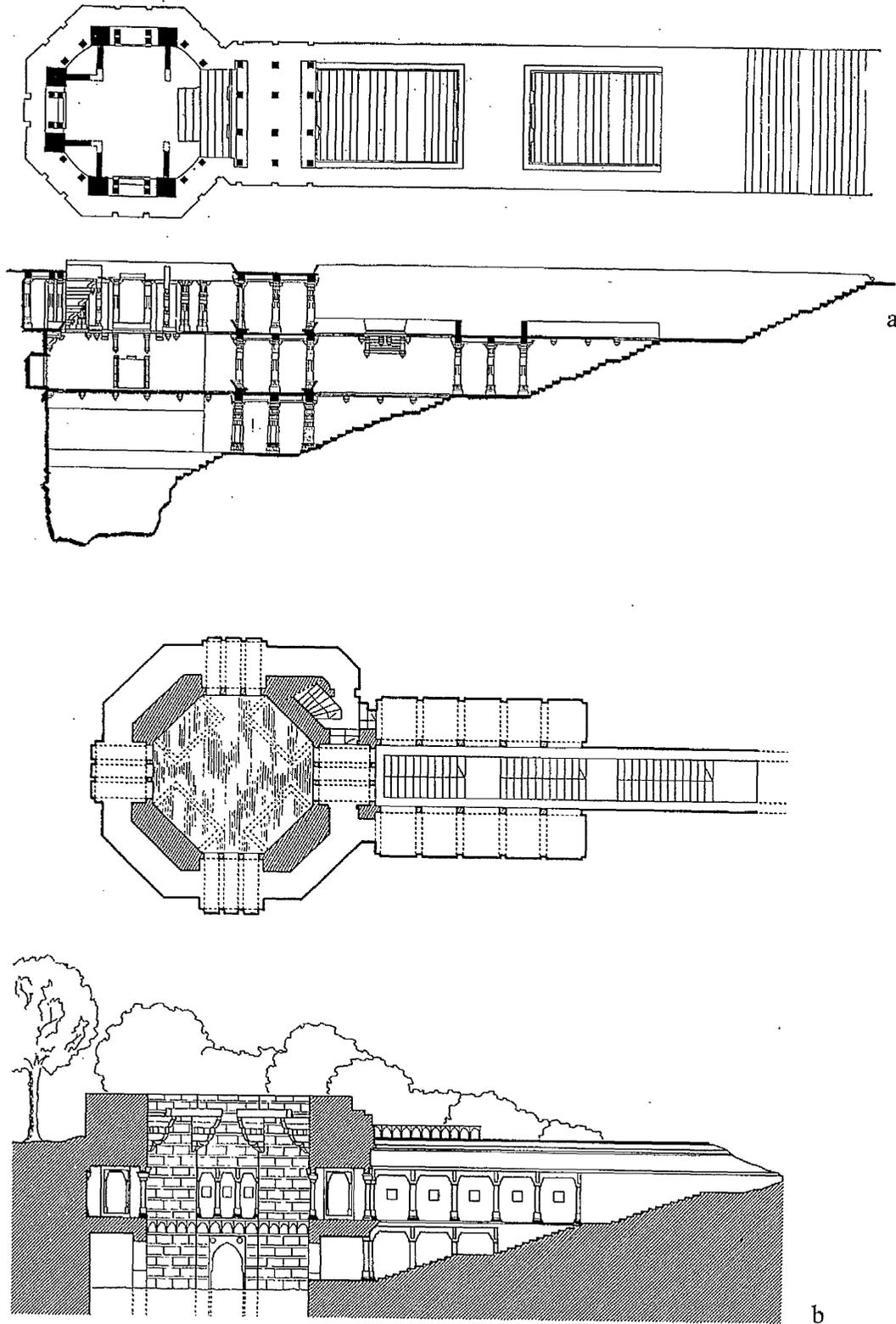


Fig. 45: Ra Khengar Vāv (a) and Indaravāli Bāoli (b) with passages surrounding the well shafts (J. Jain-Neubauer, 1981, plan 6; A. Petruccioli, 1988, p. 99).

straight stepwells. The latter two examples, dating from the sixteenth and the fifteenth centuries also show that the construction of L-shaped stepwells is not restricted to early periods but continued alongside the construction of stepwells with one straight *nāla*. The choice of an L-shaped plan seems to have had more to do with issues concerning the available plot of land. Stepwells which go very deep and therefore have long corridors need large pieces of ground. The long wedge-shaped *nālas* can be shortened by splitting the corridor into two and turning the second flight of steps to one side, a feature already encountered in linear *kunḍas*. The L-shaped corridor of the Mughal stepwell at Fatehpur Sikri, for example, neatly fits around the storage tank adjacent to the well. A further reason for creating a bend in the stepped corridor may have been to prevent dirt from being blown into the well via the steps. In addition to these practical considerations, religious aspects should also be taken into account. The well shaft is the most sacred part the well monument. Through a bend in the steps the shaft is not directly visible from the top of the steps, and therefore approached more respectfully. Because the entrance to the well is also not visible from the bottom of the steps, the person descending into the well really embarks on a journey into the nether regions, where the world above is merely reduced to a small section of the sky seen through the well shaft above.

Because the ground in most parts of Gujarat is loose and sandy, and easily slips away, it is typical of Gujarati stepwells to have structures supporting the side walls of the corridor. These can be pavilions (*kūṭa*) built on top of each other into the narrow corridors (Plates 477-9), a simpler framework of lintels and beams (Plate 480), or a combination of both methods (Plate 482). Through these additional constructions stabilising the walls on either side of the flight of steps, the corridors could be made wider and penetrate deeper into the ground. Additionally, the supporting constructions create protected and shaded areas for rest, and further emphasise the multi-storeyed nature of the well monuments

which are complicated edifices under ground. Stepwells with supporting constructions need not necessarily be larger and more complicated constructions as the simple Derānī Vāv near Ghumli, the stepwell at Uvarsad (Uvārsad) (Plate 480), Gujarat, and the Bija Maṇḍal Bāoli (circa eleventh-twelfth century) at Vidisha show. All three have only beams, some of them supported by pilasters, which firmly hold the side walls apart. It is interesting to see that although the cross-beams in the Bija Maṇḍal Bāoli are broken and only small stumps remain, the side walls still remain intact (Plate 544). The Bija Maṇḍal Bāoli is located to the north-east of the former circa eleventh to twelfth-century Paramāra Temple which in the seventeenth century was converted into a mosque by Aurangzeb. The stepwell at Uvarsad has stone beams, while the rest of the structure is built of brick. The brick walls were plastered and decorations, similar to those carved onto the walls of stone built examples, were painted in dark red-violet vegetal colours on a white background (Plate 481)<sup>41</sup>. Examples of narrow stepwells containing intermediate tower-like pavilions as strengthening features, are the tenth to eleventh-century stepwell at Modhera (Plate 478) and the Vajināth Vāv at Kapadvanj. The early twelfth-century Vikia Vāv at Ghumli, the Vidyādhara Vāv (AD 1487) at Baroda and the Gaṅgā Vāv at Wadhwan (Vadhvān) in Gujarat (circa thirteenth to fourteenth century) still have narrow corridors, but the beams of the pavilions do not simply rest on wall pilasters but are further supported by a pair of pillars set slightly away from the vertical walls and into the passage (Plate 479). Because the pillars are still very close to the sides of the corridor, they do not actually create three openings to walk through but merely convey the illusion of a wider corridor. The three pavilion towers in the Vikia Vāv have been set unusually wide apart from each other, a sign that the ground must be quite hard and stable, and admit a lot of light and air into the stepped corridor.

Most typical of this sub-group, however, is to have a wider corridor with pilasters at the sides and two columns set further away from the walls to create

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<sup>41</sup>Wall paintings of this kind are typical of the region and can for example also be seen on the walls in Gandhi's birth house at Porbander.

three trabeate openings supporting three beams above. Because the positioning of the columns is related to an octagon, a standard type of planning in Gujarat, the central opening is slightly wider than those on the sides (Plates 483-4). Probably the best known examples of this group are the eleventh-century Mātā Bhavānī Vāv at Ahmedabad, the fifteenth-century Dādā Harīr or Harīr's Vāv (1499 AD) at Asarva (Āsarvā), Ahmedabad, and the sixteenth-century Ruda Vāv at Adalaj (Adāraj), all in Gujarat. All three stepwells have separate basins for washing and bathing in front of their well shafts. The galleries above the opening are profusely carved and the parapet walls consist of stone benches with sloping back rests (Plate 484). The Dādā Harīr Vāv, also known as Bāī Harīra Vāv<sup>42</sup>, and the Ruda Vāv descend for five storeys under ground, and both were commissioned by female patrons. A lesser known example of a wide stepwell with extra columns is the Navalakhi Vāv (1405 AD) in the garden of the Lakṣmī Vilās Palace at Baroda, which makes use of both kinds of supporting structures, intermediate framework made only of beams, and also sections with towers of piled up pavilions. In the Rānī-jī-kī Bāoli at Bundi the columns are tall and slender, with flying cusped arches, creating more a delicate screen (Plate 485) than a strong load-bearing construction. An interesting feature of the circa mid-nineteenth-century Jethābhāī Vāv at Isanpur (Isānpur) near Ahmedabad is that the central openings of the two top pavilions nearest to the well have, in addition to the beam bridging the opening above, also a true vousoir arch set between the two pillars (Plate 486), while stepwell constructions are usually purely trabeate. The Ra Khengar Vāv (circa 1230-1235 AD) at Vanthali has a large slightly pointed arch bridging the entire width of a wide corridor with two wall pilasters and two pillars (Plate 487). While narrow single span corridors are frequently stabilised by arches (Plate 488), this is an usual example of such a wide arch.

Probably the widest and largest stepwell of all which has wall pilasters and six intermediate columns, is the Rānī Vāv, the Queen's Stepwell, at Patan (Plates

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<sup>42</sup>The stepwell was constructed by Bāī Harīr Sultānī, locally known as Dādā Harī or Harīr, and also the Ruda Vāv at Adalaj was commissioned by a female patron.

489-90). It was commenced by Queen Udayamati in 1063 AD and never completed entirely<sup>43</sup>. It has six storeys, measures sixty-five metres in length and contains over five hundred sculptures along its corridor walls, brackets and beams. For the last few centuries, this probably most ambitious stepwell construction remained covered by large deposits of sand from the nearby Sarasvati River, and was excavated and desilted only in 1986.

In stepwells which have pavilion towers constructed over the steps in the narrow corridors, the roofs of the top pavilions are usually level with the surrounding ground (Fig. 46 a, Plate 491). In only a few cases, a further layer of pavilions, protruding over the surrounding ground and being accessible from the sides like a bridge, was added on top. This is the case in the Mātā Bhavānī Stepwell at Ahmedabad (Plate 492), in the Vikia Vāv at Ghumli, the JñānVāv at Visavada (Fig. 46 b, Plate 496), and the Bātris Koṭha Vāv at Kapadvanj. Today,

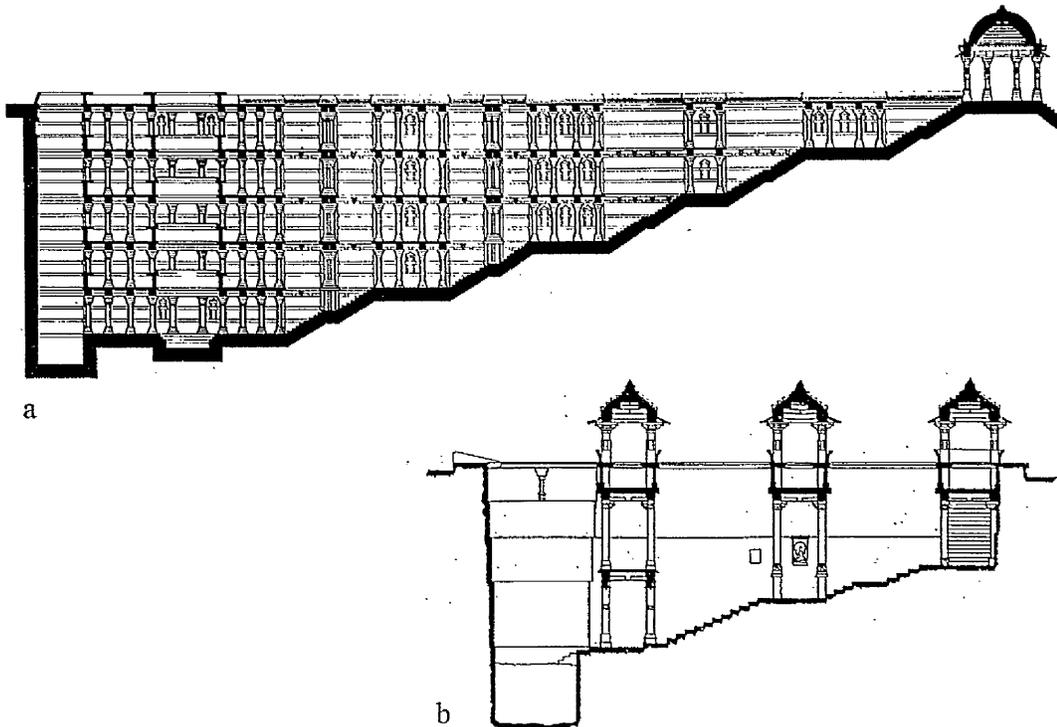


Fig. 46: Sections of the Dādā Harīr Vāv (a) and the Jñān Vāv (b) (G. Michell, & S. Shah, 1988, pp. 134-5; J. Jain-Neubauer, 1981, plan 5)

<sup>43</sup>Mankodi, 1991, p. 30.

the latter example is so closely surrounded by modern houses, that access to the top pavilions is obstructed (Plates 668-9). Such wells, although they continue predominantly to take a negative or inverted form of architecture underground, are also visible above ground. They do, however, show at surface level only a little of their subterranean splendour. Stepwells located on trading routes in the countryside were thus more easily visible from some distance (Plate 495). The stepwell at Modhera and at Vāpi No. 2 at Sirwal each have a small shrine built over the stepped corridor which protrudes above the ground (Plates 517-8). The effect of marking a subterranean edifice over ground was also achieved by adding small *chattrīs* on the sides of well monuments, such as those at the Dādā Harīr Stepwell at Ahmedabad (Plate 493) and the Rānī-jī-kī Bāolī at Bundī (Plate 494), and by constructing elaborate entrance pavilions, which will be discussed in detail later in the chapter.

There are a few interesting examples where the stepped corridors of wells are entirely roofed over, supported by arches underneath, and where merely the first few steps and the well shaft remain open and visible as holes in the ground. Such wells can be used, like other stepwells, to draw up water and to reach the water via the stairs. It is, however, less common in this sub-group of stepwells to have underground rooms or galleries functioning as cool retreats. An example of a covered stepwell is the late fifteenth or early sixteenth-century *bāolī* in the Dīvān-i-Ām quadrangle adjacent to the Salīngarh in the fort at Agra (Plate 497)<sup>44</sup>. The underground stepped corridor is not entirely straight and turns slightly east after about ten metres to meet the large brick built well shaft (Fig. 47). A second example is the stepwell of the Bāolī Sāhib Gurdwārā at Goindwal (Plate 498). The well, which is situated in the courtyard of the gurdwara, was completed in 1559 AD and seems to predate the construction of the gurdwara<sup>45</sup>. It was constructed as a water place along the route from Delhi to Lahore, and it is believed that Gurū Amar Dās received orders for its construction from Guru

<sup>44</sup>R. Nath, 1985, *History of Mughal Architecture*. Vol. II, p. 141.

<sup>45</sup>P.S. Arschi, 1986, *Sikh Architecture in Punjab*. pp. 74-75.

Nānak while in a trance. The well has prominent pavilions over the entrance to the stepped corridor and covering the well shaft. The covered corridor measures about fifty metres in length, and it is interesting that although the corridor is entirely hidden underground, its position is clearly marked by white lines painted on the courtyard. A further example of this completely covered corridor type is the *Siṃhakiṅgaru* stepwell in the compound of the *Bṛhadiśvara* Temple at *Gangaikondacholapuram* (Plate 499). By being covered, these wells can be securely locked and protected, as is the case in the Tamil example which is used only for the washing of the main temple image. At *Goindwal*, the devotees resort to a complicated rite of climbing the steps of the well while uttering prayers. They always climb only one step higher than before, and then descend again to the very bottom of the steps, before the step one above the highest reached before can be ascended; and so on, to the top. Here, the corridor has been covered to enhance the feeling of having entered a different world in which penance is done for one's deeds and which involves an arduous climb to leave the dark and hot corridor behind and reach daylight and fresh air again.

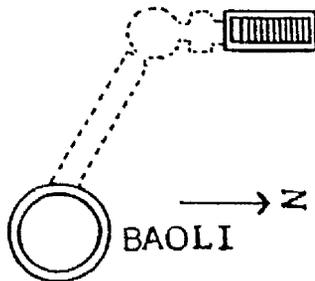


Fig. 47: Agra, plan of the covered stepwell in the *Dīvān-i-Ām* quadrangle  
(R. Nath, 1985, p. 141).

Stepwells are the group of water monuments which have attracted most attention from art historians among all other types of water structures. Until now, however, all studies of stepwell architecture have concentrated on the north of India in general, and on Gujarat in particular, which has been regarded as the homeland and sometimes even as the only place where stepwells were

constructed. R. Nath examined stepwells at Agra and Fatehpur Sikri, but believed that stepwell architecture "was introduced in the Mughal architecture by the artisans of Gujarat"<sup>46</sup>, and that they were lesser important imitations of Gujarati stepwells<sup>47</sup>. At Fatehpur Sikri, where many buildings exhibit a whole range of architectural influences from Gujarat, it may be legitimate to argue in favour of a direct Gujarati influence. But for most other regions, such as Maharashtra, Madhya Pradesh, Karnataka and Andhra Pradesh, just to mention a few other areas with clear examples of stepwell architecture, this would seem unjustifiable. J. Jain-Neubauer asserted that L-shaped stepwells are unique to Gujarat, though many examples exist all over India; and such statements seem to be based on a fascination with the Gujarati examples and a lack of detailed material on other areas more than on actual facts. A closer examination of stepwells throughout India shows that only those with an elaborate intermediate framework of beams and pavilions are predominantly found in north-western India and are less typical of other regions. This has to do with the soil condition in that region which demands such supporting constructions. The much larger group of stepwells with a straight corridor and no supporting constructions against the sloping side walls, however, is practically non-existent in the north-western region while it is found in almost all other regions of the subcontinent. Thus, although stepwells are very common in Gujarat, only a very small group of stepwell monuments - albeit one which undoubtedly shows a highly impressive development - is typical of this region. From this point of view it may be more convincing to explain the presence of stepwells in other parts of India from a climatic point of view, rather than as the diffusion of a Gujarati phenomenon. Stepwells are generally typical of regions with extremely hot, dry, and long lasting summers where ground water is often the only available source of water during the hot season, and where shade had to be provided to travellers in a barren landscape.

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<sup>46</sup> Nath, 1971, p. 133.

<sup>47</sup> Ibid., pp. 132, 134.

### 3. Spiral-wells

In a spiral-well, the galleried apartments and the steps of access are arranged to surround the well shaft and spiral around it (Plate 500). In comparison with stepwells, which show a linear or longitudinal layout, spiral-wells are planned vertically. The *Viśvakarma Vāstuśāstra* describes the staircase winding around the well shaft as being in the form of the coils of a snake<sup>48</sup>. A tendency towards this kind of well monument can be seen in the Shāh Qulī's Bāoli at Fatehpur Sikri (Plate 475), the Ra Khengar Stepwell at Vanthali and Bir Singh Deo's Bāoli at Sirol, which are essentially stepwells but have prominent galleries surrounding the well shafts. Examples which show a more distinctive spiral-well shape, are the Helical stepwell at Pavagarh (Pāvagarh), Gujarat, and the Āssi Khāmbhā (Eighty-Pillared) Well in the fort of Gwalior. In both examples there are still straight stepped corridors, but they are very narrow and short, and continue spiralling around the inner side of the well. The upper level of the Āssi Khāmbhā, just below ground level, is an open gallery, and there is a further hall overlooking the well on the north side above ground (Plate 501). A similar hall was found on the side of the Baṛī Bāoli at Golconda and was used by the kings and queens to spend their leisure time in a cool, shaded environment<sup>49</sup>. Particularly because the area of the Āssi Khāmbhā is walled, protected, and situated adjacent to the Mān Mandir palace, it was probably used in a similar way. In the Champā Bāori<sup>50</sup>, on the northern side of the Muñj Tālāo at Mandu, apartments are found surrounding the base of the well (Plate 502). These are connected with a series of vaulted rooms known as *takhāna* which are almost on a level with the lake feeding the well. The fourteenth-century Circular Bāoli in Fīrūz Shāh Kotlā, the citadel of Firuzabad (Fīrūzābād), the fifth city of Delhi, has apartments on two levels running around the large central well shaft (Plate 503). The upper level is above ground and the

<sup>48</sup>Jain-Neubauer, 1981, pp. 16-17; K.V. Sastri, 1958, *Viśvakarma Vāstuśāstram*. Chapter 33, pp. 438-443.

<sup>49</sup>Commercial Book Centre, no date, *Golconda Fort & Qutab Shahi Tombs*. p. 10.

<sup>50</sup>Its name derives from the Champak flower because the water is said to be as sweet as the flower's smell (D.R. Patil, 1992, *Mandu*. p. 32).

lower was built below ground level into the side of the well. A spiral-well at Mandwa (Māndvā), Gujarat, has apartments on three levels opening up on to a well shaft. Access to the upper chamber is provided via a passage spiraling around the well shaft (Fig. 48).

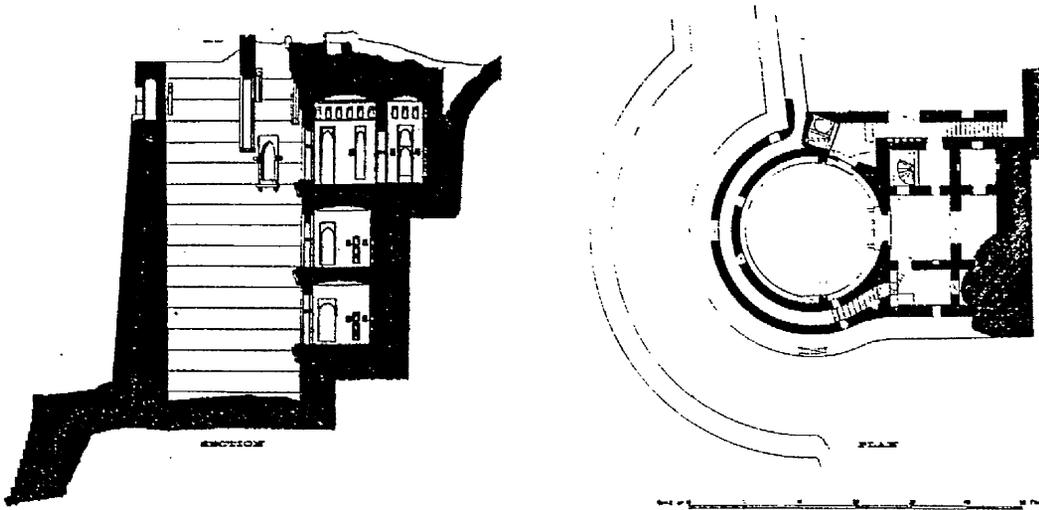
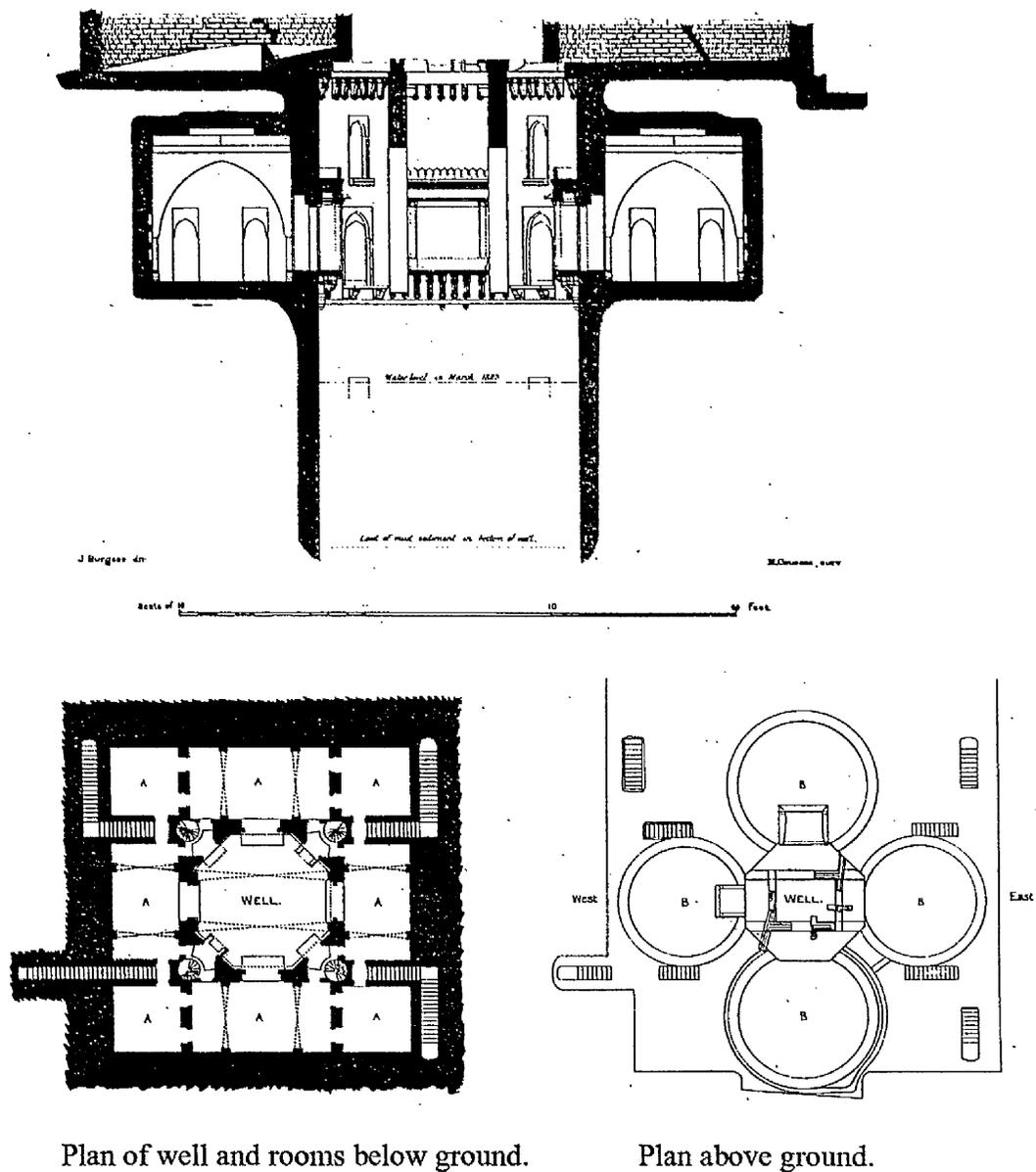


Fig. 48: Mandva, section and plan of the well (J.A.S. Burgess & H. Cousens 1903, plate 107).

A more complicated arrangement is found in the fifteenth or early sixteenth-century Bhamaria (or Bhrahmariā) spiral-well outside the village of Sojali (Sojalī) near Mehmudabad (Mehmudābād) in Gujarat (Fig. 49, Plates 504-5). The well was surrounded by four circular chambers above ground level which, however, have almost entirely gone. In the first storey underground there are eight square rooms which open onto the octagonal well shaft in the shape of large *jharokhā* windows. Between the windows are two large parallel arches overspanning the well shaft which used to support the pulley mechanism. The steps spiral around the well shaft and further down where rooms on a third level were probably used as a cool retreat in the summer heat<sup>51</sup>.

<sup>51</sup>Jain-Neubauer, 1981, p. 67.



Plan of well and rooms below ground.

Plan above ground.

Fig. 49: Mehmudabad, Bhamaria spiral well (J.A.S. Burgess, 1896, plate 77).

Similar examples of spiral-wells where the apartments above ground level are still intact are the Andherī Bāoṛī at Mandu (Plate 506) and the Saṅgīn Bāoṛī (Stone-masonry Well) near the Hāthī Pol (Elephant Gate) at Fatehpur Sikri (Plates 507-9). The well is surrounded by four chambers above ground level and by four below, and has four staircases which spiral around the well without crossing each other (Fig. 50). Two chambers on top of the *bāoṛī* contained treadmills which were turned by men. The water was channelled into a storage

tank on the north-west side of the well from where it was lifted even higher to supply the palace apartments with water. The many wells surrounding the ridge

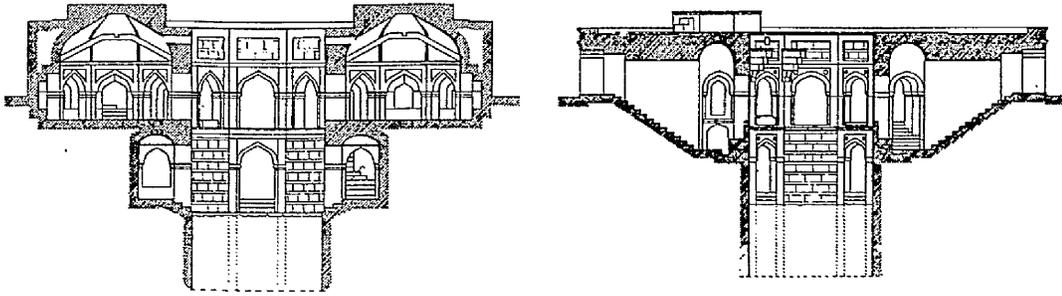


Fig. 50: Fatehpur Sikri, Saṅgīn Bāolī (A. Petruccioli, 1988, p. 101).

on which Fatehpur Sikri is located, and the remains of complicated water lifting and channelling systems which supplied water to the palace buildings all year round, make it very questionable that a shortage of water could have been the reason for the abandonment of the site<sup>52</sup>. A spiral-well with rooms on three levels, and a storage basin on its side, is Bābur's Bāolī in the fort of Agra. Today, the well is built over by the palace structures of the Shāhjahānī Mahal<sup>53</sup>. Probably the most elaborate example of a spiral-well is located in the south-eastern corner of the fort at Agra attached to the Akbarī Mahal (Fig. 51). The well was constructed by Akbar in the sixteenth century and has six underground storeys. It is plain and built entirely of red sandstone. The great architectural achievement lies in the complicated arrangement of the rooms along the deep well shaft and in the ingenuity of ventilation shafts which supply fresh air even to the lowest storeys of the well. While an arcaded gallery surrounds the first underground storey and leads to rooms and corridors behind, the second and third storeys have large octagonal rooms to the east and the west of the well shaft. The fourth and fifth storeys have again arcaded galleries, and the sixth underground storey has four

<sup>52</sup>See also: Nath, 1985, p. 176.

<sup>53</sup>Ibid., p. 142.

stairways providing access to the water. Complicated examples such as this are sometimes referred to as '*kūpāgāra*', well-houses<sup>54</sup>.

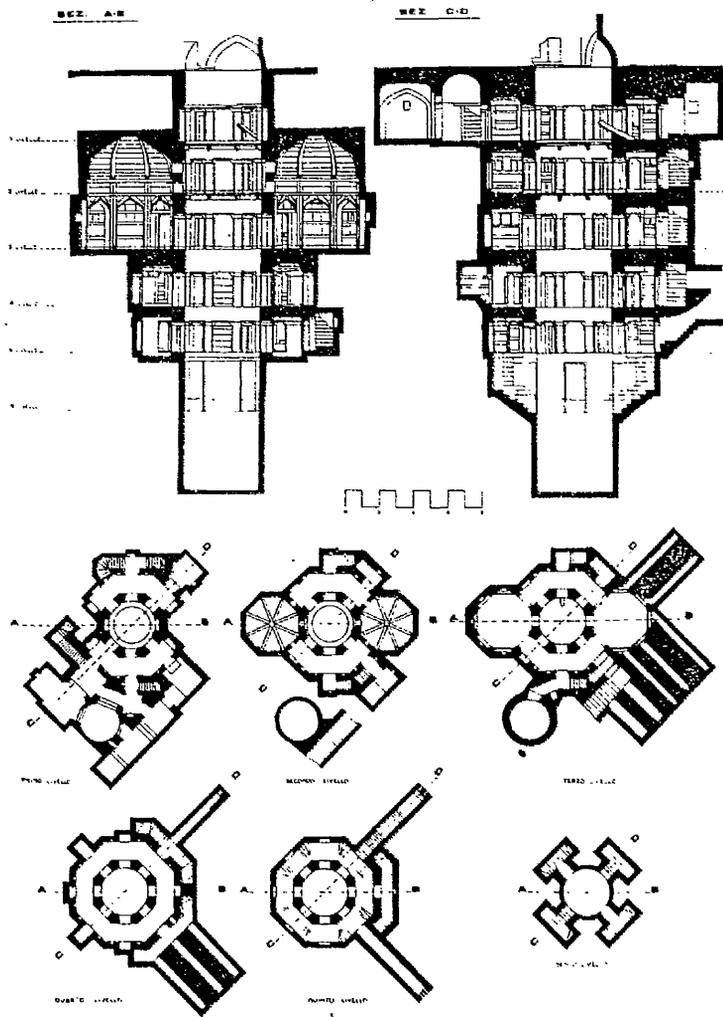


Fig. 51: Agra, Akbar's Bāoli (A. Petruccioli, 1990, p. 105).

A recent example of a spiral-well is to be found in the compound of the summer palace at Wankaner (Wānkāner), Gujarat, which was constructed between 1930 and 1935 by Mahārāṇā Rāj Amar Singhji of Wankaner<sup>55</sup>. The well, which is located under a palace building, has three underground storeys with a

<sup>54</sup>R. Nath, 1986, *Jharoka: An Illustrated Glossary of Indo-Muslim Architecture*. p. 73; See also the article by R. Nath (1971) on *bāolis* and *kūpāgārs*.

<sup>55</sup>Jain-Neubauer, 1981, p. 67.

large apartment on the second storey and a stepped corridor spiralling around the rectangular well shaft until it meets the water down below.

### III. From Wells and Temples to Well-Temples

The religious connotations of wells can take various forms dependant on the kind of well, the wealth of the community or the donors, and the particular religious importance of the well. A good example of how little is needed to express a divine presence in a well is a simple draw well near the Gurū-kā Mahal in Amritsar which had a small roof fitted above its pulley mechanism and several large mounted popular prints of Hindu gods hung underneath it (Plate 510). The women who come to the well in the morning do *pūjā* and garland the images before they draw water from the well. Over the time a simple well like this could develop into a proper well-temple by having walls and a porch added to it. Slightly more sophisticated are small shrines built next to draw wells such as the small *caitya* next to a well situated in the north of Patan, Nepal, which contains an image of the Bodhisattva Avalokiteśvara (Plate 511). Also many stepwells have shrines or small temples built next to them. They can either be found near the entrance to the well, as the ones adjacent to the Ruda stepwell at Adalaj (Plate 548) or the JñānVāv at Visavada (Plate 555), further along the corridor, as in the Nadir-kī Vāv in Nagaka Gau, or near to the well shaft as the small Śiva sanctuary behind Rāja Bir Singh Deo's Bāoli at Sirol or the small Gaṇeśa temple behind the stepwell at the cenotaphs at Ahar show. Because such small temples are often votive offerings, their number can grow over the years. The small square draw well called Dharma Kūpa at Benares, for instance, is entirely encircled by five small shrines, a sacred tree, and a wall (Plate 512), which clearly demarcates the sacred area of the well.

Among the various sub-groups of well monuments, stepwells are the ones which are usually most elaborately adorned, and many of them resemble

underground temple complexes. In addition to small temples built on its sides, shrines (Plate 513) and often also religious ornamentation and sculptures line the side walls of the stepped corridors. Such shrine niches can either be painted with religious symbols, be filled with vegetal ornament (Plate 514) or contain a sculptured religious icon (Plate 515). Vegetal decorations are especially typical of stepwells built under Muslim patronage, as for example the Dādā Harīr Vāv at Ahmedabad. The stepwell at Lakkundi has large four-storeyed shrines on either side, half way down the open stepped corridor (Plate 516). There are a few examples where a shrine room was constructed over the stepped corridor leading down to the well. Examples are the tenth-century Vāpi<sup>56</sup> no. 2 at Sirwal, and the eleventh-century stepwell at Modhera (Plates 517-8). The tenth-century shrine at the latter site is slightly earlier than the stepwell structure itself and is believed to have been moved to the steps leading down to the well<sup>57</sup>. In these cases, active worship in an earthly shrine seems to have been offered to the gods in exchange for the violation of their subterranean realm; and towering above it, the gods seem to guard the sacred water site.

It is more typical to find shrines integrated into the back of the well shaft, which is the most sacred part of the well. Although this is less typical of ordinary draw wells, a few examples, such as a well in the north of Patan, Nepal, also have images installed high up on the inside of the well shafts. Looking into the well from above, the images are hardly visible to the person using the well, which are meant more to please and propitiate supernatural forces connected with the water in the well. There is a *śiva-liṅga* on top of the pulley mechanism of the well adjacent to the Lolārka Kuṇḍa, and the Jñāna-Vāpi Kūp, the Well of Knowledge, is usually covered with a white cloth on the centre of which a *liṅga* made of flower petals is placed (Plate 520; both wells are at Benares). The Jñāna-Vāpi Kūp is a wide octagonal well contained in an arcade constructed in 1828 by the

<sup>56</sup>'Vāpi' and 'vāpi' both mean well or pond. In some place names the version with the short and in others that with the long '-i' is chosen.

<sup>57</sup>Jain-Neubauer, 1981, p. 57.

widow of Mahārāja Daulat Rāo Sindhiyā of Gwalior adjacent to the Viśvanātha Temple in Benares (Plate 519). This well is surrounded by an entire series of myths and stories. One of them recalls a twelve-year drought in the city of Benares and a ṛṣi who flung the trident of Śiva into the earth at this place and let the water of the well end the misery of the town. Śiva who heard of the miracle is said subsequently to have taken up his abode in the well<sup>58</sup>. Other accounts say that when Aurangzeb destroyed the Viśvanātha Temple, either a priest threw the sacred *liṅga* into the well, or that the *liṅga* itself took refuge in a shaft in which subsequently a well, filled by the sacred Ganges, formed to lustrate and protect it<sup>59</sup>.

In stepwells, where one has access to the well shaft from the side, such images and shrines are more easily visible and often take larger dimensions. Simple examples where only images were inserted into the upper part of a well shaft can be seen in the stepwell adjacent to the cenotaphs at Ahar, which contains the image of a goddess, allegedly Durgā (Plate 521), and in the stepwell in the compound of the Gr̥ṣneśvara Temple at Ellora, which contains an image of Śiva and Pārvatī (Plate 522). The Jethābhāi Stepwell at Isanpur and the Ra Khengar Vāv at Vanthali both have a small shrine integrated into the side of the well shaft further down in the well, while the Ruda Stepwell at Adalaj and the Dādā Harīr Vāv at Ahmedabad have small shrine niches at various levels of the well shaft set one above the other (Plate 523). It is interesting that even in stepwells built under Muslim patronage, the habit of constructing shrines in the shafts of wells continued although those do not contain divine images, but elaborate vegetal decoration as may be seen in the well shaft shrine of the Dādā Harīr Vāv (Plate 524). In the fourteenth-century stepwell at Khedbrahma (Khedbrahmā), a horizontal row of small shrines imitating *sikhara* temples runs around the entire inner wall of the well. The shaft of the twelfth-century stepwell at Sathambha (Sāṭhambhā), Gujarat, is decorated with a whole series of religious and secular

<sup>58</sup>Havell, 1905, p. 182.

<sup>59</sup>Ibid., p. 182; Gutschow & Michaels, 1993, p. 65.

images, and in the Rānī Vāv at Patan, register above register is filled with hundreds of various icons, with Viṣṇu Nārāyaṇa as its main sacred image above the water of the well. An interesting example where an entire temple protruding from the back wall of the well takes up about a third of the well shaft, is the Mātā Bhavānī Vāv at Ahmedabad (Plates 525-6). The shrine which gave the stepwell its name, contains an image of the mothergoddess Śakti- or Ambā-Bhavānī<sup>60</sup> and can be reached via a small bridge from the second storey of the last *kūtā* in front (Fig. 52). In the circa nineteenth-century Dhauli Vāv at Ghanerao, Rajasthan, this feature seems to have been imitated in the form of a secular balcony overlooking the well (Plate 527). M. Postel described the Mātā Bhavānī Vāv as a plain and

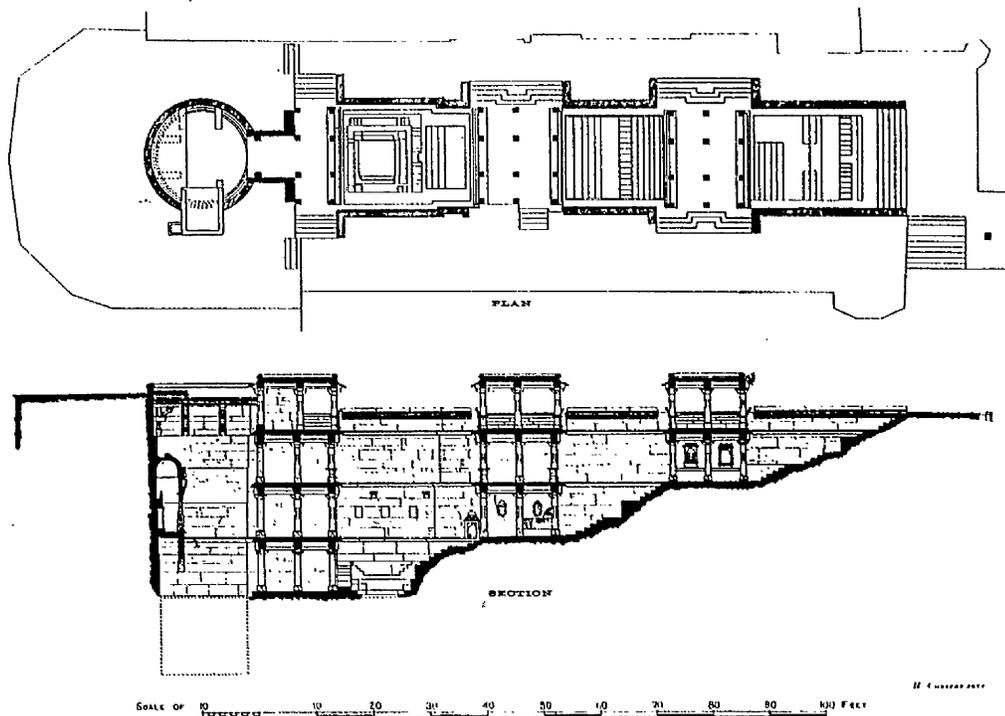


Fig. 52: Ahmadabad, Mātā Bhavānī Vāv with shrine built into the well shaft  
(J.A.S. Burgess, 1905, plate 13.)

<sup>60</sup>She has usually been identified with Pārvatī, and allegedly her shrine is later than the main structure of the stepwell (J.A.S. Burgess, 1905, 'Muhammadan Architecture of Ahmadabad.', p. 2.)

mostly utilitarian structure<sup>61</sup>. With regard to today's actual use of the well, however, this seems most peculiar, since on the contrary, the well is not used for ordinary water provision, but has been completely turned into an underground temple with an ever growing number of new icons, 'well-temple' musicians and active worship (Plates 528-530). A similar example is a village stepwell in Bhadraka, Gujarat, which has been refurbished with bright colours and tiles, contains many niches with religious icons, and is actively venerated as a temple<sup>62</sup>.

There are also examples of well-temples where either a shrine or temple was constructed above a well, or where a well was dug into the sanctum of a temple. They date from various periods and are found in different parts of India. A not yet fully evolved example but clearly taking this direction, is the circa late tenth-century Marīci Kuṇḍa well next to the Mukteśvara Temple at Bhubaneswar (Plate 531), Orissa. The well, which is located on the south side of the temple, is surrounded by a high wall, and has an entrance gateway with carved pillars and beams resembling those of the ordinary temples of the region (Plate 532). The outer pillars are fashioned in the shape of *nāginīs*, half man and half snake, which encircle the doorway with their long twisted tails. The well water is used for temple rituals and women who cannot have children come to bathe in it. From some distance the well looks like a small dilapidated shrine which has lost its superstructure. A further example of a well-temple which resembles a subsidiary shrine is the eleventh-century Bālaḥ Kuāṃ, also called Tārā Vāv, at Menal (Plate 533). The well is contained within the *vimāna* of the shrine which had a porch, now almost entirely gone, and steps leading up to the platform carrying the well-temple. The outer walls of the *vimāna* are staggered, decorated with the usual ornaments of the temples of the region, and small shrines which contained images face the cardinal directions. The upper section of the superstructure, of which several columns still remain, seems to have ventilated the well. A larger well

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<sup>61</sup>M. Postel in K. Mankodi, 1991, p. 7.

<sup>62</sup>Livingston, 1995, pp. 16-7. Bhadraka is the only place mentioned in the PhD which has not been marked on the map due to a lack of information about its exact location.

monument, called the Mallikār or Manohara Guṇḍam, which resembles the shape of a square *maṇḍapa* with small Nandi sculptures on its roof, is located in the inner enclosure of the Mallikārjuna Temple at Srisailam (circa fourteenth to sixteenth century) (Plate 534). It is surrounded by a wall of about 1.2 metres, and contains a large nine metres square basin into which a peculiar construction of columns and beams was set (Plate 535). The pillars and beams inside the basin and those supporting the roof are all elaborately carved, and there is a standing image of the river goddess Gaṅgā on the west side of the well facing the Mallikārjuna Temple. The pilgrims pay special attention to the finial of the main temple which is mirrored on the water surface of the well. According to the priests of the temple, luck is granted to the person who throws a coin into the well and hits the reflection of the temple finial. This rite may hint at a belief that the god of the temple may at least at times be present in the well. A particularly interesting site for water temples is Bijolia where there are two well-temples on either side of the Mandākinī Kuṇḍ. In the cella of the Bolanāth Mandir (Plate 536) to the north-east of the *kuṇḍa* is a circa two and a half metres deep well which is fed by water from the *kuṇḍa*. The *liṅga* contained within the cella is surrounded and often remains submerged by the water of the well (Plate 537). The *liṅga* in the shrine of the Undeśvara Temple to the west is lustrated by a water pot dripping onto it. Its *maṇḍapa* in front has three porches, of which the central one is the entrance, and the one to the south contains a further *liṅga*, also called Bolanāth. The *liṅga* in the main shrine and the Bolanāth-*liṅga* both become submerged by water during the rainy season. The porch to the north contains a spiral staircase leading down to a well which is half inside and half outside the temple wall (Plate 538). A further example of a well-temple is the Pātāleśvara Mandir in the temple group below the Karan Mandir at Amarkantak (Plate 540). The floor of the sanctum is again several metres below ground level and contains a *liṅga* which once a year on Samanka Pūrṇimā, is submerged when the Ganges emerges here to lustrate the *liṅga*. This belief is also hinted at in the name of the

temple, and there are many water structures which are believed to be Pātāla Gaṅgās, places where subterranean currents of the Ganges can surface. Also the Jambukeśvara Temple at Srirangam has a depression in the *garbhagrha* which contains the Āp-liṅga, a *svayambhū* or self-created *liṅga* standing in water<sup>63</sup>. In well-temples, water is still venerated in its natural pure form, and has not been substituted by images of Gaṅgā Devī or the water god Varuṇa. They are clear indicators of the sanctity of water and its view as a divine substance.

In connection with the idea of a sacred river emerging in a well, it is interesting to note that the source of the Godavari at Brahmagiri above Trimbak, and that of the Son River, outside Amarkantak, are both contained in well-like cavities. The source of the Godavari is a well or cleft hewn into the rock face of the mountain (Plate 539), and the source of the Son is a modern concrete structure bearing the inscription 'Son-nadikā-udgam', meaning 'Source of the Son River' (Plate 541). At Amarkantak, the entire mountain seems to be imbued with the sacred river which arises inside of it, and the water of which can be drawn out of it. A few metres away from its source, the Son river is believed to flow into the Narmada, and this underground confluence is believed to be located directly underneath a modern concrete well shaft. Here, the 'well' seems to provide an insight into the underworld, where invisible subterranean rivers merge, and provides the opportunity to draw up the particularly holy water from the sacred confluence.

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<sup>63</sup>There are also temples in which the *garbhagrha* is found on a lower level, or which have two, an upper and a lower *garbhagrha* separated by a ceiling, but where the lower cella remains dry and does not contain water (S. Kramrisch, 1991, *The Hindu Temple*. Vol. 1, pp. 171-173; H. Cousens, 1926, *The Architectural Antiquities of Western India*. pp. 38, 53). These examples should not be confused with the well-temples discussed above in which the water itself or water-*liṅgas*, visualising the divine presence in the water, are worshipped.

#### IV. Gateways to the Underworld

Gateways are placed by *ghāṭs* and tanks to mark the transition from the ordinary to the sacred, and at *kuṇḍas* also because they penetrate deep into the ground. All these structures, however, are still open to the sky and flooded with light and air, and therefore still part of or at least closely connected with our world. Wells penetrate much deeper into the sacred ground, and in a stepwell, people themselves descend several storeys under the earth where it is dark, cool and moist, and where surface life and sounds recede. In order to mark these subterranean monuments above ground, and to give architectural shape to the transition from our world to the nether regions, into which a person descending into a well embarks, imposing gateways and pavilions were constructed particularly at the stairs of access to wells.

Gateways to wells can be ordinary doorways which make it possible to lock up a well, as may be seen in the eighteenth-century Purāṇa-Ghāṭ Kanyā Bāoli at Jaipur, which from the outside looks like an ordinary entrance in a row of domestic houses. The peaceful well surrounded by apartments conveys the feeling of a protected courtyard area away from the busy road. Although today the apartments around the well are inhabited, the well seems originally to have been part of a royal garden. More frequently, however, such doorways are found further down the corridor of a stepwell, as may be seen in the stepwell at the Jain temples at Khajuraho (543), or in the Bīja Maṇḍal Bāoli at Vidisha. The doorway in the latter is found at the first landing, where the two side stairs join the main straight corridor of the well. The doorway is elaborately carved and imitates those leading to shrine rooms of contemporary temples of the region (Plate 544). The remaining pillars at the corners of the landing may hint at the presence of an earlier pavilion in front of the doorway (Plate 542). In other cases, *torāṇa* gateways were constructed at the entrances to wells. The well adjacent to the Gaurī Temple at Bhubaneshwar is not only marked as sacred ground by a high

wall but also has a *torana* on its southern side (Plate 545). Stumps of former *toranas* remain on top of the stairs of the Rāṇī Vāv at Patan<sup>64</sup> and at Vāpi no. 1 at Sirval<sup>65</sup>. A modern triple *torana* marks the entrance to the sacred compound of the Mātā Bhavānī Vāv which nowadays is used as a temple (Plate 546). A monumental gateway containing a pointed arch leads down to the Hāthī Bāoli outside Adavad (Plate 547).

It is typical of Gujarati stepwells to have two gateway towers, called *pratoḷi* (Gujarati), flanking the entrance to wells. Stone *pratoḷis* may be seen at the entrance to the Nadir-kī Vāv at Nagaka Gau (Plate 473) and the Ruda Vāv at Adalaj (Plate 548), and brick-built examples which have been plastered and painted, can be seen at Uvarsad (Plate 549). Lateral *pratoḷis* may at times contain shrine niches, and particularly large ones still containing images are present at the Sindhvāi Mātā Stepwell (1633 AD) at Patan, Gujarat. A wall containing an ordinary doorway was inserted between the two *pratoḷis* flanking the entrance to the Vājināth Vāv at Kapadvanj (Plate 550), and in the Vidyādhara Vāv at Baroda (1487 AD), a domed gateway pavilion was set between the two lateral gate towers (Plate 551). Probably the largest examples of towers on either side of the entrance to a well are flanking Rājā Bir Singh Deo's Bāoli at Sirol (Plate 552).

The majority of stepwells, however, have gateway pavilions above ground which clearly mark the entrance and the presence of an underground edifice. Such pavilions can either be domed, as for instance those belonging to the Dādā Harīr Vāv at Ahmedabad (Plate 493), the Jethābhāi Vāv at Isanpur (Plate 553), and the Navalakhi Vāv at Baroda, or they can be pyramidal, as exemplified by the JñānVāv at Visavada (Plate 555), the Vikia Vāv at Ghumli, and the Gaṅgā Vāv at Wadhwan (Plate 554). The Āssi Khāmbhā spiral-well in the fort at Gwalior has a large hall and a gateway resembling the shape of an *iwān* on its northern side (Plate 556), and the sacred Sikh well at Goindwal is entered through a pavilion

<sup>64</sup>When Henry Cousens surveyed Patan in 1887, one pillar of the *torana* was still in place (Mankodi, 1991, pp. 30, 44).

<sup>65</sup>Meister & Dhaky, 1986, p. 156.

resembling a miniature gurdwara with a large fluted dome (Plate 557). A particularly interesting example of a gateway to a covered stepwell resembling the shape of a lion is the *Siṃhakiṇaru* (Plate 499), in the compound of the *Bṛhadiśvara* Temple at Gangaikondacholapuram. The people descending to the well seem to pass between the legs of the lion, visualising the fact that the sacred bath in the well is equivalent with one's death and a new birth. The well was constructed by the Zamindar of Udaiyarpalaiyam<sup>66</sup> who is also believed to have been the donor of two similar lion gateways leading to the water of *kuṇḍas* at Tiruvannamalai, discussed in Chapter Five.

Wells are found all over India, Nepal and Sri Lanka, and still continue to be built today. They fall into various sub-groups, and have developed features both above and below ground level. Although art-historians have tended to concentrate mainly on stepwell architecture, there are many other sub-types of well monuments which show a high degree of elaboration, and artistic and technical ingenuity. Wells penetrate deep into the ground, and particularly stepwells and spiral-wells, with their multiple underground storeys and galleried corridors, are large subterranean edifices. Although the decorations of wells are usually related to the local temple architecture, the builders of wells faced entirely different problems from those building temples which stand free in space above the ground. The art of building wells evolved extensively over the ages, and wells could go deeper, have apartments spiralling around the well shaft or adjacent stepped corridors which became longer and wider. While wells in tanks or multiple wells are unusual, there are a few interesting exceptions. At Mandu, the *Champā Bāoṛī* spiral-well is located close to the large *Muñj Tālāo* which has further tanks and pools constructed in and next to it. At Kankroli, one of the

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<sup>66</sup>P. Pichard (ed.), 1994, *Vingt ans après Tanjavur, Gangaikondacholapuram*. p. 149, and fig. 190.

platforms protruding into the water of Rājasamand Lake contains a deep well fed by the lake, and an example of a multiple well is the Āṭh-Vāv Nau-Kuāṃ well at Halol in Gujarat, which has a central octagonal well shaft directly surrounded by sixteen smaller wells (Fig. 53).

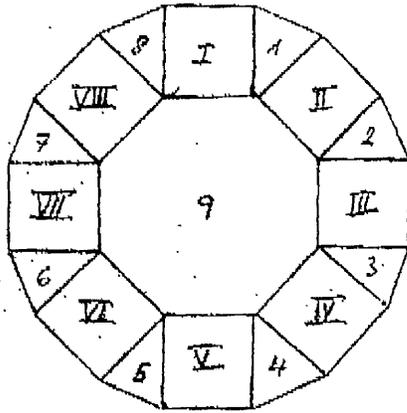


Fig. 53: Halol, Āṭh-Vāv (VIII) Nau Kuāṃ (9) (drawing Gustav Widmann).

Because of increased water demand for industry and towns, the ground water table in many regions has dropped considerably, leaving, at least during certain periods of the year, many of the old wells dry. While some wells have been deepened, others were replaced by modern means of water provision. In remote regions and small villages, they are, however, still the predominant means to store and preserve water all year round.

# Sites mentioned in Chapter 7: Ornamental Pools



## Chapter 7: ORNAMENTAL POOLS

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### I. Introduction

*Ghāṭs*, tanks, *kuṇḍas* and wells are all found in religious, civic and private palace situations, and no type is restricted to any one context. Examples of *ghāṭs* in connection with palaces and pleasure resorts have been discussed in the relevant chapter, for example some of those along the Ganges at Benares and on Ana Sāgar Lake at Ajmer. In front of the Kāliyādeh Mahal near Ujjain the entire river has been divided into compartments integrating steps and pleasure pavilions. Several tanks discussed in Chapter Four were found in a royal context as for example the tanks of the Sarkej Rauzā near Ahmedabad, and those in front of the City Palace at Bundi and the Mattāncheri Palace at Cochin-Ernakulam. The Kuṇḍa at Sabli is part of a royal pleasure garden, and also the palace at Patan in Nepal contains an important example of the risalit sub-group of *kuṇḍas*. Also all sub-groups of wells have been constructed in palaces and gardens, and examples mentioned in Chapter Six include the Navalakhi Stepwell in the palace compound at Baroda, and the two spiral-wells in the palace-fort at Agra. Often, the climax of a type or of the development of a sub-group is to be found in palace architecture, where on a private level, more money was available for experimentation and extravagance. An example illustrating this point is the Kāliyādeh Mahal near Ujjain. While there are several examples where compartments were integrated into a lake or river, the dozen or so basins built into the river at the Kāliyādeh Mahal show the largest number and most complex stage of the development known to us. Moreover, spiral wells along trading routes usually penetrate only about two to three levels underground, while the *bāoli* near the Akbarī Mahal in the palace at Agra has the highest number of six subterranean levels. Furthermore,

complicated traditional water structures were still built in palaces after the introduction of Western engineering techniques when, on a public level, such constructions had become uneconomical. This tendency may be exemplified by the elaborate spiral-well in the palace at Wankaner which was constructed in the early 1930s.

Water structures in palaces which stand in close connection with examples found in a religious context, or which represent a close continuation of tendencies in public water architecture, have been dealt with as part of their specific type of water structure. Tanks, the type found most widely spread over the entire Indian subcontinent and which exists in the largest number, however, took a particular development in private structures which is specific to palace, garden and pleasure architecture, and will be discussed in this chapter. This sub-group of tanks will be referred to as 'pools', because they are comparatively small and ornamental. Pleasure and bathing pools are found in palaces and gardens, and have been combined with a whole range of accessories such as fountains, cascades and water chutes, which are not usually found in water architecture outside a private or royal context. It is interesting, however, that themes such as bridges leading to islands, water pavilions, basins next to larger water bodies and gateways to water, which have been encountered in connection with religious and civic tanks, also play an important role in palace and pleasure pools.

Pleasure and palace architecture is also the area where the influence of Islamic ideas and styles on the indigenous architecture is felt very early and clearly. When the Muslim rulers firmly established themselves in India in the late twelfth century, they first built residences and mosques, as signs of their victory and identity. An influence on Hindu and Jain temple architecture and religious and civic water structures becomes evident only in later periods. Not much survives of Indian palaces built before the arrival of Islam, and to get a clear idea of the indigenous palace and garden architecture, and to augment the scarce archaeological remains of earlier Hindu and Buddhist palaces we mainly rely on

literary descriptions and paintings. The earliest surviving substantial remains of a palace are those of Fīrūz Shāh Koṭlā (1354) at Delhi. An indigenous garden tradition existed in India before the arrival of Islam, but the Persian water garden was imported to the north of India by the Mughals. Islamic ideas and styles, however, did not develop in a vacuum, and both the indigenous Indian and the foreign Islamic traditions mutually influenced each other in an active and fruitful exchange. The focus in this thesis lies mainly on the sacred domain of the Indic tradition, and less has been said about Islam. In this chapter on ornamental pools in palaces and gardens, however, there is much more cross-fertilisation, and the distinction between the traditions is much less clear. The palace structures and gardens are discussed not because they are Islamic, but because they are Indian architecture connected with water. Also in this chapter some mention will be made of *ḥammāms* and mortuary baths, again an Islamic import, but their discussion will be kept to a minimum because of the comparative absence of adaptation occurring in this type. Although public *ḥammāms* existed in the Muslim quarters of Indian cities, most of the surviving hot baths are private royal structures which were reserved for the king, his family, and high officials of the court.

Water structures relating to palace and garden architecture are a comparatively less neglected topic than the *ghāṭis*, tanks, *kuṇḍas*, and wells of the previous chapters. Therefore, no separate chapters have been dedicated to the discussion of palace water structures and water gardens in Persia and India. The relevant existing studies have been listed and discussed in the Introductory Chapter and further ones are mentioned in the bibliography. The emphasis here will be placed on two points; first, the changes the Persian paradise garden underwent in India, making it eventually a fusion of local Indian and imported Islamic ideas, and secondly the strong connections between water structures from the indigenous Indian religious traditions on the one side, and that of the imported secular palace and the religious *cār-bāgh* (*cahār-bāgh*) traditions on the other.

## II. Water in Palaces and Gardens

The three main areas which will be dealt with in this chapter are gardens integrating water into their layout, residential palaces, and summer, pleasure or hunting resorts which were used by the royalty only during certain periods of the year and which include water structures. Although the three areas will be introduced separately, summarising their development and providing examples of each of them, the groups are closely related and overlap to a considerable amount. Therefore, this distinction will not be continued in the following sections III-VI, which will discuss themes in water architecture which run through and combine garden, pleasure and palace architecture.

### 1. Water Gardens

India, Nepal and Sri Lanka have long-standing traditions of gardens, parks and groves, many of which needed some form of artificial irrigation. The Indian Buddhists were great gardeners, and King Aśoka had gardens with water pools and shaded walks laid out in the third century BC, which were described by Megasthenes, when ambassador at the Mauryan court<sup>1</sup>. These ancient gardens were probably quite informal and contained indigenous trees and shrubs. The planting of trees was seen as an act of piety creating religious merit. Such gardens surrounded temples and monasteries and provided space and peace for contemplation and meditation, and accorded with the Buddhist love for nature, and their desire to establish a harmonious relationship with her. According to C.M. Villiers Stuart, such Buddhist gardens could still be seen early in this century in the Lanoli Grove beyond Khandalla on the railway line between Bombay and Poona, Maharashtra, and at Chembur on the island of Trombay

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<sup>1</sup>J. Lehrman, 1980, *Earthly Paradise: Garden and Courtyard in Islam*. p. 139; E.B. Moynihan, 1980, *Paradise as a Garden: In Persia and Mughal India*. p. 91.

opposite Salsette<sup>2</sup>. Also at Venuvana, a part of Rajgir, an ancient Buddhist garden survives in which the Buddha and Mahāvira are said to have meditated. Similarly Hindus have been maintaining gardens with flowers and blossoming trees around their houses and temples for many centuries because the offering of flowers is an essential part of Hindu temple ritual. Particularly for the south of India, Hindu epics and temple histories provide ample accounts of temple gardens often located near springs and rivers, which supplied the temples with flowers and brought a source of income to the temples. Some of the grandest accounts describe the flower gardens at Chidambaram and Tanjore, and a garden in the compound of the Kanthimathi Nellaiyappar temple at Tirunelveli survives in a simplified form (Fig. 54). The practice of offering flowers, especially lotuses (Plate 558), is also common to the Buddhists, and in Sri Lanka temple altars have to be cleared of heaps of flowers several times a day. Gardens were also part of palaces and the large mansions of noblemen and merchants.

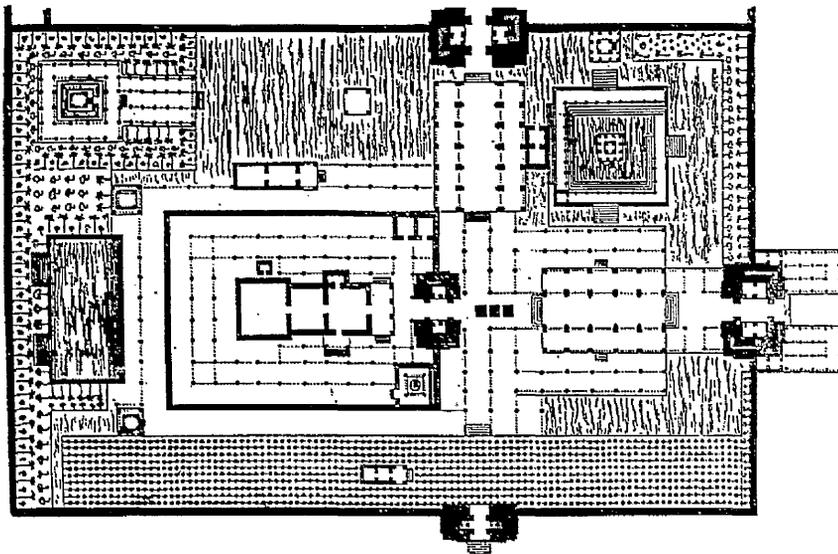


Fig. 54: Half plan of the temple at Tirunelveli with temple garden (left)  
(J. Fergusson, 1967, Vol. 1, p. 393).

Although we know from travellers' accounts, ancient literature and from paintings that ancient Indian gardens contained pools, fountains and springs, a

<sup>2</sup>C.M. Villiers Stuart, 1913, *Gardens of the Great Mughals*. p. 241.

general belief prevails that the integration of artificial water-courses, and the division of the gardens into terraces and parterres of flowers were not known to Indian garden designers before the arrival of Islam<sup>3</sup>. In this respect it is interesting that according to J. Lehrman, gardens divided by paths into four regular sections did already exist in earlier south Indian Hindu temple gardens<sup>4</sup>. Moreover, at Sigiriya (Sīgiriya) in Sri Lanka, formal water gardens divided by channels into geometric compartments, with terraces rising towards the rock carrying the citadel, existed in the fifth century AD<sup>5</sup> (Fig. 55, Plate 559). The walled gardens

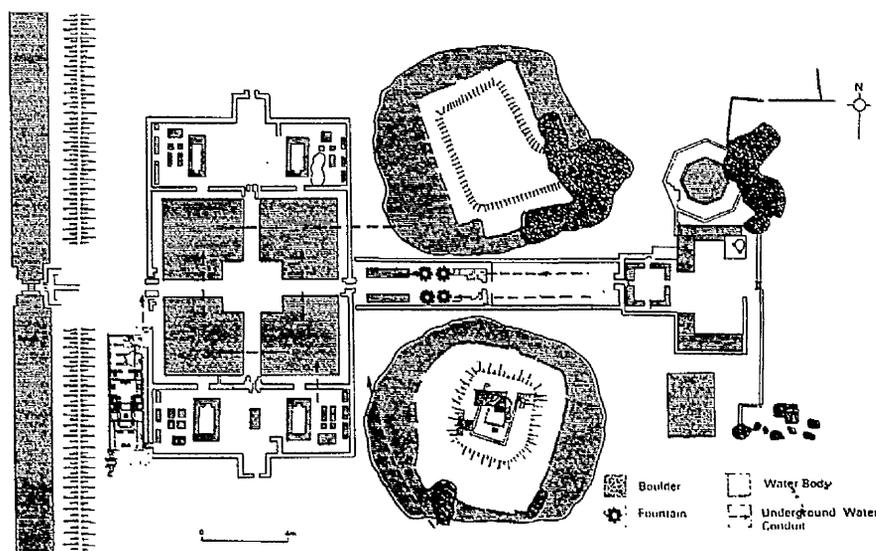


Fig. 55: Sigiriya, formal water garden below the citadel (UNESCO, 1993, p. 124).

were constructed by prince Kassapa during the reign of King Dhātusena I (459-477 AD). There are water gardens, cave gardens, boulder gardens, and terraced gardens on the base and on top of the large rock. The main water garden to the west of the rock was constructed on a prominent east-west axis. It contains oriented water channels and ornamental pools with fountains (Plate 560)<sup>6</sup>, and is one of the earliest known examples of the quartered garden, a type which in art-

<sup>3</sup>N. Tittle & Wood, F., 1991, *Oriental Gardens*. p. 46.

<sup>4</sup>Lehrman, 1980, p. 139.

<sup>5</sup>UNESCO, 1993, *The Cultural Triangle of Sri Lanka*. p. 112; R.H. De Silva, 1976, *Sigiriya*. pp. 1, 6.

<sup>6</sup>During the rainy season the fifth century fountains still function to this day.

historical writing has been closely and almost exclusively associated with Islam in general, and Persia in particular.

Although the concept of the Islamic *cār-bāgh* was highly developed in Persia, its origins are older than the Persian empire, and references to a garden intersected by four rivers originating in its centre are already found in the Book of Genesis (First Book of Moses 2, 10-14). When Islam spread to India in the late twelfth and early thirteenth centuries, this type of garden was almost certainly brought to India from Persia<sup>7</sup>. It was, however, during the Mughal reign, starting with Bābur in the sixteenth century, that it was either reintroduced or invigorated more strongly. In this initial period, the Mughal gardens were almost purely Persian, and only during the latter part of the sixteenth and the seventeenth centuries, was this type of garden transformed into something distinctly Mughal and Indian by adapting to the local climate and landscape.

The prototypical plan of the Persian *cār-bāgh* is flat because it was developed on the Iranian plateau, although in the area of Shiraz (Shirazi) bordering hills, terraced gardens with small waterfalls did exist. In places where there is no natural slope, a slight gradient had to be created artificially to ensure a flow of water. In Persia, *cār-bāghs* are usually square or rectangular and surrounded by high walls, which protect the gardens against the winds, the dust, and the animals of the surrounding desert. Through these walls, the *cār-bāghs* are private and protected spaces, entirely inward-looking green oases of perfect peace which shield off the exterior world. They were not perceived as displays of power<sup>8</sup>. The design of the *cār-bāghs* is strictly geometric and in their most basic form, two water channels cross at right angles in the centre of the garden, dividing it into four quarters. This quadripartite shape gave the gardens their name '*cār-bāgh*', 'the four-fold garden'. The channels represent the four rivers of life and the meeting or union of man with God, and stand for fertility and timelessness<sup>9</sup>. In

<sup>7</sup>Titley & Wood, 1991, p. 46.

<sup>8</sup>Moynihan, 1980, p. 123.

<sup>9</sup>S. Crowe & S. Haywood, 1972, *The Gardens of Mughul India: A History and a Guide*. p. 17; Lehman, 1980, p. 59.

the gardens, the water channels are both the symbolic and the physical source of life and growth. The solidity of the stone channels and architecture are counterbalanced by the fluidity of the water and the organic shapes of the plants covering the regular plots of land. Already in Persia, variations developed on this basic plan, and many gardens are more oblong with a main central water channel crossed at right angles by several smaller water courses or walks, and with pavilions set at the points of intersection. The water channels are usually slightly raised above the surrounding ground to irrigate the sunken parterres. The Qur'ān describes paradise as a lush garden, which it refers to by various names<sup>10</sup>. One which is frequently used, is '*firdaus*' (Arabic), which derived from '*paridaēza*', the old Avestan word for an enclosure, a garden, or a park, used by the Sasanian kings of Persia to describe their gardens<sup>11</sup>. From this word also the Greek *paradeisoi* and the Latin *paradisus* originate which in English became 'paradise'. *Cār-bāghs* are formalised versions of this idea of paradise.

In Mughal India, this form of garden was enriched and developed in a distinct way, particularly during the latter part of the sixteenth and the early seventeenth centuries, by adapting to the local climate, landscape and availability of water. The earliest *cār-bāghs* in India were built on the plains, where the gardens were still flat and very close to their Persian antecedents because they were located in a similar environment. They are walled and have prominent gateways facing the four cardinal points of direction. Probably the earliest Mughal garden is Bābur's Rām Bāgh, originally called the Ārām Bāgh (Garden of Rest) laid out in the early sixteenth century at Agra. An innovation which is visible at this early stage and which was further developed in subsequent gardens, is that although the garden is predominantly inward looking, it borders the river

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<sup>10</sup>The image of paradise as a garden can already be encountered in the Epic of Gilgamesh which dates from 2700 BC (E. Clark, 1996, *Under Which Rivers Flow: The Symbolism of the Islamic Garden*, p. 9).

<sup>11</sup>T. Leisten in H. Forkl, H. Kalter, T. Leisten & M. Pavaloj (eds.), 1994, *Die Gärten des Islam*, p. 47; Moynihan, 1980, p. 99; M. Alemi in A. Petruccioli (ed.), 1995, *Der Islamische Garten: Architektur, Natur, Landschaft*, p. 39.

Yamuna, and a terrace with pavilions overlooks the water and opens the garden towards the outer world.

The most pronounced differences in the design of the water garden, however, took place after Akbar's conquest of Kashmir in 1586. In Kashmir, a region which is characterised by abundance of water and greenery, water did not have to be lifted up from wells or rivers. The hilly area around Lake Dal, close to the capital of Srinagar (Śrīnagar), is dotted with mountain springs and streams which were led through artificial channels to descend from one garden terrace to the next, utilising the pressure of the spring and the gradation of the terrain to move the water and to supply numerous fountains. While fountains were already known in the Persian garden, there were relatively few, because the pressure of the water was not high enough; but in Kashmir, where the water pressure was raised because the water descended the hill sites with much pressure, the number of fountain jets readily increased in number.

Because many gardens were built into the hills bordering or overlooking Lake Dal, they were stepped, and had at least three terraces (Fig. 56). With the creation of various levels in the gardens, distinct functions were given to specific terraces. In gardens with three levels the lowest terrace was used for public receptions and to welcome visitors (*dīvān-i ām*), while the second level was private and reserved for men of the court (*dīvān-i khās*). The highest terrace was the *zenānā* (Arabic: *zanāna*) or *ḥaram*, the area dedicated to the women of the royal household. As such, the gardens followed the same formal layout as the palaces, in which a strict separation between public and private domains, and between male and female quarters was set up. Gardens divided into seven terraces are said to refer to the seven planets, those into eight have been interpreted with a view to the eight fold division of the Qur'ān<sup>12</sup>, and the largest existing number of twelve terraces, to be found in the Nishāt Bāgh at Lake Dal, is believed to refer to the twelve signs of the zodiac (Fig. 57 a)<sup>13</sup>.

<sup>12</sup>Crowe & Haywood, 1972, p. 20.

<sup>13</sup>Lehrman, 1980, p. 142

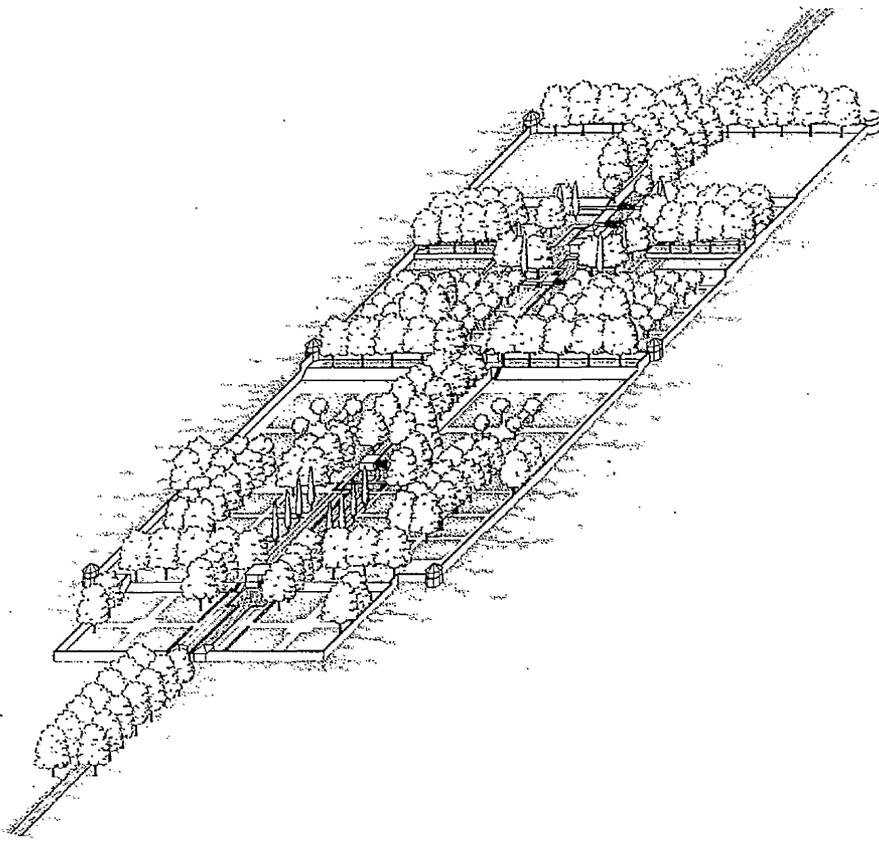


Fig. 56: Kashmir, Shalimār Bāgh with four terraces (A. Petruccioli, 1995, p. 258).

Although the Mughal gardens in Kashmir continued to be surrounded by walls, they were opened up and, at least on the bottom where most of the gardens border Lake Dal, they were allowed to merge with the natural landscape. The view over the lake when looking down, and into the mountains when looking up from the lake, added to the long vistas and the splendour of the designs, and enriched the carefully designed geometrical gardens with dramatic natural backdrops.

The walled and inward looking gardens of the plains usually had gateways called *darvāzā* or *naqqārkhānā* (drum house)<sup>14</sup> in the centre of their four sides, but also in the more open layout in Kashmir, there are strong references to gateways. There is a bridge which functions as a gateway to the Nishāt Bāgh, and separates Lake Dal from an inner lake bordering the garden (Plate 561). A large free-standing pointed entrance gateway at the edge of the water, facing Lake Dal, was erected in the Cashmā Shāhī garden (Plate 562), where a pavilion constructed in

<sup>14</sup>G. Bailey in A. Petruccioli (ed.), 1997, *Gardens in the Time of the Great Muslim Empires: Theory and Design*. p. 130.

the shape of a bridge or gateway across a water channel, makes further reference to water gateways. A similar pavilion was constructed over a channel at Achabal (Plate 563), and a further example existed over the triple arched entrance to the large octagonal pool at Vernag (Fig. 57 b)<sup>15</sup>. Such gates and bridges could be interpreted as gateways to paradise.

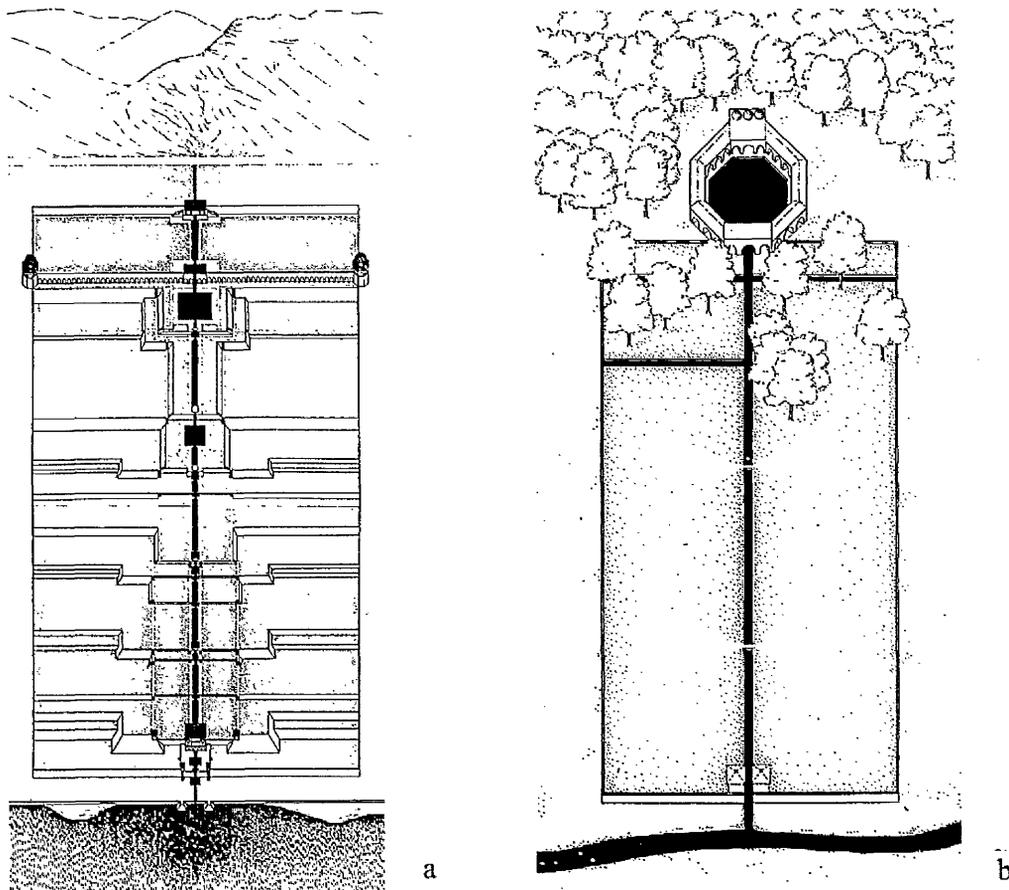


Fig. 57: Nishāt Bāgh with twelve terraces (a), and the garden at Vernag (b)  
(A. Petruccioli, 1995, pp. 253, 252).

Later on, the tendency to open up the gardens was developed even further under the Rājput rulers with their strong feeling for picturesque settings. In the artificial Maota Lake in front of Amber Palace, an artificial island carrying a *cār-bāgh* with three terraces was constructed. Here, a wall remains along the short

<sup>15</sup>Although today only the arched openings remain, a drawing by Captain Knight, published in 1863, shows the original construction above the entrance (Crowe & Haywood, 1972, p. 112.).

south side on the highest level of the garden, and the three other sides only have low delicate fences to prevent people from falling into the surrounding lake. While Persian gardens tried to shield off a hostile dry desert area, this garden, bordered by water on all four sides and only reached by a causeway from the south, has gone to the opposite extreme. The openness of the unprotected garden, easily visible from the border of the lake and the fort, stands in marked contrast to the strongly fortified *garh*-palace on top of the hill which is typical of Rājput palace-forts, and expresses a fusion of Rājput with Mughal ideas of planning.

A further departure from the traditional Persian ideal can be seen in the width of the channels running through the *cār-bāghs*. While early examples such as the Rām Bāgh at Agra (Plate 565), the formal water gardens at the tomb of Humāyūn at Delhi (1565-73) (Plate 564) and that of Akbar at Sikandra (1605-12), Uttar Pradesh, still have narrow channels, those at Vernag and in the Shalimār Bāgh, both early seventeenth-century gardens in Kashmir, like the channels in the Hayāt Bakhsh Bāgh at Delhi (Plate 566) and those in the tomb garden of the Tāj Mahal at Agra (1631-52) (Plate 567) and at Şafdar Jaṅg's Tomb (1753-4) at Delhi, have wider channels. Although the geometric and cross-shaped layout of the gardens continued, increasing emphasis was laid on the use of water during the Mughal Period. Although water pavilions are already found in Persian *cār-bāghs*, their number and importance increased in Mughal India, while other features, such as cool underground rooms, ceased to exist in the gardens<sup>16</sup>.

The Kashmiri water gardens were built for summer enjoyment and as pleasure gardens, although the Mughal emperors often spent several months there, until the beginning of winter in Kashmir<sup>17</sup>. There are two more types of gardens built by the Mughals, the first being residential or palace gardens situated mainly in the Indian plains. These garden palaces were the official seat of the emperors,

<sup>16</sup>Crowe & Haywood, 1972, p. 45.

<sup>17</sup>J.L. Wescoat points out that particularly early Mughal gardens also played an important imperial role in the expansion and control of the territory by providing places for military encampments. They were also important political metaphors of an organised and well structured empire (Wescoat in Petruccioli, 1997, p. 187).

and will be discussed in the following section on palaces. The last group of *cār-bāghs* are associated with tombs, and it was one of the most important innovations of the Mughals to create tomb gardens, which were not Persian in origin. The tomb gardens return to an earlier version of the Persian paradise garden, which has no terraces and only a slight slope to prevent the water from stagnating in the channels. The walled tomb gardens are square and divided into four large plots, which were further subdivided by channels and paths. Earlier tombs such as that of Sultān Ghārī (1231), Ghiyās-ud-dīn Tughluq (1320) and Sikander Lodī (1517) were already set into fortified enclosures, but it is only in Isa Khān's tomb (1547), at Delhi, that a garden is added to surround the tomb. This set the stage for Humāyūn's tomb (completed in 1573) at Delhi, which is the first tomb located at the centre of a formal *cār-bāgh*<sup>18</sup>. As a rule the tombs are always located at the centre of the gardens, above the crossing of the four main channels<sup>19</sup>. This place is the source of the four rivers of life, and has therefore been equated with the source of eternal life or with immortality, which the deceased is meant to have gained by entering paradise, symbolically represented by the garden. An exception to this rule is the Tāj Mahal which was sited on a terrace at the northern end of its garden overlooking the Yamuna River<sup>20</sup>. This continues the tendency to open up vistas and to juxtapose the man-made geometry of the tomb garden with the free flow of an unbound river. Many of the tombs and gardens of Mughal India were laid out by princes and noblemen during their lifetimes, and used as pleasure grounds. The tomb buildings provided space for banquets and feasts, and some are also said to have been used as institutions of religious teaching. When the pleasure grounds were tuned into tomb gardens, they became public places.

<sup>18</sup>G.H.R., Tillotson, 1990(a), *Mughal India*. p. 48.

<sup>19</sup>The earliest surviving example of this centralised plan is the garden around Humāyūn's Tomb at Delhi. E. Koch suggests, however, that there must have been earlier versions of this arrangement, if not in funerary then in residential garden architecture (Koch in Petruccioli, 1997, p. 143).

<sup>20</sup>According to E. Koch, the antecedent of this arrangement is to be found in the residential garden arrangements of the Mughals which were usually laid out on a rectangular plan (Koch in Petruccioli, 1997, pp. 142, 144).

Although there are many studies and books on water gardens in India, the emphasis has always been placed on the northern regions in general, and Kashmir in particular. Northern India is undoubtedly the cradle of the Mughal garden, and Kashmir the region where it found its distinct development and unique shape. It is, however, wrong to assume that only in this part of India, and only during the Mughal period, were gardens of this type designed and maintained. A separate detailed study would be needed to convey a comprehensive picture of the history of Mughal gardens in later periods and in southern regions which have been neglected almost entirely. In this thesis, only a few examples should be mentioned to indicate the wide-ranging importance of formal gardens outside the northern area.

With the weakening of the Mughal empire during the late seventeenth and the eighteenth century, many craftsmen and artists lost their work and went to the regional Rājput and the Deccani courts to seek employment. For the painters of the Mughal atelier this process has been well documented, but the skills of garden designers and architects, were also appreciated by the Rājput rulers<sup>21</sup>. In the seventeenth century the Ānand Mahal Gardens were laid out behind the Rai Pravīn Mahal at Orchha, and during the seventeenth and eighteenth centuries, pleasure gardens and islands were constructed at Udaipur. In the eighteenth century, the Jāt rulers of Bharatpur started building a garden palace at Dig (Plate 569), and the Sisodia Rānī Mahal gardens were planted near Jaipur (Plate 570). Dating from the early nineteenth century is the Vidyādhār Bāgh nearby, and also many formal gardens at Lucknow, Uttar Pradesh, were laid out during this century. But also further south, formal gardens in the Islamic *cār-bāgh* tradition existed. In the early seventeenth century, water gardens with tanks on various terraced levels were laid out at Chandragiri but the remains are overgrown and in a bad state of preservation. During the Ādil Shāhī Dynasty, water gardens were created at Bijapur, behind the Dam of the Rām Liṅg Tank and at Kumatgi.

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<sup>21</sup>Crowe & Haywood, 1972, p. 54.

Although Aurangzeb was not particularly interested in painting and architecture, he had a tomb and garden built for his wife at Aurangabad (Aparānta), Maharashtra, in 1678 (Plate 568). Several *cār-bāghs*, dating from the eighteenth century, were laid out by Ḥaidar 'Alī and Tipu Sultān at Srirangapatnam (also known as Seringapatam), near Mysore in Karnataka. While nothing survives of Ḥaidar 'Alī's famous Lāl Bāgh, the Dariyā Daulat Bāgh (1784), the Garden of the Wealth of the Sea, at the Summer Palace of Tipu Sultān, and the later Lāl Bāgh (which was laid out in 1784, and which contains the Gumbaz (1799), the tomb of Ḥaidar and Tipu), remain in a good condition. Ḥaidar also had water gardens laid out in the hills at Melkote (Bednor) also in Karnataka.

With the increasing influence of the British in India, garden design was more and more influenced by European ideas, and predominantly by the style of the English landscape garden, which is very different from the formal Mughal gardens, by being natural and by merging with the surrounding landscape. The Lāl Bāgh at Bangalore, Karnataka, which was started by Ḥaidar 'Alī and enlarged by Tipu Sultan, was later converted into a botanical garden with a spacious glass-house by the British<sup>22</sup>. The *cār-bāgh* tradition did, however, continue on a small scale. Mughal-style formal gardens were designed by Edwin Lutyens around the Viceroy's House (Rashtrapati Bhavan) in New Delhi, which was completed in 1929, and in the early 1930s the Brindavan Gardens<sup>23</sup> were laid out behind the Kṛṣṇa Sāgar Dam near Mysore (Plate 571). Also in modern architecture, there are frequent references to the tradition of formal gardens, as for example in the Hotel Mughal Sheraton, constructed at Agra in 1974-77, where the disposition of the hotel buildings creates a four-fold division and four secluded garden courtyards<sup>24</sup>. Moreover, the design of the architectural office, Sangath, constructed by B.V. Doshi at Ahmedabad (1979-80), integrates terraces and water channels into its layout.

<sup>22</sup>D.V., Gundappa, no date, *All About Mysore*. pp. 17, 116.

<sup>23</sup>'Rashtrapati Bhavan' and 'Brindavan Gardens' are the common modern ways of spelling the names.

<sup>24</sup>Haus der Kulturen der Welt, 1991, *Vistāra: Die Architektur Indiens*. p. 146.

## 2. Palaces and Water Architecture

Palaces in South Asia are often located near water which makes them more easily defensible, visualises the cleft between the ordinary public space and the private palace, and sets them into a more picturesque setting. A further reason for the location of residences by large sheets of water is that the winds blowing over the water surface are moistened and cooled, acting as an air conditioning system for the buildings adjacent to them. The water surface mirrors the mighty façades of the palaces and reflects light onto them, which makes them seem grander. Palaces may be situated along rivers, as for example Akbar's palace-fort at Allahabad (commenced in 1583) which was constructed close to the sacred confluence of Ganges and Yamuna (Plate 572). Further Mughal palaces were built along the Yamuna at Agra (1565) and later at Delhi (commenced in 1639). The princely houses of Bharatpur, Jaipur and Gwalior had residences constructed on the Yamuna at Vrindavan, and the river front in Benares has been shaped almost more strongly by its many palaces than by temples. Under British rule, the religious pilgrimage site of Benares developed into an important trading centre, and kings, *mahārājas* and noblemen had their residences constructed overlooking the sacred river Ganges. Although the citadel at Mandu is not directly located on a river, there is a story about Queen Rūpamaṭī who used to come to her pavilion at the southern end of the ridge, to take *darśana* of the sacred River Narmada, which can be seen from the top of the pavilion on clear days<sup>25</sup>.

Other palaces were constructed at lakes and large artificial tanks, which also served as their water supply. In many cases, the lakes are on the main axis of approach, situated in front and below the citadels. Examples are Amber Fort above the Maota Lake, the City Palace at Bundi overlooking the Naval Sāgar, and the citadel at Raichur, located above the large Ām Tālāo. This layout is typical of Rājput palaces, and demonstrates a strong feeling for a picturesque aesthetic. In

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<sup>25</sup>D.R. Patil, 1992, *Mandu*, p. 51.

other cases, the palaces are also situated at lakes and tanks, but these are not found on the main approach to them, but lie behind them. From the edge of the water, the palaces are still mirrored on the water, but the experience is clearly different from the sites mentioned above. Examples illustrating this point are the City Palaces at Alwar and Udaipur (Plate 573), and the palace at Datia. In other cases, smaller lakes and tanks are found in front of the main or various palace buildings within a large fort, and are only visible after having entered the walled enclosure. This arrangement may be seen in Kalinjar Fort where Rāja Mān Singh's Palace overlooks the Koṭ Tīrth, in Raigarh with its citadel on Gaṅgā Sāgar Lake, and at Chandragiri, with the Koneru Tank located in front of the Rāja Mahal.

Frequently, islands were constructed reaching out into the water of large tanks which are part of the palaces and often carry pleasure gardens and pavilions. At Mandu, a large island carrying a pleasure palace, two lotus pools and a *kuṇḍa*, was constructed in the north-western corner of the Muñj Tālāo, reached by a causeway in the centre of the northern side (Plate 574). It is interesting that a single free-standing gateway faces the water on the eastern side of the island, and makes reference to religious traditions discussed in previous chapters. A further smaller island at Mandu, carrying an octagonal pavilion, projects into the water of the Kapūr Tālāo. An island in front of Amber Fort has already been mentioned (Plate 575), and the Rūpa-Lank and the Sonā-Lank (the silver and the golden Island) are two fifteenth-century artificial islands carrying pavilions in Lake Dal, Kashmir.

There are also examples where palaces were constructed on islands in lakes, such as the Jal Mahal (Water Palace) outside Jaipur, which allegedly was reached by a causeway<sup>26</sup> (Plate 576). The palace was constructed by Mān Singh I, one of Akbar's generals, and added to by successors. At Ahmadnagar, the Farah Bakhsh Palace, also known as Feria Bāgh, is located on an island in the circa 220

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<sup>26</sup>India Tourism Development Corporation, 1975, *Guide to Rajasthan*, p. 90.

metres square artificial water tank. A circa 300 metres long bridge leads to the square island in the centre of the tank. The palace was completed in 1574 and is surrounded by a garden with water basins. The large open façades on all four sides of the palace *bārahdarī* admit a cool breeze to the palace apartments<sup>27</sup>. A smaller version of this idea may be seen close to Datia on the road from Gwalior. The Kāliyādeh Mahal north of Ujjain is located on a small island in the Sipra River and is reached by a wide bridge in the south-west of the island. At Orchha, a much larger island, situated in a bend of the Betwa River and approached by a bridge from the west, carries several palaces and gardens. Although they are not literally islands surrounded entirely by water, a similar situation exists at Dig and Mandu. The garden palace at Dig is located between the large Gopāl and the Rūp Sāgar. Similarly, the late fifteenth-century Jahāz Mahal (Ship Palace) at Mandu was constructed on a thin strip of land bordered by the Muñj and the Kapūr Tālāos, and conveys the feeling of an island location. Smaller versions of this idea may be seen in the small pleasure palace built on the upper dam in the Sāgar Tank in the north-west of Jaigarh (Jaigarh) (Plate 577), and at Amber itself, where the Dil-i-Ārām pleasure garden with its pavilions is laid out on the dam of the Maota Lake.

In other cases, palaces were directly constructed in the middle of tanks or lakes or cover natural islands so thoroughly that they convey the feeling of a palace floating on the water. Padminī's Palace at Chitorgarh, constructed in the large tank to the north of Bhīm's Palace on shore, dates from 1880 AD but is believed to have replaced an earlier version of a water palace constructed in about 1300 AD<sup>28</sup> (Plate 578). The idea of a Rājput pleasure palace set in water was further developed during the seventeenth and the eighteenth centuries in Udaipur. Lake Pichola which is overlooked by the mighty City Palace, the residence of the rulers of Udaipur, is dotted with water palaces and islands carrying pavilions and

<sup>27</sup>O. Reuther, 1925, *Indische Paläste und Wohnhäuser*. pp. 76-77.

<sup>28</sup>G.H.R. Tillotson, 1987, *The Rajput Palaces: The Development of an Architectural Style, 1450-1750*. p. 40.

smaller palaces. The largest water palace is the originally eighteenth-century Jag Nivās (today the Lake Palace Hotel), which entirely covers a natural island, contains gardens with fountains and pools, and seems to float on the lake (Plate 579). A further interesting example is the early seventeenth-century Jag Mandir in the southern part of the lake (Plate 580).

There exists a mutual relationship between gardens and palaces, since there is practically no palace without courtyards, gardens and open spaces. Although there are references to palace gardens from as early as the third century BC, we have no uninterrupted record of Indian palace gardens. In the Indian climate where shelter only has to be provided against intruders, the strong sun, rain and wind, but not so much against the cold, people lived very much in the open, and shaded places were created by awnings and parasols in courtyards and on terraces. Even where proper rooms or pavilions exist, they usually admit a lot of light and air and the borders between inside and outside are often fluid. Gardens are open-air rooms in which often expensive materials such as marble inlaid with precious stones and delicate ornamentation, showing the highest degree of craftsmanship, were employed. Mughal palaces are particularly good examples of the close relationship between palaces and gardens. They typically consist of a line of rectangular, single-storeyed, marble pavilions formally disposed in a line and connected by gardens. They are protected by a detached fortification wall. The pavilions are usually raised on a terrace overlooking a river, and show a strong feeling for the site, an aspect which is equally striking in the Mughal gardens in Kashmir. Rājput palaces, which usually consist of a continuous range of irregularly shaped structures disposed informally, and raised on a hill top, also contain palace gardens and green courtyards. Examples of such palace gardens may be seen in the City Palaces at Udaipur and Jaipur. Through their raised and picturesque location, Rājput palaces usually offer stunning views

in the surrounding landscape which were enjoyed from roof-top terraces and ornate *jharokhās*.

An interesting juxtaposition of Mughal exactness and the Rājput feeling for the picturesque<sup>29</sup> may be seen in the Mohan Bārī located on an island in front of the palace fort at Amber. There are further examples of interesting and fruitful combinations of Mughal and Rājput traditions of water architecture in later palaces. During the pre-Mughal period, large tanks were predominantly used for leisure and enjoyment, and many Rājput palaces overlook such reservoirs, while the Mughals established formalised gardens to rest and socialise. The protected walled Mughal gardens expressed a Persian adaptation to the geography of desert areas and an adverse climate of dust-loaded winds, while the Indian tanks, which generate cool air, were a response to the local heat. Particularly with the decline

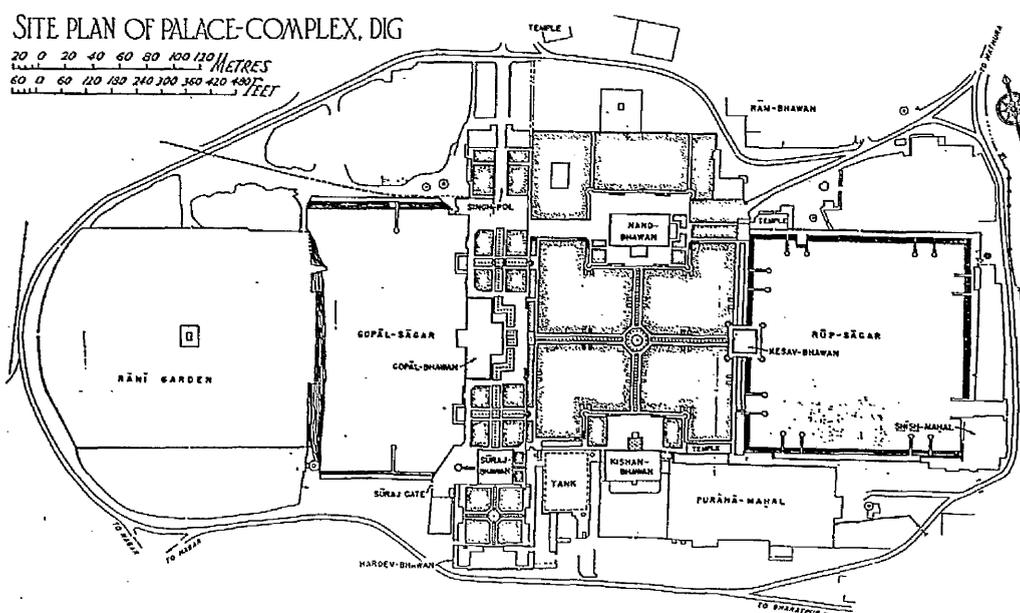


Fig. 58: Dig, plan of the garden palace (M.C. Joshi, 1971, plate 9).

of the Mughal dynasty and the rise of local Rājput chieftains who took on artists and architects from the Muslim court, fusions of the two distinct traditions of

<sup>29</sup>For a more detailed comparison between Rājput and Mughal planning and aesthetics see G.H.R. Tillotson, 1987, and 1990(b) 'The Rajput Aesthetic: Ideals in Rajput Palace Design, 1450-1750'.

gardens and reservoirs were created. An example is the pleasure palace at Dig, which consists of a formal garden with pavilions disposed between two large tanks (Fig. 58). There are also other features in the formal garden at Dig which refer to Hindu traditions which will be discussed later in the chapter. A similar juxtaposition is also evident in several of the eighteenth and nineteenth centuries garden residences located outside Benares<sup>30</sup>. While nineteenth-century maps show large gardens surrounding Benares, the city's expansion during recent years has

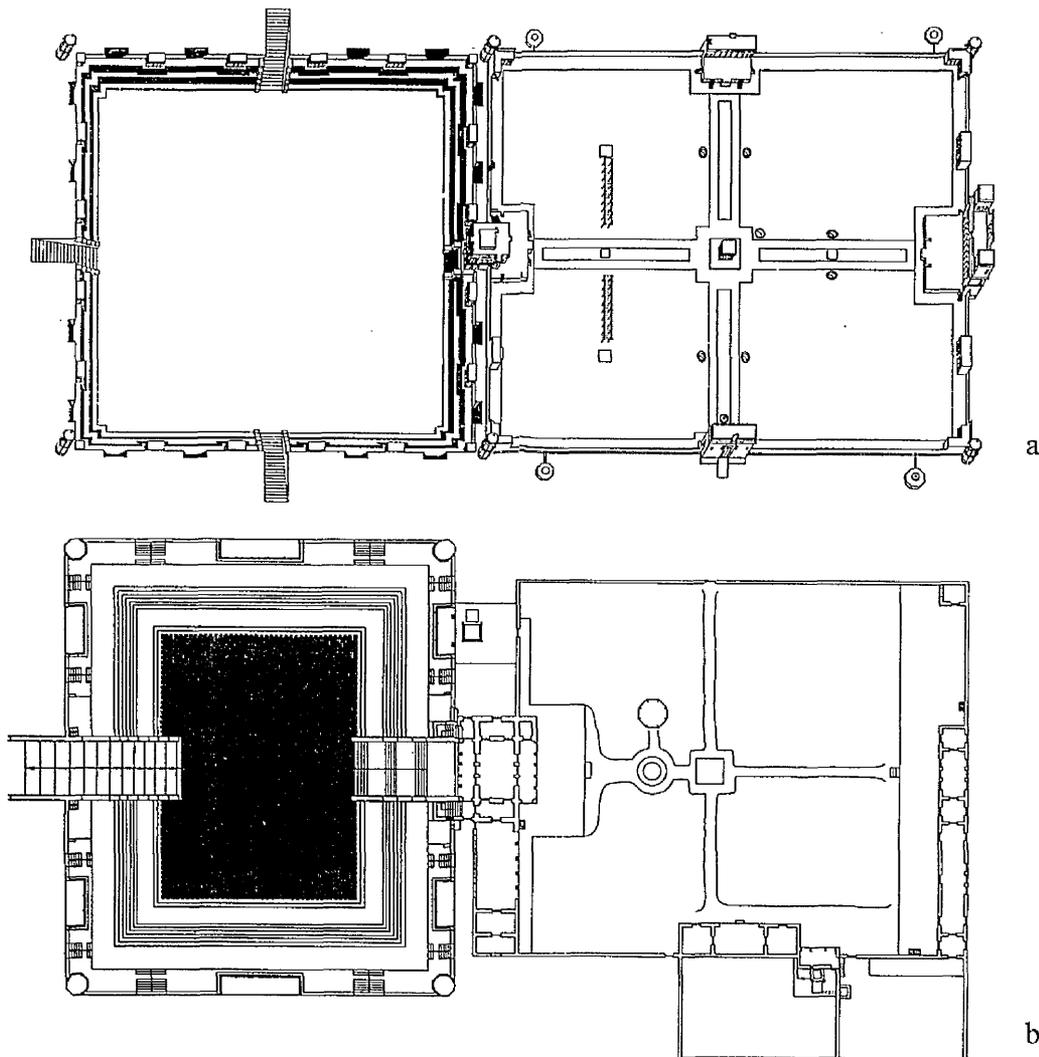


Fig. 59: Garden palaces with formal gardens and large water basins at Ramnagar (a) and Salarpur (b) (P.D. Couté & J.M. Léger, 1989, pp. 102, 84-5).

<sup>30</sup>P.D., Couté & J.M. Léger (eds.), 1989, *Bénarès: Un voyage d'architecture - An Architectural Voyage*, p. 99.

changed much of its previous layout. The garden palaces were built by wealthy merchants and the *mahārājas* of Benares who also owned *havelis* in the town, and used the garden residences as cool and peaceful pleasure resorts during the hot season. A well preserved example is the Rām Bāgh at Ramnagar (Rāmnagar), and the garden at Salarpur on the Pañcakrośī Road, which both have extensive formal *cār-bāghs* bordering large square tanks surrounded by *ghāṭs* (Fig. 59).

Several of the gardens and residences mentioned above were pleasure grounds and only used during certain periods of the year as retreats from the heat and noise of the Indian plains or large cities. We are left with many written accounts of courtly entertainments that took place in the palaces and pleasure gardens. This frequently involved the lighting of candles or lamps around water basins and large lakes, a practice also common to Hindu religious festivals. On one of Jahāngīr's visits to Mandu, lanterns and lamps were lit all around the lakes and their reflection conveyed the illusion that the lake was on fire<sup>31</sup>. Lights were also placed to surround the lake at Fatehpur Sikri on royal festivals<sup>32</sup>. On other occasions the royalty and their guests went on boat trips to the palaces in Lake Pichola at Udaipur, and also the Kaṭorā Hauz (1560) at Golconda, which is said to be the largest masonry tank in the world<sup>33</sup>, was used by Ibrāhīm Quṭb Shāh for boating excursions<sup>34</sup>. The tank is entered through a gateway and has a small central platform. The large tank of the Sarkej Rauzā outside Ahmedabad, which is believed to have been surrounded by extensive gardens, was used for water spectacles and the performance of mock sea battles<sup>35</sup>. A nineteenth-century photograph taken at the octagonal pool in the Kashmiri garden at Vernag shows a wooden raft and constructions around the pool decorated with hundreds of oil

<sup>31</sup>G. Michell, 1994, *The Royal Palaces of India*. p. 57.

<sup>32</sup>A. Petruccioli, 1988, *La Città del Sole e delle Acque: Fatehpur Sikri*. p. 55.

<sup>33</sup>P. Davies, 1989 (a), *The Penguin Guide to the Monuments of India: Islamic, Rajput, European*. (Vol. 2), p. 467.

<sup>34</sup>Commercial Book Centre, no date, *Golconda Fort & Qutab Shahi Tombs*. p. 20.

<sup>35</sup>K. Herdeg, 1990, *Formal Structure in Indian Architecture*. p. 24.

lamps (Plate 582)<sup>36</sup>. Boat processions took place as part of the Gaṅgaur Festival on Lake Pichola, and court Paintings from Udaipur depict the floating lights and the grand fireworks around the lake on this occasion (Plate 583). Courtly celebrations also took place in the gardens and palaces at *holī*, the Hindu spring festival, and the main courtyard of the City Palace at Alwar, and a subterranean chamber in the Mān Mandir at Gwalior (Plate 581), contain so called 'Holi Pools', used during the celebration of this festival. The festivities also often included displays of fireworks, preferably over large sheets of water mirroring the colours and lights.

Also widespread in India and Nepal were hunting resorts. These spacious areas were situated outside the cities and usually included wooded areas and lakes, housing wild animals for hunting and fishing. Most of them had pavilions or hunting lodges constructed in certain parts which could be used for picnics, by the women of the court, or to spend the night<sup>37</sup>. The earliest surviving examples of such pavilions date from the time of Firūz Shāh Tughluq, and were erected in the Delhi area. Also the area around the large Kaṭorā Tāl at Jaipur<sup>38</sup>, and the areas known as Cakiya and Sikarganj near Benares<sup>39</sup> were former hunting grounds. Probably the most extensive and well preserved remains of a hunting resort survive at Kumatgi east of Bijapur on the shore of a large dammed reservoir. The buildings date from the sixteenth and seventeenth centuries and were used by the court of Bijapur and its nobles. A row of four water pavilions set in or next to water tanks, strung in a line parallel to the high dam, survive at the site. In the pavilion furthest to the south are fresco paintings showing hunting scenes and an antecedent of polo<sup>40</sup>. In Nepal, hunting resorts existed for example in the Terai region to the south, and in the Gokarṇa Ban, also called the King's Forest, north of Kathmandu.

<sup>36</sup>Titley & Wood, 1991, p. 59, fig. 40 [The British Library IOL 94/1].

<sup>37</sup>Michell, 1994, p. 60.

<sup>38</sup>Tillotson, 1987, p. 179.

<sup>39</sup>Couté & Léger, 1989, p. 100.

<sup>40</sup>H. Cousens, 1889, *Bijapur: The Old Capital of the Adil Shahi Kings. A Guide to its Ruins with Historical Outline.* p. 77.

### III. Ornamental Pools

Although large tanks have been discussed in connection with *cār-bāghs* in the previous section, these are by no means common and constitute a late stage and a combination of Mughal and Hindu ideas. It is typical of palaces, gardens and pleasure resorts to integrate small and often beautifully decorated and ornamented pools into their layouts. These pools vary in size and in degree of elaboration. Because large sections of Indian palaces are open to the air, most pools are found outside and relatively few are located within pavilions, porches or properly enclosed rooms.

Many palaces have small and plain pools which are either square or rectangular<sup>41</sup>, about one metre deep, made of plaster or restored in concrete, and without any decorations. It has to be assumed that such pools were probably either clad in marble or another stone, which was destroyed or removed over the centuries. Examples may be seen in the courtyard of the *zenānā* enclosure in the palace at Amber, in the *zenānā* area of the fort at Golconda (Rānī Mahals), and in front of the Vikram Mandir at Gwalior. A similar square plain pool in front of a raised platform in the main courtyard of the Rāj Mahal at Orchha is said to have been used to fan cool air, moisturised with water, towards the Mahārāja seated on the platform (Plate 584).

Other, slightly larger examples which are stone clad but without ornamentation seem to have been intended to be plain. This is the case with the square red sandstone pool in the Divān-i-Ām quarters of the palace at Agra, the square Holī Kuṇḍ (circa 1793) in the main courtyard of the City Palace at Alwar, and the shallow rectangular pool inside the early sixteenth-century Kuś Mahal in

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<sup>41</sup>It is interesting to notice that Indian pools are generally quite simple in their overall shape and follow clear geometrical patterns, such as circles, squares, octagons or rectangles. According to D.N. Wilber (1962, *Persian Gardens & Garden Pavilions*, fig. 12), pools in Persian gardens and palaces frequently are far more complicated and irregularly shaped.

the citadel at Warangal, Andhra Pradesh (Plate 585). Although the design of the Kuś Mahal, the audience hall of Shitāb Khān, was modelled on the Hiṇḍolā Mahal (1425) at Mandu, the latter does not contain a bath. Pools inside buildings are, however, more commonly octagonal in shape, as for example those inside several water pavilions at Kumatgi, those inside the palace buildings north east of the Rānī Mahal at Golconda (Plate 586), and the Holī Kuṇḍ in the subterranean apartments of the Mān Mandir at Gwalior. Other pools are plain but impress through the organic curves of their low side walls, their smoothness and the high polish of the stone. This type is exemplified by the pool inside the Baṛī Mahal (Plate 587) next to the raised Amar Vilās (Eternal Pleasure) courtyard, and that inside the Candra Mahal (Plate 588), both located in the City Palace of Udaipur. The latter example was fitted between four pillars supporting the roof at the centre of the room. A similar arrangement of four columns and a bath fitted between may also be seen in the throughfare from the first to the second courtyard in the Rāj Mahal at Orchha, although the sides of this pool are more rigid and angular (Plate 589).

Some ornamental pools have designs which are slightly reminiscent of *kuṇḍas*, discussed in Chapter Five. Reference is usually made to the pyramidal step formations typical of the *kuṇḍas*. A small square pool in the formal garden south of the Kesar Kastūrī Mahal at Mandu has one triangular block of steps, each containing an arched niche, in the centre of its four sides (Plate 590). A larger version, where some of the pyramidal blocks of steps contain three small triple niches, was constructed in the northern courtyard of the elevated palace of Bāz Bahādur, also at Mandu (Plate 591). The northern and eastern sides of the court were furnished with open arcades, and open up the view into the surrounding countryside. An example of a palace pool with pyramidal sets of stairs in the centre of all four sides which penetrated deeper into the ground, may be seen in the centre of the small *cār-bāgh* east of the Citra Mahal in the City Palace at Bundi. On top of the sets of steps are four throne platforms which resemble

similar examples associated with the risalit sub-group of *kuṇḍas* (Plate 387)<sup>42</sup>. Although the royal tank in front of the Mahānavami Platform at Vijayanagara has only one prominent triangular set of steps on its western side, here, the shape of the basin, too, is reminiscent of the linear *kuṇḍas* of the region (Plate 592). On a level with the second lowest step of the triangular block runs an elephant frieze. A further example with only one block of pyramidal steps, exists on the south side of the large pool in the centre of the Amar Vilās, the raised courtyard in the City Palace at Udaipur. Bilateral stepping may have been preferred in small palace pools, because the steps do not protrude as far into the basins as parallel steps would do. Examples of proper *kuṇḍas* in palaces may be seen at Mandu, and at Bhaktapur and Patan in Nepal. The *kuṇḍa* at Mandu, which has three terraces with single pyramidal blocks of steps surviving at several levels and sides, is located south of the *ḥammāms*, and although it seems to have been an outside pool, it may have been part of the baths (Plate 593). The royal bath at Patan is in four tiers and is closely related to the local *dhārās* which belong to the conduit sub-group of *kuṇḍas* (Plate 392). This royal *kuṇḍa* at Patan has been discussed as part of the risalit group.

It is especially common to find pools in palaces and gardens which make references to lotus designs. Some display individual and imaginative interpretations of lotus flowers, while others are more formalised. A particularly varied collection of lotus pools was created at Mandu during the fifteenth and sixteenth centuries. The most simple examples are located on the island reaching out into the Muñj Tālāo from the north-side of the lake. The smaller pool, in the north-eastern corner of the island, is elliptical and its fluted edge is shaped to resemble the petals of a lotus flower. The larger pool, slightly south of it, is in three shallow tiers, and has a lotus flower delineation on the outside, but a geometric octagonal shape inside (Plate 594). The more formalised lotus pools,

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<sup>42</sup>For a detailed discussion of *kuṇḍas* see Chapter Five.

discussed below show exactly the opposite tendency, by having a clear geometrical outer shape and an elaborately carved foliated inner edge. There is a further water basin in the north-western corner of the island, which belongs to the risalit sub-group of *kuṇḍas*, creating a group of three water basins on a small island surrounded by water (Plate 574). Further examples of the theme of pools in islands from a palace context are the Jag Nivās and Jag Mandir water palaces with their pools at Udaipur, and the Mohan Bārī at Amber. Basins in islands or platforms which in turn are contained in larger tanks have also been discussed in connection with religious sites, such as Taleshvar and Bundi, just to mention two. While in a religious context, the religious purity and the sacredness of water played an important role, in a palace context, the physical purity of the water, and the joy of looking at water bound in beautifully shaped artificial structures, seem to have been of higher importance. There are two further lotus pools on the upper and lower terraces of the Jahāz Mahal overlooking the Muñj Tālāo from the eastern side. The upper pool represents a design of an open lotus flower seen from above, but is more irregular and imaginatively individualised than the examples before (Plate 595). The design of the large lotus pool below this terrace, seems to have been inspired by a lotus sprout, and the shape resembles a section through a shoot (Plate 596). The pool is in three tiers and appears to grow out of the lower storey into the light of the terrace. Important about all these sites is that in comparison with the following more formalised versions, the ones just mentioned have no geometrical outer border but were set straight into the regular ground or terrace.

There are, however, more examples where the shape of the lotus flower or its petals have been formalised and simplified to a higher degree. Such pools have a clear geometrical outer perimeter, either square or octagonal, while the inner edge or silhouette of the basins is shaped to resemble lotus petals. In most cases, the lotus silhouette has only been cut into the corners of the pools. Clear examples illustrating this point are the square bathing pool in the centre of the Angūrī Bāgh

(Grape Garden) (Plate 597), and the square pool in the centre of the garden of the Tāj Mahal, both seventeenth-century structures in Agra. There are several examples of slightly later pools of this type, and it is interesting to observe that most of them become more stylised and abstract. One example is to be found inserted into the terrace in front of the Kesar Kastūrī Mahal at Mandu (Plate 598), dating from the fifteenth or sixteenth century. Although the shape carved out of the corner of the pool, which resembles half an octagon, seems quite far removed from the floral lotus design described before, it follows the same technique of cutting a negative shape out of the wide edge of the pool. Additionally, the ornamental feature is located in exactly the same position as the lotus decorations discussed above. Similarly simplified examples are the sixteenth-century circa four metres square water pool on the private side of the Dīvān-i-Ām at Fatehpur Sikri (Plate 599), and the circa seventeenth-century pool in the courtyard created by the gallery containing a fine collection of wall frescoes, known as the Citra Mahal at Bundi (Plate 600).

Lotus or more abstract designs were, however, not only cut into the corners of pools, but were often applied to their entire inner sides. An example where a negative lotus pattern was incised into the corners and two of the four sides of a small square water pool is located in the apartment opposite the Sammān Burj in the palace at Agra (Plate 602). Pools with fluted edgings resembling lotus ornamentation along all four sides may be seen in the palace at Agra. One foliated pool is located on the terrace in front of the Khās Mahal (Plates 603-4) overlooking the Angūrī Bāgh, and another on the terrace overlooking the Yamuna on the east side of the Jahāngīrī Mahal (Plate 601). The latter pool is octagonal on the outside and carved as a lotus on the inside. The water channel feeding the pool is left open and visible in the red sandstone paving of the terrace. By not separating the liquid water from the solid ground by a hard straight edge, and by allowing the water to cut into the exact outlines of the pools, an ambiguity between the two materials is created which results in the partial

dissolution of boundaries between the liquid and shapeless water, and the solid stone pools.

Although Agra seems to be a place where this kind of ornamental pool with elaborately carved edges was particularly developed, it is not the only place where such complicated arrangements are found. Two large and complex examples of octagonal pools, where each of the sides measures about four metres, are part of the *cār-bāgh* laid out around the Bibī-kā Maqbarā (1678) at Aurangabad, which is the mausoleum of Aurangzeb's wife Rabi'a Daurānī (Plate 605). The pools have been integrated into octagonal platforms which project above the raised channels irrigating the *cār-bāgh*. The novelty in the pool last mentioned at Agra, and in these examples from Aurangabad, is that the lotus forms cut out of the edge of the pool do not only exist in a negative shape, since the positive remaining sections between them, create mirror images of their negative counterparts (Plates 606-7). In a less spectacular way, a similar effect has been created in the marble elaboration surrounding the central tank in the Shalimār Bāgh at Lahore, Pakistan, built by Shāh Jahān in the seventeenth century. It has little platforms shaped as lotus buds sticking out into the water, while the area between the projections creates a negative image of scalloped lotus leaves. The climax in complexity of this type of fluted pool ornamentation, however, was probably reached in a large square pool, dating from the nineteenth century<sup>43</sup>, in one of the courtyards of the Jag Nivās Palace in Lake Pichola at Udaipur (Fig. 60, Plate 608). This pool does not only exhibit an ambiguous relationship between the water and the stone perimeter of the pool, but includes the greenery of the garden in the design too. Some stone lotus flowers and leaves reach out into the water of the pool, while others penetrate into the lawn of the garden. Thus, the foliated outline of the marble pool bridges both the boundary to the water inside the pool, and to the lawn surrounding it. In addition to this, certain areas of the stone flowers projecting into the water contain earth and have

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<sup>43</sup>Lehrman, 1980, p. 185.

been planted with grass and flowers. The final touch to this exceptional arrangement is given by the fact that although the borders between water, pool and garden are fluid, the innermost border of the stone islands in the centre of the pool, and the outermost delineation of grass and stone, are again shaped as squares. Thus, the feeling of a complete dissolution of shapes, materials and matter, is eventually counterbalanced by exact geometrical forms.

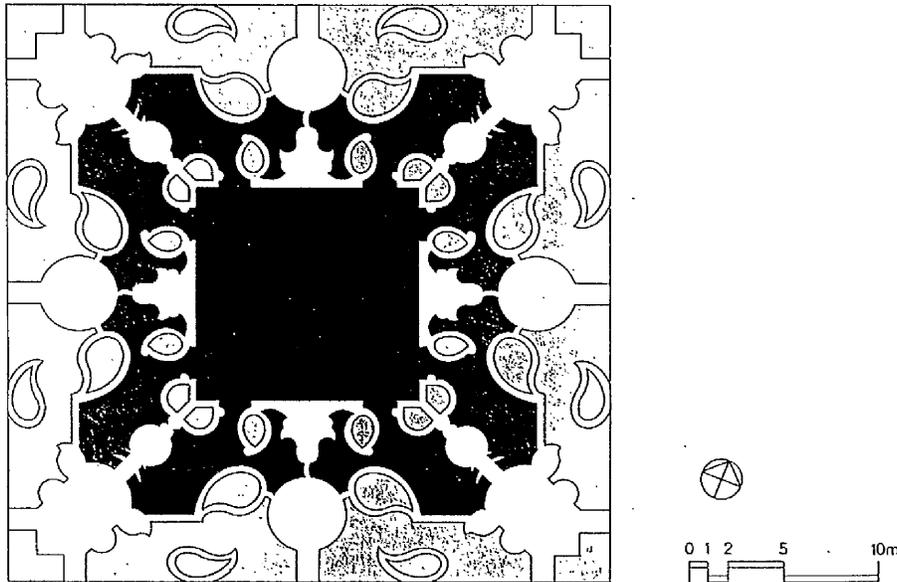


Fig. 60: Udaipur, garden pool in the Jag Nivās Palace  
(J. Lehrmann, 1980, p. 185).

It is a common feature of Islamic architecture to try to dissolve surfaces and to bridge various materials, which is often achieved through patterns or decorations which aim at transforming and undermining the solidity or heaviness of the object they cover and adorn. Also in religious structures, discussed in the previous chapters, the tendency to reach out and to build into water, and to have basins in or next to larger water bodies has been described. It seems, however, that in a religious context, this tendency was used to achieve exactly the opposite effect. While in a palace situation one aimed at the dissolution of borders, in a religious context such constructions were used to set up separations and distinctions. Sacred temples were set on islands to separate them from the

mundane by a ring of water, and to mark the border between sacred and profane spaces. Within a larger basin, the water of a spring or the Ganges, which are considered more sacred than the surrounding waters, were singled out and clearly delineated. This aimed at separating waters of various degrees of sacredness and at reinforcing religious boundaries and thresholds.

#### IV. Baths and *Hammāms*

Some pools are larger than those mentioned above but have not been included in Chapter Four on tanks, because they are ornamental and more closely related to the tradition of palace pools than that of tanks and reservoirs. They are royal or pleasure baths (although smaller pools may also at times have been used for bathing). Examples of larger royal baths may be seen in the central raised platform in the Angūrī Bāgh in the palace at Agra and in the centre of the Amar Vilās at Udaipur (Plate 609). The Amar Vilās garden with its marble paths, the central bath and its tall trees is located on a small natural hill which is entirely surrounded and obscured by the palace buildings, and therefore found on an elevated level within the palace<sup>44</sup>. Larger bathing pools are also found at the palace structures on the northern side of the Muñj Tālāo at Mandu. There are two identical rectangular pools set into a platform slightly above the level of the lake (Plate 610) which seem to echo the religious tradition of twin tanks, and of basins next to larger water bodies, which distinguished between various grades of water and purity. It may be presumed that the twin basins, which are not deep and contain clean water which could regularly be changed, would have been preferred for bathing, while the large Muñj Tālāo provided a picturesque backdrop, cooled and moisturised the air, and was used for boating excursions. There are interesting examples of palace baths in the Royal Centre at Vijayanagara, and the area to the

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<sup>44</sup>Tillotson, 1987, pp. 109-10.

south-east of it. The 'Great Tank' in the 'Kings palace' enclosure, to the south of the Mahānavami Platform, is the largest water structure in the Royal Centre, and served as a ritual bath and as a silt settling pit for the water coming through open supply channels into the enclosure<sup>45</sup> (Plate 611). Originally it was surrounded by an arcaded gallery now almost entirely gone. The sixteenth-century so called 'Queen's Bath' or 'Square Water Pavilion' to the south-east of the Royal Enclosure, is a plain single-storeyed masonry block (Fig. 61). It contains a tank measuring

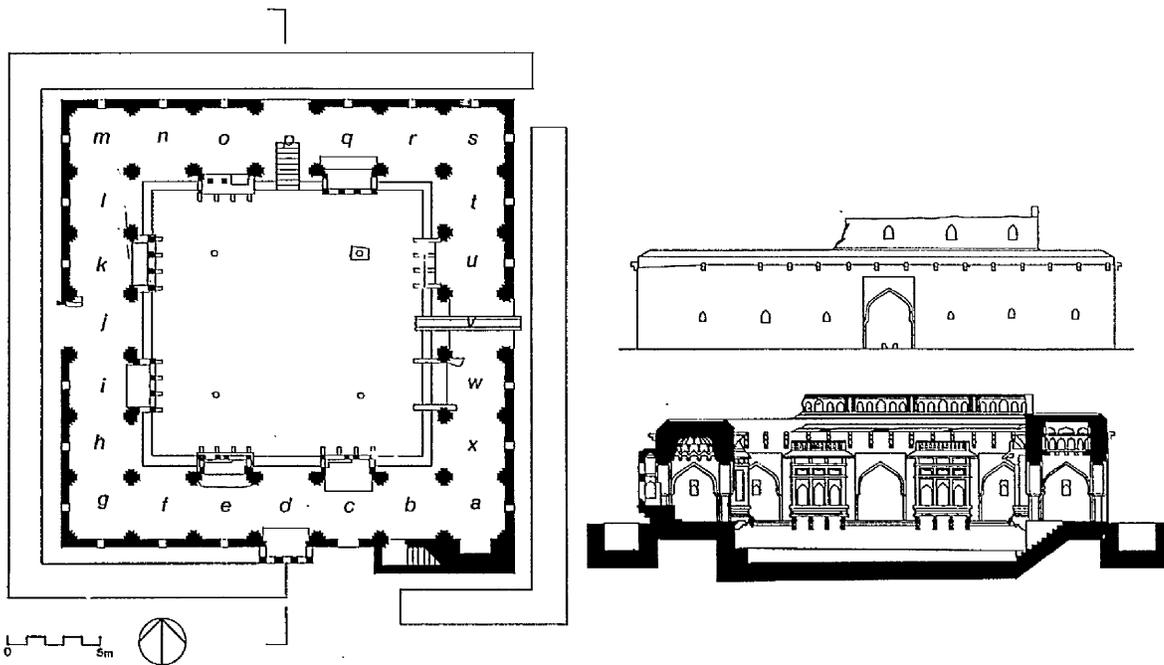


Fig. 61: Vijayanagara, Queen's Bath (G. Michell, 1992, pp. 108-9).

about fifteen metres square and 1.8 metres in depth, surrounded by a corridor with pointed arches from which decorated balconies project (Plate 612). Although the structure is quite damaged, stucco decorations survive on the ceilings of the corridors and in parts on the inside façades of the bath, showing foliate motifs, geese and parrots. Because stone blocks, suitable for the fixing of posts, survive in the floor of the bath, it has been suggested that a structure once existed in its centre<sup>46</sup>. Although the bath has been called the Queen's Bath, it is as likely that it

<sup>45</sup>D. J. Davison-Jenkins, 1988, 'The Irrigation and Water Supply System of the City of Vijayanagara.', PhD dissertation, p. 68.

<sup>46</sup>Ibid., p. 64.

was used as a bath for the ruler and other men of his court<sup>47</sup>. A further sixteenth-century bath, slightly to the north-east, is the 'Octagonal Bath'. The fact that several buildings survive in ruins around the bath suggests that it was probably part of a larger palace complex. The bath consists of an octagonal arcade, once plastered, surrounding an octagonal basin with an octagonal platform in its centre (Plate 630). The Kalyān Mahal at Gingee, Tamil Nadu, also has a large bath surrounded by an arcade with a central platform (Plate 631). Platforms and pavilions in water will be discussed in detail in the following section. A small but particularly lavishly decorated bath is Tuṣa Hiṭī which was constructed by King Siddhi Narasiṃha Malla in 1646 AD in the Sundari Cok of the royal palace at Patan, Nepal (Plate 613). It is circular and embraced by two snakes whose heads rise up on either side of the stairs leading down into the bath. The niches around the inner side of the basin contain images of *tantric* deities, and the decorated brass water spout consists of several aquatic animals, and Garuḍa carrying Viṣṇu and Lakṣmī (Plate 417). A very similar bath, built by King Pratāpa Malla also in 1646 AD, remains in the closed Mohan Cok of the Hanūmān Dhokā Palace in Kathmandu. Also the bath in the royal palace at Bhaktapur has strong religious references (Plate 614). A *nāgakaṣṭha* is located at its centre and the water spout in metal repoussé is in the shape of a *makara* spewing forth a telescoping series of other animals.

There are a few examples of baths which were roofed over. One is Maryam-kā Hauz (Maryam's Tank) in the south-eastern corner of the *zenānā* garden to the north of Jodh Bāī's Palace at Fatehpur Sikri (Plate 615). The red sandstone bath measures about eight metres (circa 26 feet) and is 1.20 metres deep. The stone roof is supported by pillars, one of which stands in the centre of the basin. This part of the palace was walled and stone screens were originally fitted between the pillars of the tank<sup>48</sup> to cover the women and to provide shade to

<sup>47</sup>A.H., Longhurst, 1993, *Hampi Ruins: Described and Illustrated*. p. 54; J.M. Fritz & G. Michell, 1991, *City of Victory: Vijayanagara, the Medieval Hindu Capital of Southern India*. p. 104.

<sup>48</sup>M.M. A. Hussain, 1937, *A Guide to Fatehpur Sikri*. p. 40.

the basin. A further and larger example of a roofed bath is located in the palace complex on top of Kṛṣṇagiri at Gingee, Tamil Nadu, where an open pillared bath house contains a large shallow basin surrounded by a corridor. The stone ceiling above the bath and the corridor, which is constructed out of long stone slabs (Plate 617), is supported by stone pillars, four of which stand inside the water basin. A second storey, only covering the extent of the basin underneath, towers above (Plate 616).

Hot steam baths, called *ḥammāms*, were imported by the Muslim invaders. Over the following centuries they became an essential part especially of Mughal palaces and gardens, but also public baths existed in many towns. The palace of Fatehpur Sikri alone had twelve *ḥammāms*, while a public bath survives in ruins opposite the Buland Darvāzā (Fig. 62, Plate 618). There were separate bath houses for men and women, and *zenānā* baths survive for example in the Rānī Mahal at Golconda and in 'Jodh Bāī's Palace' at Fatehpur Sikri. The baths served for ritual ablutions, physical cleanliness and luxurious bathing. Perfumed water, mixed with oils, essences and herbs, was supplied to the emperor's private *ḥammāms* at Fatehpur Sikri<sup>49</sup>, and spray of rose water issued from the fountains in the royal *ḥammām* at Delhi<sup>50</sup>. Specific functions were dedicated to almost all the rooms of *ḥammāms*. The baths had changing rooms (*rakht-kan*) and rooms where people were anointed with oils before entering the water (*tāq be jihat-i kīsa-kashī-dan*). There were hot steam rooms, and warm (*garm khāna*) and cold baths (*sard-khāna*). During the Mughal period, the cold baths, which were built underground and mainly used during the summer heat, were usually housed in separate buildings<sup>51</sup>. Other apartments were used for resting, massage and conversation, and many of them were beautifully painted<sup>52</sup>. The important social

<sup>49</sup>S.A.A. Rizvi, 1992, *Fatehpur Sikri*. pp. 83, 87.

<sup>50</sup>P. Andrews in B. Gray (ed.), 1981, *The Arts of India*. p. 123.

<sup>51</sup>G. Bailey in Petruccioli, 1997, pp. 131, 132.

<sup>52</sup>Traces of murals survive in several baths at Fatehpur Sikri and in Jahāngīr's bath in the garden at Sirhind, Punjab (G. Bailey in Petruccioli, 1997, p. 132; S. Parihar, 1985-6, p. 431).

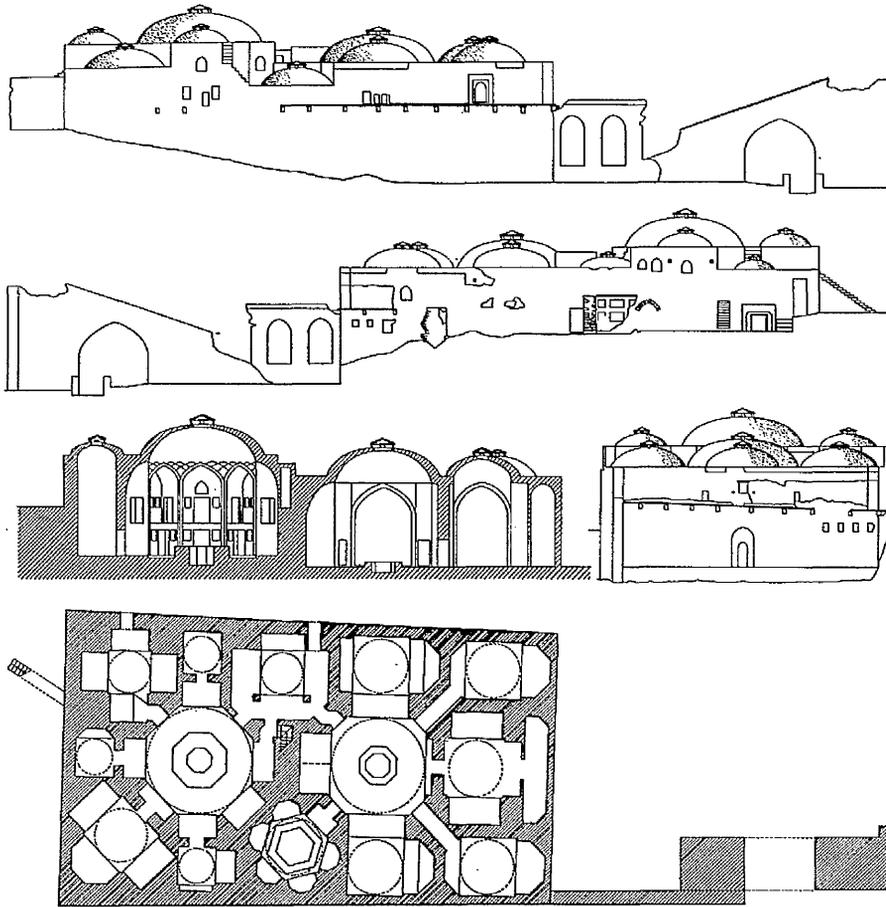


Fig. 62: Fatehpur Sikri, public *ḥammām* near the Buland Darvāzā  
(A. Petruccioli, 1988, p. 106).

role of the *ḥammāms* as places of encounter, pleasure and rest, is also emphasised in Islamic literature<sup>53</sup>. For insulation, the walls of the hot baths are usually very thick, so that the rooms do not have to be rectangular on the inside, and more frequently are found to be octagonal, hexagonal or round, as may be seen in the royal *ḥammām* at Mandu (Plate 619), contained within a square or rectangular building. The earliest *ḥammāms*, dating from about 1400 AD, survive in ruins in the royal palace at Firuzabad (Fīrūzābād) near Gulbarga in Karnataka<sup>54</sup>. Hot bath houses are usually easily recognisable by their thick walls and their domed

<sup>53</sup>Petruccioli, 1988, p. 59.

<sup>54</sup>Michell, 1994, p. 65.

ceilings provided with holes and thick glass roundels to release steam and to admit light and air.

At Golconda, the baths are located immediately behind the entrance gateway to the fort, to provide refreshment to the ruler, his noblemen and visitors after long and arduous journeys (Plate 620). Allegedly these baths were also used to bathe the royal dead before their bodies were taken to the Quṭb Shāhī Tombs for final rest<sup>55</sup>. At the tombs, however, is a further mortuary bath, the Badshāhī Hammām, which is the oldest monument at the site predating the tombs (Plate 621)<sup>56</sup>. The largest chamber contains a slightly raised octagonal platform which was used for the anointment of the dead (Plate 622). Such platforms also exist in the warm rooms of ordinary *hammāms* where they were used for massages<sup>57</sup>. At both Delhi and Agra, the *hammāms* are located directly opposite of the hall of private audience, Dīvān-i-Khās. The luxurious baths, furnished with carved inlaid marble fountains, pools and decorated marble beds (Plates 623-4) were ceremonial rooms and regarded as an extension to the Dīvān-i-Khās, where the emperor would take his private guests to continue their meetings and negotiations<sup>58</sup>.

## V. Pleasure Pavilions

In the previous chapters several examples have been mentioned, where pillars and temples were set straight into the water of rivers, tanks and *kunḍas*, visualising the divine essence or a materialisation of divine energy in the water. Additionally, they also expressed notions of the cosmic axis and the spread of creation from a fixed centre within the cosmic ocean. There are also examples in the Islamic

<sup>55</sup>Commercial Book Centre, no date, p. 9.

<sup>56</sup>Davies, 1989(a), p. 467.

<sup>57</sup>A. Petersen, 1996, *Dictionary of Islamic Architecture*. p. 108.

<sup>58</sup>Reuther, 1925, p. 56; L. Nicholson, 1989, *The Red Fort, Delhi*. p. 67. The fact that royal *hammāms* were generally also used to conduct state affairs is mentioned by G. Bailey in Petruccioli, 1997, p. 132.

religious *cār-bāgh* tradition, where platforms, pavilions and mausolea at the crossing of water channels symbolise the source of life out of which the four divine rivers arise. Because those gardens were, however, also used for pleasure and to hold audiences, there are also structures such as throne seats and pavilions in water, which draw on the religious notion of the *cakravartin*, a sacred and a profane world sovereign, seated at the centre of the cosmic waters. But more practical considerations may also have had an influence here: in the summer heat the middle of a water pool or the place above a gushing stream are comfortable and cool places to spend the day.

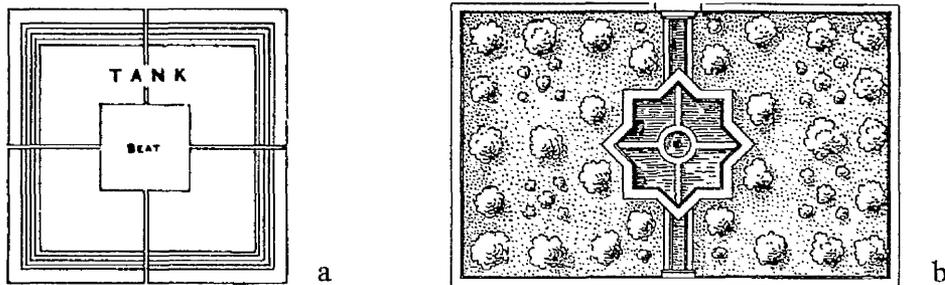


Fig. 63: Platforms in the Anūp Tālāo (a) and in a pool in the palace at Amber (b)  
(K. Herdeg, 1990, p. 51; O. Reuther, 1925, p. 78).

Simple stone platforms or throne seats which were constructed in pools and above water channels in formal gardens are referred to as *cabūtarās* or *chībūqrahs*<sup>59</sup>, terms which may not only be applied to water-related structures, but to any kind of platform. Examples may be seen in the Nishāt and the Shalimār Bāgh, both at Lake Dal. Examples of platforms in palace water tanks may be seen in the Kumāra Pokuna at Polonnaruva and in the Anūp Talāo (1575-76), also referred to as Kapūr Talāo, Caman (garden) or Cār-Caman, at Fatehpur Sikri (Plate 626). While the lotus shaped circular platform at Polonnaruva is an isolated seat (Plate 625), the square platform in the Anūp Tālāo is connected with all four sides by bridges (Fig. 63 a). Both structures are *kuṇḍas*, because the now

<sup>59</sup>Crowe & Haywood, 1972, p. 64; E. Clark, 1996, *Underneath which Rivers Flow: The Symbolism of the Islamic Garden*. p. 38.

relatively shallow basin of the Anūp Talo was originally much deeper<sup>60</sup> and the five lowermost steps were covered by Saiyid Aḥmad Khān, governor of Fatehpur Sikri, in the early 1840s<sup>61</sup>. The platform in the middle carried Akbar's throne seat (Plate 627), just as the lotus platform in the Kumāra Pokuna was allegedly used to seat the king. There is a further example of a platform with four bridges set into a pool, in the centre of the formal garden between the Sukh Nivās and the Śīs Mahal in the Amber palace fort (Fig. 63 b, Plate 628). The pool is in the shape of a star, possibly a borrowing from Islam<sup>62</sup>. It is interesting that four shallow pathways, only a few centimetres higher than the courtyard of the *zenānā mahal* at Amber, also lead to the central *bārahdarī*, and create a cross of bridges. During heavy monsoon rains the water does not drain off quickly enough and will assemble in the shallow compartments, conveying the illusion that the court is a large tank with four bridges leading to a central island (Fig. 64 a, Plate. 629). A

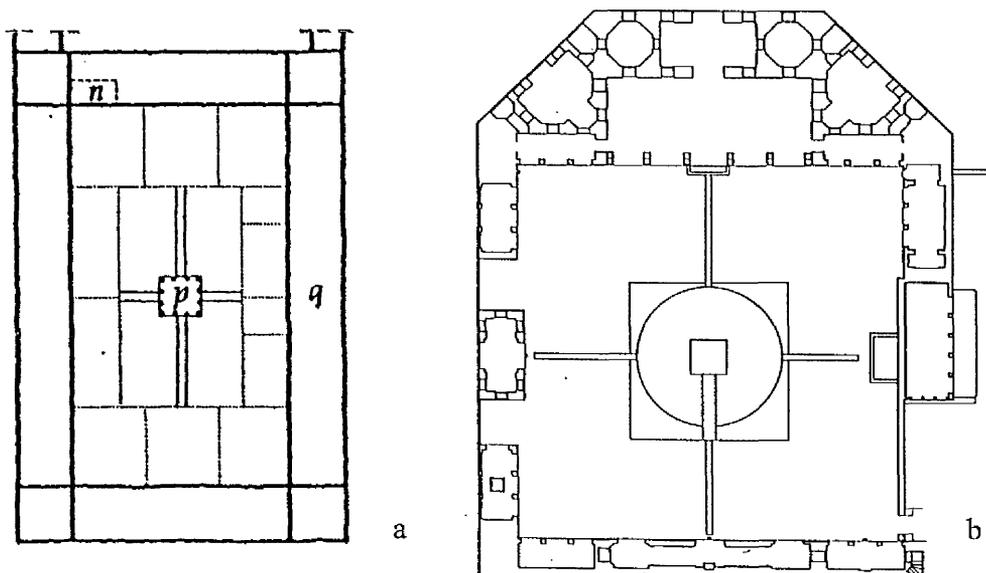


Fig. 64: Shallow walkways and depressions in the courtyards of the palaces at Amber (a) and Lahore (b) convey, when filled with water, the illusion of large tanks (G.H.R. Tillotson, 1987, p. 93; A. Petruccioli, 1995, p. 122).

<sup>60</sup>Abu'l Fazl reported that the basin was 'twice a man's height' (R. Nath, 1985, *History of Mughal India*, Vol. II., p. 171.), while today, it has only six steps and measures 1.35 metres in depth.

<sup>61</sup>Rizvi, 1992, p. 28.

<sup>62</sup>Stars are a typical motif in Islamic art and represent life and intellect (Lehrman, 1980, pp. 44-45).

similar arrangement, involving not a pavilion but a raised platform with a bridge set into a shallow square depression which contains a slightly deeper circular area, is to be found in the courtyard in front of the Śīs Mahal in the fort at Lahore (Fig. 64 b)<sup>63</sup>. Such effects are more common with temples which, often only surrounded by a few centimetres of water, seem to float on large tanks (Plate 326).

The Octagonal Bath at Vijayanagara has a platform, also octagonal in shape, at its centre (Fig. 65, Plate 630). While A.H. Longhurst referred to the platform as the foundation of a water pavilion<sup>64</sup>, according to the reports on the restorations carried out by the Archaeological Survey of India, the platform originally had a fountain jet in its centre which was plastered over early this century<sup>65</sup>. Whether or not the central platform carried a fountain does not

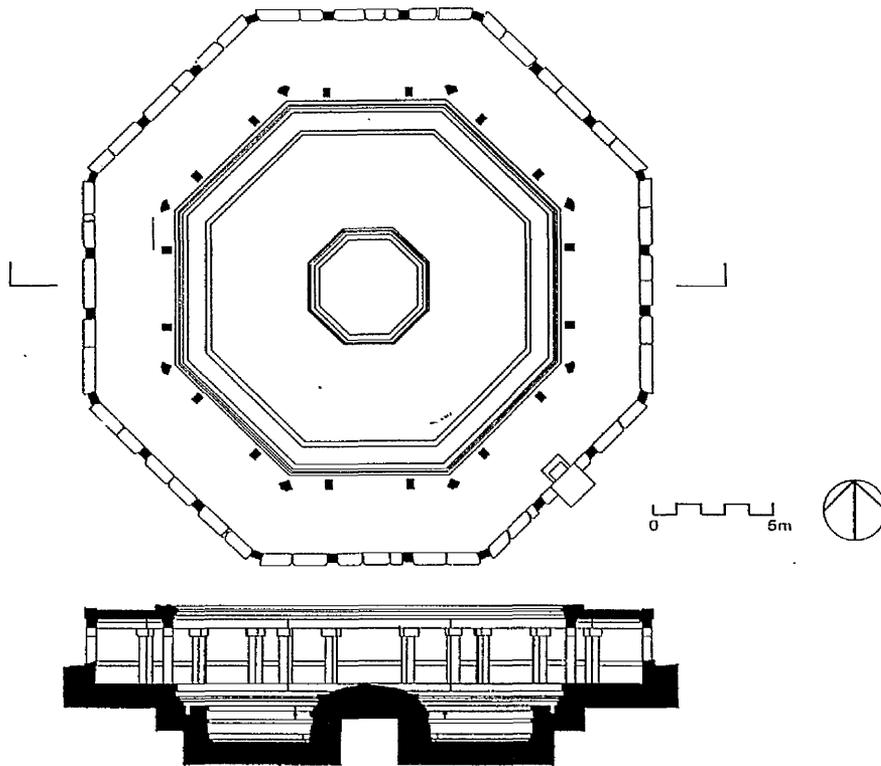


Fig. 65: Vijayanagara, Octagonal Bath (G. Michell, 1992, p. 120).

<sup>63</sup>E. Koch in Petruccioli, 1997, p. 159, Fig. 15; J.L. Wescoat in Petruccioli, 1995, p. 122.

<sup>64</sup>Longhurst, 1993, p. 56.

<sup>65</sup>Archaeological Department, Southern Circle, Madras, Annual Report 1919-20, p. 16.

diminish the fact that a platform much larger than would have been needed just to hold a fountain jet, exists at the centre of the basin. The platform provided a cool and comfortable place to sit, but is also connected with the religious tradition of the *cakarvartin*. A similar square platform exists in the centre of the large tank in the Kalyān Mahal at Gingee (Plate 631).

Awnings could be put up above many platforms, and others had firmly constructed pavilions. Such water pavilions can be very small, basically providing a roof over a small platform or seat, or they can be proper buildings accommodating groups of people and serving as cool places to hold banquets or perform music. An example of a small octagonal domed pavilion made of red sandstone is located in the centre of one of the artificial compartments constructed in the Sipra River in front of the Kāliyādeh Mahal, north of Ujjain (Plate 665). The pavilion is reached by a narrow causeway from the north-east. Not connected to the edge of the pool, but of comparable size, is the eighteenth-century circular white marble pavilion in the Saheliyon-kī Bāri at Udaipur (Plate 632). Water is pumped up inside the columns of the pavilion and collected in the domed ceiling from where, when released, it showers down at the edge of the roof as a refreshing summer rain. This cooling feature, which served as a reminder of the refreshing monsoon during the heat of the summer months, is not unique to this place, being also found in pleasure pavilions at Bijapur and Kumatgi. The sixteenth or seventeenth-century Jal Mahal, a water pavilion in a small water basin opposite the Sāt Manzili (Seven Storeys) at Bijapur, is said originally to have stood in the centre of a large reservoir<sup>66</sup> (Plate 633).

A whole assembly of water pavilions was constructed in the pleasure and hunting resort of Kumatgi, outside Bijapur. Here, a row of water basins with pavilions in, and next to, them were constructed behind the dam of the large water reservoir. Five variations on the water pavilion theme survive in a comparatively good state. Two examples, situated in the middle of the line of pavilions, are a

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<sup>66</sup> Cousens, 1889, p. 49.

single and a double-storeyed square pavilion (Plates 634, 635), topped by lotus shaped domes typical of the Bijapur region, and set in the centre of square tanks. In both cases, an open oblong additional building existed on one side of the tank. The single-storeyed water pavilion contains an octagonal pool. The arrangement to the north of the latter two constitutes a simpler stage and just has an oblong pavilion, containing an octagonal pool, next to a water tank. The fourth example, located to the south of the other three, shows the most complicated stage of the development (Fig. 66). Here, a rectangular tank contains a large rectangular island reached by a short bridge from the centre of the western side; the northern half of the island carries a rectangular pavilion, containing a lotus shaped pool, while the southern part contains a circa five metres square water tank, in the centre of which is a further double-storeyed water pavilion reached by a bridge from the east. Thus, the former arrangement of a tank with a water pavilion and a larger pavilion on its side, was contracted onto an island and contained in a further tank (Plates 637-8). The square water pavilion has a perforated ceiling and several bird-shaped

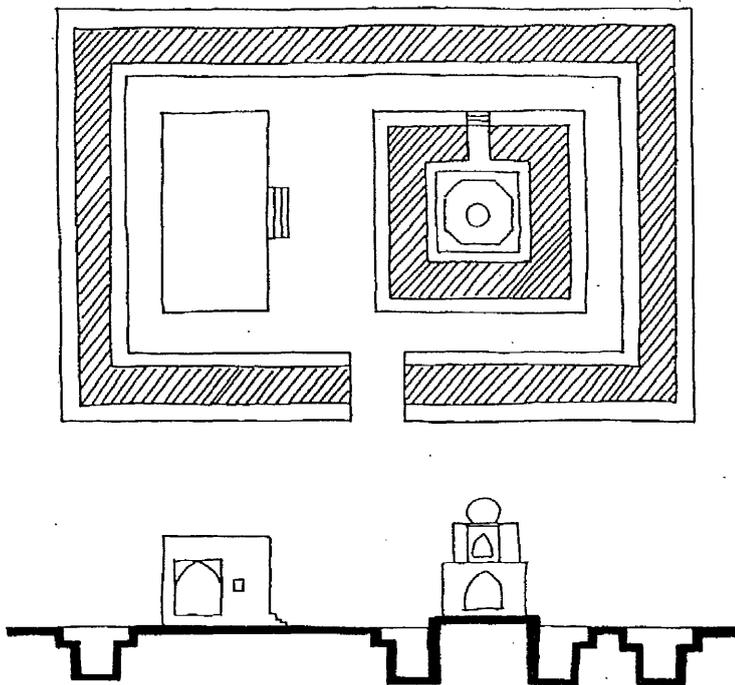


Fig. 66: Kumatgi, southernmost water pavilion.

water spouts pointing outwards through which water, collected in the roof, could be released to shower down. A water pavilion also existed in the south-western corner of the so called 'Zenānā Enclosure' of the Royal Centre at Vijayanagara<sup>67</sup>. The only surviving elements are a basement with four central projections and carvings of water animals and boats, set into a rectangular tank (Plate 639). A small bridge provided access to the platform on the south, and it is believed that the platform, like other ones located in the Royal Centre, did once carry palace buildings made of less durable materials, hinted at by the presence of post holes.

An example of a larger pleasure or garden pavilion set into a water tank is the nineteenth-century red sandstone Zafar's Pavilion in the central pool of the Hayāt Baḡhsh Bāgh in the Lāl Qilā (Red Fort) at Delhi (Plate 640). To the south and north of it, at the ends of the axial water channel, are two seventeenth-century white marble pavilions, called Sāvan and Bhādom, after the two main months of the monsoon<sup>68</sup>. Also at Dig, there are two such monsoon pavilions overlooking the Gopāl Sāgar. The Keśav Bhavan at Dig, and the water pavilion in the Hardaul-kā-Baiṭhak at Orchha have already been mentioned in connection with the tradition of Vasanta Maṇḍapas in Chapter Four. The Keśav Bhavan has water spouts underneath its roof to create the illusion of a monsoon shower falling around the central pavilion, accomplished by fountains spraying water upwards from below, and the sound of thunder created by stones moved by the water pumped up into the roof of the pavilion. As such, the garden palace at Dig not only combines the indigenous tradition of constructing large tanks with the Mughal habit of laying out formal gardens; it also merges the typical Rājput water palace with the layout of Mughal palace pavilions. A swing and the shower mechanisms in the Keśav Bhavan are typically Hindu, connected with the celebration of the monsoon and the rainy season (*varsā ṛtu*)<sup>69</sup>. Larger pavilions were also set into the pools in formal gardens, as for example the black *zenānā*

<sup>67</sup>According to more recent research at the site, the *zenānā* quarters appear not to have been located in this area (W.M. Callewaert, 1995, *Gods and Temples in South Asia*, p. 191).

<sup>68</sup>Sāvan corresponds to July/August, and Bhādom to August/September.

<sup>69</sup>M.C. Joshi, 1971, *Dig*, p. 9; Tillotson, 1987, pp. 188-193.

pavilion, added by Shāh Jahān to the Shalimār Bāgh (Fig. 67), or the water pavilion in the *cār-bāgh* at Achabal. At Kumatgi (Plate 636), Nayā Qilā near Golconda, and at Fatehpur Sikri, substantial water pavilions and *bārahdarīs* are also found in the centre of large dammed water storage reservoirs.

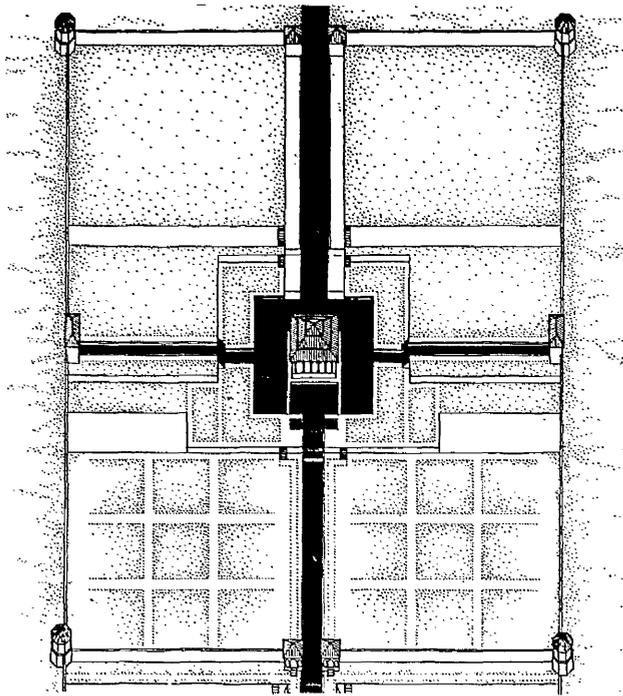


Fig. 67: Kashmir, Shalimār Bāgh with a large pavilion in the upper tank  
(A. Petruccioli, 1995, p. 253).

## VI. Fountains, Cascades and Chutes

In gardens and palaces, water constitutes an element of continuity. The Nahr-i-Bihisht, the Stream of Paradise, which runs through the pavilions of the Red Fort at Delhi, links the various areas of the palace and bridges inside and outside spaces (Plate 641). In formal gardens, pools and pavilions are often strung like beads along straight and geometrically disposed water channels. Such channels direct the attention of the viewer to a tomb in the centre of a garden, or far into the distance, out of a garden and into the landscape, and as such give a sense of direction. Additionally, they also convey a strong feeling of movement,

contrasting with the still and stagnant pools which have the ability to mirror buildings and nature, reflect light, and encourage meditation and contemplation. Water in motion on the other side, is associated with action and excitement, and with freshness and coolness. In order to increase the visual effect of movement, channels were sometimes carved or inlaid with zigzag patterns in strongly contrasting colours which agitate the smooth flow of the water and cause it to ripple (Plate 642). In addition to the visual effect thus achieved, the sound of water plays an important role in the design process of water gardens. There are various means which were employed to create movement and sound in palaces and gardens.

An important part in the expression of movement and sound is played by water fountains. Most fountains work through water pressure built up by gravity flow, or by releasing water from a storage tank raised well above the level of the garden<sup>70</sup>. The shape and the width of the nozzle, and the pressure of water determine the shape of the jet, which may shoot up in a thin vertical line or create a fine spray of mist. The fountain jets are frequently shaped to resemble lotus buds, as for example those in Şafdar Jaṅg's Tomb at Delhi (Plate 643), in the centre of the Ibrahim Rauzā (1626) at Bijapur, and that in the *kuṇḍa* in the palace garden at Patan, Nepal. Fountains moisten and cool the air, they produce a splashing noise and enliven the surface of pools and channels<sup>71</sup>. They can be found in Islamic *cār-bāghs*, as for instance in the pools in Shalimār Bāgh and at Achabal (Fig. 68), and in the main water channel in the Nishāt Bāgh, all in Kashmir. They have also been placed in the centre of palace pools, such as the small basin between the two courtyards in the Rāj Mahal at Orchha and the large Octagonal Bath at Vijayanagara. Fountains are, however, not unique to a garden

<sup>70</sup>Such a raised water storage tank, creating water pressure for the many fountains, existed for instance in the palace gardens at Dig.

<sup>71</sup>It has been suggested that initially, they were introduced to clear insects from the water surface (Lehrman, 1980, p. 37).

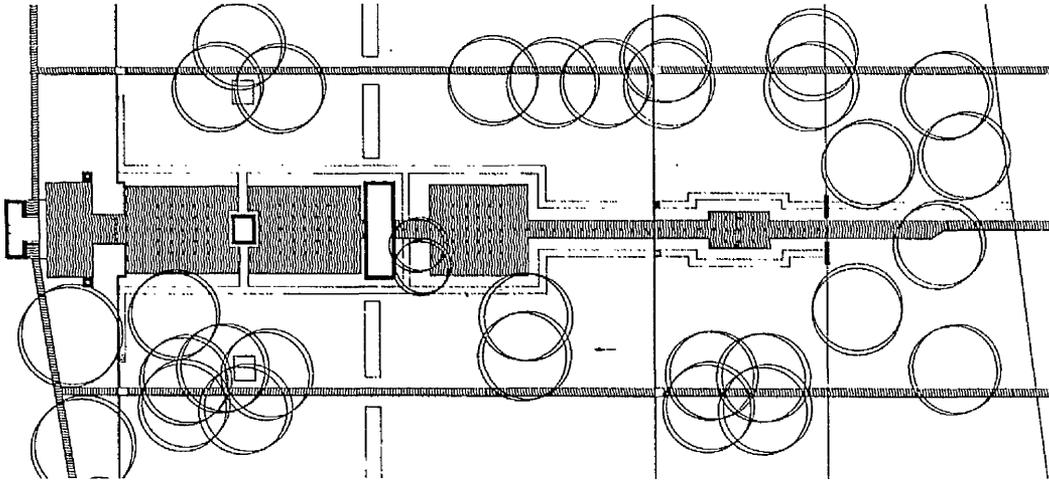


Fig. 68: Garden at Achabal with a forest of fountains (S. Crowe & S. Haywood, 1972, p. 104).

or palace situation, and may also be found in temple tanks, such as the bathing tank of the Mahākāleśvar Temple at Ujjain, or in a civic context. The fountain at Ujjain is shaped like a star, spraying into every direction, and a whole series of the same type of fountain adorns a pool in the centre of Hassan (Hassān), Karnataka.

While all the fountains mentioned above were found in large water pools where they could theoretically have been added later to an existing design, and were mainly intended to achieve a decorative effect, there are fountains in which the water falls into special basins, which allow the water to be taken either directly from the spout or from the basin. These fountain basins are different from the water pools discussed above. This group in particular is commonly found in connection with religious institutions. It is typical of Sri Lankan Buddhist temples and stupas to have fountains with their own basins which are predominantly used for ablution rites but also for refreshment. Such fountains may be seen at the Mirisaveṭiya Dāgaba at Anuradhapura (Plate 645), at the Temple of the Tooth at Kandy (Plate 644), and at the Kelani Temple at Colombo (Plate 445). Examples of fountains related to Śiva and the descent of the Ganges, at Trimbak and Kalahasti, have been discussed in Chapter Two (Plates 23, 30). In a Jain context,

Western-influenced baroque fountain basins may be seen at the Śītalnātha and the Dāda Gurūdeva Temples at Calcutta (Plate 646).

Surviving examples of civic fountain basins mainly date from later periods and may be exemplified by the fountain in the centre of the Cār Kamān (Four Arches) at Hyderabad dating from about 1594 (Plate 648), the fountain near the Temple of the Tooth at Kandy, which was erected by the Coffee Planters of Ceylon in 1875<sup>72</sup> (Plate 647), and the nineteenth-century fountain on the Darbar Square at Patan, which holds a central bust of the wife of Jaṅga Bahādur Rāṅā (Plate 649). Especially with respect to the Hindu religious fountains, the image of a queen in the centre of a fountain may be interpreted as a use of the *cakravartin* symbolism<sup>73</sup>. A public fountain to the south of the 'Mint' enclosure of the Royal Centre at Vijayanagara, called the Octagonal Fountain, is contained within a pavilion (Plate 650).

Examples of this type of fountain located in palaces may be seen in the Rānī Mahal at Golconda (Plate 651) and in the palace gardens at Dig. The latter basins are said to have been looted by the Jāts in 1765 from the Palace at Agra, where they are believed to have been part of the Macchī Bhavan garden layout<sup>74</sup>. Together with these basins, a marble swing is believed to have come to Dig<sup>75</sup>, which was set up on a platform in front of the Gopāl Bhavan, overlooking the garden. The frame, which does not contain a swing (*hiṅḍolā*) any more, is in the shape of a *torāṇa* gateway facing the central water channel of the garden (Plate 652). It is unclear if this was a conscious continuation by the Jāts of an earlier religious tradition of gateways facing water, but even the positioning of a swing in this place meant that the person sitting on it would axially swing into the garden from a raised level<sup>76</sup>.

<sup>72</sup>The fountain was erected to commemorate the visit of H.R.H. The Prince of Wales to Kandy.

<sup>73</sup>A tank at Banepa has the image of a Rāṅā minister in its centre.

<sup>74</sup>Reuther, 1925, p. 49.

<sup>75</sup>ibid., p. 72. The swing has a Persian inscription dating it to A.H. 1041 (AD 1630-31) (Joshi, 1971, p. 17-18).

<sup>76</sup>An ambiguity or double function between a gateway and a swing has also been encountered in Chapter Three, 'Ghāts', at the Sās-Bahu Temples at Nagda. The triple arched *torāṇa* on a

Mughal fountain basins are often very shallow, intricately carved and inlaid with semi-precious stones to enrich their surface. There is a small example of such a fountain basin carved in the shape of an open lotus set into the floor of the *zenānā* pavilion in the Shalimār Bāgh at Lahore<sup>77</sup>, and a slightly larger lotus carving creating a shallow fountain basin may be seen in the changing room on the east side of the royal *hammām* in the Lāl Qilā at Delhi<sup>78</sup>. The three largest carved marble basins surrounded by inlay work are in the Fort at Lahore<sup>79</sup>, in the Raṅg Mahal of the Lāl Qilā at Delhi (Plate 653), and in the Sammān Burj in the palace at Agra (Plate 654). While the Delhi example is a large open lotus, the Agra fountain basin makes reference to floral and wavy water designs. The shallow fountain basins are further examples of the bridging and dissolution of materials in Islam. The coloured stones and carvings provide a varied background to the water of the fountain, and the water which wets the marble and collects in the depressions of the fountain enlivens and merges with the basin. Light also plays an important part in the visual effect created by fountains, because their spray and the wet polished surfaces of the basins reflect the light.

An alternative to the fountain jet, where the water is forced vertically up under high pressure, is the water spout, where water pours horizontally out of an opening in a wall. Such spouts are rarely connected with Indian palaces and pleasure architecture, while they are frequently found in connection with religious water structures such as the Teppakūlam and the Hema Puṣkarinī at Madurai, or the many cow-head spouts discussed in Chapter Two. Spouts are, however, typical of royal water structures in Sri Lanka and Nepal. The Kumāra Pokuna at Polonnaruva has two crocodile-shaped water spouts (Plate 419), and the palaces at Bhaktapur and Patan have several examples of *makara*-shaped water spouts in

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platform reaching out into the lake, is of the *hīṇḍolā* or swing- type used during festival occasions for the entertainment of the divine images.

<sup>77</sup>Lehrman, 1980, p. 66, fig. 66.

<sup>78</sup>Nicholson, 1989, p. 120.

<sup>79</sup>Lehrman, 1980, p. 42, fig. 33.

stone and metal repoussé, which often consist of a whole series of animal heads emerging out of each other (Plate 655).

An important role in emphasising the movement of water, and in creating visual and audible effects, is played by cascades which are employed to bridge changes in the level between terraces in gardens and palaces. Gardens had to be terraced to prevent the water from stagnating in the channels, but at times, particularly sharp drops in level were required to create sufficient pressure to force the water through fountain jets on the next lower level. The vertical sheets of water, falling down from a higher terrace, reflect the light in a way that is very different from horizontal pools and the fine spray of fountains, and thus adds to the enrichment of the garden environment. Frequently, there are carved niches called *cīnī-khānā*<sup>80</sup> ('porcelain compartments') behind cascades, which by day contained vases with colourful flowers, and at night candles or small lamps which were seen flickering through the sheet of falling water. In order to achieve a similar effect today, electric light bulbs have been fitted in some of the Mughal gardens, as for example in the late seventeenth-century garden at Pinjore (Pinjaur), near modern Chandigarh, Punjab, which was a halting station for the royal entourage on their way to Kashmir<sup>81</sup>. In the Brindavan Gardens outside Mysore, which were laid out in the late 1920s, colourful bulbs have been placed behind cascades and under fountains to create a spectacular effect at night. The bulbs make the water of the fountains appear coloured, and in the palace at Dig actual coloured water was channelled through the fountains on certain occasions<sup>82</sup>. The modern Mysorian counterparts are clear expressions of the Indian ability to include the latest technology and materials of their time, but to use them to continue traditional practices. In Mughal gardens, candles were also

<sup>80</sup>Crowe & Haywood, 1972, p. 101. This term is frequently also spelled '*cīnī-khānah*'.

<sup>81</sup>This is one of the latest Mughal gardens created by Fidai Khān, a foster-brother of Aurangzeb.

<sup>82</sup>Michell, 1994, p. 65.

set afloat in pools on tiny rafts, like the practice encountered in a Hindu religious context.

A Mughal cascade containing three rows of marble recessed niches may be seen in the Angūrī Bāgh in the palace at Agra, where water flowing out of the pool in the terrace of the Khās Mahal dropped in a cascade into an oval pool in the garden in front (Plate 656). In the Lāl Qilā at Delhi, similar marble cascades with scalloped niches are found in the terraces of the Sāvan and Bhādom monsoon pavilions. The Mohan Bārī, the island garden in front of Amber palace, has a double cascade (Plate 657), where the water drops down onto a small platform and then further down a second cascade. Through this means, the splashing noise and the visual effect of freshness and movement are further increased. Cascades also exist in many of the Kashmiri gardens, as for instance in the Shalimār Bāgh, and at Achabal. In the pleasure garden behind the dam of the large Rām-liṅg tank outside Bijapur, are ruined cascades where the water was pressed up in narrow pipes, based on the principle of communicating tubes, and then splashed down the cascade (Plate 658). The Bhādom Pavilion of the Hayāt Bakḥsh Bāgh in the Lāl Qilā at Delhi has a square pool set into its marble floor. All four sides of the pool are furnished with recessed niches, creating a four-sided *cīnī-khānā*, to which water was channelled through shallow grooves.

While impressive water cascades are usually located in the centre of garden arrangements, along the perimeter of gardens it is more typical to find narrow sloping water chutes, called *cādars* or *chādors*<sup>83</sup>, to carry water down from one level to another (Fig. 69). While in a cascade, the water breaks and drops in a free fall, chutes allow the water to continue its flow over an inclined plane. *Cādars* are usually strongly textured and carved in the shape of scallops or shells to break the flow of water and create interesting patterns. It depends on the degree of inclination of the *cādar* how smoothly or forcefully the water continues its

<sup>83</sup>G. Plumtre, 1993, *The Water Garden: Styles, Designs and Visions*. p. 45; Clark, 1996, p. 37.

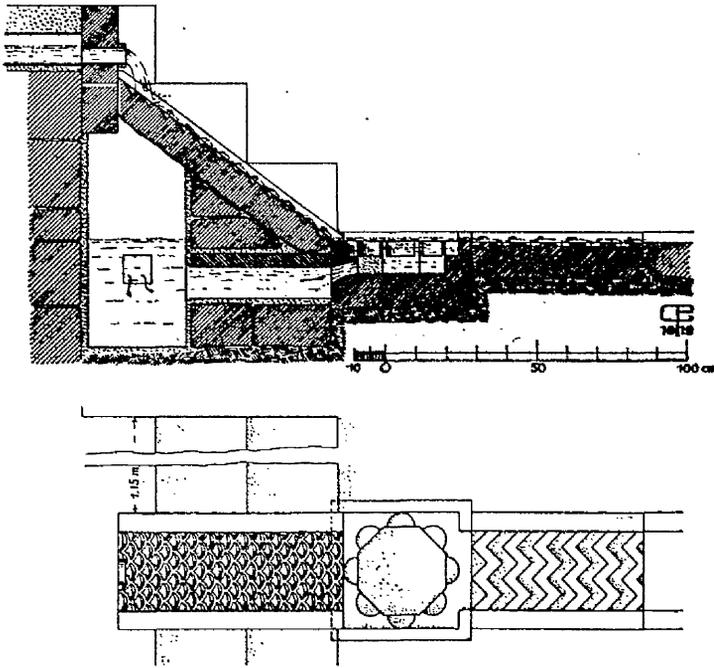


Fig. 69: Water chute (O. Reuther, 1925, p. 77).

flow. As with the cascades, the spray of the chutes cools and moistens the air, enriches and varies the flow of water, and as such contributes to the visualisation of movement, and creates peaceful splashing sounds. Due to the cooling and moisturising effect water chutes have on their surroundings, they were also constructed inside buildings and pavilions, and worked as systems of air conditioning. Examples of such cooling devices may be seen in the Sukh Nivās of the palace at Amber (Plate 642), and in the Śīs Mahal and the apartment opposite the Sammān Burj in the palace at Agra (Plate 659). Patterns similar to those of the *cādars* were sometimes also carved on the floor of horizontal water channels. Set upright at an angle, however, the water chutes reflect light more intensely than horizontal water channels.

Water chutes exist in most Kashmiri gardens, such as at Achabal, with its strongly sloping and foam-creating *cādars*, and in the Nishāt Bāgh, which has more gentle descents. They are also found in the plains, for example in the early Mughal Rām Bāgh at Agra. Water chutes are also very common in central India, especially in Madhya Pradesh and Maharashtra. They are found in pleasure and

palace gardens, as for example those situated to the south of the Kesar Kastūrī Mahal at Mandu, in front of the Pālki Mahal at Orchha, and surrounding the palace at Ahmadnagar. Water chutes are also associated with gardens surrounding tombs such as the Bībī-kā Maqbarā at Aurangabad (Plate 660). The latter has a very fine pattern and flows into a small square pool underneath the terrace carrying the mausoleum. An especially long *cādar* leads down from the roof of the building built by Akbar in 1601 on the river opposite the Kāliyādeh Mahal outside Ujjain, and leads into one of the many river compartments (Plate 661). Particularly interesting with respect to variations in water movement and texture, is the Nilakanṭh Palace at Mandu (Plate 662). It was built around 1577 by an *amīr* of Akbar, and after the decline of the Mughals developed into a sacred Hindu *tīrtha*<sup>84</sup>. A natural spring issues from the rock face in the back of the pavilion and flows through a marble channel to the edge of the terrace. The fact that the channel is decorated with inlay emphasises the movement of the running water. At the end of the terrace, the water descends in white ripples and with splashing noises over the surface of a carved marble chute, before entering a square pool below. From there it slowly continues its flow through a thin ornamental spiral, cut into the ground, and subsequently vanishes underground (Plate 663).

This is not the only place where water was directed to flow in the shape of a spiral, an ancient symbol of movement, growth and the snake. There are fifteenth-century examples of four interconnected, less formal spirals in the south-eastern corner of the upper lotus pool in the Jahāz Mahal (Plate 664), also at Mandu, which probably provided the idea for the later Mughal design at the Nilakanṭh Palace. From within the same tradition, but showing a simpler design, is a small channel with a wavy outline which connects the twin pools in the terrace on the north side of the Muñj Tālāo. At Champaner, a water spiral is part of the garden layout of a private residence, and the water gardens at Kota (Kotah),

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<sup>84</sup>This is a further example of the continuity of sacred sites in general and of water sites in particular. During the Muslim conquest of India, sacred springs such as those at Vernag and Achabal were taken over and converted into Islamic gardens or religious complexes which, with the weakening of Muslim power, could, however, be regained by the Hindus.

Rajasthan, show a whole variety of versions on this theme. There are further examples of clearly geometrical and formal versions of a large spiral and a square maze set into one of the walkways in-between the artificial river compartments opposite the Kāliyādeh Mahal at Ujjain (Plate 665). The mazes and also small pools, which were integrated into the partitions, undermine the solidity of the causeways, and blur the boundaries between the river, the compartments, and the causeways. An illusionary complexity of water spirals cut into causeways dividing tanks built into a natural river is created. Also at Bijapur, in the garden around the Anand Mahal, several such water mazes were laid out<sup>85</sup>. Examples which may have developed out of square water mazes as the ones at Ujjain and Bijapur, but which developed into complicated water games where the contestants had to predict the run of the water before it was allowed through the winding channels of the labyrinth, may be seen next to the early nineteenth-century cenotaph of Mahārāja Bakhtavar Singh at the south side of the Sāgar Tank at Alwar (Plate 666), and on the south side of the Śītalnātha Jain Temple (1867) at Calcutta (Plate 667).

This Chapter has been concerned with the forms and variations which tanks, islands and pavilions took in garden, pleasure and palace architecture, and with additional water features, such as fountains, cascades and chutes, which cool the air and create visual and audible enjoyment. It is interesting to compare examples of water structures from secular palace and pleasure architecture, discussed in this chapter, with examples of the four types discussed before, which were more strongly based on religious traditions. This does not mean that palace architecture does not make reference to religious themes, but that the primary emphasis is different. Additionally, the religious connotations in this chapter were more

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<sup>85</sup>Cousens, 1889, pp. 9, 10.

closely associated with Islamic ideas of planning, while the former chapters showed a strong influence of Hinduism and the other main indigenous religions of India, although, of course, they did not exclude Islam. Despite the different primary emphasis of religious versus secular, and a secondary differentiation in religious emphasis, indigenous religions versus 'imported' Islam, there are many common themes in religious and profane water architecture.

In the place where cosmic pillars or images of deities were found in religious water architecture, worldly rulers were seated on platforms or in pavilions in palace structures. Just as temples and tombs have been located on islands or built straight into the water of lakes and reservoirs, so have palaces, pavilions and pleasure gardens. Also in palace and garden contexts smaller basins were constructed inside or adjacent to larger water bodies, and twin and multiple pools have been pointed out. Continuity has also been encountered in the theme of gateways to water.

Certain features make a clear and conscious reference to religious traditions, as for example the idea of gods as *cakravartins*, seated at the centre of tanks, with whom emperors tried to associate themselves to gain universal power or to legitimise their rule. Other features, however, such as pleasure pavilions in water, may also have derived from practical considerations such as comfort and cool rest in the heat of the summer months. Often, it is difficult to clearly differentiate between these two motives which both influenced the designs. It has been shown that the religious tradition of Vasanta Maṇḍapas, for example, continued in palace structures, such as the Keśav Bhavan at Dig, but this particular pavilion refers also to the celebration of the monsoon, and provided a cool comfortable environment to the inhabitants of the palace. As such several reasons may have contributed to a choice of design. Furthermore, one could argue that a theme such as gateways are universal and derive from man's desire to delineate and mark certain areas as distinct spheres, be it a religious compound or the domain of an emperor. It is, however, interesting that in a religious South

Asian water context, the preventative function of gateways frequently is largely symbolic, and gateways have been reduced to the mere idea or symbol of a door, and of delineation and protection without walls, which also continues to some extent in this distinct form in palace and garden architecture. There are therefore certain themes in water architecture which seem unique to the South Asian culture rather than unique to certain religions within it or to religious situations in general. The various religious traditions of South Asia developed out of and alongside each other, absorbed new movements and faiths over a long period and mutually influenced each other.

## Chapter 8: CONCLUSION: THEMES AND CONTINUITIES IN SOUTH ASIAN WATER ARCHITECTURE

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### I. Themes in Water Architecture

The architectural material presented in this thesis has shown that South Asian water structures are highly sophisticated forms of construction, that they are among the most visually impressive buildings of the region, and that they signify both practical and metaphysical importance. It has further illustrated that the shapes of water monuments can communicate profound meanings, that all types of water architecture underwent considerable change and development, and that they are common to every context and every part of South Asia.

The five types identified in this thesis did not develop in isolation, and links between them have been established: through border cases or hybrid forms of construction where certain features of another type were adopted or where two types were fused; through the combination of structures of different types retaining their distinct shapes, such as *kuṇḍas* in front of well shafts in stepwells or those built into rivers or lakes; and also by common themes in water architecture. One theme which runs through all types, all contexts, and all regions of South Asia, is the placing of a basin next to or within a larger water body, to provide a protected area or deeper basin for bathing, but also demarcate a more sacred or pure area within a larger reservoir. The theme of twin and multiple tanks or *kuṇḍas* is especially common at large pilgrimage places where they are believed to contain waters of varied purity and frequently have been attributed to different groups of society. There is also a strong tendency in South Asian water architecture to set simple pillars and platforms, or entire temples, pavilions and palaces straight into water, which may be encountered with all types of water

architecture. Pillars seem frequently to refer back to the creation of the world, and their capitals may indicate the dedication of the water structure to a particular god. Platforms and pavilions in water provide comfortable places to sit in the summer heat but can also be related to religious concepts such as the *cacravartin*. Temples in water and on islands are material manifestations of the divine energy contained within the waters, they are pure places removed from our world, where an encounter with the divine is more easily possible. It is also a common feature to find vertical elements, such as memorial pillars and towers or tall fluted façades, next to water monuments which aim at counterbalancing the horizontality of the flat sheets of water. Certain themes, such as bastion platforms which initially served mainly to protect and delineate *ghāṭs*, developed and changed within the limitations of its own type to incorporate short bridging elements. Applied to a different type, however, this theme could develop even further in the more protected environment of tanks, where bridges could protrude further into the water, which led to the creation of often long causeways connecting the shore with islands carrying buildings and gardens.

A further general theme is that of access to water monuments. This aspect is closely linked to gateways leading to water, which probably is the most common and universal theme in South Asian water architecture and plays an important role in all five types. Gateways of various kinds were set up along lake and river *ghāṭs*, at tanks, *kunḍas* and wells, and also in water gardens and palaces. Only rarely are they connected with walls or fences on either side, and they should therefore be regarded as markers and symbols more than actual attempts to fence off or physically protect a site. The gateways indicate and remind people that space is not homogeneous, and that the sacred area of the water site, may it be a river bank, a *kunḍa* or a well, is qualitatively different from the surrounding world. Water is sacred and so is everything that relates to it, the ground bordering it, and the steps and platforms leading into it. The image of the gateway is also a potent symbol of transition and change. By passing through a gateway and

entering the pure sphere of a sacred water site, the visitor will come closer to the eternal reality and will embark on a crossing which eventually may lead to enlightenment and an escape from rebirth. As such, gateways are simple but clear symbols which give visual shape to cosmological and spiritual ideas, communicate religious and philosophical teachings, and provide a stage for the re-enactment of mythical events.

## II. Technological Progress and Change

Due to technological progress and the introduction of water provision through pipes, faucets and pumps, now supplying water to many houses directly, a considerable number of traditional water structures throughout South Asia have fallen into disuse. While many have been abandoned entirely and are merely used as communal toilets or rubbish dumps and are doomed to decay and disappear (Plates 668-9), others have been attributed new functions. Dry tanks and *kunḍas* whose steps resemble the seats of amphitheatres are sometimes used to house schools; stepwells and *kunḍas* which are surrounded by apartments have frequently been taken over by squatters; and the strongly fortified *kunda* at Abaneri for example, today houses the local police headquarters. It is interesting to see that while many water structures are not used for basic water provision any longer, and thus their utilitarian function has ceased, their religious importance as shrines and places of worship has often increased. This is the case for example in the Māta Bhavānī Vāv in Ahmedabad, the Bhadraka village stepwell and also in the *kunḍa* at Roda. Therefore, the argument frequently made, that one reason for the abandonment of water monuments is "a weakening of the socio-religious traditions"<sup>1</sup> or as another author put it, "profound changes in the attitude and life-

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<sup>1</sup>"un affievolimento delle tradizioni socio-religiose" V. Sestini & E. Somigli, 1993, 'L'architettura e l'acque nella cultura Nepalese.', p. 44.

style"<sup>2</sup>, seems to tackle the problem from the wrong end. People did not abandon traditional water structures and look for new technologies because they considered them unimportant or unfitting, but because instead of having to carry every drop of water from a communal water place, some were offered water from a tap in their own homes. When the still waters of many wells and *kunḍas* were discovered to be infected by the guinea worm because traditional funds and institutions connected with the cleaning and servicing of the structures had ceased to exist, it was easier and cheaper for Indian public health officials to barricade them and to provide water through modern technology. However, since pumps and pipes have not yet reached every part of South Asia, a large number of aesthetically pleasing and elaborate water structures, including most of those discussed in this thesis, are still in constant use. The fact that many water structures which were first established during the early centuries AD still function, speaks for the great skill and achievement of their builders. With respect to towns, the argument that changes in life-style have had a profound impact on water architecture seems more justified. The abandonment of villages and the congestion of modern cities has led to every free space within them, be it a park or a large water reservoir, being used for constructing new buildings. Benares, for instance was substantially rebuilt, first under the Marāṭhās during the eighteenth and then under the British in the nineteenth century. Many lakes and reservoirs were filled in and the drainage of surviving ones was frequently obstructed by the construction of wide roads cutting through the city.

A further important reason for the disuse and disappearance of traditional water monuments throughout South Asia is wide-ranging ecological change. Increased irrigation, the founding of new settlements which extract more water, and the rapid pumping of water in industrial areas, have drastically lowered the water table in many regions. In the area around the Rāṇī Vāv at Patan and in the Kathmandu Valley for instance, the water level has sunk by eight to ten metres

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<sup>2</sup>J.Nicolais, 1974, 'Water Architecture of the Kathmandu Valley.', p. 64.

within the last few years<sup>3</sup>. Many traditional wells and *kundas* do not reach the ground water table any longer and have dried up entirely, or they only contain water during the rainy season. In some cases, crude pumps have been installed in traditional water monuments to extract water from deeper levels (Plates 670-1), which will eventually lead to the further lowering of the water table. Many water monuments, such as tanks and reservoirs, depend predominantly on rain water and over the last few years drastic climatic changes have led to lack of rain in some areas and floods in others. In Kashmir, for example, a region renowned for its abundance of water during the Mughal period, water scarcity due to decreased annual rainfall, and a drop of the water table through deforestation and erosion, has become a poignant problem<sup>4</sup>. Other water structures, which are badly serviced or have poor drainage systems, are flooded and have turned into smelling pits which cannot be used for drinking water any more (Plates 672-3). Near the slopes of hills, where aquifers are frequently located just a few metres below the surface, drinking water is easily polluted by rubbish dumps and industries. Although for centuries people have argued that the 'self-purifying capacity' of the Ganges could cope with any amount of pollution, a scientific assessment carried out by the Government of India's Environmental Ministry in 1984 led to a first acknowledgement of the problem. Only a few development organisations, such as the Nepali-German projects 'Patan Conservation and Development Programme' and 'Urban Development Through Local Efforts' (Udle), aim at the rehabilitation of traditional methods of water provision. Their work has proved very successful because traditional water structures can be repaired and serviced with comparatively little money by the people themselves, and the projects have raised an awareness among the people of the value and beauty of this endangered heritage. In Bijapur, a similar project which entirely depends on the private funds of local families and industries, and which is especially concerned with the

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<sup>3</sup>K. Mankodi, *The Queen's Stepwell at Patan*. p. 24; E. Kvarnström, 1994, 'Water Supply in Lalitpur, Nepal.', MA thesis, p. 41.

<sup>4</sup>E.B. Moynihan, 1980, *Paradise as a Garden: In Persia and Mughal India*. p. 125.

desilting of the Begum Tank, has been initiated by the local civil engineers Peter and Joseph Alexander.

### III. Continuity in Modern South Asian Architecture

With the decline in influence of local rulers and elites, patronage and financial support for the construction of complicated and expensive well monuments and *kunḍas* ceased, and their construction has not continued on a public level. Storage tanks and plain draw-wells, however, still play an important role in modern water conservation and provision, and *ghāṭs* continue to be constructed along rivers and lakes to secure their embankments and to make the water accessible to the people. Ancient water sites are continuously restored and rebuilt, frequently using the latest technology and materials, and have not lost their importance or meaning, and the Ganges is not considered less pure despite its industrial pollution. Thus, despite changes in water technology and the introduction of modern Western techniques, the importance and significance of water for the people of South Asia has not changed considerably in modern times.

The integration of water as a design element continued during the British period, as may be exemplified by the Victoria Memorial Hall at Calcutta, designed by Sir William Emerson and others in 1902-21 (Plate 674), the water gardens surrounding the Viceroy's House (Rashtrapati Bhavan) completed by Sir Edwin Lutyens in 1929, and the esplanades of the coastal cities of British India, such as Calcutta, Madras and Bombay. Water structures are also typical of modern South Asian architecture, which frequently makes direct reference to traditional building types and themes. Such references are especially frequent and overt in the work of Charles Correa, many of whose projects link water and architecture (Plate 675). It is interesting that he not only integrates actual water structures into his designs, but that frequently he refers to the visual shapes of

traditional types of water architecture, applying them to a different context. The open courtyards of the Bharat Bhavan at Bhopal (inaugurated 1982), the Centre for Astronomy and Astrophysics at Pune (1992), and the Jawahar Kala Kendra at Jaipur (1986-90) for example, are surrounded by simplified versions of pyramidal step formations which are strongly reminiscent of *kunḍa* constructions (Plates 676-7). The steps and the central depressions structure the open spaces, create depth, and provide places for people to sit and meet. In the example at Jaipur, the reference to *kunḍas*, which often have circular well shafts in their centres, is made even more explicit through a large circular stone disc in the centre of the court which marks the imaginary well shaft. Similarly, the open amphitheatre in the Crafts Museum at Delhi is not derived from a circle, like Western classical examples, but is reminiscent of rectangular tanks with *ghāṭ*-like steps (Plate 678). While the Bharat Bhavan is located on and overlooks the large Upper Lake at Bhopal, many of Correa's designs integrate water and fountains into their layout. The shape of Correa's water basins are frequently reminiscent of *maṇḍalas* (Plates 679-80), and a shallow basin in the Jawahar Kala Kendra is in the shape of a snake, an animal closely related to the sacred waters (Plate 681). In the courtyard of the headquarters of the British Council (1992) at New Delhi, Correa re-invented the ancient theme of the water spiral, observed at Mandu, Champaner and Bijapur in the previous chapter. At Delhi, the modern water spiral opens up into a shallow pool which is overlooked by a large stone head of Śiva (Plate 682).

Religious connotations are not untypical of modern water structures in South Asia, although many art-historians draw a strict if arbitrary line between traditional and modern water architecture, and regard contemporary structures purely as an expression of belief in technical progress. This is an idea clearly expressed by M. Livingston who wrote "No Hindu, however devout, sees a water tap or canal as a *tīrtha*, or holy, sacred place."<sup>5</sup> It is true that water faucets are not worshipped, but it has never been the case that the actual fabric of water

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<sup>5</sup>M. Livingston, 1995, 'The Stepwells and Stepped-Ponds of Western India.', p. 16.

structures has been venerated. The worship has always been directed towards the water itself or the gods associated with it, and the water issuing from a modern tap is not regarded as less pure or efficient for religious rituals than that coming from a traditional water structure. While the Kelani Temple at Colombo has several beautifully shaped water basins and fountains, only the water from a certain, seemingly ordinary modern water tap can be used for the ritual of circumambulating the Bodhi tree, and the fact that the concrete foundations of modern lever pumps are almost without exception shaped to resemble a *yoni* surrounding a *liṅga*, cannot completely be sheer chance (Plate 683). An irrigation canal will probably not be regarded as a *tīrtha*, but if it is the only available water structure nearby, ritually, it undoubtedly is the right place to cremate a body and into which to sprinkle the ashes, since all waters are believed to be interconnected. In general, people in South Asia seem to find it less problematic than those in the West, to combine traditional and modern tendencies, whether in matters concerning beliefs and world views, forms of architecture or building materials. Traditional water sites frequently have been so thoroughly modernised that to a Western eye they may seem to resemble municipal swimming pools and to be deprived of their past and religious importance, a thought not many Indian pilgrims will share or even understand. They feel no compulsion to believe exclusively in the efficacy and accuracy of the calculations of a hydraulic engineer, and to neglect the gods who over centuries were responsible for the protection of tanks and dams. It is not surprising that the large Kṛṣṇa Sāgar Dam near Mysore, constructed in the early 1930s and then one of the show cases of Indian progress and modern technology, has a temple of Kāverī Amman, the mother goddess Kāverī, in its centre. The goddess inside the temple holds a bowl in her hands into which water runs continuously, and people make offerings and worship the goddess who is believed to be the true provider of water and abundance at the site. Equally, many modern bridges have religious images integrated into their structures to propitiate the divine rivers and to protect the

man-made constructions (Plate 684). A further example of the fusion of tradition and modernity is the Bahāī Temple at Delhi, designed by Fariburz Sahba and completed in 1986. While its shape makes reference to the ancient symbol of the lotus, its material, white marble, is frequently used for Indian temples; and although its layout follows a long tradition of temples set into water reached by bridges, the traditional features have been assembled and presented in a new and distinct, truly modern way (Plate 685).

Returning to modern South Asian architects incorporating water into their concepts, Correa is not the only one who frequently does so. The theme of sunken courtyards or gardens reminiscent of tanks and *kundās* can also be encountered in the work of Raj Rewal, as for instance in the complex of the World Bank Office (1993) in New Delhi. Balkrishna Doshi frequently integrates water into his design concepts as for instance in the Gandhi Labour Institute at Ahmedabad (1980-84) with its geometrical basins. Doshi's most interesting design with regard to the re-use and continuity of traditional themes in water architecture is probably his own studio, Sangath (1979-81), west of Ahmedabad which is surrounded by gardens and water (Plate 686). There are pools next to and within larger water basins, and cascades enrich the garden environment with sound and spray. The moving water of the gushing cascades stands in stark contrast to the still and mirror-like pools nearby, and water, garden and architecture mingle continuously.

This is also a typical feature of the work of the Sri Lankan architect Geoffrey Bawa, who almost universally integrates shallow water pools into outdoor and indoor spaces (Plates 687-8). Frequently, he uses water basins as bridging elements to merge inside and outside spaces, architecture and nature, which has probably been best achieved in the Triton Hotel at Ahungalla (1982) (Plate 689). Bawa also frequently constructs buildings in water, as the Steel Corporation Office at Oruwela, which lies half on water and half on land (Fig. 70), and the Simā Mālaka Temple in Colombo which occupies three

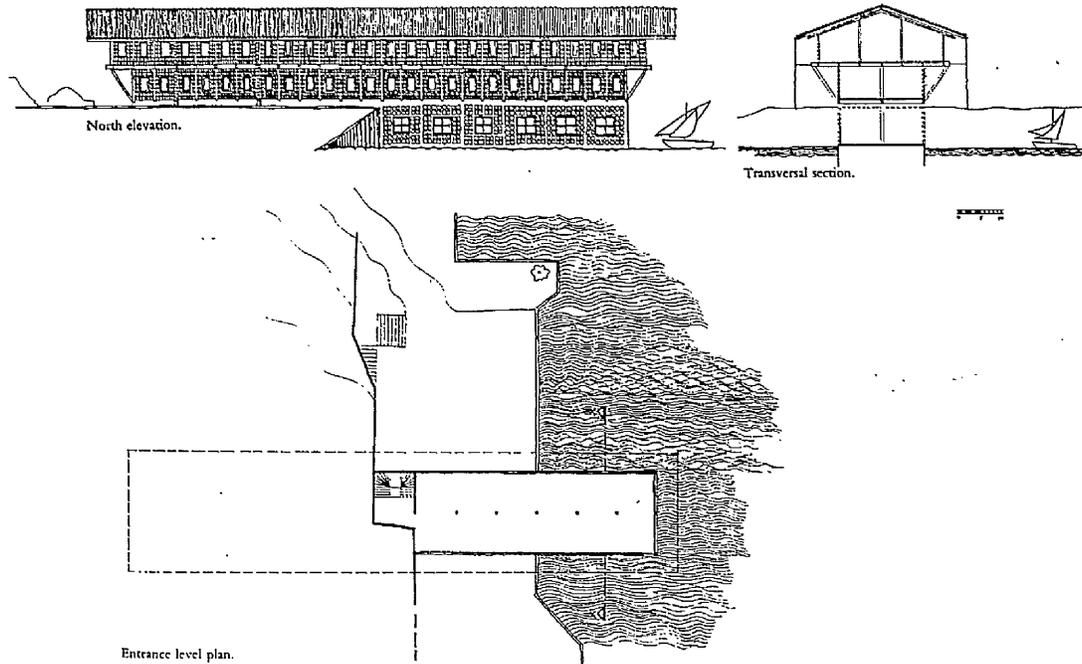


Fig. 70: Oruwela, Steel Corporation Office lying half on water and half on land (B.B. Tylor, 1995, p. 121).

interconnected islands reached by a narrow causeway. Bawa's most ambitious project was the design of the new Parliamentary Complex, Sri Jayawardenepura, at Kotte near Colombo which is situated on an island in a large man-made lake (Plate 690). The water is used to separate the general public from the political elite, and it is interesting that in a modern political context, where governments wish to appear progressive, the traditional theme of water is still readily employed.

Le Corbusier, too, incorporated large water basins into the design of the Capital Complex at Chandigarh (1951-64), the modern capital of Punjab, which convey, at least from certain view points, the illusion that the Palace of Assembly and the High Court are floating on water (Plate 691). Although Bangladesh does not lie within the regional limitations of this thesis, the Capitol Complex Sher-e-Banla Nagar at Dakha, by Louis Kahn (1962-83), has been planned within and around a large water reservoir.

Water architecture is an ancient traditional theme but it is powerful and adaptable, and therefore still of paramount importance for the history of South

Asian architecture and culture. In modern South Asia, water architecture continues to be part of basic water provision and religious institutions, while in a political context it is used to create a positive and future-oriented image of newly established governments. Echoing centuries of tradition, the modern buildings of the capital complexes are reflected on the mirror-like surface of the water. They are read as symbols of wealth, independence and purity, and are powerful and authentic expressions of the confident beginnings of modern South Asian states.

## GLOSSARY

abhiṣeka	sprinkling, anointing or ceremonial bathing with sacred water, frequently in an inauguration or consecration ceremony
amṛta	the elixir of life or nectar of immortality
bāgh	garden
bāoli / bāvli	water basin, usually with steps; the term is connected with the names of tanks, <i>kunḍas</i> and wells (also spelled <i>bāori</i> )
Bhagīratha	the sage who is credited with bringing down the Ganges from heaven to earth through extreme austerities
cabūtarās	any kind of platform; frequently found in water channels and tanks in gardens and palaces (also known as <i>chibūqrahs</i> )
cādar	sloping water chute
cajjā	slanting broad overhanging-eave of a building, protecting against sun and rain
cār-bāgh (cahār-bāgh)	walled garden divided by intersecting walkways or water channels into four compartments; alternatively it may also have several intersections along one axis.
chatrī	a pillared pavilion topped by a dome; also a funerary structure
cīni-khānā	carved niches behind cascades in gardens and palaces
dāgaba	Sri Lankan term for a Buddhist stupa
dargāh	shrine or tomb of a saint
devī	goddess, lady, queen
dhārā	typical Nepali water structure, also called <i>hiṭī</i> ; usually a deep stepped basin
Gaṅgā	name of the river goddess and the River Ganges
garbhagṛha	'womb chamber', the inner sanctuary of a Hindu temple
ghāt	a flight of steps leading into water
gomukh	cow-head
gopura	temple gateway in the shape of a large pyramidal tower
gurdwara (gurdwārā)	'the doorway to the Gurū', Sikh places of worship
ḥammām	bath, hot steam bath, bath house
haṃsa	goose (swan), vehicle of the god Brahmā
hiṭī	typical Nepali water structure, also called <i>dhārā</i> ; usually a deep stepped basin
iwān	monumental arch indicating the direction of prayer
jālī	latticed or perforated stone screen

jhālā	deep masonry reservoir with steps, mainly for collecting rain water
jharokhā	projecting, often elaborately carved window or balcony
kacca	untreated, unbound or natural edge of a river or lake
kuṇḍa	deep stepped water basin, frequently drawing ground water
kūpa / kuāṃ	well
kūṭa	pavilions built into the stepped corridor of stepwells to counteract the inward thrust of the side walls
liṅga —	phallic emblem of the god Śiva
mahal	pavilion, palace, mansion
makara	mythical crocodile-like sea animal
maṇḍala	a diagram of the cosmos, used in architecture, ritual and for mediation
maṇḍapa	hall or pavilion
mandir	temple
mantra	verbal expression of a sacred verse or invocation
maśān	Nepali for <i>ghāṭ</i> or burning place
masjid	mosque
melā / parva	festival or fair, usually with religious connotations
nāga	snake
nāgakaṣṭha	snake pole, erected in the centre of tanks and reservoirs particularly in Nepal
nāla	stepped corridor of a stepwell
pāda / pādūkā	foot or footprint, particularly of Viṣṇu and the Buddha
pokharī / pokharā	lake, pool, tank
pakka	firmly constructed
piṇḍa (dāna)	offerings to ancestors performed during funerals and on certain festivals; consist usually of small balls formed out of rice and flour
pokuna	lake, pool, tank
pol	gateway
prākāra	temple compound wall
praṇālī	a channel-like part or spout to drain the sacred liquid poured over the image in the <i>garbhagrha</i> out of the temple
pratolī	gateway tower; frequently flanking the entrance to stepwells
pūjā	ritual worship
Rāja / Rāṇa	king, ruler
Rānī / Rāṇī (Sansk.)	related to this is Mahārāja / Mahārāṇa meaning great king queen

	related to this is Mahārānī (Hindi) / Mahārāṇī (Sansk.)
rehaṅṭ	water wheel
rauṣā (Arab. rauza)	tomb or mausoleum of a Muslim saint
risalit	wall section protruding forward from a vertical wall (feature in the development of <i>kuṇḍas</i> )
ṛṣi	a seer or wise man
sāgar	ocean, see, also used for lakes and tanks
saṅgama	confluence, usually of two or several rivers
sarovar	lake, pool, tank
sati	Hindu wife who follows her dead husband onto his funerary pyre
stambha	pillar, column, post
Sūrya	the Vedic Sun god
tāl	pond, tank
tālāo / tālāb	pond, tank, reservoir
tīrtha	a ford or crossing, place where transition to salvation is possible; a place of pilgrimage, frequently connected with water
toraṇa	free-standing ornamental gateway or arch
triśūla	Śiva's weapon or emblem in the shape of a trident
vāhana	vehicle or mount, an animal used for riding by the gods
Varuṇa	the Vedic god of the waters
vāv	well, step-well
zenānā (Arab. zanāna)	harem (ḥaram) or women's living quarters

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# Water Architecture in South Asia

A Study of Types, Developments and Meanings

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Volume 2: Illustrations (I)

A Thesis Submitted for the Degree of PhD

School of Oriental and African Studies  
University of London

April 1998



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 445 Colombo, *kuṇḍa*-like fountain at the Kelani Temple.

#### Chapter 6: WELLS

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 448 Chidambaram, draw well with pulley mechanism in the Natarāja Temple complex.  
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 450 Raipur, draw well in the compound of the Rāmacandra Temple.  
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 453 Ghumli, Bābūke Vāv with cattle trough and irrigation channel.  
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- 462 Malpannagudi, small stepwell.
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- 615 Fatehpur Sikri, Maryam-kā- Hauz, a roofed over bath.
- 616 Gingee, palace building containing a large bath.
- 617 Gingee, the ceiling construction over the bath.
- 618 Fatehpur Sikri, public *ḥammām* opposite the Buland Darvāzā.
- 619 Mandu, circular chamber with water channels in a *ḥammām*.
- 620 Golconda, *ḥammām* near the entrance gate of the fort.
- 621 Golconda, Badshāhī Ḥammām at the Quṭb Shāhī Tombs.
- 622 Golconda, the octagonal platform in the Badshāhī Ḥammām.
- 623, 624 Delhi, interior of the royal *ḥammām* (photo A.I.I.S., Varanasi).
- 625 Polonnaruva, lotus platform in the Kumāra Pokuna.
- 626 Fatehpur Sikri, Anūp Tālāo.
- 627 Fatehpur Sikri, throne platform in the centre of the Anūp Tālāo.
- 628 Amber Palace, star-shaped pool with platform and bridges.
- 629 Amber Palace, raised walkways and central pavilion in the *zenānā* quarters.
- 630 Vijayanagara, Octagonal Bath with central platform.
- 631 Gingee, square platform in the Kalyān Mahal Tank (top left).
- 632 Udaipur, water pavilion in the Sahelīyon-kī Bārī (top right).
- 633 Bijapur, Jal Mahal.
- 634 Kumatgi, single-storeyed water pavilion.
- 635 Kumatgi, double-storeyed water pavilion.
- 636 Kumatgi, large water pavilion in the dammed reservoir.
- 637 Kumatgi, complex arrangement of pavilions and islands in pools.
- 638 Kumatgi, the outer and the inner basin with bridge.
- 639 Vijayanagara, platform of a decayed water palace.
- 640 Delhi, Hayāt Bakhsh Bāgh, Zafar's Pavilion.
- 641 Delhi, the Nahr-i-Bihisht in the Lāl Qilā.
- 642 Amber Palace, water chute.
- 643 Delhi, lotus bud fountain jet at Ṣafdar Jaṅg's Tomb.
- 644 Kandy, ablution fountain at the Temple of the Tooth.

- 645 Anuradhapura, fountain (front left) at the Mirisaveṭṭiya Dāgoba.
- 646 Calcutta, fountain of the Dāda Gurūdeva Temple.
- 647 Kandy, nineteenth-century public fountain.
- 648 Hyderabad, the fountain in the centre of the Cār Kamān.
- 649 Patan (Nepal), fountain with central bust of Jaṅga Bahādur Rāṇā's wife.
- 650 Vijayanagara, octagonal fountain pavilion.
- 651 Golconda, fountain in the courtyard of the Rānī Mahal.
- 652 Dig, swing in the shape of a *torāṇa* facing the garden.
- 653 Delhi, fountain basin in the Raṅg Mahal of the Lāl Qilā.
- 654 Agra, carved fountain basin in the Sammān Burj.
- 655 Bhaktapur, water spout of the royal bath.
- 656 Agra, cascade at the terrace of the *Khās* Mahal.
- 657 Amber, double cascade in the Mohan Bārī.
- 658 Bijapur, cascade behind the dam of the Rām Liṅg Tank.
- 659 Agra, water chute in the apartment opposite the Sammān Burj.
- 660 Aurangabad, chute in the garden of the Bībī-kā-Maqbarā.
- 661 Ujjain, chute opposite the Kāliyādeh Mahal.
- 662 Mandu, Nīlakaṅṭh Palace.
- 663 Mandu, water spiral at the Nīlakaṅṭh Palace.
- 664 Mandu, water spirals on the roof terrace of the Jahāz Mahal.
- 665 Ujjain, water mazes between the river compartments.
- 666 Alwar, water game near the cenotaph of Mahārāja Bakhtavar Singh.
- 667 Calcutta, water labyrinth at the Śītalnātha Jain Temple.

#### Chapter 8: CONCLUSION: THEMES AND CONTINUITIES IN SOUTH ASIAN WATER ARCHITECTURE

- 668, 669 Kapadvanj, the Bātris Koṭha Vāv has fallen into decay, and modern buildings constructed along its edge obstruct access to the upper galleries.
- 670 Patan (Nepal), modern pumps and faucets in a traditional *dhārā*.
- 671 Srisailam, modern pumps installed in the well shaft of the old *kuṇḍa*.
- 672 Ghumli, the Jethā Vāv is blocked and has filled up with water.
- 673 Bhaktapur, traditional *dhārā* with blocked drainage.
- 674 Calcutta, Victoria Memorial Hall with water basins.
- 675 Jaipur, incorporation of water into modern architecture (Jawahar Kala Kendra).
- 676 Pune, the stepped courtyard in the Centre for Astronomy and Astrophysics (H.U. Khan, 1995, p. 92).
- 677 Jaipur, the *kuṇḍa*-like courtyard in the Jawahar Kala Kendra.
- 678 Delhi, the tank-shaped amphitheatre in the National Crafts Museum (H.U. Khan, 1995, p. 88)

- 679 Bhopal, complex of the Bharat Bhavan with *maṇḍala*-shaped fountain basins.
- 680 Jaipur, fountain in *maṇḍala* shape in the Jawahar Kala Kendra.
- 681 Jaipur, basin in snake shape in the Jawahar Kala Kendra.
- 682 Delhi, basin with water spiral and head of Śiva in the courtyard of the British Council (H.U. Khan, 1995, p. 90).
- 683 Mandu, modern water pumps resemble *yonis* surrounding *liṅgas*.
- 684 Calcutta, religious images protect a bridge at Bābū Ghāt.
- 685 Delhi, Bahā'ī Temple.
- 686 Ahmedabad, 'Sangath', B. Doshi's studio (W.J.R. Curtis, 1988, p. 121).
- 687 Dambulla, Kandalama Hotel (B.B. Taylor, 1995, title page)
- 688 Colombo, G. Bawa's office surrounded by water (B.B. Taylor, 1995, p. 116-117).
- 689 Ahungalla, Triton Hotel (B.B. Taylor, 1995, p. 141).
- 690 Kotte (Colombo), new Sri Lankan Parliamentary Complex (B.B. Taylor, 1995, p. 164).
- 691 Chandigarh, Palace of Assembly with water basins by Le Corbusier.

**Chapter 2:**  
**THE SACRED WATERS**



1  
Udayagiri,  
Cave Temple No. 5. Varāha rescues Bhū Devi.



2  
Budhanilkantha,  
large scale sculpture of Viṣṇu Nārāyaṇa.



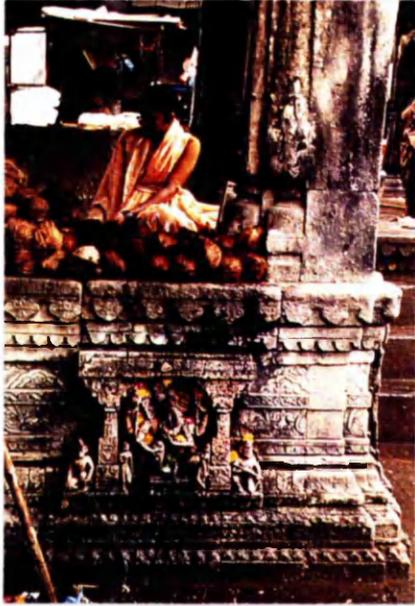
3  
Mamallapuram,  
Mahiṣamardini Cave Temple.



4  
Kalinjar Fort,  
Koṭ Tirth with panel of Viṣṇu on Śeṣa.



5  
Modhera,  
panel in the eastern shrine  
of the Sūrya Kuṇḍa.



6  
Trimbak,  
coconuts are offered to the sacred water  
of the Kuśavart Tirtha.



7  
Trimbak,  
worship of the holy Godavari  
at the Kuśavart Tirtha.



8  
Hardwar,  
flower petals and lights are offered  
to the Ganges.



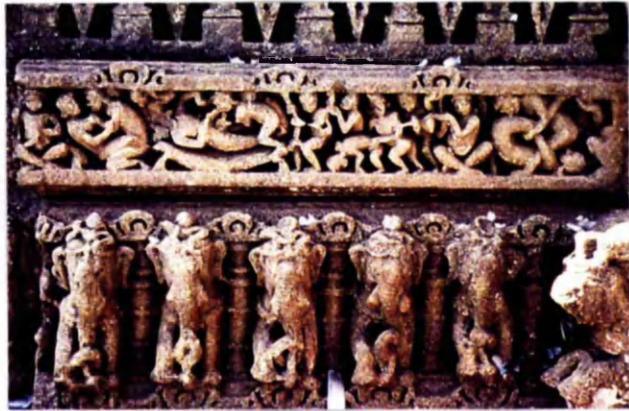
9  
Gokarneshvara,  
image of cow and calf near the river *ghāṭs*.



10  
Khajuraho,  
water pots filled with sprouting grain  
in the Yoginī Temple.



11 Amritsar, churning of the cosmic ocean on a panel on Bābā Atal Tower.



12 Modhera, *mithuna* scenes in the Sūrya Kuṇḍa.



13 Nandi Fort, goddess Lajjā Gaurī in the tank of the Śrī Yogānandiśvara Svāmi Temple.



14 Aihole, Lajjā Gaurī in the tank of the Huchimalliguḍi (C. Radcliffe Bolon, 1992, p. 109).



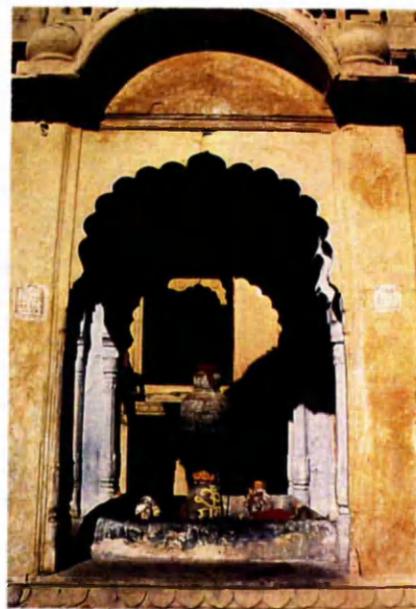
15 Amarkantak, water is poured over a *linga* at the Narmadā Tank.



16 Bijolia, brass pot suspended over the *linga* in the Undeśvara Temple.



17 Vijayanagara, at the Tungabhadra.



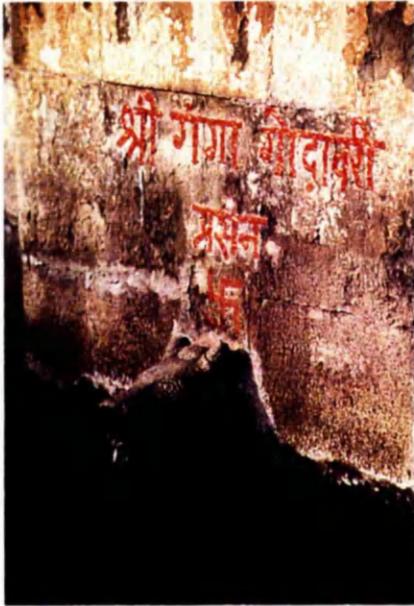
18 Alwar, water dripping onto a *linga*.



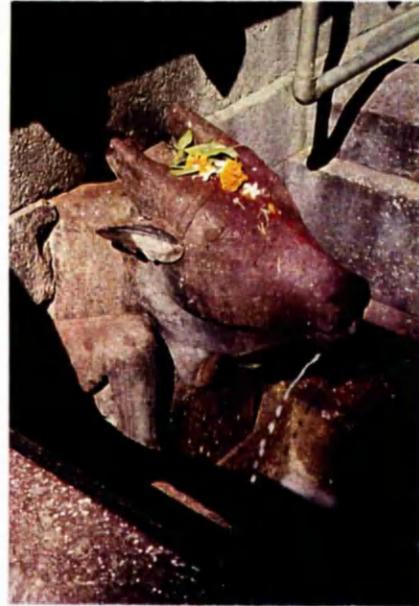
19 Vijayanagara, *lingas* carved onto the boulders at the Tungabhadra River.



20 Gangasagar, *linga* formed out of sand.



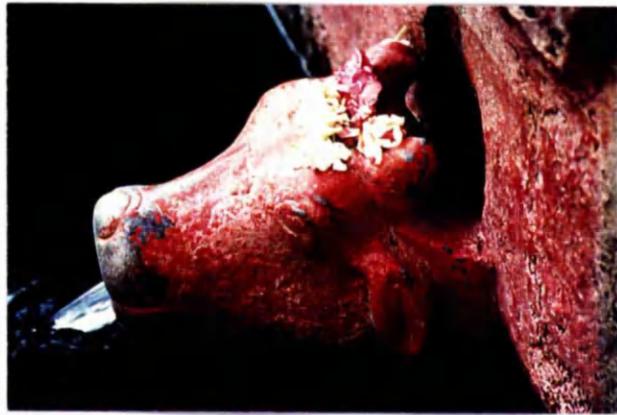
21  
Brahmagiri,  
cow head spout.



22  
Ellora,  
*praṇālī* of the  
Gṛiṣneśvara Temple.

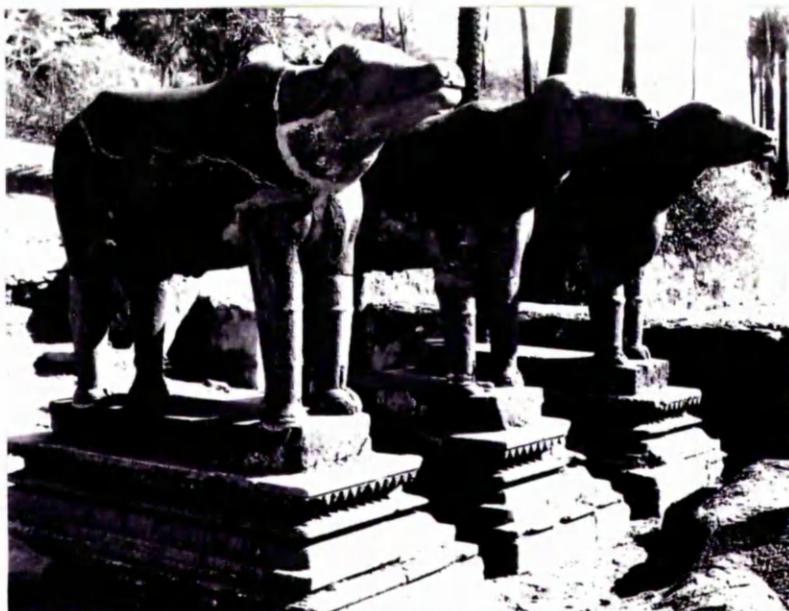


23  
Trimbak,  
fountain with four cow head spouts.

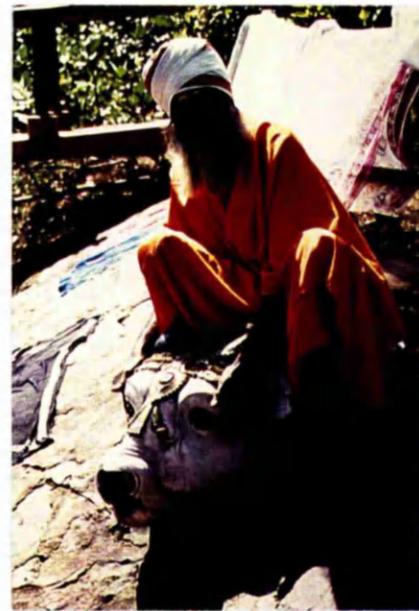


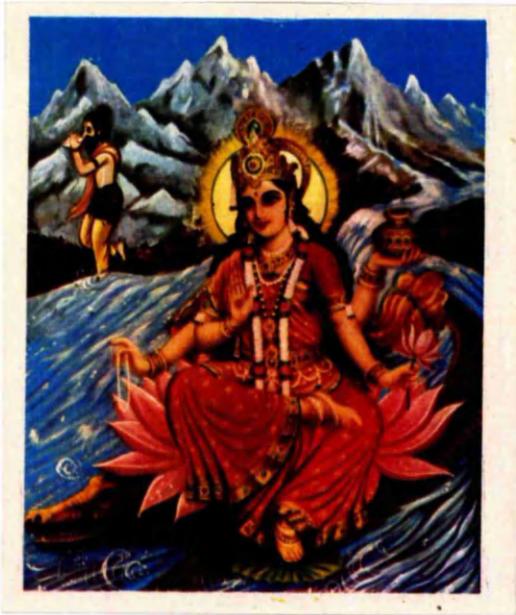
24  
Adavad, the sacred water issues out of the  
head of a cow.

25  
Achalgarh, Mandākinī Kuṇḍ.

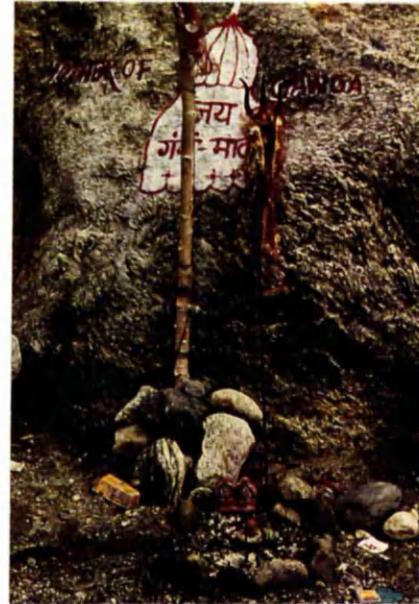


26  
Srisailam, at the bathing *ghāṭs*.





27 Gomukh,  
Gaṅgā on her *makara* with Baghiratha  
in the background.



28 Gomukh,  
shrine to Gaṅgā Mātā at  
the source of the Ganges.

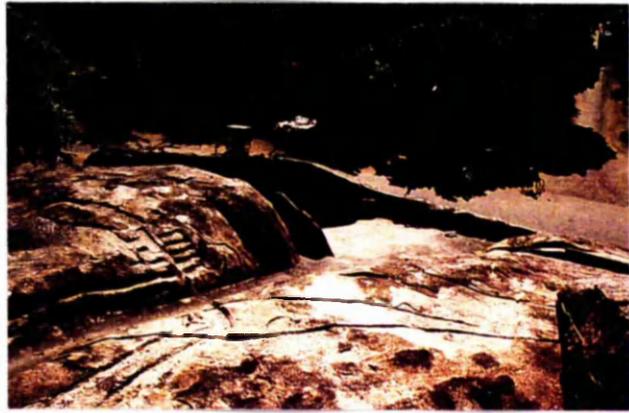
29 Bhaktapur,  
Śiva stele in the centre of a *pokhari*.



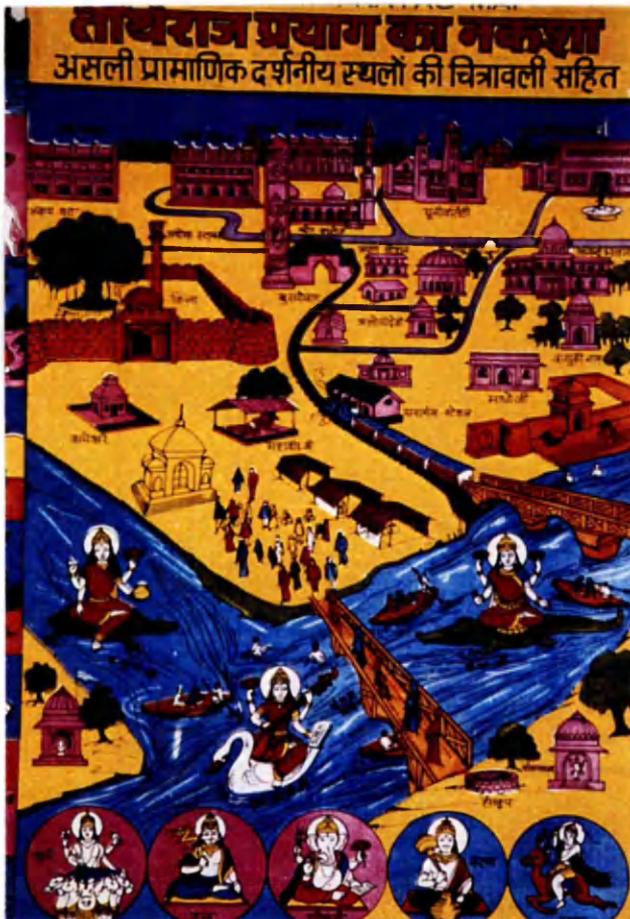
30 Kalahasti,  
Śiva fountain in the Kālahastīśvara Temple.



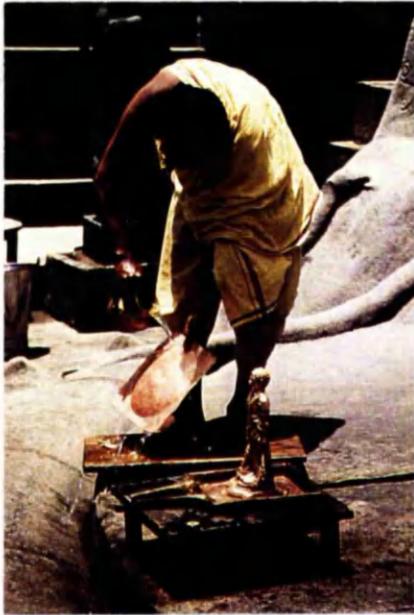
31 Mamallapuram,  
the descent of the Ganges.



32 Mamallapuram,  
storage basin above the frieze.



33 Allahabad,  
the confluence of Ganges, Yamuna and Sarasvati.



34  
Sravana Belgola,  
bathing of religious images  
and symbols.



35  
Pushkar,  
hero stone at Puṣkar Lake.



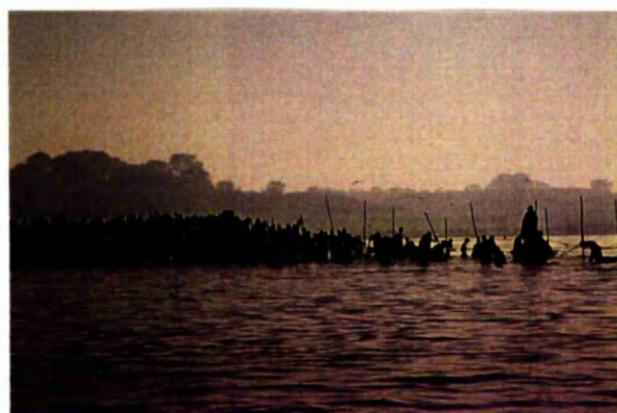
36  
Hardwar, bathing ceremonies  
at Hari-ki-Pairi Ghāt.



37  
Benares, the greeting of the sun as part of  
ceremonial washings.



38  
Rameshvaram, ancestral rituals  
involving the presence of a cow.



39  
Prayag, bathing in the confluence  
during the Māgh Melā.



40 Golconda, a small mosque constructed over a sacred spring.



41 Mandu, representation of the temple at Pavapuri in the Jain Temple at Mandu.



42 Plants growing out of water pots symbolise fertility and growth. Vidisha, column from the Bija Maṇḍal Temple.



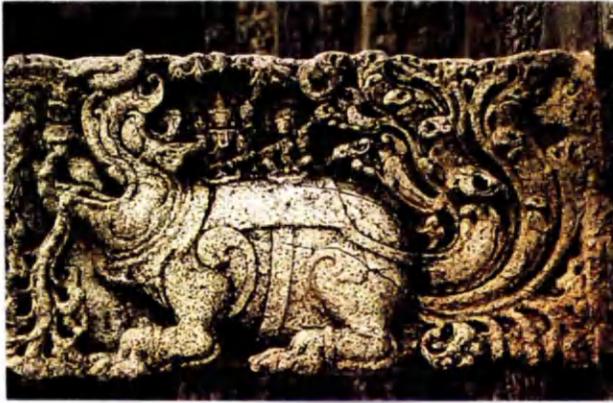
43 Osian, Mahāvira Temple.



44 Mihintale, Kantaka Cetiya.



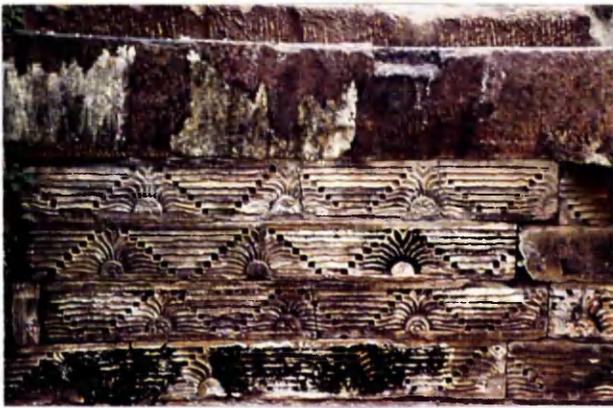
45 Bhaktapur, small shrine near the Nyātapola Pagoda.



46 Halebid, vegetation originating from the mouth of a *makara* on a *pranāli*.



47 Srisailam/Alampur, *makara-toraṇa* over a window in the Saṃgameśvara Temple.



48 Menal, lotus ornamentation in the Balaj Kuāṃ.



49 Pattadakal, central pillar with lotus design in a water tank.



50 Bijapur, lotus water spout in a tank at the Asal Mahal.



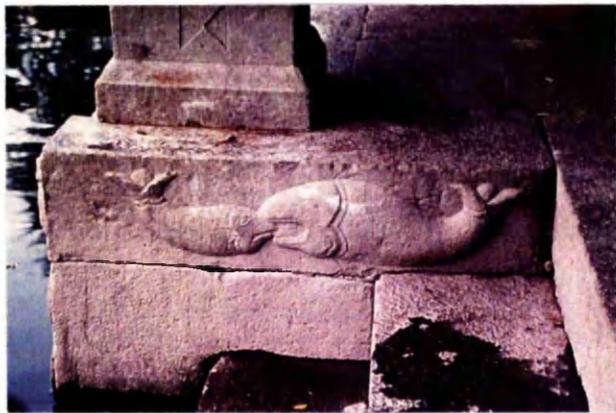
51 Bhaktapur, the lotus-shaped Palikhyah Hiṭi.



52 Badami, spiral ceiling of Cave Temple No. 1.



53 Alampur, spiral ceiling closely related to snakes and the waters.



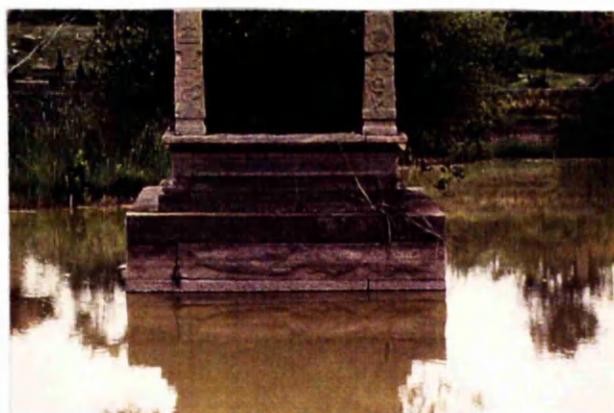
54 Tiruvannamalai, tank in the first enclosure of the Aruṅācaleśvara Temple.



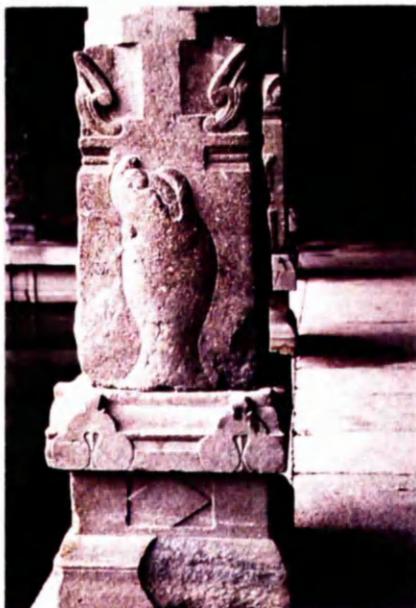
55 Vijayanagara, fish carvings in the *kuṇḍa* in front of the Rāmacandra Temple.



56 Madurai, elaborate fish carvings in the Teppakuḷam.



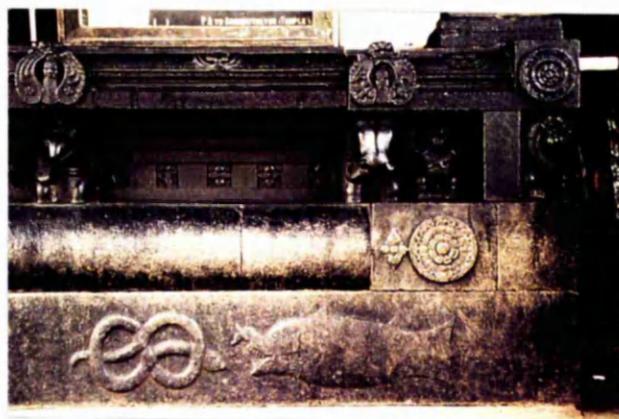
57 Vijayanagara, large fish swallowing smaller ones.



58  
Tiruvannamalai,  
tank in the first enclosure of  
the Aruṇācalesvara Temple.



59  
Vijayanagara,  
large fish on the *gopura*  
of the Kṛṣṇa Temple.



60 Guruvayur, fish carved on the *gopura*  
of the Kṛṣṇa Temple.



61 Sravana Belgola, fish carvings adjacent  
to the *gopura* on top of the hill.



62  
Madurai,  
fish carvings on the  
pillars around the  
Sundareśvara Shrine.



63  
The Pāṇḍyan emblem,  
not to be confused with  
the fish discussed above.



64 Sravana Belgola, fish carvings on the temple enclosure wall.



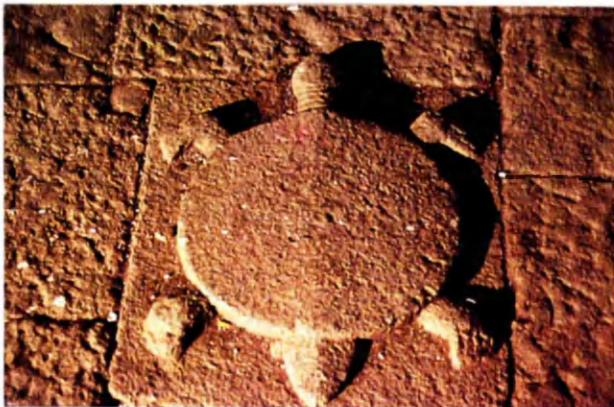
65 Bhaktapur, amphibian animals on the water spout in the royal bath.



66 Bhaktapur, frog and mythical animal on water spout.



67 Patan (Nepal), snake on water spout in *dhārā*.



68 Brahmagiri, stone turtle at the source of the Godavari.



69 Pandharpur, brass turtle pointing towards the Vithobā Temple.



70  
Ujjain,  
turtle at the tank  
of the Mahākāleśvara Temple.



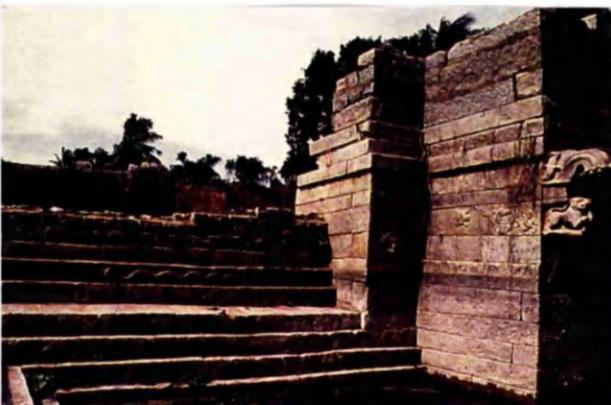
71  
Chitorgarh,  
churning of the ocean  
on the back of *kūrma*,  
Kālikā Mātā Temple.



72  
Bhaktapur, turtle supporting a pillar  
on Dattātreya Square.



73  
Ettumanur, turtle as foundation of a  
*dīpa stambha* in the Mahādeva Temple.



74  
Kamalapuram, snake carving  
on the steps of the local *kuṇḍa*.



75  
Kumbakonam, a wall of *nāga-kals* lines  
the *ghāṭs* at the Kaveri.



76  
Sanchi,  
half human and half  
snake *nāga-rāja*.



77  
Mathura,  
snake deity installed next to a  
tank (Government Museum).



78 Mihintale, the *Nāg Pokuna* with multi-  
hooded cobra emerging from the waters.



79 Kathmandu, *Nāg Pokhari* with central  
snake pole.



80  
Bodhnath,  
*Nāga-rāja Vāsuki*  
at the Buddhist stupa.



81  
Anuradhapura, *nāga-kal*  
at the Twin Pools.



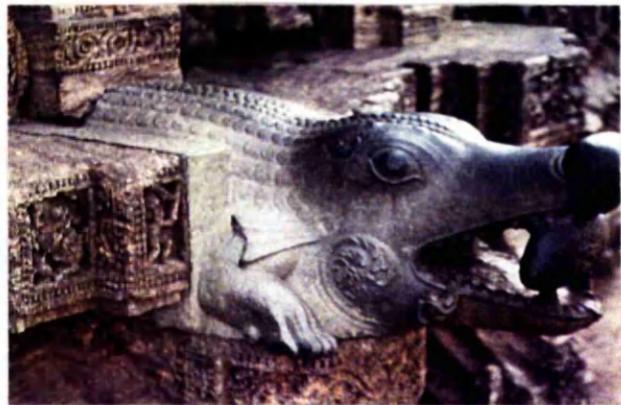
82 Vijayanagara, elephant spout in a tank at the 'Hall of Justice'.



83 Belur, spout in elephant-shape at the tank of the Cenna Keśava Temple.



84 Madurai, crocodile sculpture on a water spout in the Teppakulam.



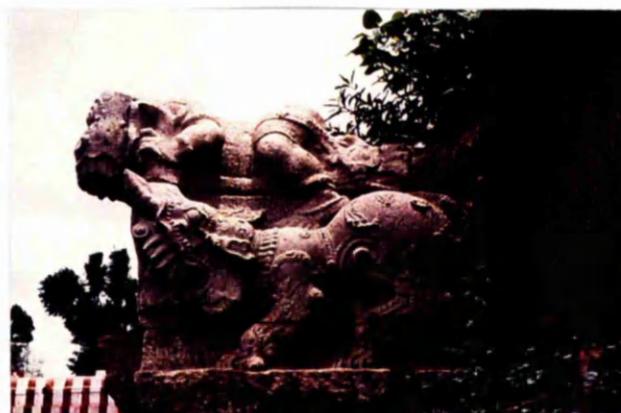
85 Konarak, *praṇāli* in the shape of a crocodile at the Māyādevī Temple.



86 Patan, water spout in *makara*-shape with other animals emerging from its mouth in the Manga Hiṭī.



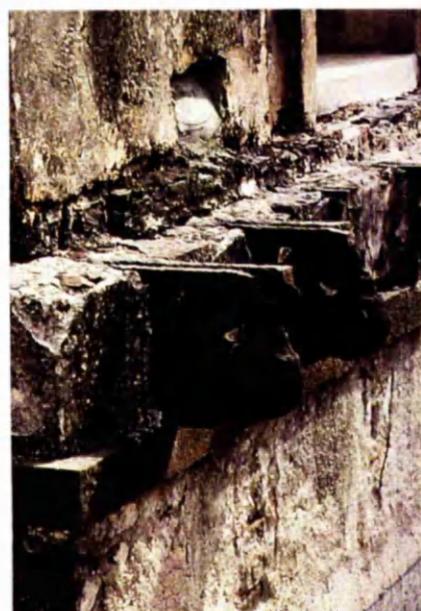
87  
Madurai, fierce water spout  
in the Hema Puṣkariṇi.



88, 89 Madurai, monstrous creatures as water spouts in the Teppakuḷam.



90  
Bhaktapur,  
Bhagīratha under a  
water spout.



91  
Kumatgi,  
water spouts in the  
shape of birds.



92 Siddhpur, geese carvings in the Bindu Sarovar.



93 Chandragiri, *hamsa* carvings in one of the Rānī Mahal tanks.



94 Orchha, a painted stone in the Betwa River is venerated as river god.



95 Shesh Narayan, an image of Sūrya submerged in the waters of a tank.



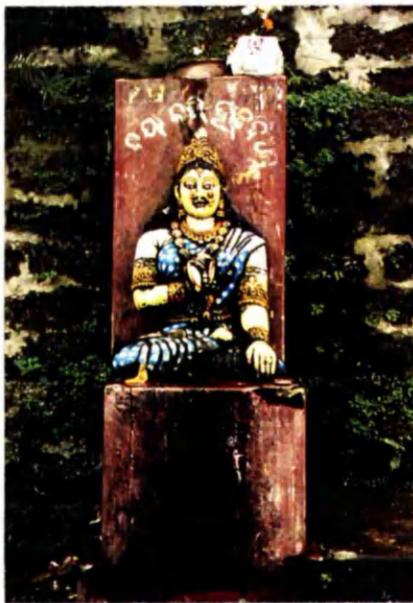
96 Kalinjar Fort, large image of Kāl Bhairava 'emerging' from the waters of a tank.



97 Ellora, image of Yamunā in the temple of the River Goddesses.



98, 99  
Patan (Nepal),  
images of the river goddesses  
Gaṅgā and Yamunā flank the en-  
trance to a shrine in the royal  
palace.



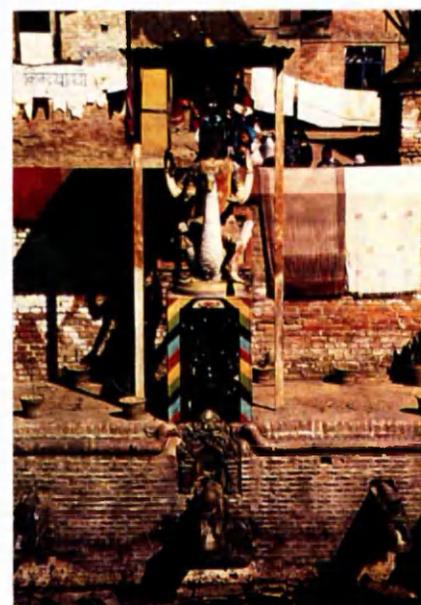
100  
Puri,  
image of Gaṅgā at the tank of  
the Mārkaṇḍeśvara Temple.



101  
Benares,  
image of Gaṅgā in a small  
shrine near the Ganges.



102  
Brahmagiri,  
image of the goddess Godāvārī  
at the source of the river.

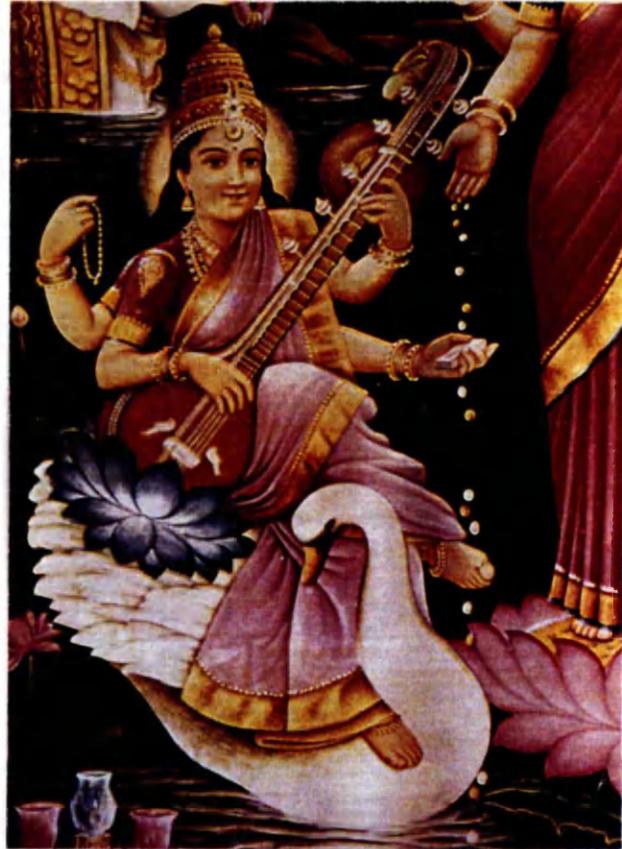


103  
Patan (Nepal),  
large sculpture of Sarasvatī  
in Chyāsal Hiṭī.

104 Goddess Sarasvatī with peacock.



105 Sarasvatī on a goose.



106, 107 Goddess Sarasvatī with peacock and goose.





108 Vidisha, image of Gaṅgā on her *makara* from the Bija Maṅḍal Mandir.



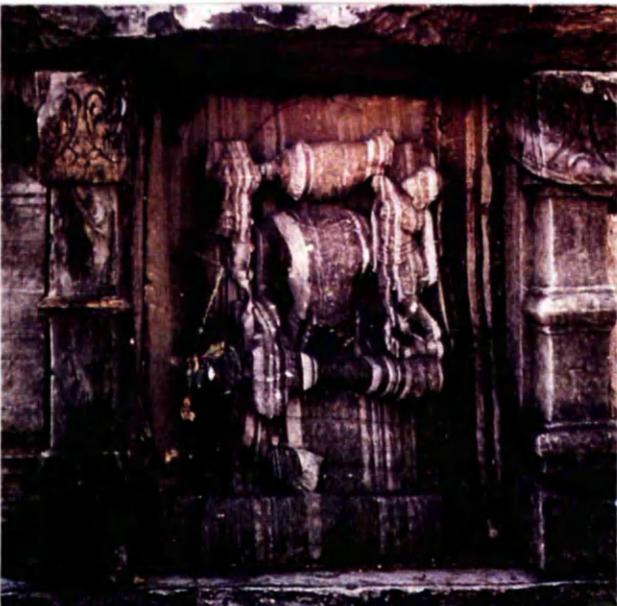
109 Patan (Nepal), *ṭuṭe-dhārā* painted with images of Sarasvatī and Yamunā.



110 Khware, Viṣṇu in his fish *avatāra*.



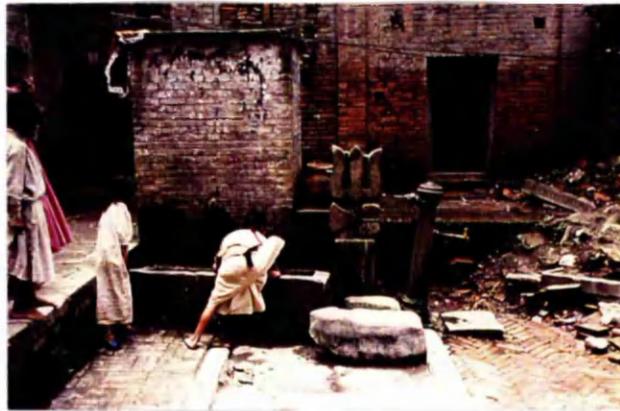
111 Tirukkalukundram, Viṣṇu as *kūrma* in the Śrī Vedagiriśvara Temple.



112 Chitorgarh, Varāha in the Chāttran Tālāo.



113 Patan (Nepal), Viṣṇu with attendants in a local *dhārā*.



114 Bhaktapur, Śiva's *trisūla* next to a *tuṭe-dhārā* with water trough.



115 Patan (Nepal), *śiva-liṅga* in the centre of the Konti Hiṭi.



116 Patan (Nepal), Buddhist stupa in the centre of the Misā Hiṭi.



117 Chitorgarh (village), Sūrya in the Kukadeśvara Kuṇḍ.

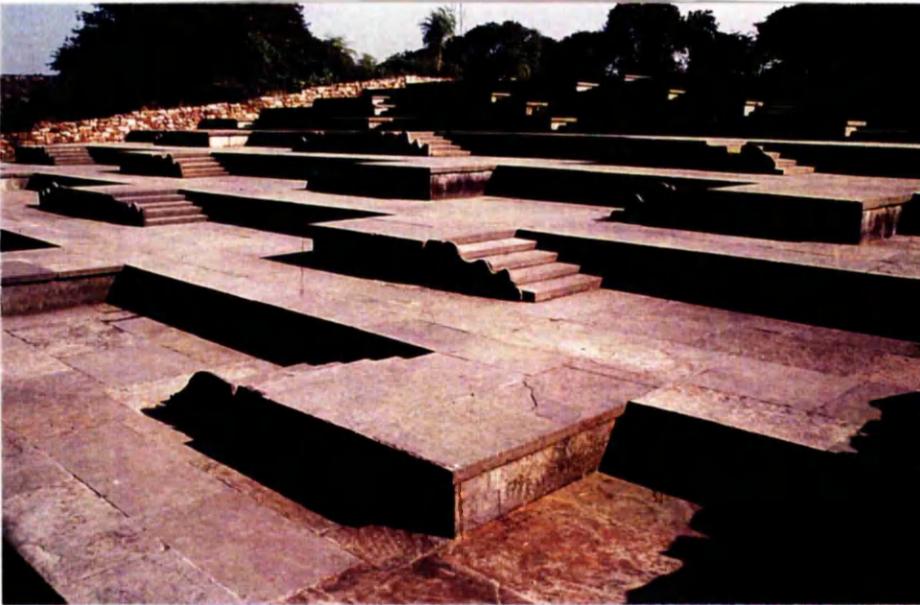


118 Nala, Sūrya on his chariot in the *dhārā* at the Bhagavati Temple.

Chapter 3:  
*GHĀṬS*



119  
Pashupatinath



120  
Nagarjunakonda,  
bathing *ghāṭs* at the  
Puṣ̥pabhadrasvāmin  
Temple.



121  
Mamallapuram,  
*ghāṭs* at the Shore Temple.



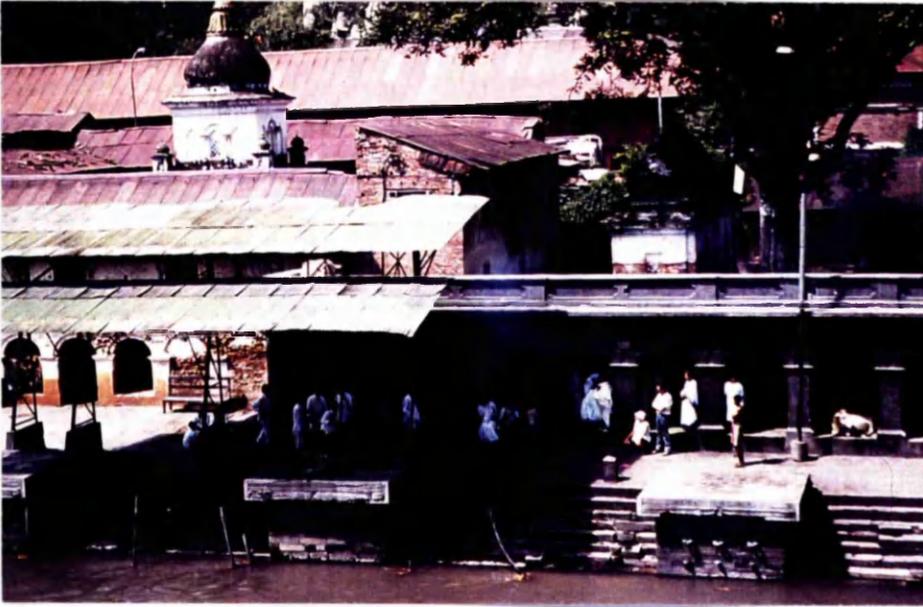
122  
Hardwar,  
bathing and purification  
rituals at Hari-ki-Pairi  
Ghāt.



123  
Hardwar,  
evening *āratī* at  
Hari-ki-Pairi Ghāt.



124  
Benares,  
Sarasvatī Festival at  
Daśāśvamedha Ghāt.

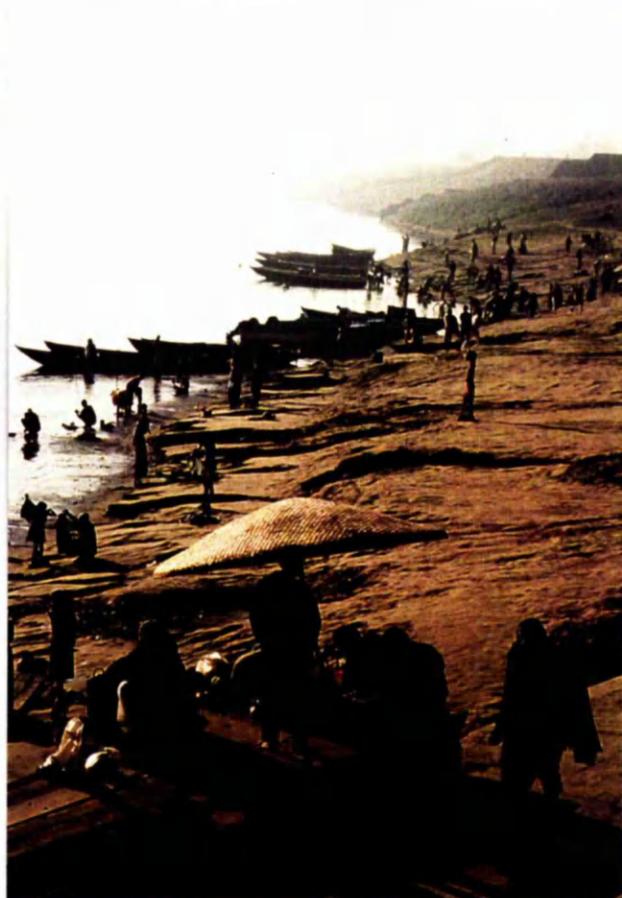


125  
Pashupatinath,  
cremation at  
Bhasmeśvar Ghāt.

126 Gomukh, the source of the Ganges.



127 Benares, Assī Ghāt,  
the southernmost *ghāt* at Benares.





128  
Rameshwaram,  
Agni Tirtha.



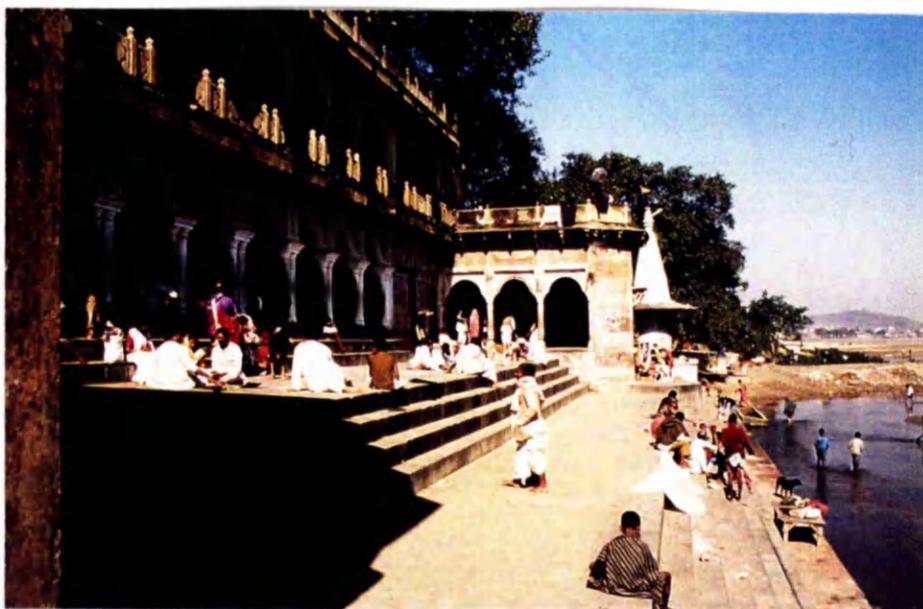
129  
Hardwar,  
modern constructions at  
Brahmā Kuṇḍa.



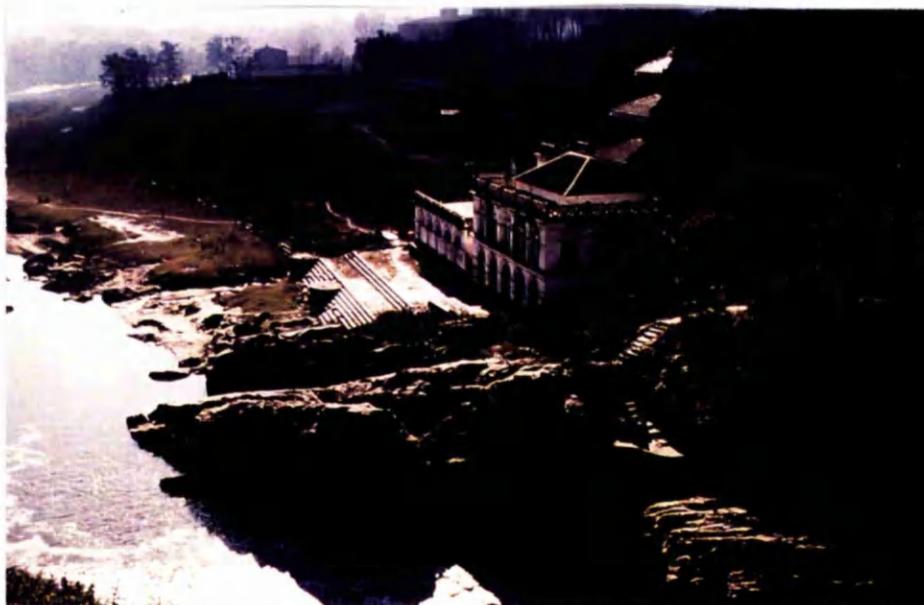
130  
Rishikesh,  
Trivenī Ghāt.



131  
Kumbakonam,  
*ghāṭ* at the Kaveri.



132  
Gaya,  
*ghāṭ* at the Viṣṇupāda  
Temple.



133  
Chobar,  
Jal Vināyaka Temple  
and *ghāṭs*.



134  
Ghazipur,  
*ghāt*-ramp with  
intermediate terraces.



135  
Pandharpur,  
*ghāt*-ramps at shallow  
river bed.



136  
Kankroli,  
Rājasamand Lake.



137  
Eklingji,  
Indra Lake.



138  
Benares,  
Bāljī Ghāt and  
Pañcagaṅgā Ghāt with  
Ālamgīr Mosque.



139  
Bithur,  
Pata Ghāt.



140 Vrindavan, palaces at Keśi Ghāt.



141 Pashupatinath, arcading and royal cremation platform at Ārya Ghāt.



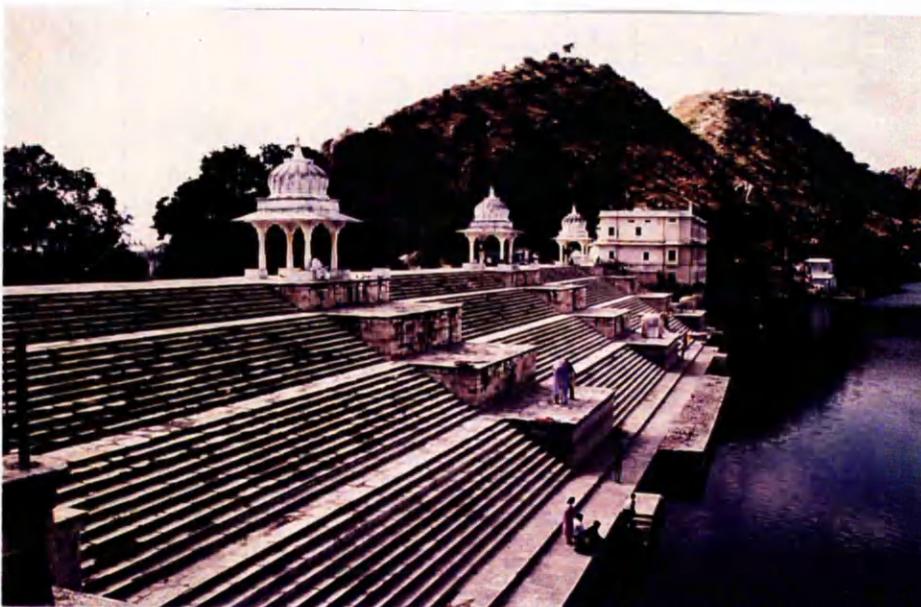
142  
Bithur,  
Chāpā Ghāt.



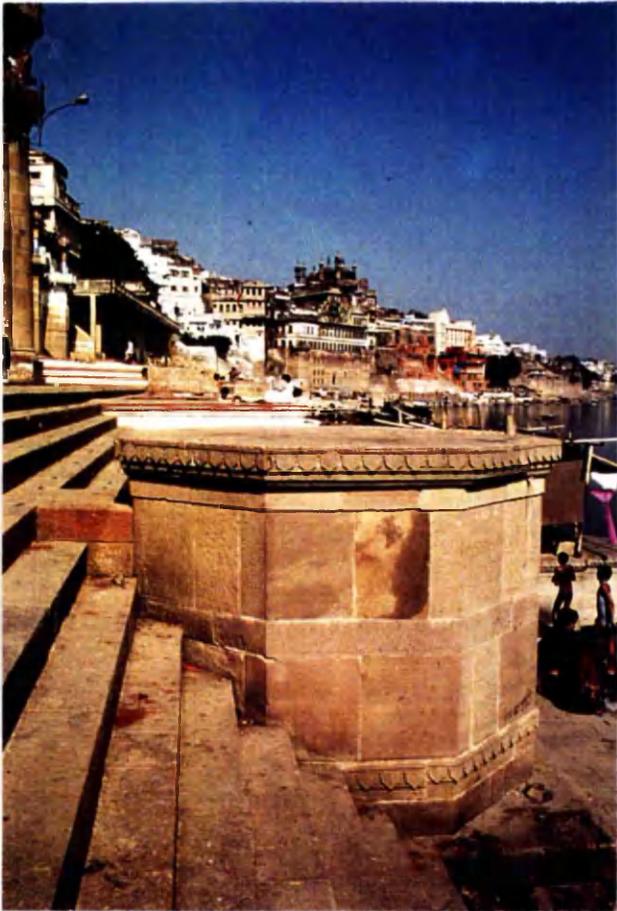
143  
Pushkar,  
*ghāt* bays on the eastern  
side of the lake.



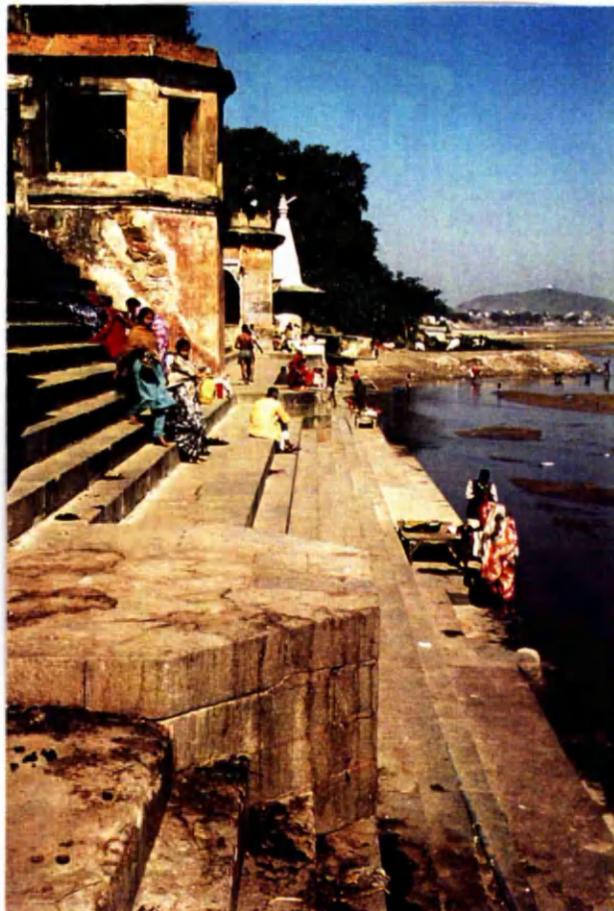
144  
Bithur,  
Bārahdari Ghāt.



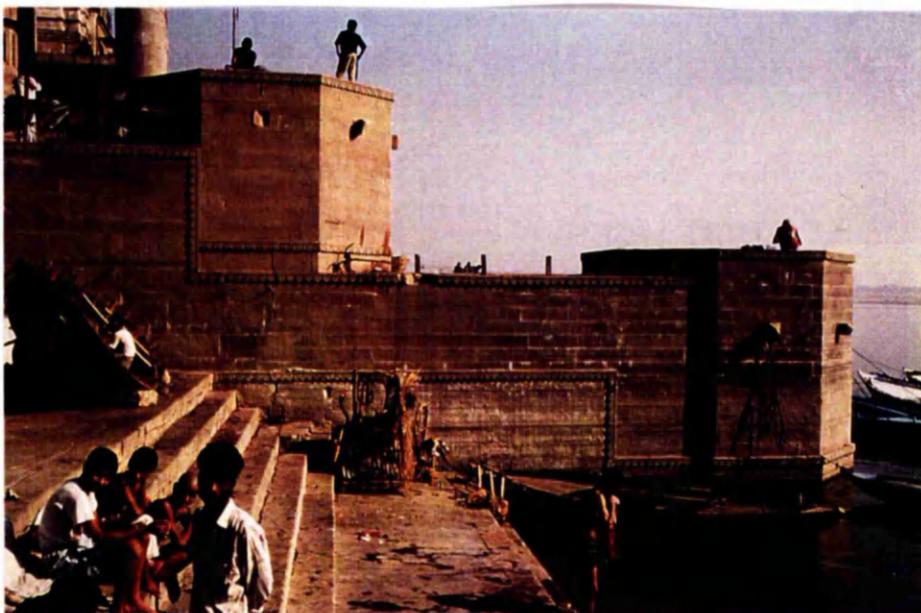
145  
Jaisamand,  
Jaisamand Lake.



146 Benares, octagonal bastion-platforms at Bhojśalā Ghāt.



147 Gaya, platforms in the shape of half an octagon at the Viṣṇupāda Temple Ghāt.



148 Benares, narrowly spaced platforms at Rāṇa Mān Ghāt.



149  
Benares,  
corner platforms at Rāja  
Ghāt.



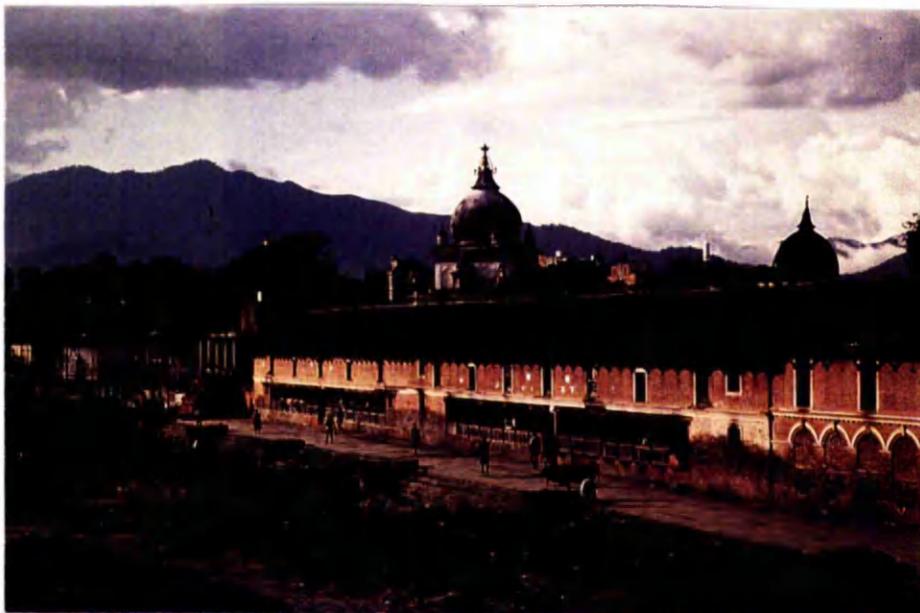
150  
Pandharpur,  
scattered stone  
platforms in the river  
bed.



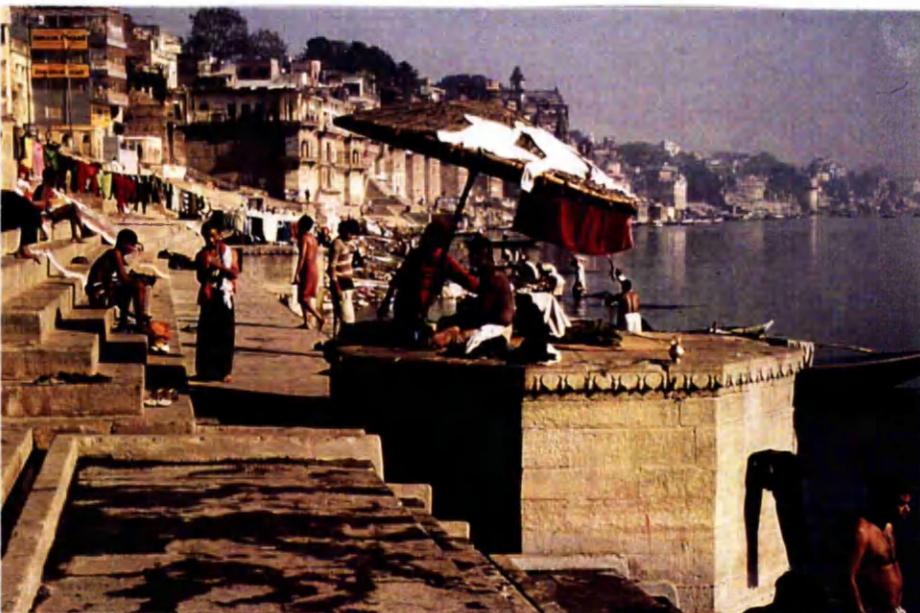
151  
Dwarka,  
ocean *ghāts* with  
square platforms and  
shrines.



152  
Pushkar,  
rectangular platforms,  
one carrying a shrine.



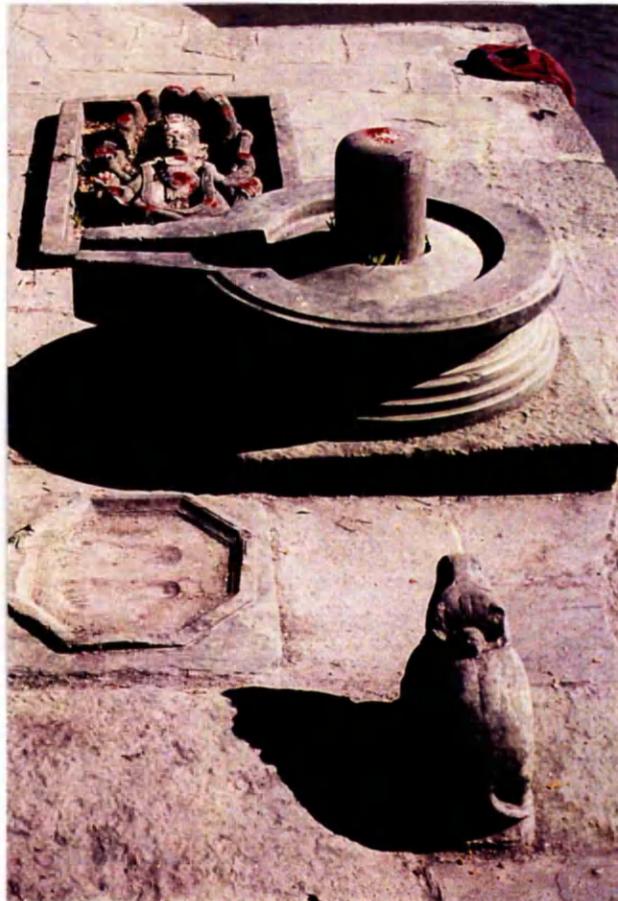
153  
Kathmandu,  
circular platforms at  
Ṭeku Maśān.



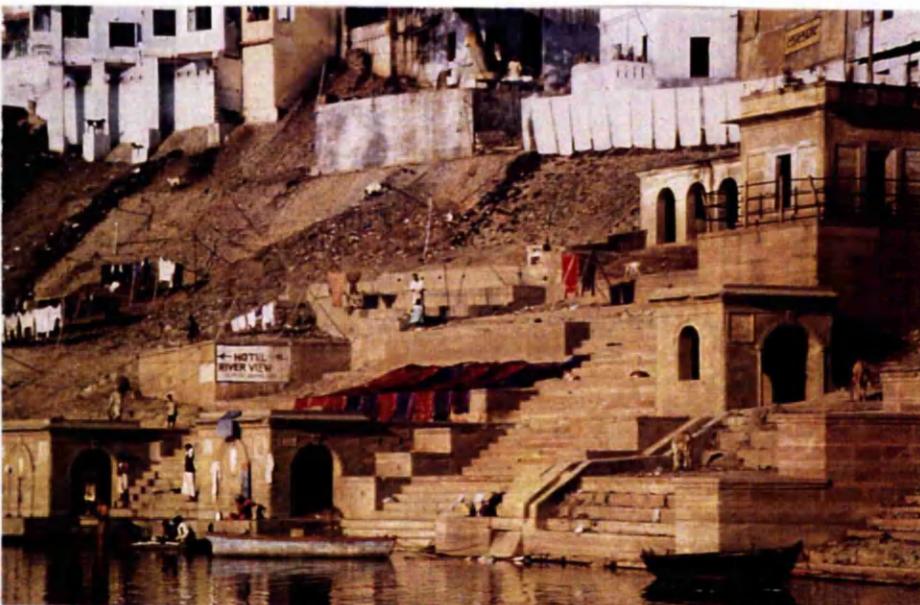
154  
Benares,  
pilgrimage priest at  
work on his platform at  
Rāja Ghāt.



155 Benares, shrine in a platform at Pañcagaṅgā Ghāt.



156 Pashupatinath, *śiva-linga*, Nandi, Viṣṇu Nārāyaṇa and *viṣṇu-pāda* at Bhasmeśvar Ghāt.



157 Benares, shrines in platforms at Lāl Ghāt.



158  
Benares,  
*śiva-līngas* at Gāy Ghāt.



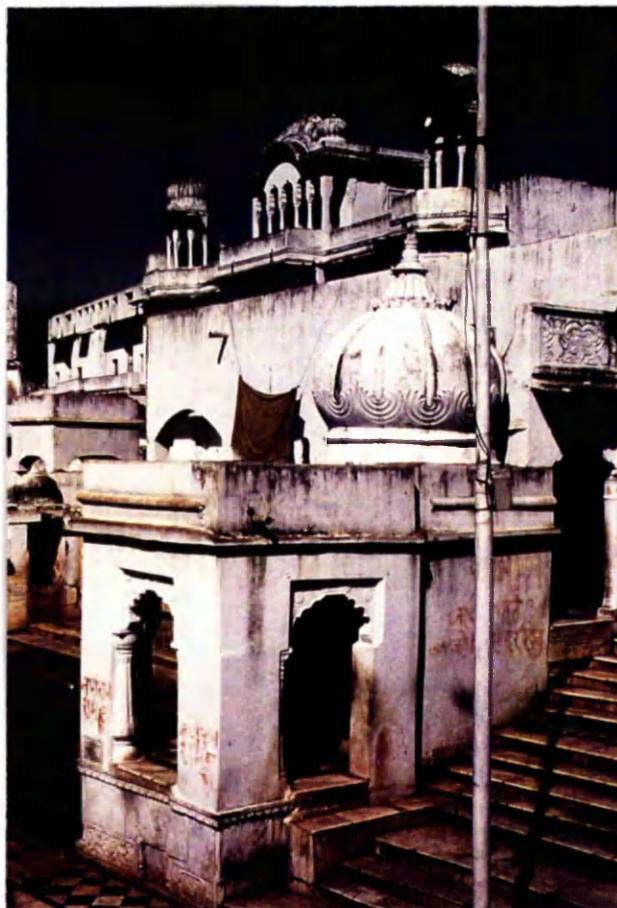
159  
Benares,  
*līnga* raised on triple  
platforms at Karṇātaka  
State Ghāt.



160  
Pashupatinath,  
Viṣṇu Nārāyaṇa on  
platform at  
Rājarājeśvari Ghāt.



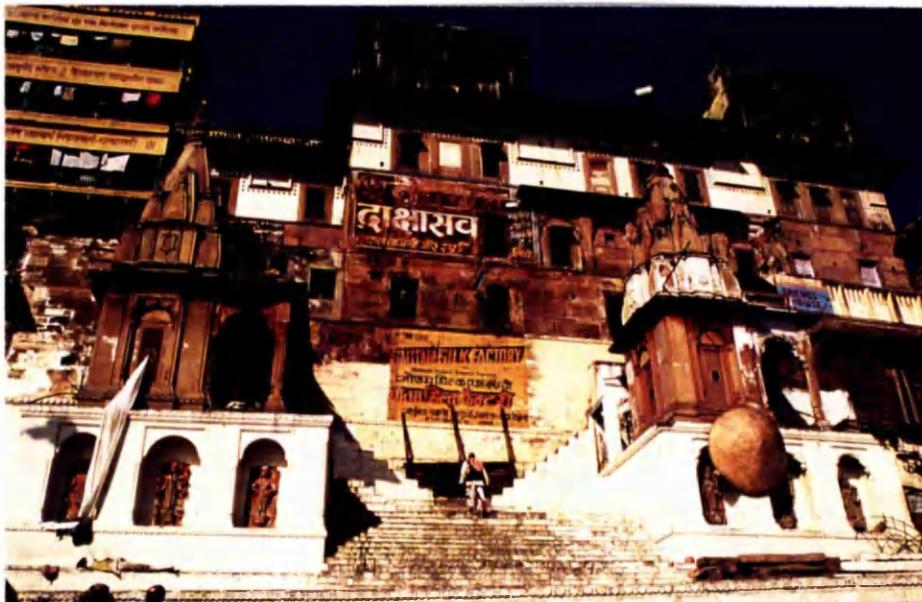
161 Patan (Nepal), death stone at Śaṃkhamūla Ghāt.



162 Pushkar, small temple built over an image on the *ghāt*.



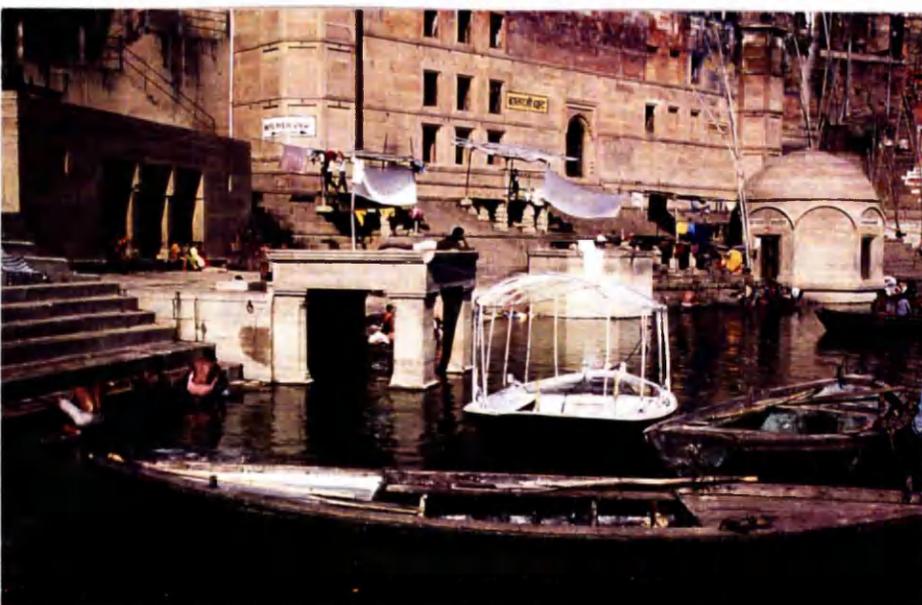
163 Panauti, death stones at Khware.



164  
Benares,  
temples on platforms at  
Indore State Ghāt.



165  
Benares,  
Pañcagaṅgā Ghāt with  
small cells.



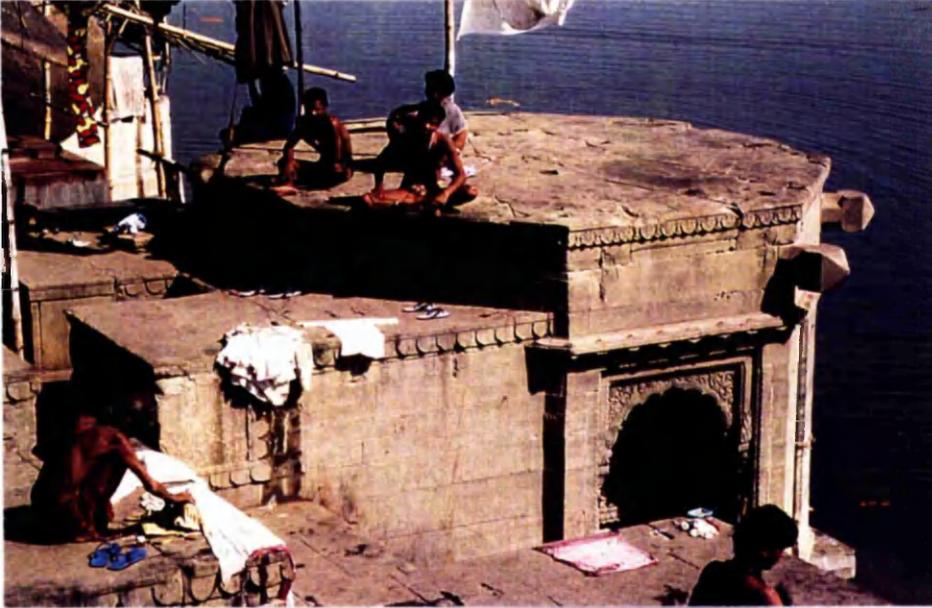
166  
Benares,  
Jatāra Ghāt.



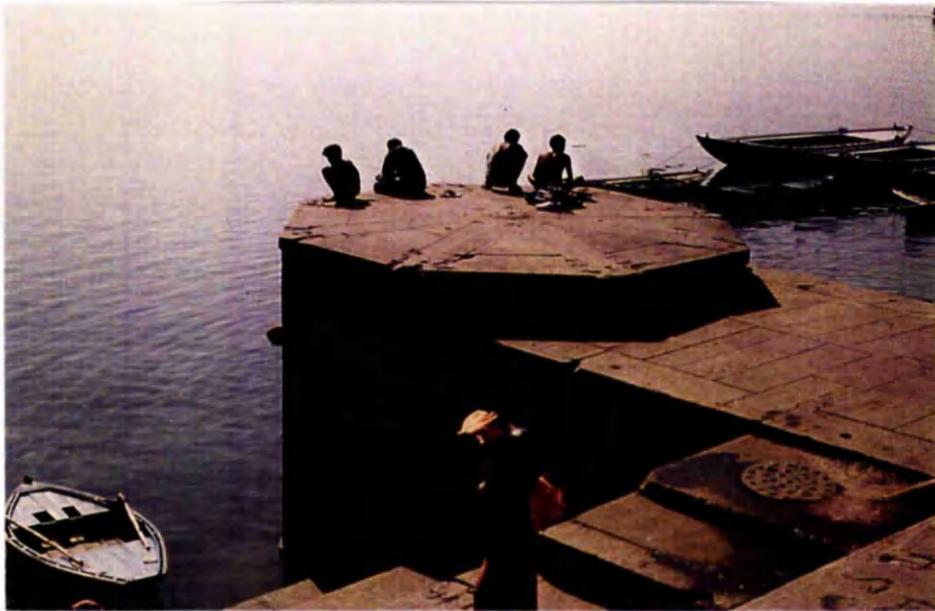
167  
Pandharpur,  
pilgrims visiting the temples in the river by boat.



168  
Pandharpur,  
temples and pavilions  
on platforms in the river  
bed.

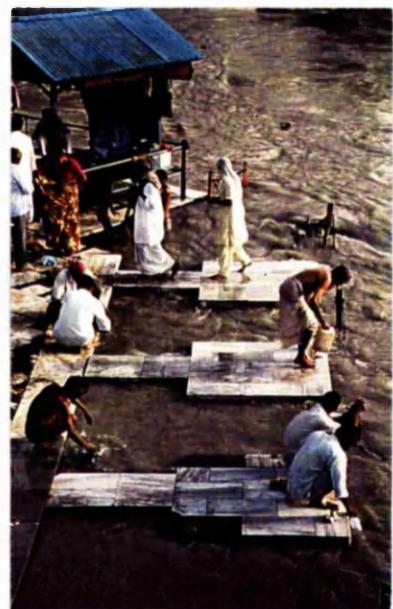


169  
Benares,  
shrine in the side of a  
*ghāt*-platform just of  
Maṅikarnikā Ghāt.



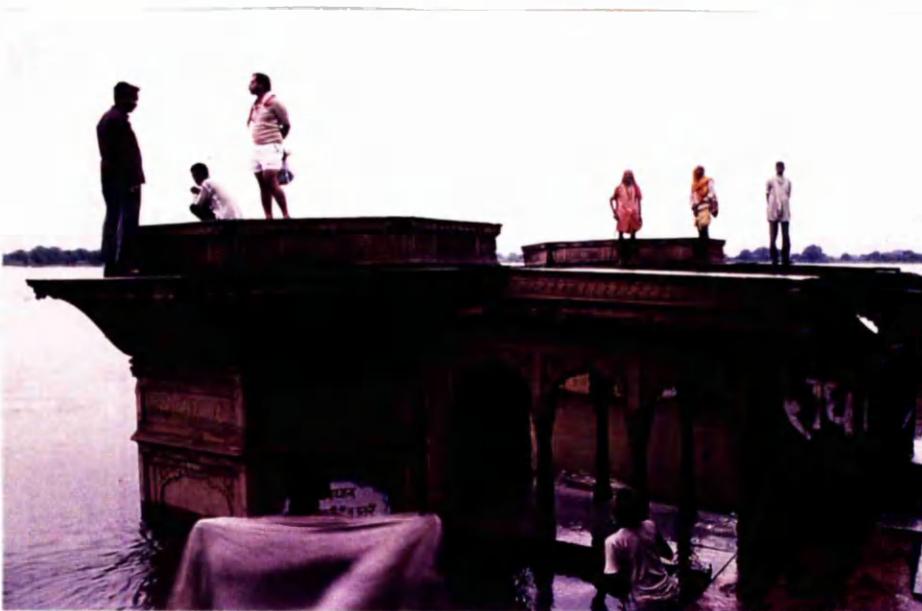
170  
Benares,  
bastion-platform  
continuing behind as a  
wall at Rāṇa Mān Ghāt.

171, 172  
row of platforms with  
short bridges at Mīr  
Ghāt (Benares), and  
modern imitations at  
Hari-kī-Paiṛī Ghāt  
(Hardwar).

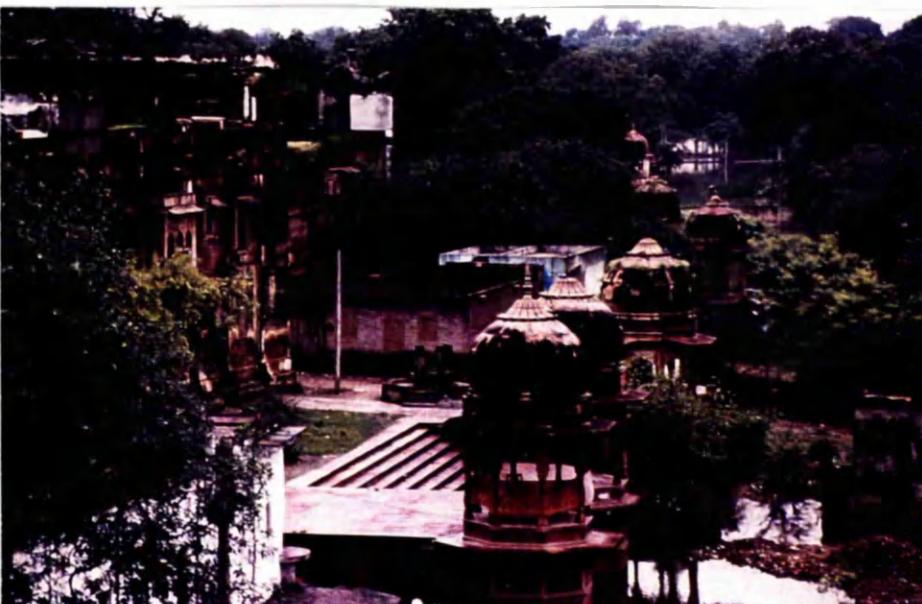




173  
Mathura,  
bastion with bridge south  
of Bangāli Ghāt.



174  
Vrindavan,  
a more playful version of  
bridge and bastion at  
Keśi Ghāt.

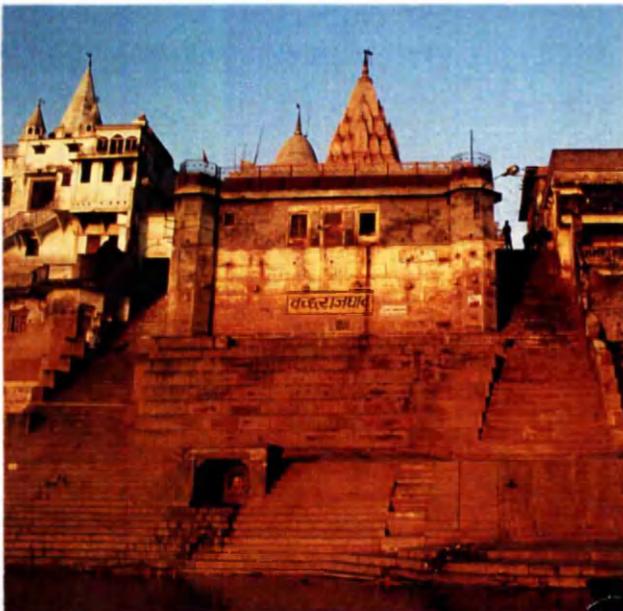


175  
Vrindavan,  
bridges each leading to  
two platforms with  
pavilions at Kaliyā Ghāt.

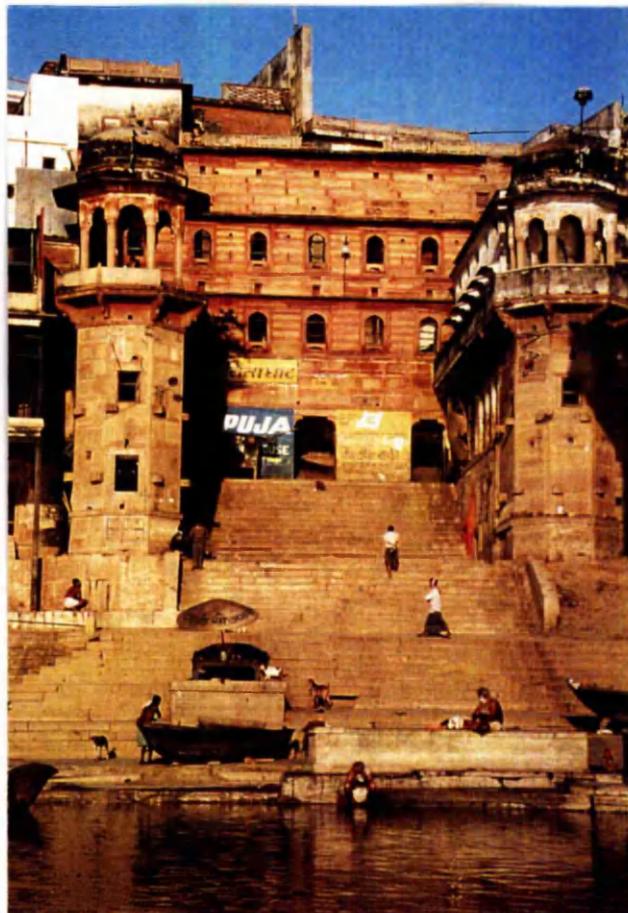


176  
Mathura,  
platform with bridge  
entirely covered by a  
temple with porch.

177 Benares, large platform with bastions  
carrying a temple at Vācdharāj Ghāṭ.



178 Benares, bastion towers at recessing  
building blocks at Lalitā Ghāṭ.





179  
Benares,  
Gaṅgāmahal Ghāt and  
Bhoṃṣalā Ghāt.



180  
Benares,  
bastion-like elements in  
the façades of Digpatiyā  
and Rāṇa Mān Ghāts.



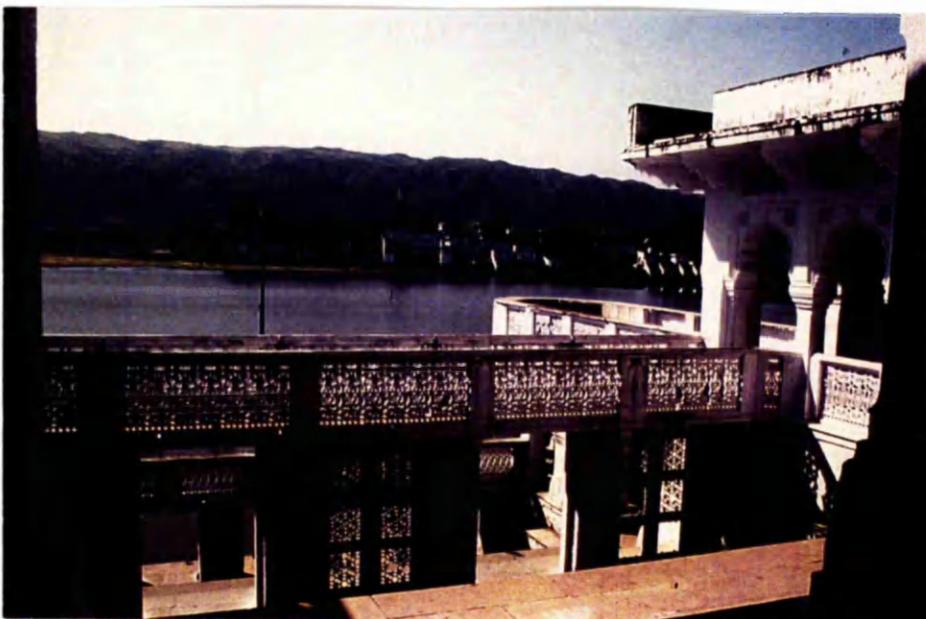
181  
Benares,  
emphasis on the vertical  
in the Brij Rāma Palace  
at Rāṇa Mān Ghāt.



182  
Pushkar,  
bastion-like elements in  
the façades at the lake.



183  
Bithur,  
Brahmā Ghāṭ with long  
flying walkway.



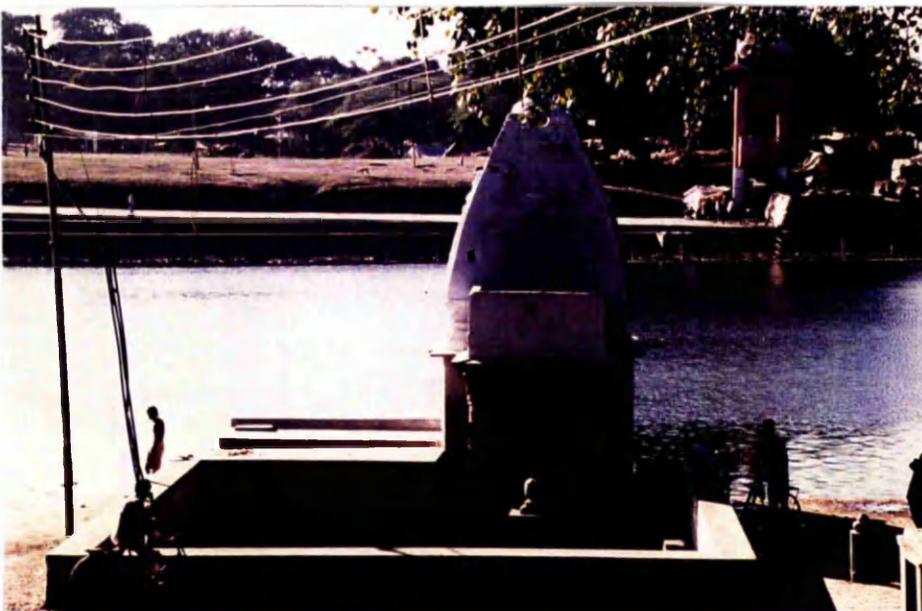
184  
Pushkar,  
two bridges run parallel  
to the *ghāṭ*.



185  
Benares,  
Gaurī Kuṇḍa next to the  
Ganges at Kedār Ghāṭ.



186  
Benares,  
Maṇikarnikā Kuṇḍa at  
Maṇikarnikā Ghāṭ.



187  
Ujjain,  
Śiva temple with basin at  
Rām Ghāṭ.



188  
Kankroli,  
deep well-tank built into  
a platform protruding  
into Rājasamand Lake.



189  
Sahasradha,  
a basin for safer bathing  
was built into the forthful  
river.



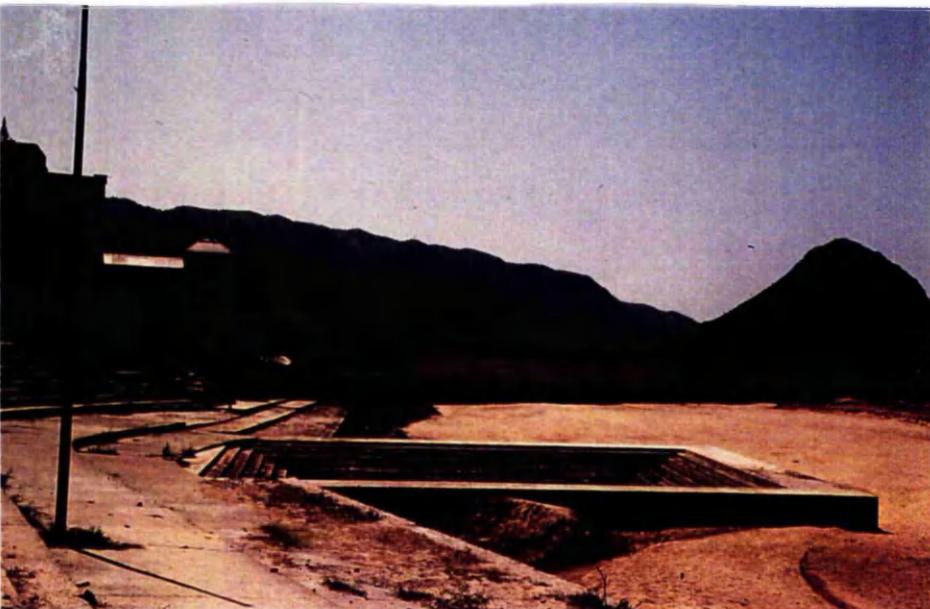
190  
Dakshinkali,  
water spouts for  
purification rituals.



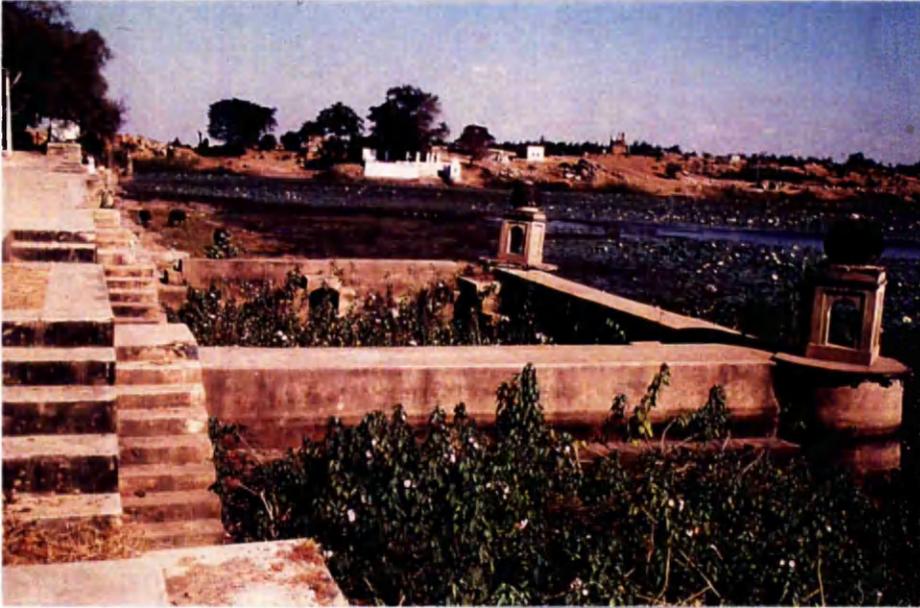
191  
Dhulikhel,  
tanks and spouts next to  
the mountain rivulet at  
the Gaukareśvara  
Mandir.



192  
Pushkar,  
basins constructed in  
Puşkar Lake.



193  
Pushkar,  
basin in the south of the  
dried up Puşkar Lake.



194  
Datia,  
small compartments built  
into the lake at the cenotaphs of the local rulers.



195  
Hardwar,  
Brahmā Kuṇḍa and is-  
land with clock tower.



196  
Nasik,  
Rām Kuṇḍa, a small  
protected part of the  
Godavari.



197  
Nasik,  
concrete bridges create  
basins and provide more  
space for bathing.



198  
Amarkantak,  
three compartments dam  
the Narmada at its source.

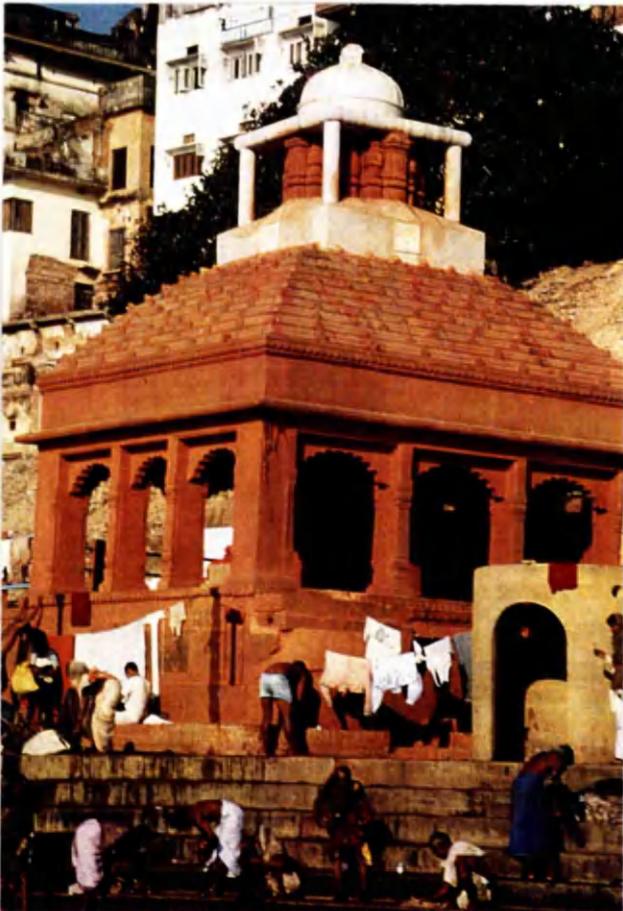


199  
Ujjain,  
Sipra River divided into  
compartments in front of  
the Kāliyādeh Mahal.



200  
Ujjain,  
compartments with islands  
and pavilions in the Sipra.

201 Benares, at high water level the roof of the Śrī Motilāl Voḍhā Temple becomes a 'floating *ghāt*'.



202 Pandharpur, square pyramidal block of  
*ghāts* in the middle of the river.



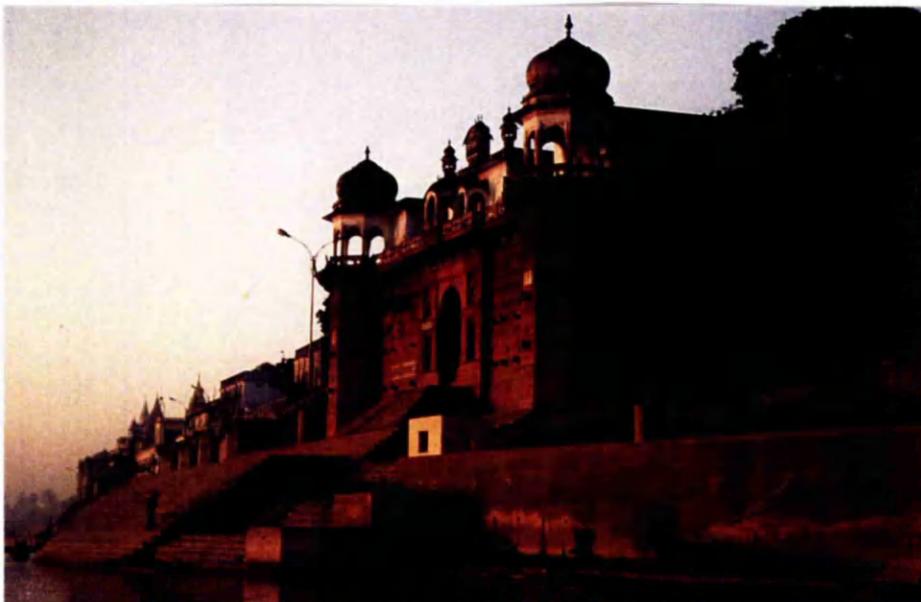
203 Besnagar, a row of three *ghāt*-blocks  
parallel to an old bridge.



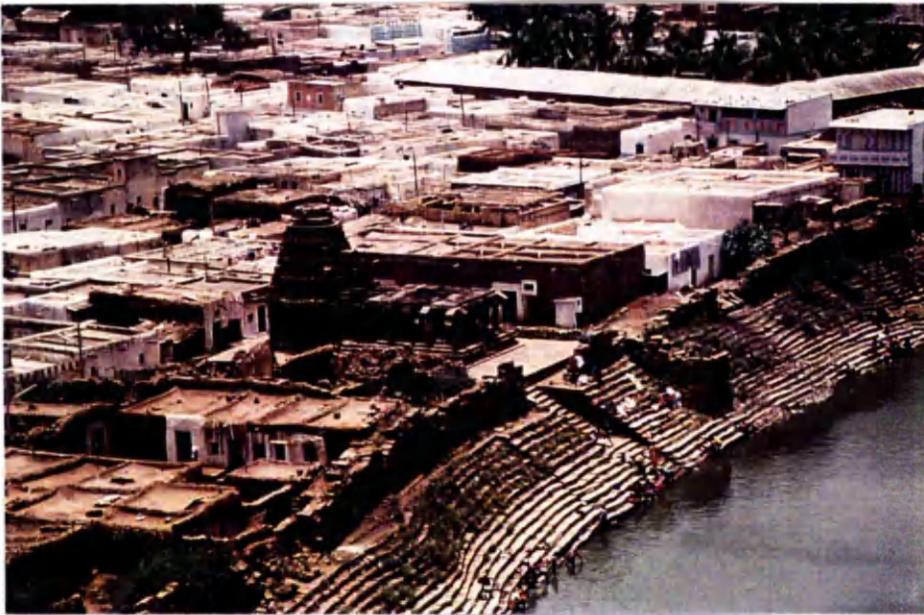
204  
Benares,  
prominent *ghāṭs* at Jānaki  
Ghāt.



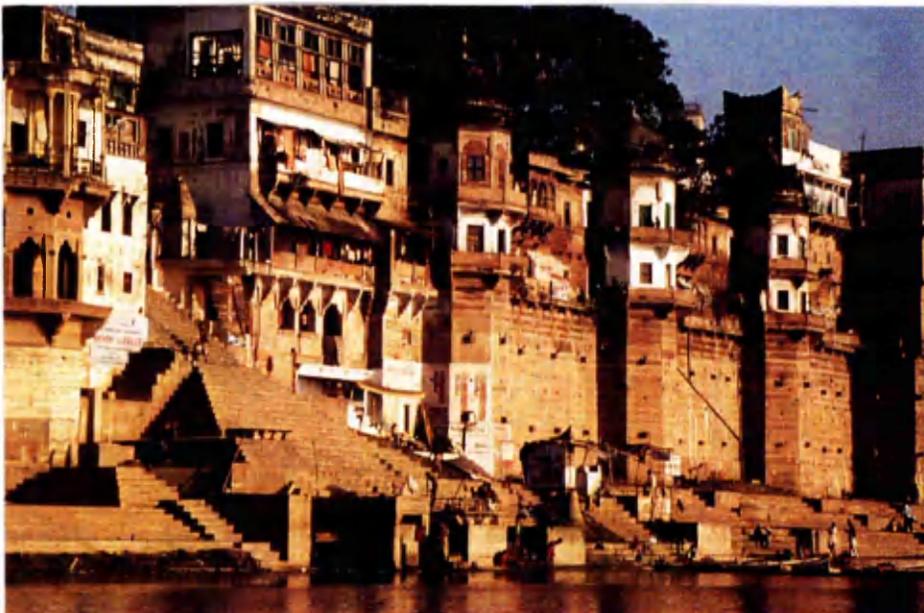
205  
Pushkar,  
narrow lanes cut deeply  
into the houses along the  
*ghāṭ*.



206  
Benares,  
in front of Chet Singh's  
Palace the steps are  
raised above the *ghāṭ*.



207  
Badami,  
pronounced steps in front  
of the Yellamā Temple.



208  
Benares,  
steps fan out into a wide  
triangle at Rāṇa Mān  
Ghāt.

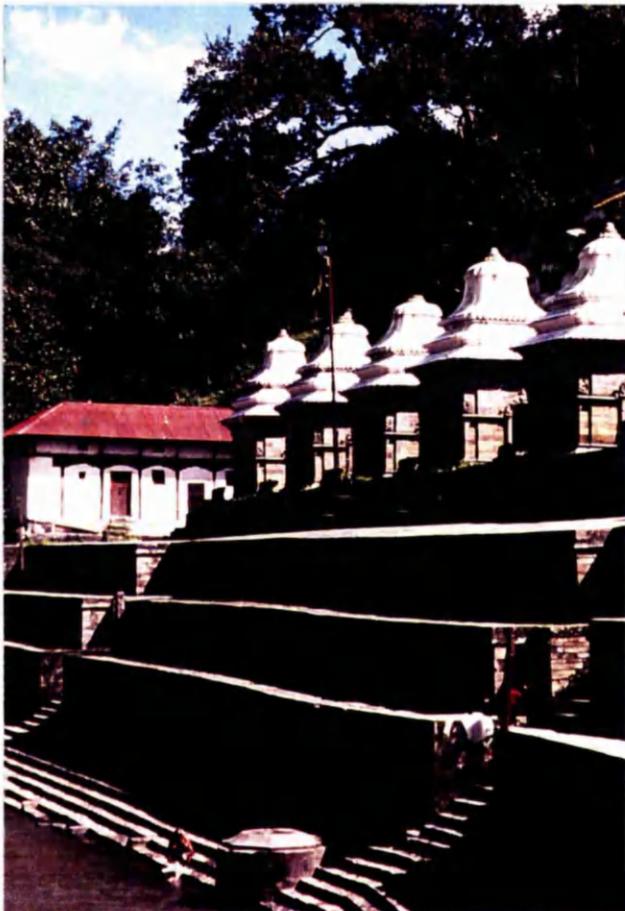


209  
Benares,  
two fan-staircases at  
Pañcagaṅgā Ghāt.

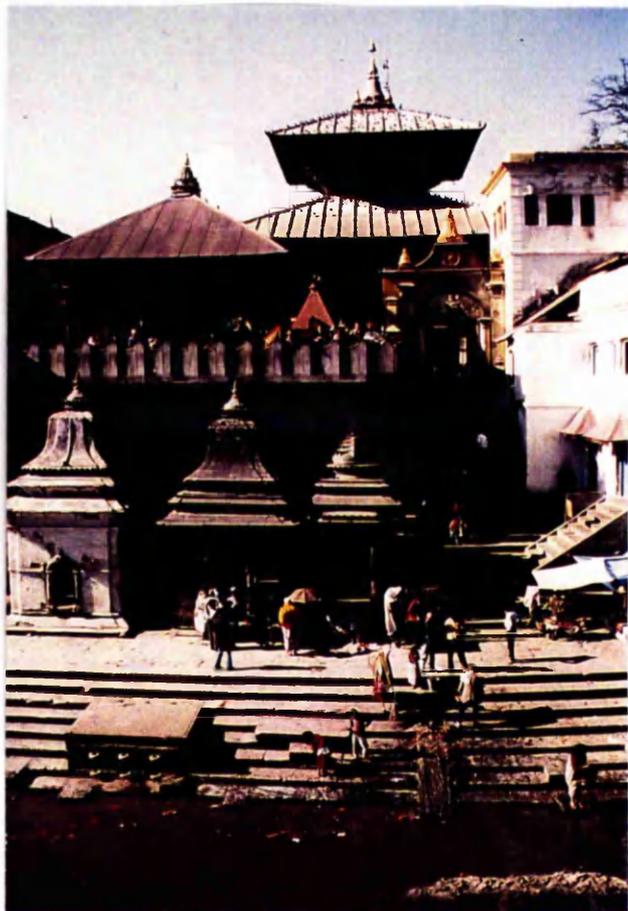


210  
Benares,  
monumental ramps at  
Jaina Ghāt.

211 Pashupatinath, monumental steps  
opposite the Paśupathi Temple.

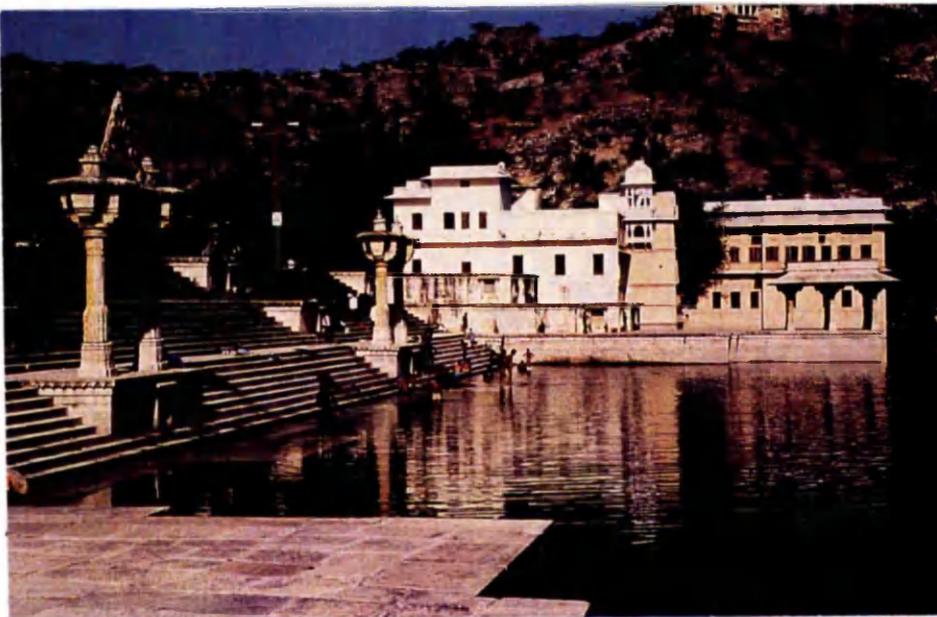


212 Pashupatinath, steep steps lead up to the  
Paśupathi Temple.





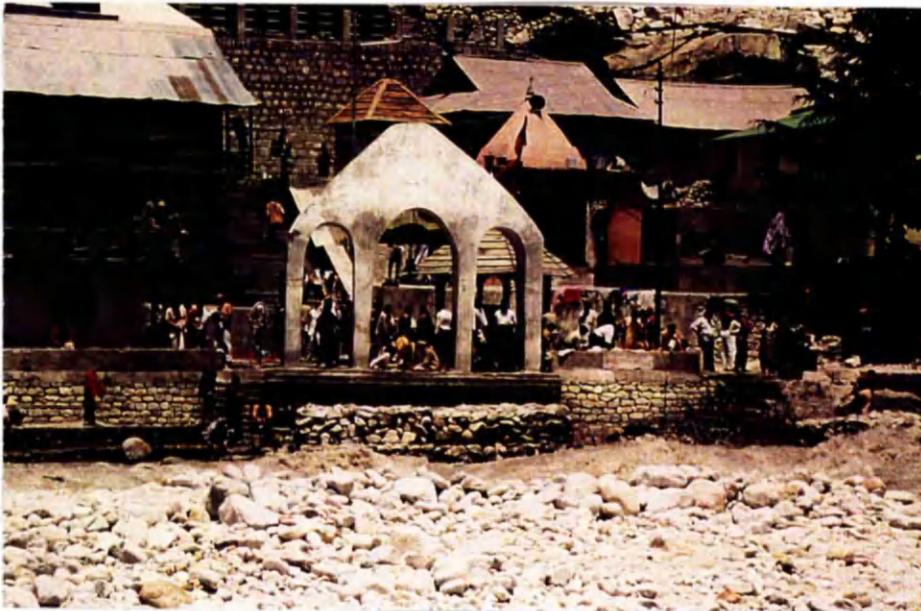
213  
Kalahasti,  
*gopura* facing the river.  
The houses in front are  
modern constructions.



214  
Kankroli,  
Rājasamand Lake with a  
row of *torāṇas* facing the  
lake.



215  
Mathura,  
at Viśrām Ghāṭ five  
gateways were set up  
between a temple and  
the river.



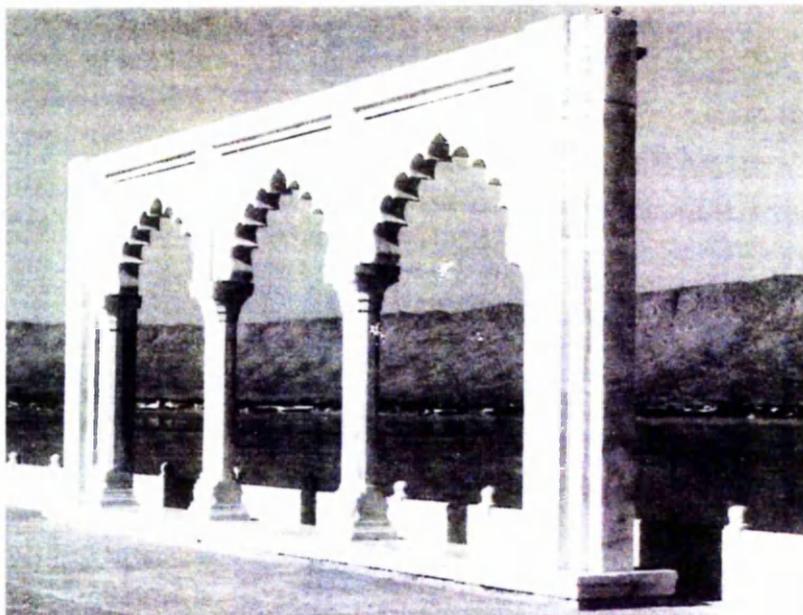
216  
Gangotri,  
triple gateway facing the  
Ganges at the Gaṅgā  
Mandir.



217  
Nagda,  
triple *torāṇa* on a  
platform protruding into  
the lake at the Sās-Bahu  
Temples.

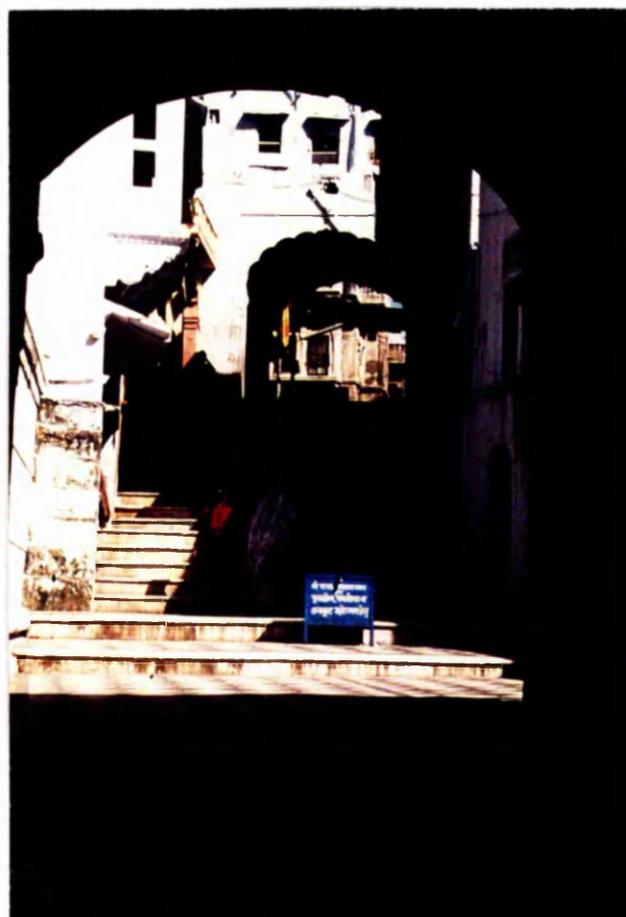


218  
Govardhan,  
symbolic gateway facing  
the Mānsigaṅgā.



219  
Ajmer,  
triple gateway facing the water of  
Ana Sāgar Lake (E.B. Moynihan,  
1980, p. 116).

220 Pushkar, alleyways with bridges connect  
the town with the *ghāṭs*.

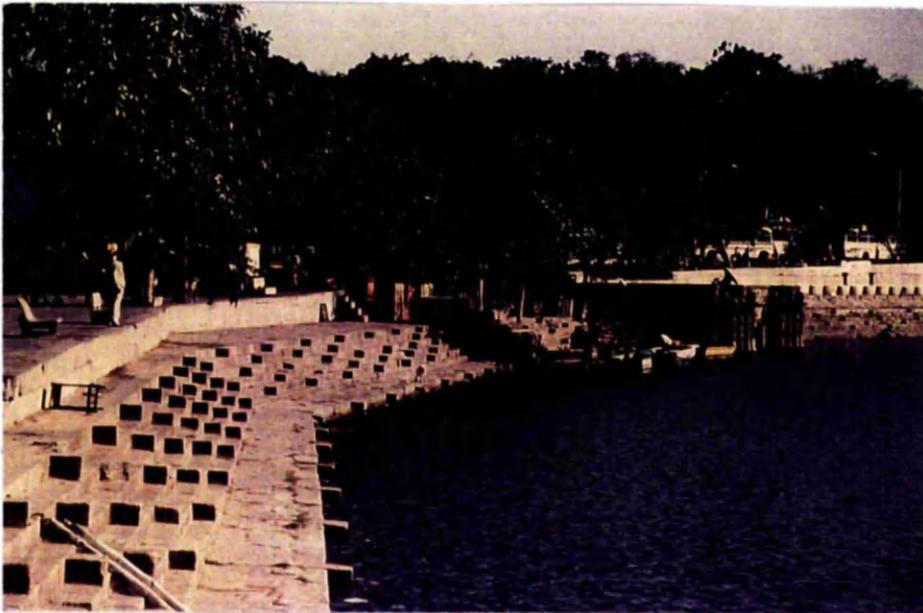


221 Dwarka, gateway-*maṇḍapa* at the  
Rukmiṇī Temple.

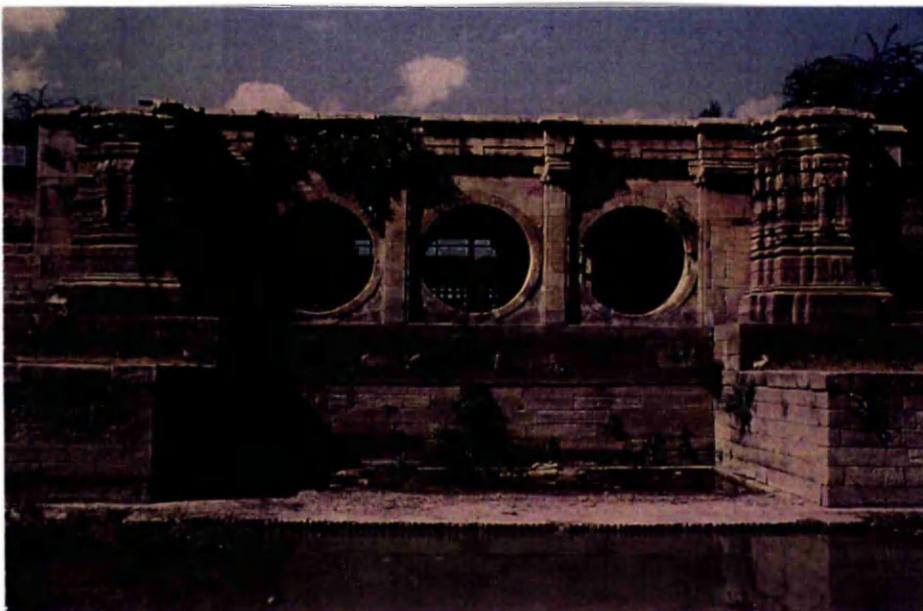


## Chapter 4:

# TANKS



222  
Ahmedabad,  
Kankariya Tank with  
sluice.



223  
Sarkej,  
elaborately carved  
sluice of the tank at the  
Sarkej Rauzā.



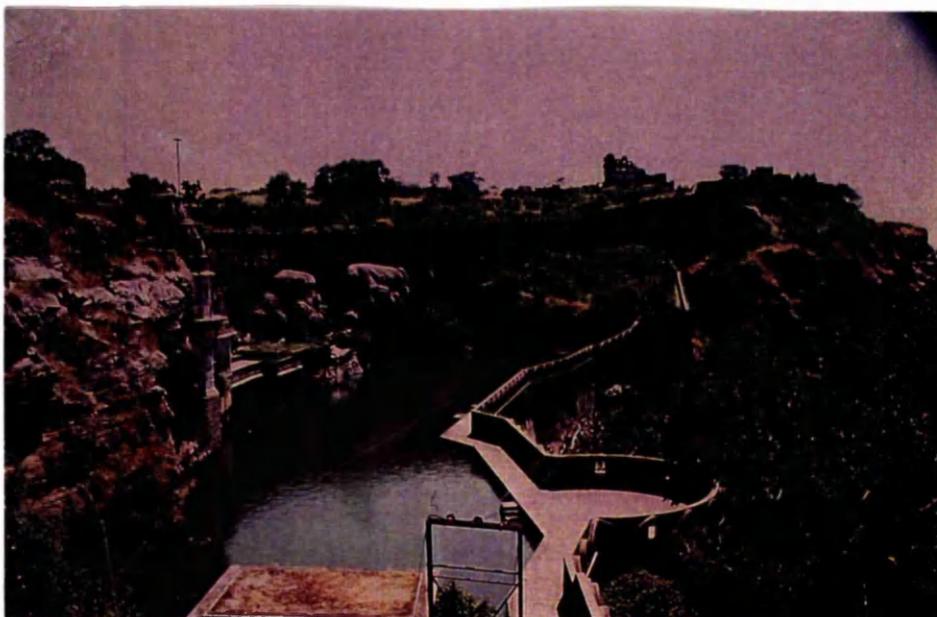
224  
Patan,  
the circular Rudra  
Kūpa.



225  
Hardwar,  
octagonal Bhimgoda  
Tālao with central  
Nandi figure.



226  
Calcutta,  
tank of the baroque  
Śitalnātha Temple.



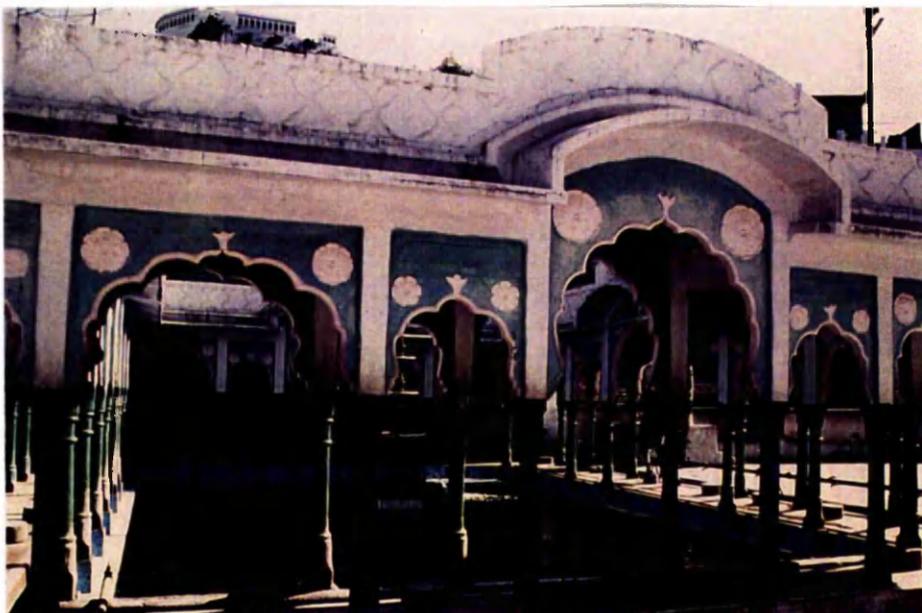
227  
Chitorgarh,  
the irregularly shaped  
Gomukh Kuṇḍ.



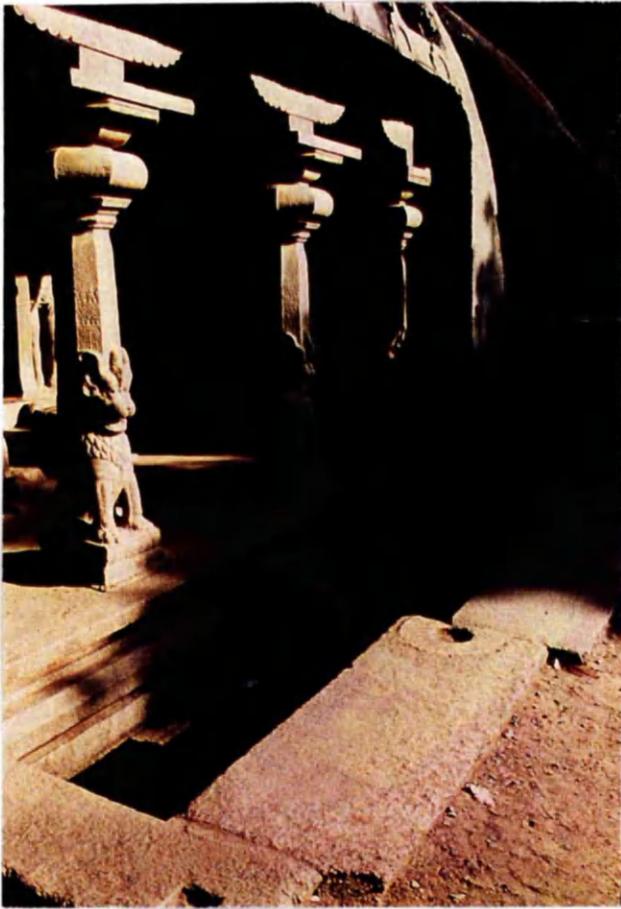
228  
Goindwal,  
Sikh walk-through  
ablution basin at the  
steps leading up to the  
gurdwara.



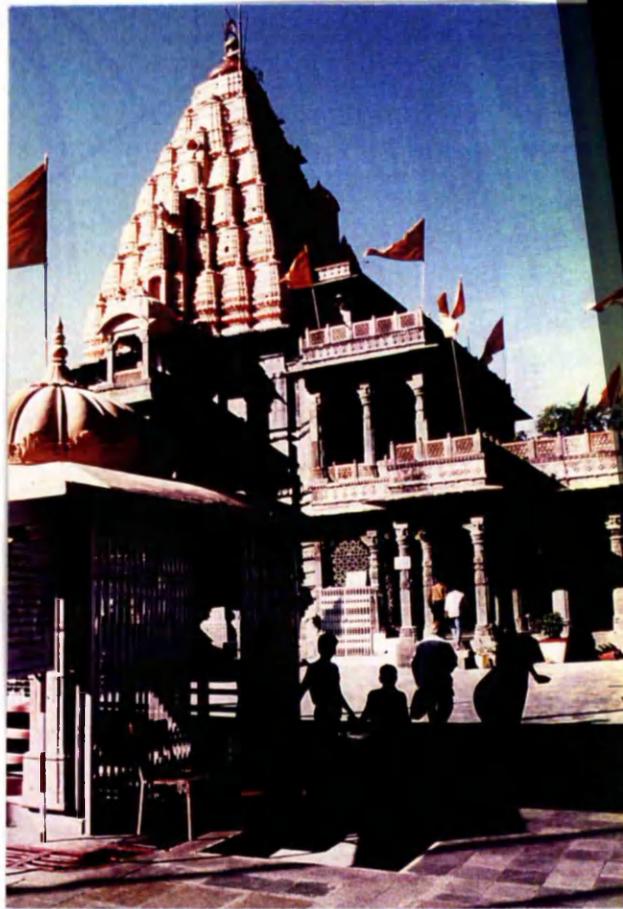
229  
Polonnaruva,  
Buddhist walk-through  
basin at the stairs to the  
Vaṭadāgē Complex.



230  
Ajmer,  
small ablution basin  
with colonnade on four  
sides.



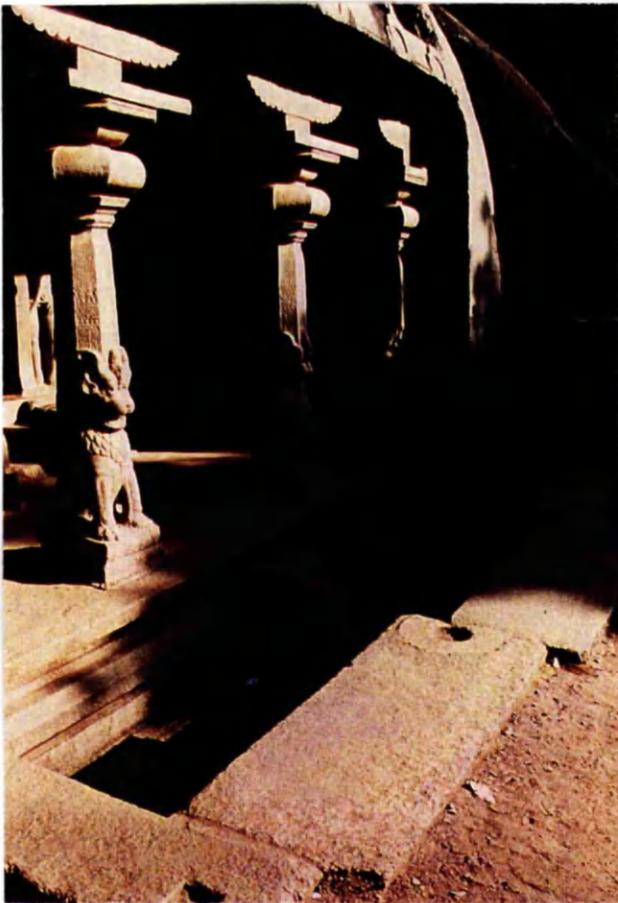
231 Mamallapuram, Hindu walk-through basin in front of the Varāha Cave Temple.



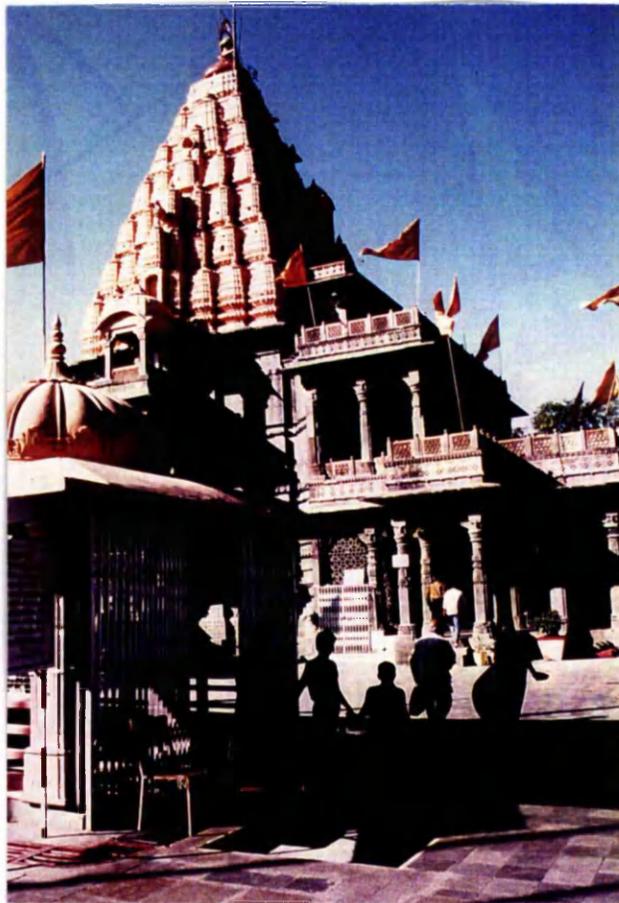
232 Ujjain, walk-through basin in the complex of the Mahākāleśvara Temple.



233  
Ajmer,  
a second ablu-tion tank  
in the Dargāh is com-  
pletely roofed over.



231 Mamallapuram, Hindu walk-through basin in front of the Varāha Cave Temple.



232 Ujjain, walk-through basin in the complex of the Mahākāleśvara Temple.



233 Ajmer, a second ablution tank in the Dargāh is completely roofed over.



234  
Dholka,  
a large platform was  
built into the ablution  
tank of the Jāmi Masjid.



235  
Fatehpur Sikri,  
a well provides access  
to the sacred tank  
underneath the mosque  
courtyard.



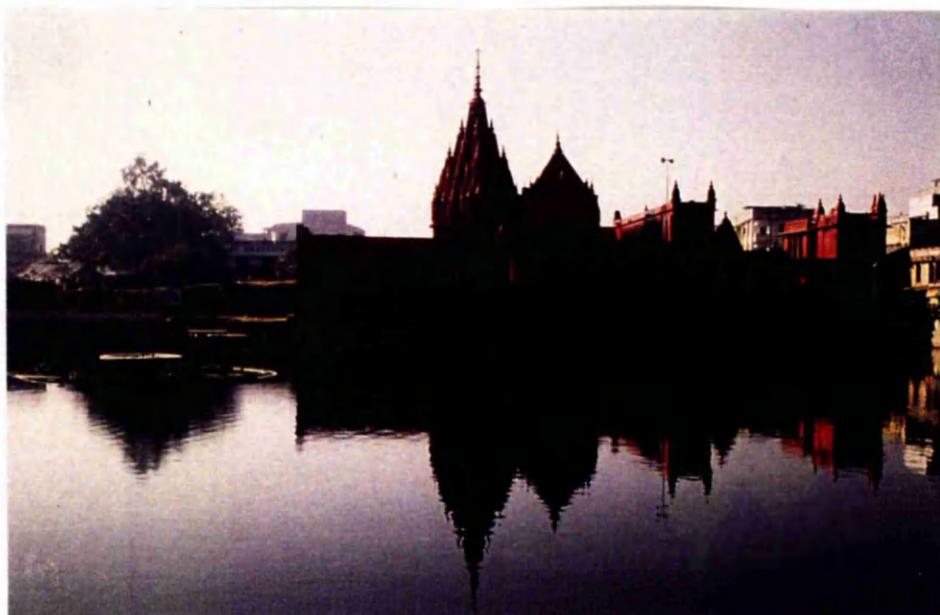
236  
Pandua,  
tank of the Bari Dargah.



237  
Amritsar,  
bathing tank of the  
Bābekṣa Gurdwārā.



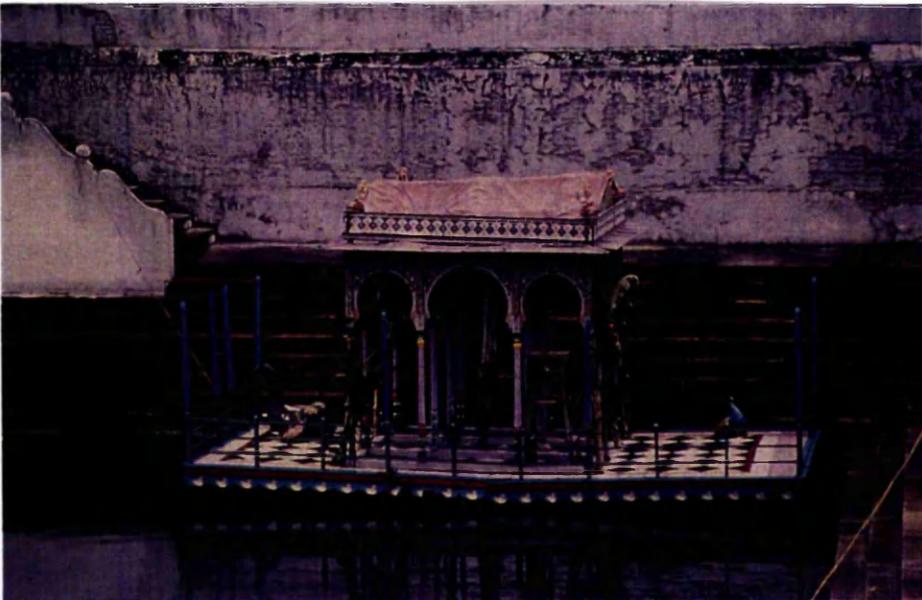
238  
Kumbakonam,  
the Mahāmakham  
bathing tank.



239  
Benares,  
the large tank at the  
Durgā Temple.



240  
Madurai,  
float festival on the  
Teppakulam (photo  
C.P.C. Branfoot).



241  
Vrindavan,  
ceremonial float in the  
Gajendra Mukṣ Kuṇḍa  
of the Śrī Raṅganātha  
Temple.

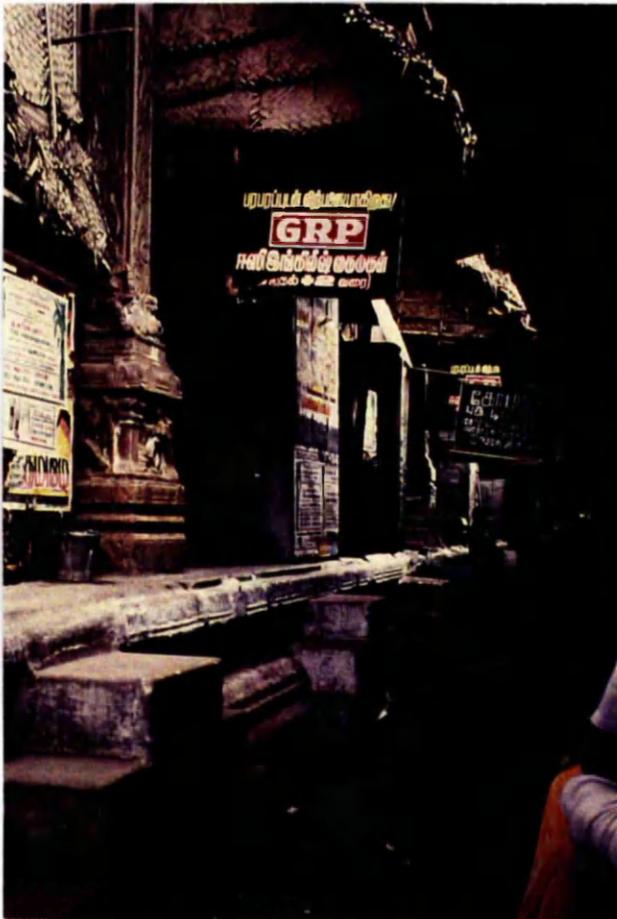


242  
Govardhan,  
lights are placed around  
the Mānsigaṅgā at night  
(D. Anand, 1992,  
p. 132).



243  
Tiruvellarai,  
Vasanta Maṇḍapa.

244 Madurai, Puṣu Maṇḍapa with pyramidal steps.



245 Dig, Keśava Bhavan.

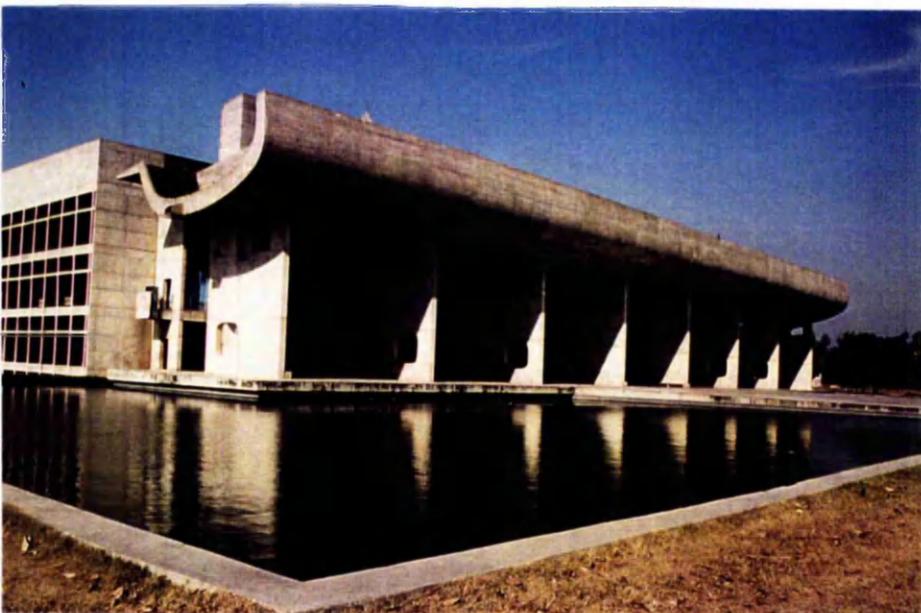




246  
Bundi,  
the City Palace  
overlooking the Naval  
Sāgar.



247  
Calcutta,  
Victoria Memorial Hall  
surrounded by tanks.



248  
Chandigarh,  
water tank in front of  
the Palace of Assembly.



249  
Delhi,  
plain storage tank in the  
Dargāh of Quṭb-Sāhib.

250 Tiruvellarai, at the bottom of the tank is a well with a pulley mechanism.



251 Lakkundi, temple material was reused for the construction of the reservoir.





252  
Aihole,  
deep tank in front of the  
Durgā Temple.



253  
Aihole,  
deep tank in front of the  
Huchimalligudi.



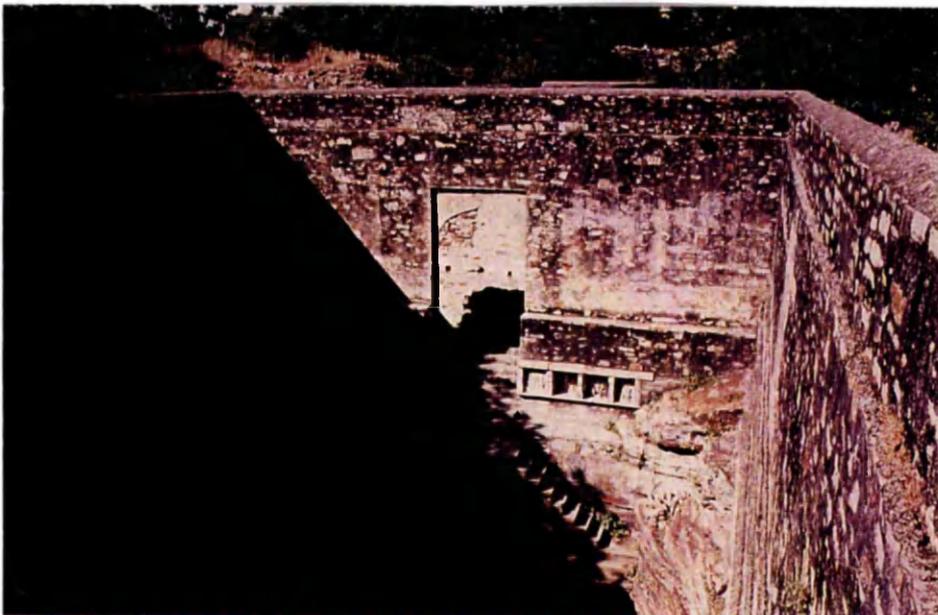
254  
Aihole,  
carved panels in the tank of  
the Huchimalligudi.



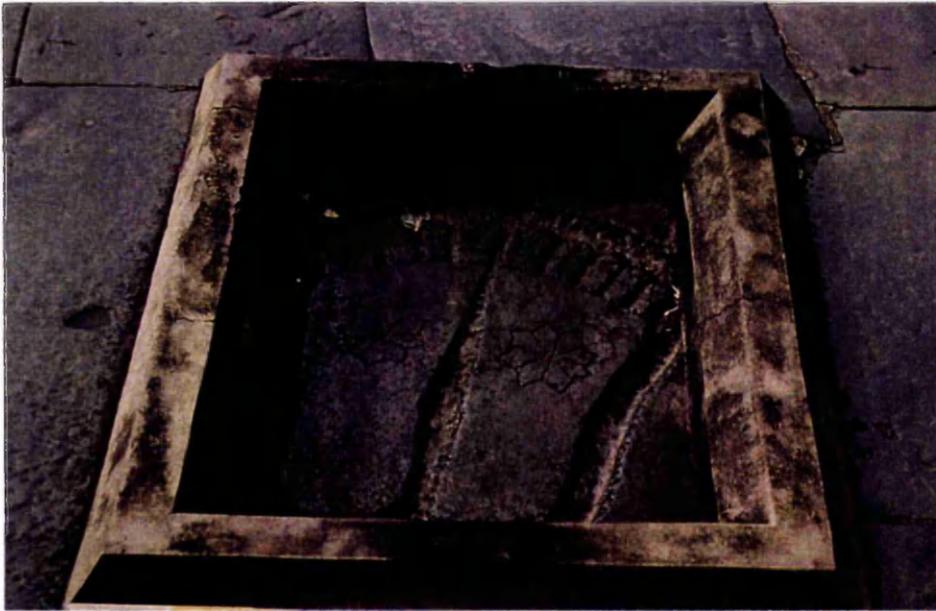
255  
Sudi,  
Nāgagonda Kuṇḍa with  
long access steps (photo  
A.I.I.S., Varanasi).



256  
Sudi,  
wall section of the  
Nāgagonda Kuṇḍa  
(photo A.I.I.S.,  
Varanasi).



257  
Chitorgarh,  
Bhīm Koṭhī Tank.



258  
Belur,  
small *viṣṇu-pāda* tank-  
temple on the terrace  
of the Cenna Keśava  
Temple.



259  
Gokarneshvara,  
miniature tank-temple at  
the Gokarna Mahādev  
Temple.



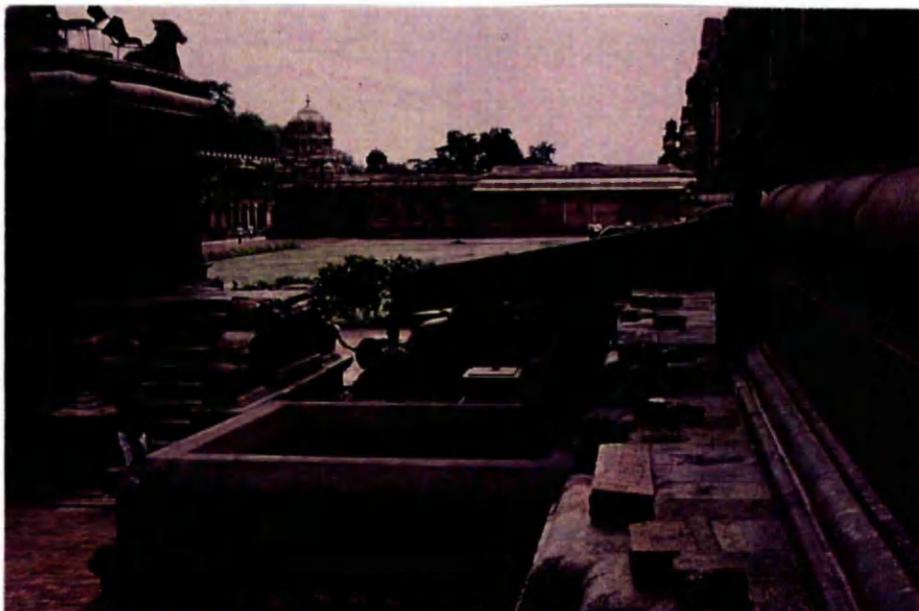
260  
Gaya,  
the inner sanctuary of  
the Viṣṇupāda Temple  
with the *pāda* in a small  
basin.



261  
Ghumli,  
*liṅga* tank-temple next  
to the Śāleśvar Mahādev  
Tālāo.



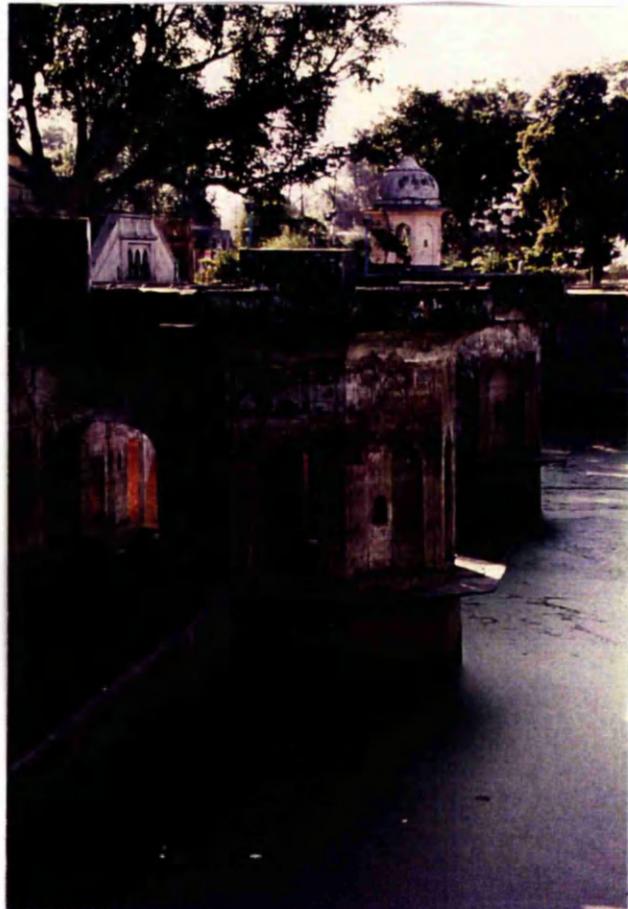
262  
Balaju,  
large tank-temple with  
image of Jalaśayana  
Harihara.



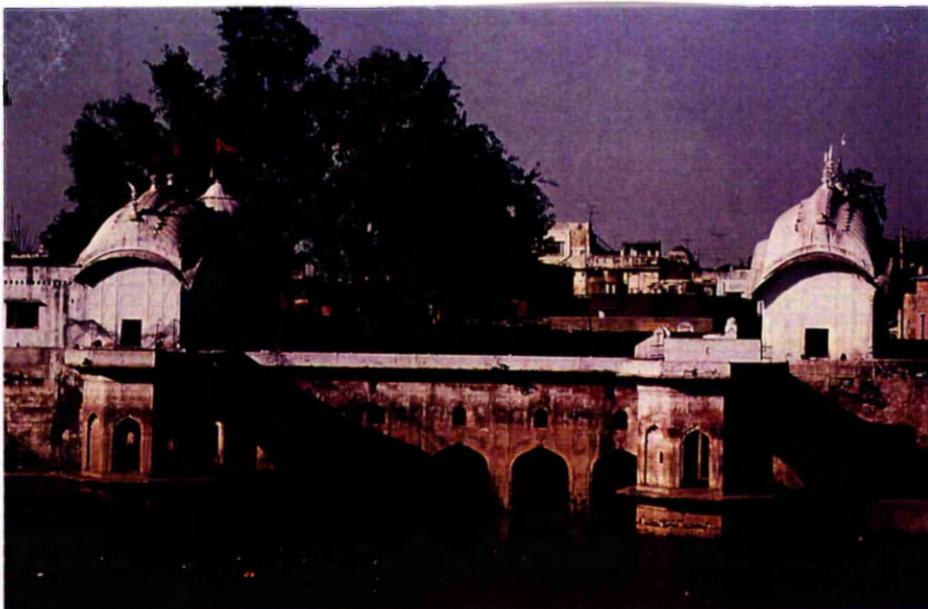
263  
Tanjore,  
*praṇāli* with conch  
playing *gaṇa* at the  
Bṛhadiśvara Temple



264 Benares, Kurukṣetra Kuṇḍ with half octagonal platforms.



265 Rewari, Bhārat Tālō with hollow octagonal bastion platforms.



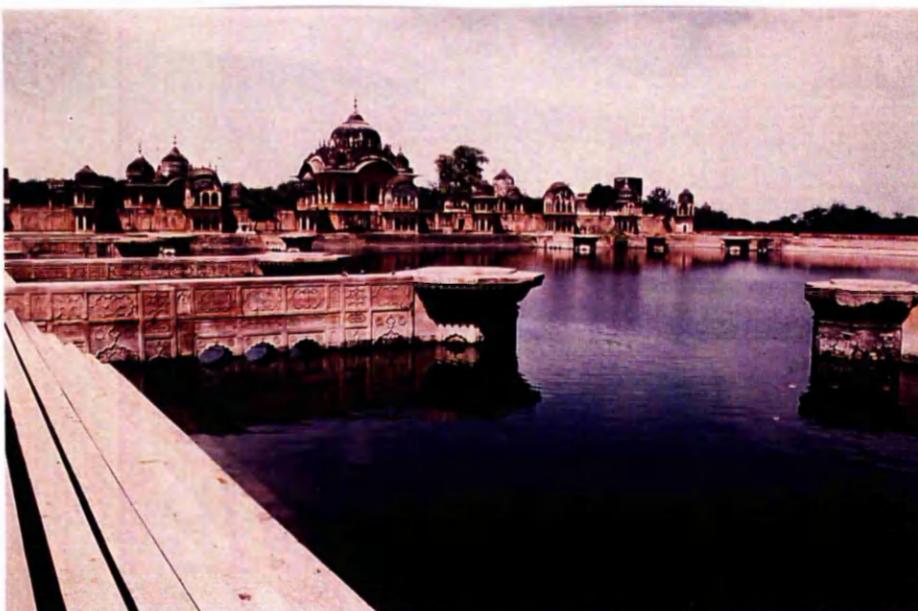
266  
Rewari,  
Bhārat Tālō with  
arched inlet channel.



267  
Raipur,  
Ambā Tālāo with four  
platforms topped by  
small temples.



268  
Tiruvarur,  
large platform in the  
Kamalāya Tank.



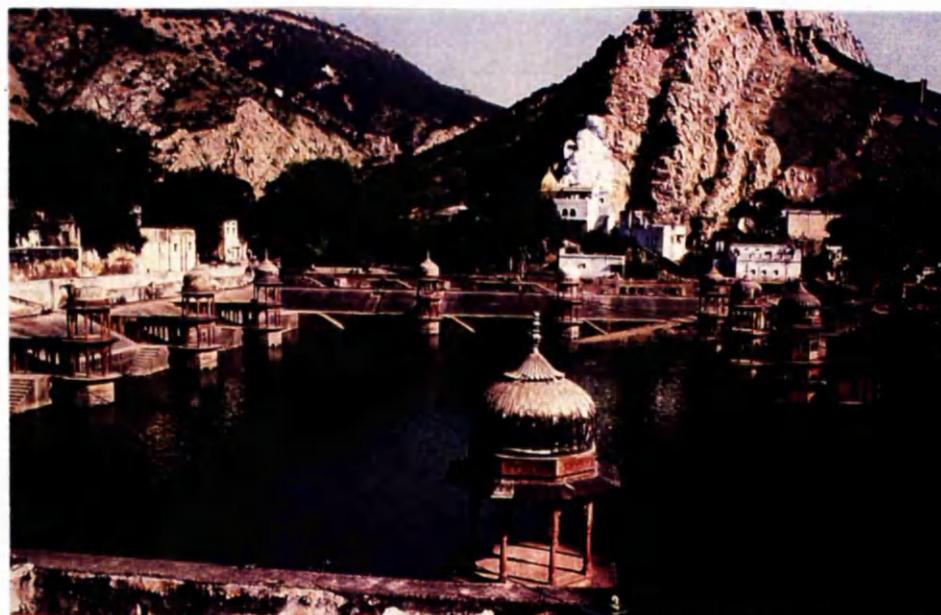
269  
Govardhan,  
Kusum-vāṇ Sarovar.



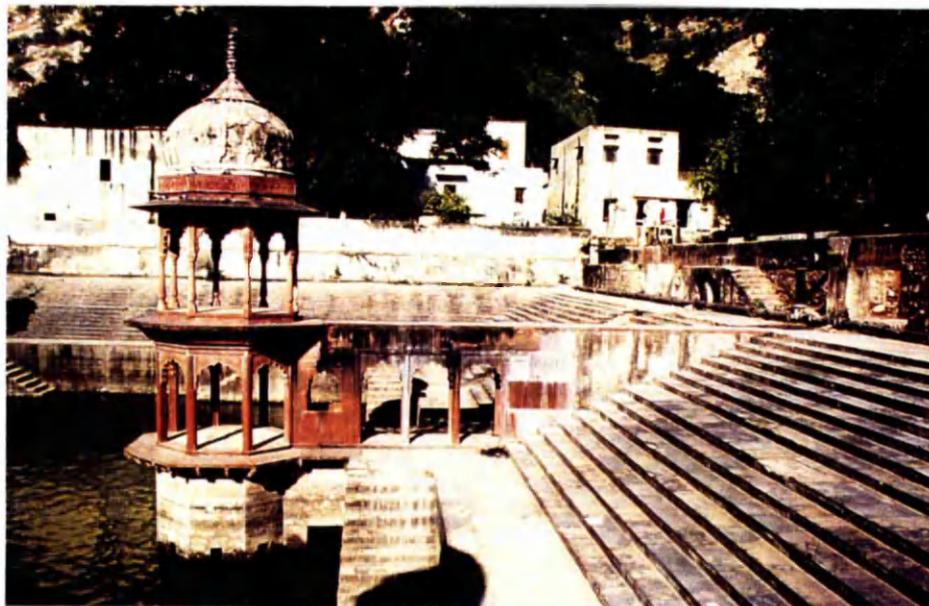
270  
Dig,  
Keśav Bhavan.



271  
Dig,  
long hollowed out  
platforms in the Gopāl  
Sāgar.



272  
Alwar,  
Sāgar Tank.



273  
Alwar,  
three-storied platforms  
in the Sāgar Tank.



274  
Gwalior,  
Tāl Bija Tank with  
Rāmlilā platform.



275  
Tiruvannamalai,  
Agni Tirtha with short  
bridge and island.



276  
Puri,  
Narendra Tank.



277  
Kurukshetra,  
Brahmā Sarovar with  
Śrī Sarveśvara Mandir.



278  
Gwalior,  
Sūraj Kuṇḍ.



279  
Taleshvar,  
tank of the Tilasvam  
Mahādev Temple.



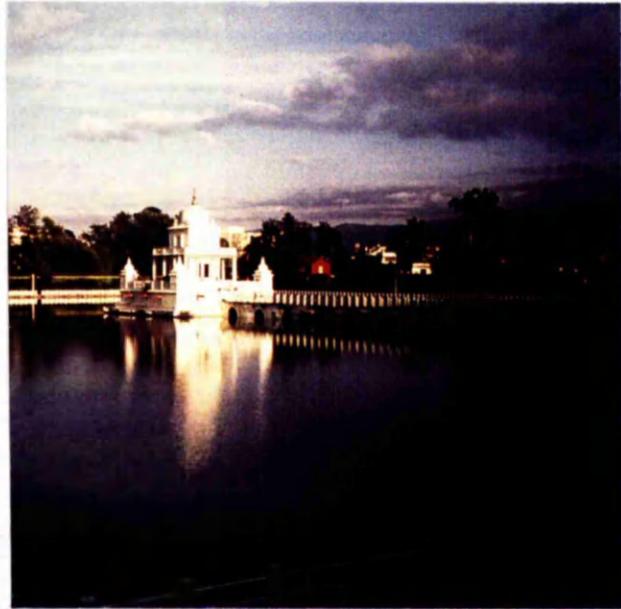
280  
Dholka,  
the circular Niyāi Malāo  
Tālāo with bridge and  
island.



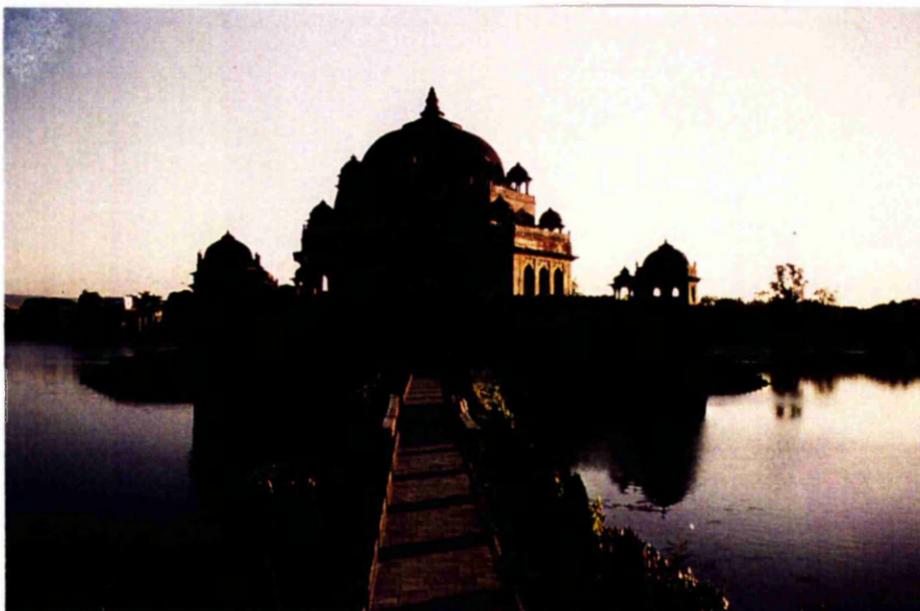
281  
Delhi,  
Hauz-i-Shamsi.



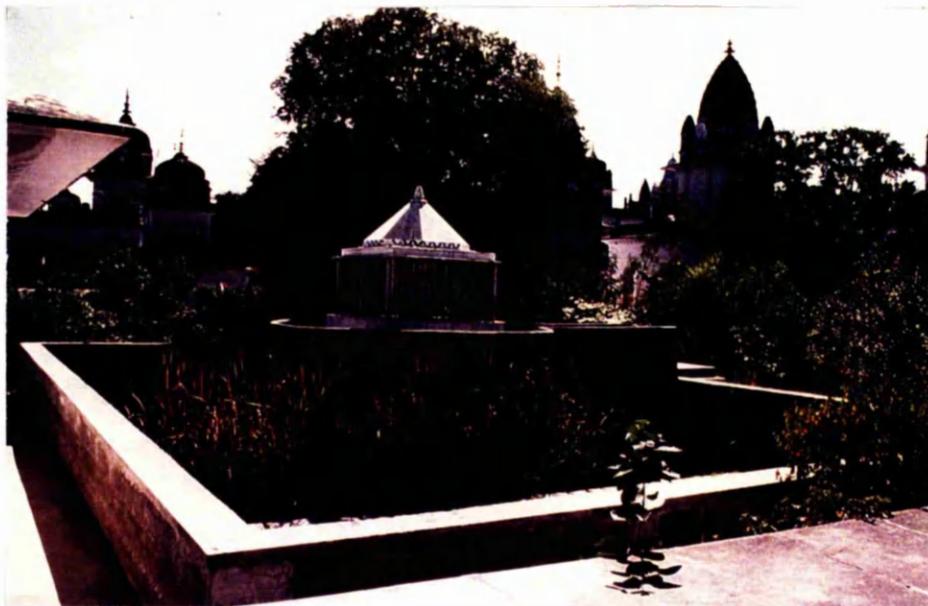
282 Udipi, Kṛṣṇa Temple tank (photo N.H.M. Chancellor)



283 Kathmandu, Rāni Pokharī with bridge and temple on island



284  
Sasaram,  
Sher Shāh Sūr's tomb.



285  
Sonagiri,  
Mahāvira Meru Temple  
in a small tank reached  
by a bridge.



286  
Pavapuri,  
Jalamandir.



287  
Nala,  
Karunāmaya Temple.



288  
Anuradhapura,  
the island in the tank of  
the Issurumuṇiya  
Vihāra.



289  
Colombo,  
Simā Mālaka Temple.

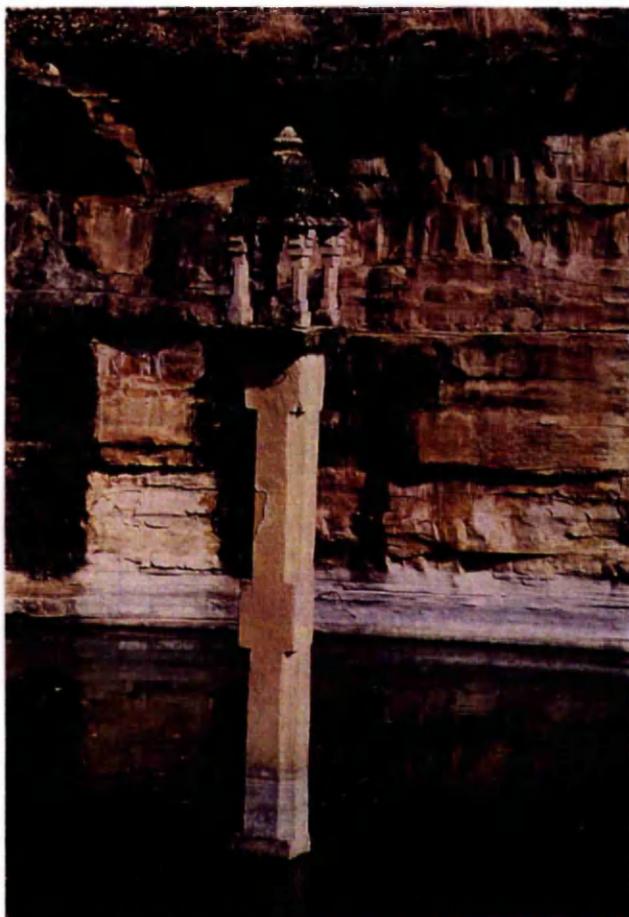


290  
Amritsar,  
the Golden Temple.



291  
Pattadakal,  
small tank with pillar in  
front of the Candra  
Śekhara Temple.

292 Gwalior, Jain *mānastambha* in the Ek-  
kambhā Tāl.



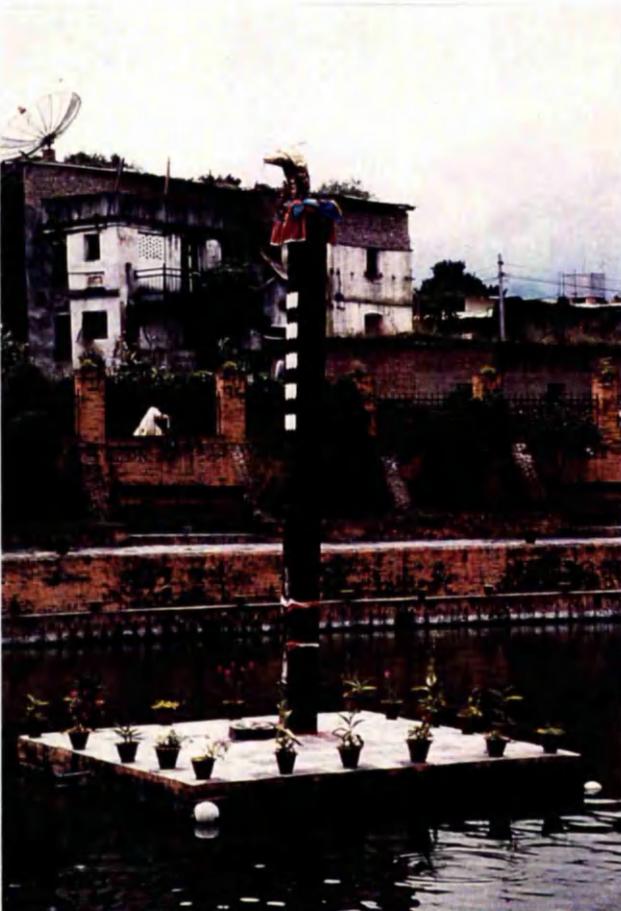
293 Guruvayur, central image of Kṛṣṇa in the  
temple tank.





294  
Bhaktapur,  
*pokharī* with a pillar  
topped by a seated Śiva  
image.

295 Kathmandu, central *nāgakaṣṭha* in the  
Nāgpokharī.



296 Bhaktapur, snake pole in the Sundhārā in  
the royal palace.





297  
Madurai,  
Golden Lily Tank.



298  
Sravana Belgola,  
Kalyān Tank with  
central fountain and  
*gopura*.

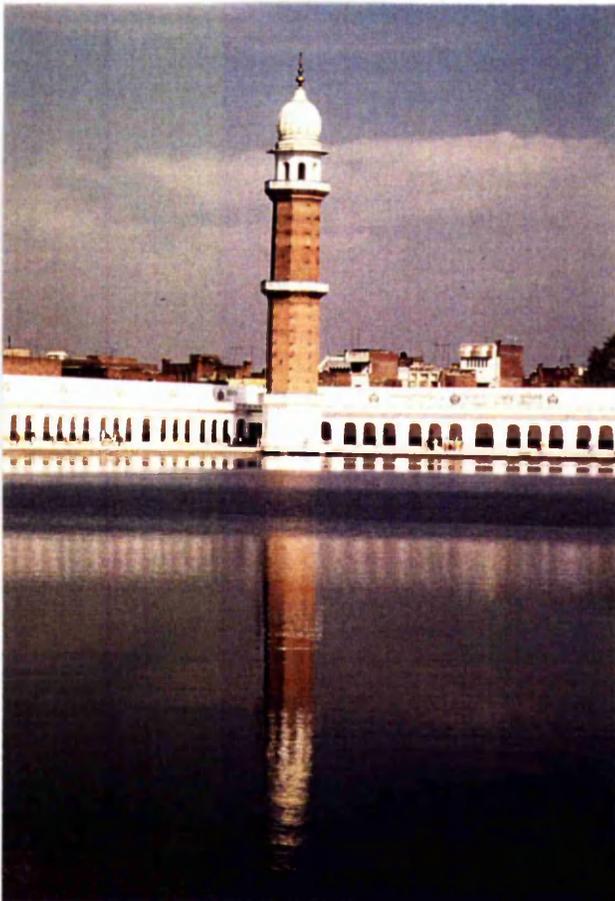


299  
Gwalior,  
Kaṭorā Tāl.

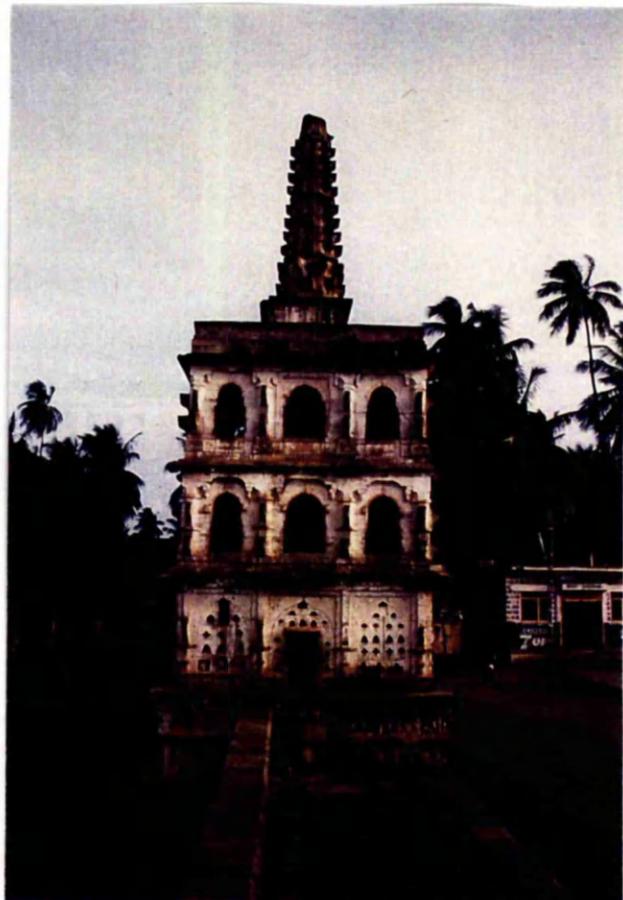


300  
Amritsar,  
Kaulsar Tank with Bābā  
Atal Tower.

301 Tarn Taran, bathing tank with minaret-like tower.

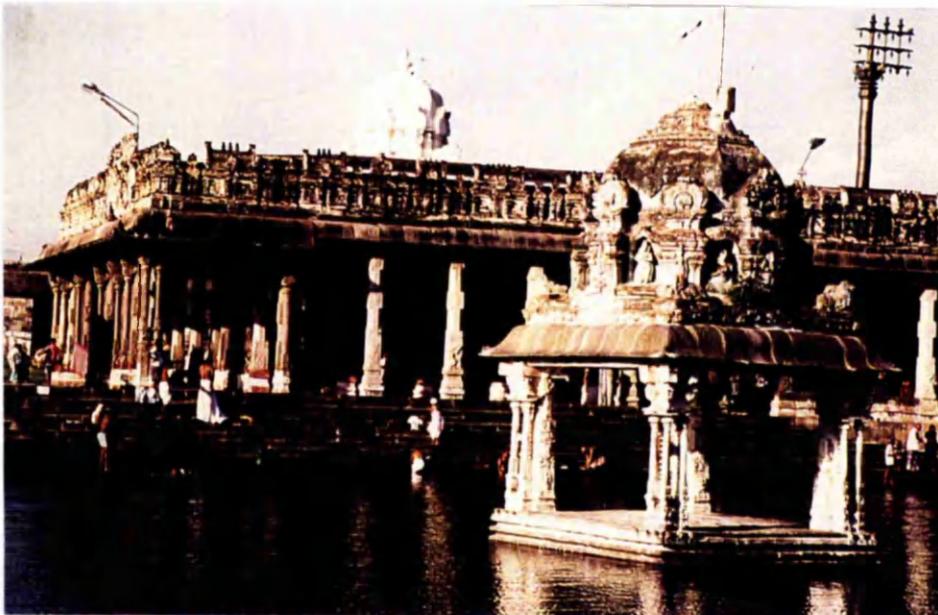


302 Banasankari, high tower next to the temple tank.





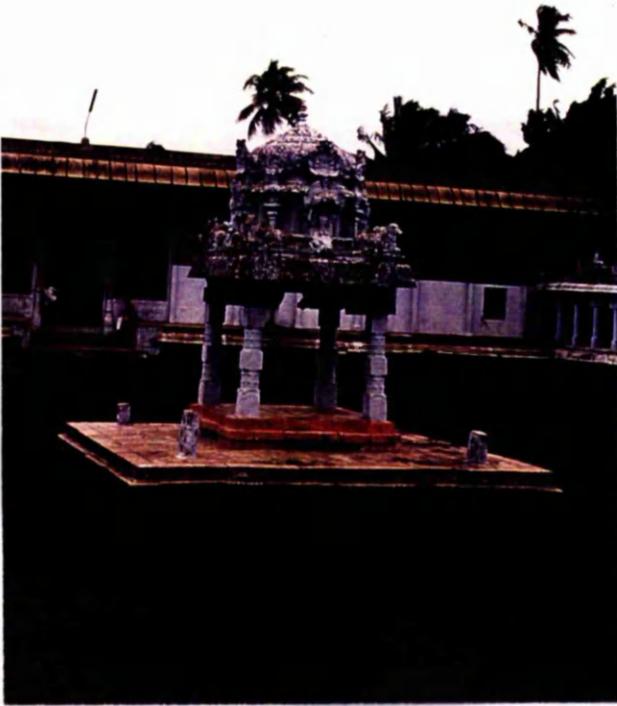
303  
Vaisali,  
Makuta Hada bathing  
tank with Aśokan  
column and stupa at  
Kolhua.



304  
Kanchipuram,  
tank of the  
Ekāmbareśvaranātha  
Temple with pavilion.



305  
Tirupati,  
festival tank of the  
Govindarāja Temple.



306 Srirangam, tank of the Jambukeśvara Temple with pavilion.



307 Suchindram, festival pavilion in the temple tank.



308 Kanchipuram, tank of the Varadarāja Temple.



309

Kumbakonam, the porch of the Sāraṅgapāṇi Temple goes over into the tank.

310

Tirunelveli, a porch connects a temple on the side with the *teppakuḷam*.



311 Madras, pavilion with pyramidal substructure at the Kāpāleśvara Temple.



312 Madras, Pārthasārathi Temple tank with pavilion.



313 Kumbakonam, pavilion in the festival tank of the Sāraṅgapāṇi Temple.



314  
Madurai,  
Teppakulam with large  
pavilion on an island.



315  
Mahakuta,  
small pavilion with  
*linga* in the complex of  
the Mallikarjuna  
Temple.



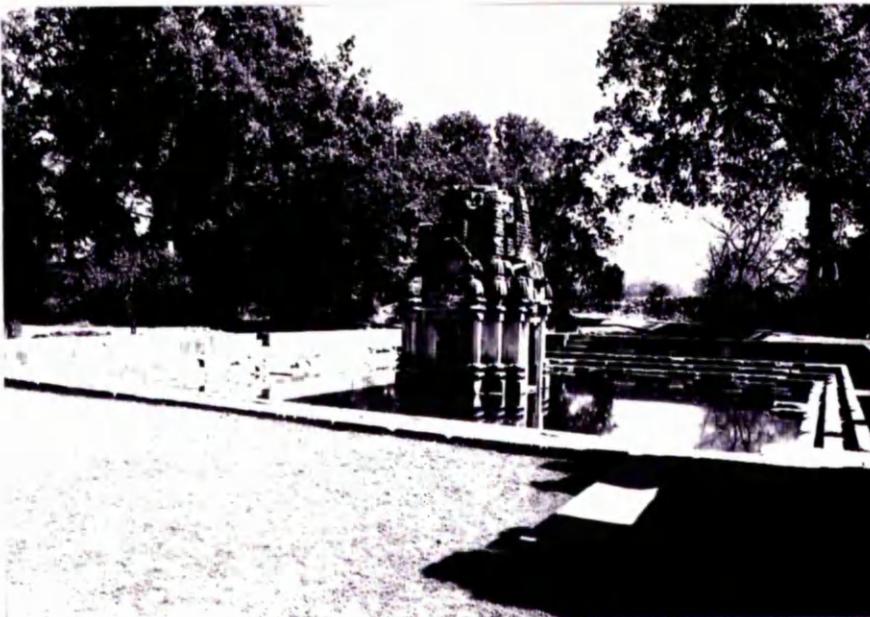
316  
Gangotri,  
miniature Bhāgīrathī  
Temple set into a small  
water basin in a  
pavilion.



317  
Mamallapuram,  
small tank with shrine  
behind the Shore  
Temple.



318  
Amarkantak,  
Narmadā Tank.



319  
Badoli,  
*śikhara* temple in the  
centre of a tank.



320  
Raigarh,  
Temple of Jagadīśvara  
set in a courtyard which  
could be flooded.



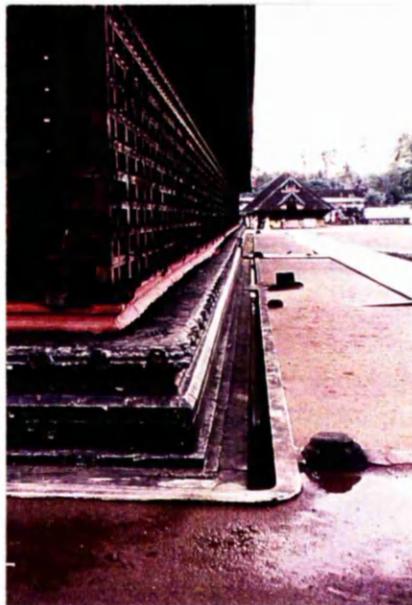
321  
Bundi,  
Varuṇa Temple in the  
Naval Sāgar.



322  
Patan,  
Śiva Water Temple at  
the Sahasra Liṅga Tank.



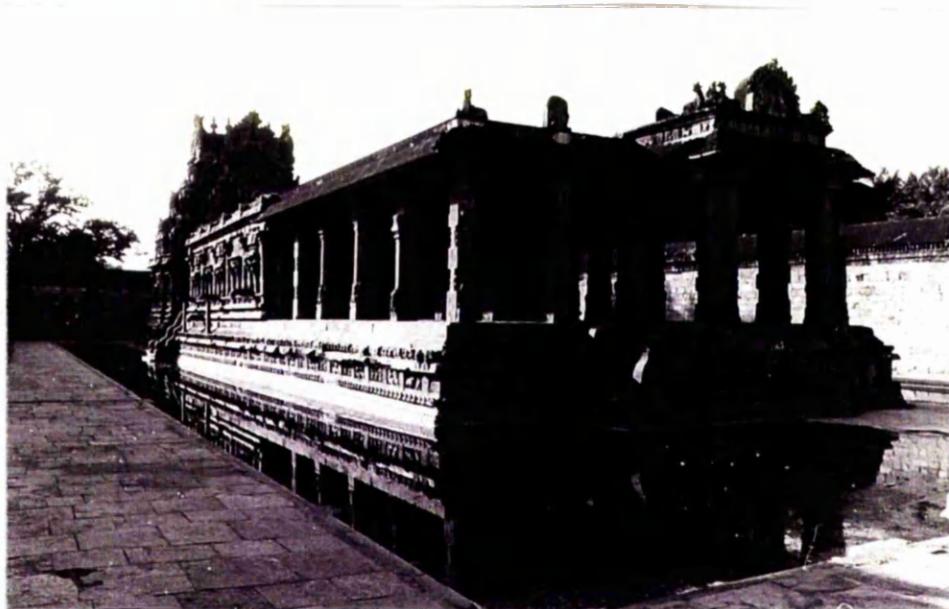
323  
Darasuram,  
shallow water basins with  
lamp holders at the  
Airāvateśvara Temple.



324  
Ettumanur,  
Mahādeva Temple with water  
channel around the second  
*prākāra* wall.



325  
Colombo, the stupa at the Kelaṇiya Vihāra  
is surrounded by a narrow water channel.



326  
Darasuram,  
Amman Temple  
'floating on water' after  
a heavy downpour.  
(photo C.P.C. Branfoot)



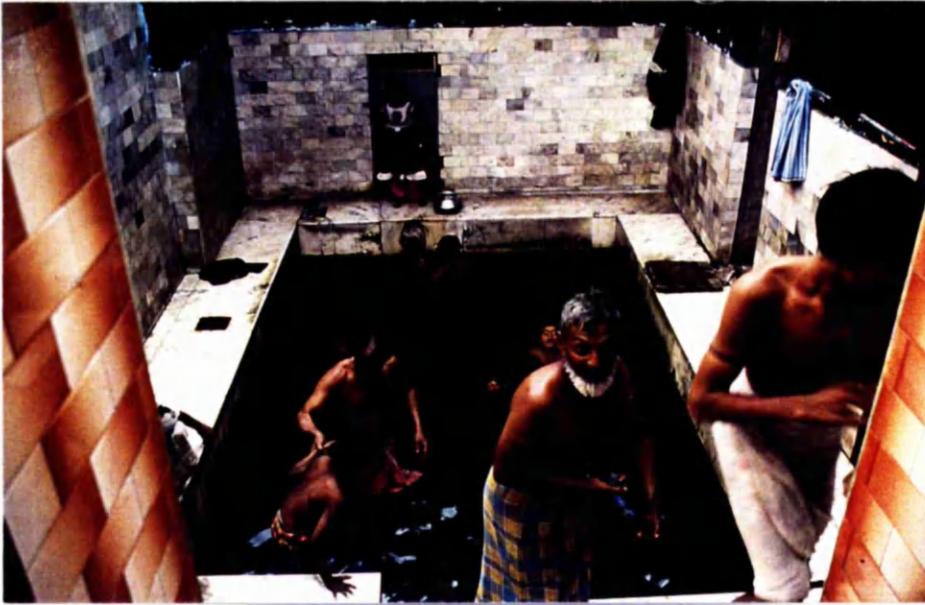
327  
Viramgam,  
Mānasarovar.



328  
Ittagi,  
steps leading up to the  
Mahādeva Temple.



329  
Raipur,  
steps leading up to the  
Kaṅkāli Devī Temple.



330  
Rajgir,  
Makhdūm Kuṇḍ.



331  
Chidambaram,  
a high wall surrounding  
the Śiva Gaṅgā Tank.



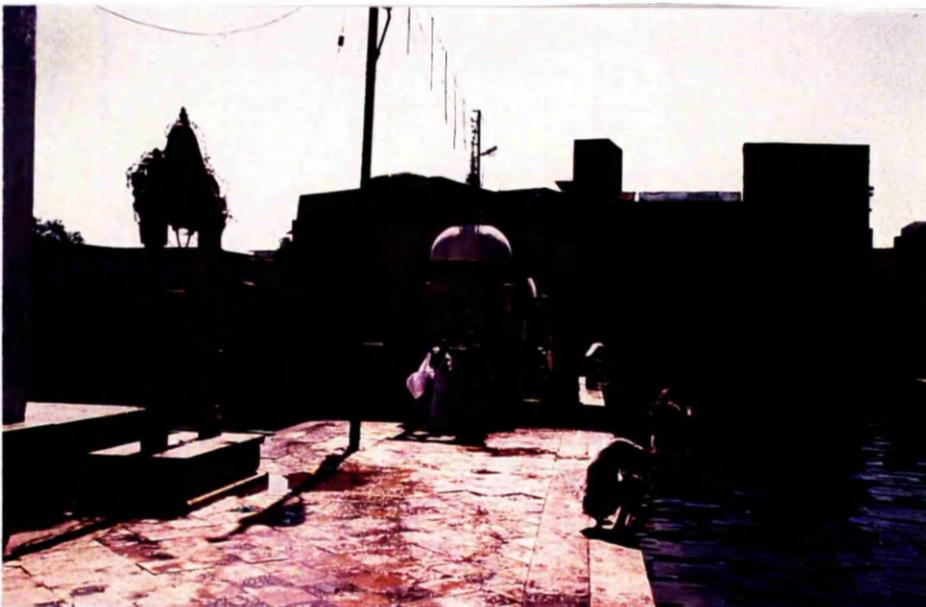
332  
Srirangam,  
a colonnade provides a  
view into the tank of the  
Jambukeśvara Temple.



333  
Aihole,  
a *torana* leads to the  
tank of the Yeniarguđi.



334  
Puri,  
a gateway faces the tank  
of the Mārkaṇḍeśvara  
Temple.



335  
Radhakund,  
two gateways on the  
causeway dividing  
Rādhā and Śyām Kuṇḍ.



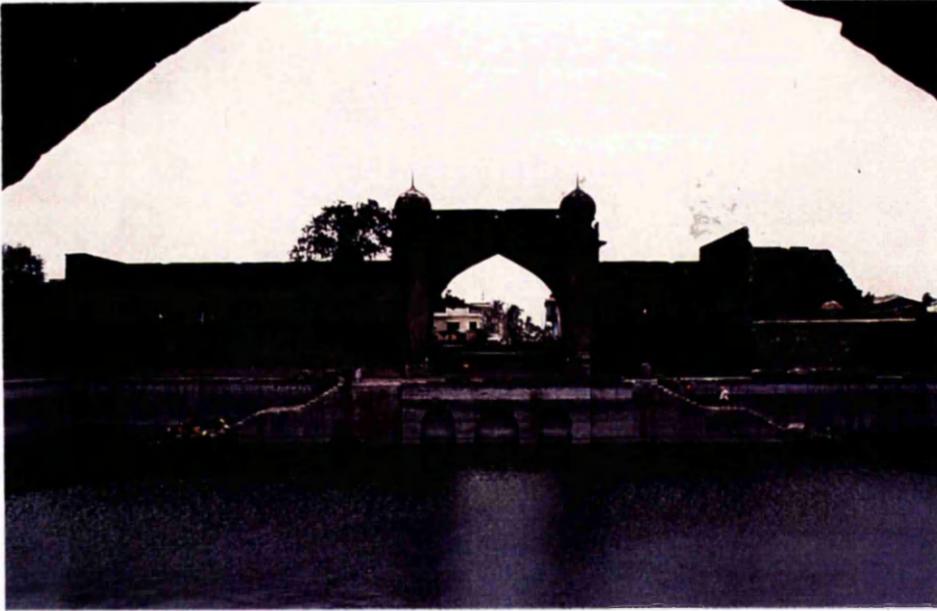
336  
Tiruvarur,  
Kamalāya Tank with  
island, temple and  
*gopura*.



337  
Kandy,  
and island with gateway  
and platform used for  
temple festivals.



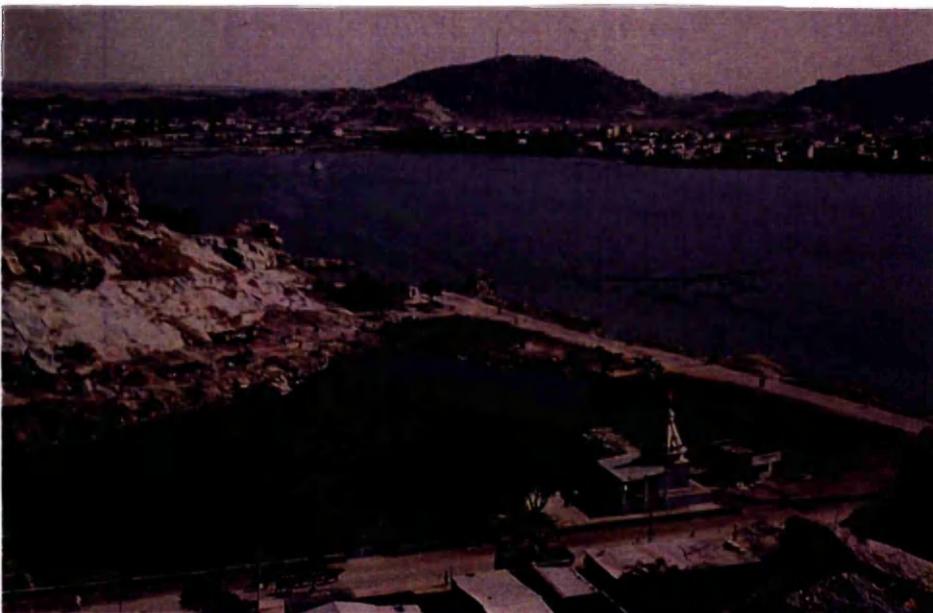
338  
Tirupati,  
Kāpāleśvara Tirtha.



339  
Bijapur,  
Tāj Bāvli.



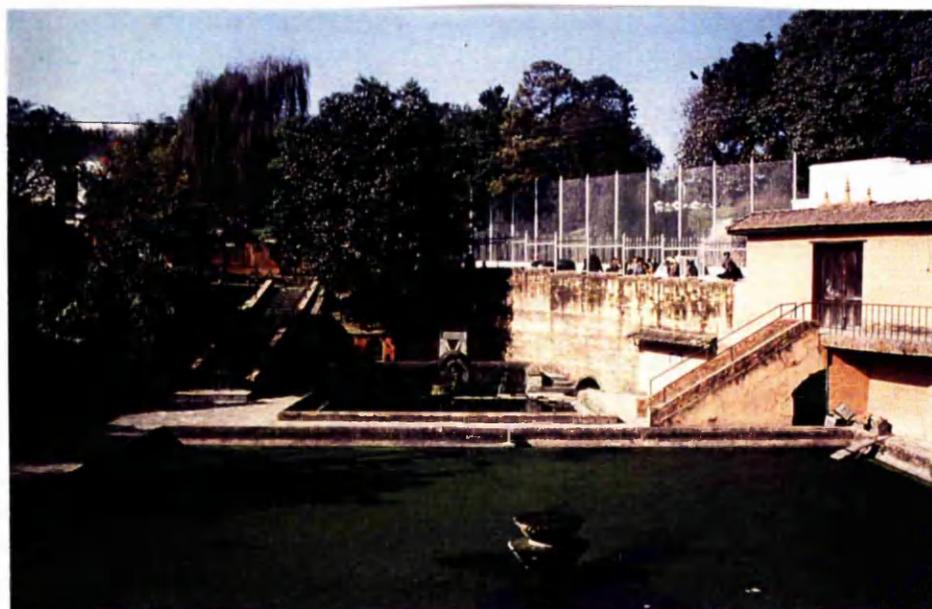
340  
Srirangam,  
Candra Puṣkariṇī.



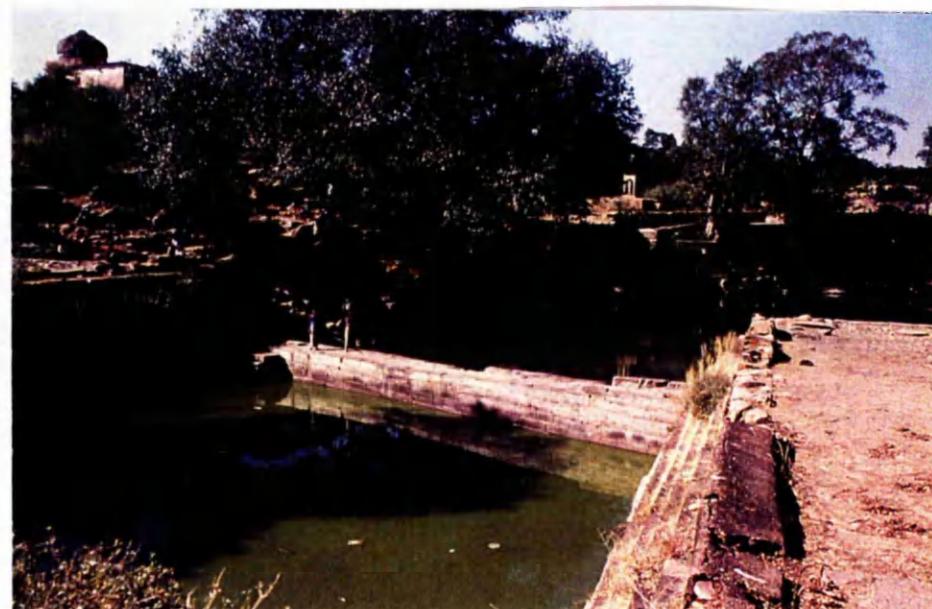
341  
Raichur,  
Khās and Ām Tālāo.



342  
Bhubaneswar,  
tank of the Uttareśvara  
Temple next to the  
Bindu Sāgar.



343  
Kathmandu,  
the Nārāyaṇ Hiṭi twin  
tanks.

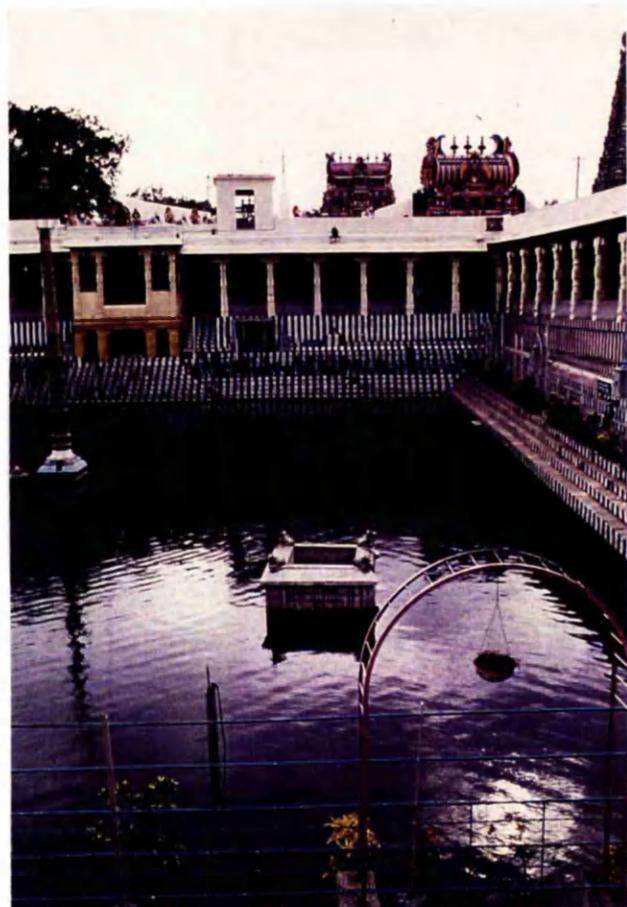


344  
Kalinjar,  
the Buddā-Buddi twin  
tanks.

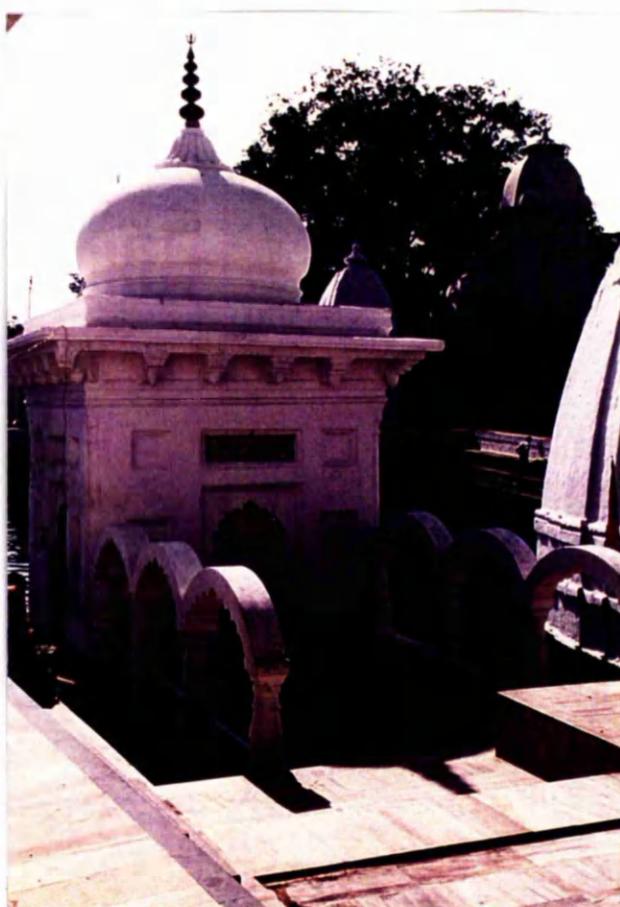


345  
Taleshvar,  
water basin in the island  
in the centre of the tank.

346 Madurai, small basin in the Golden Lily Tank.



347 Amarkantak, a smaller basin within the large tank marks the exact spot where the Narmada arises.



# Water Architecture in South Asia

A Study of Types, Developments and Meanings

Julia A.B. Hegewald

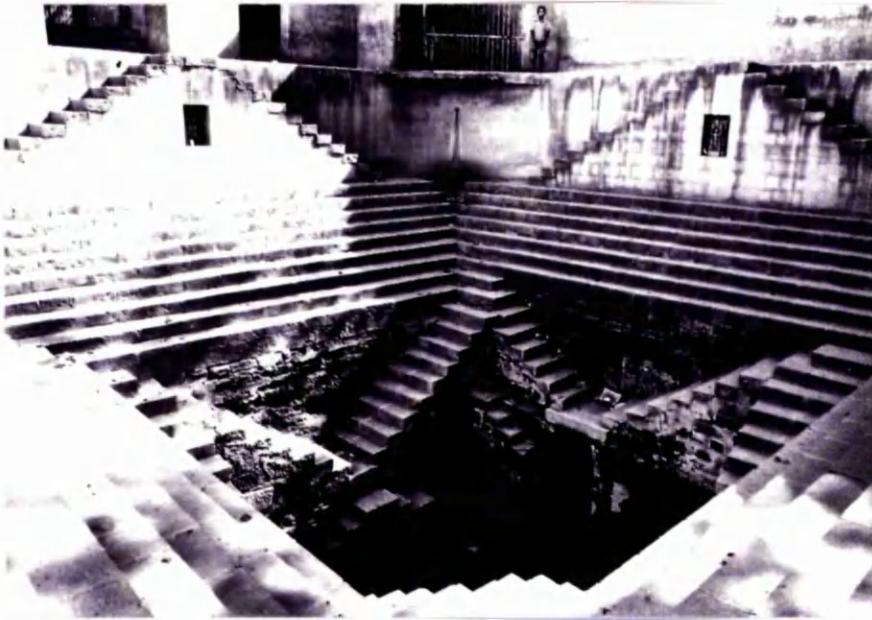
Volume 3: Illustrations (II)

A Thesis Submitted for the Degree of PhD

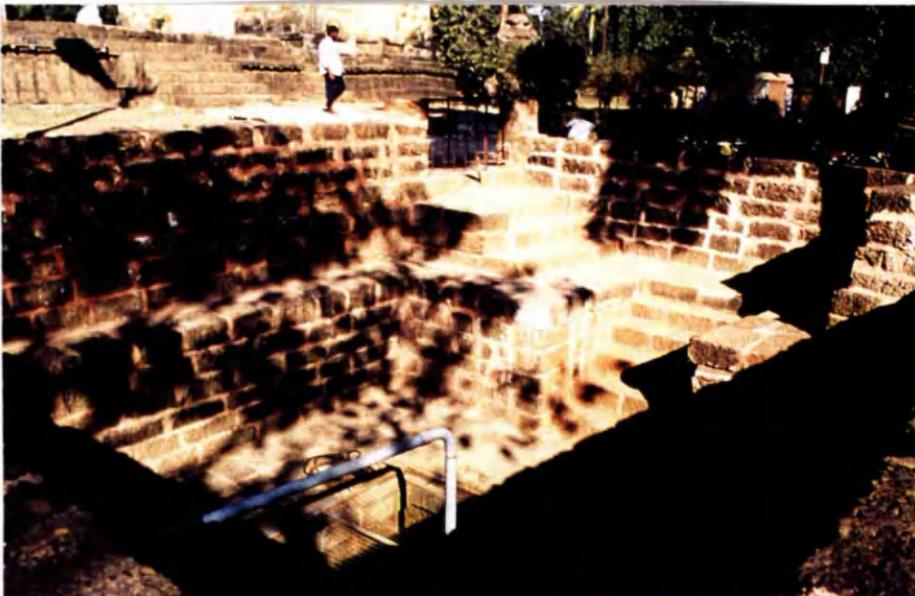
School of Oriental and African Studies  
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April 1998



Chapter 5:  
*KUNḌAS*



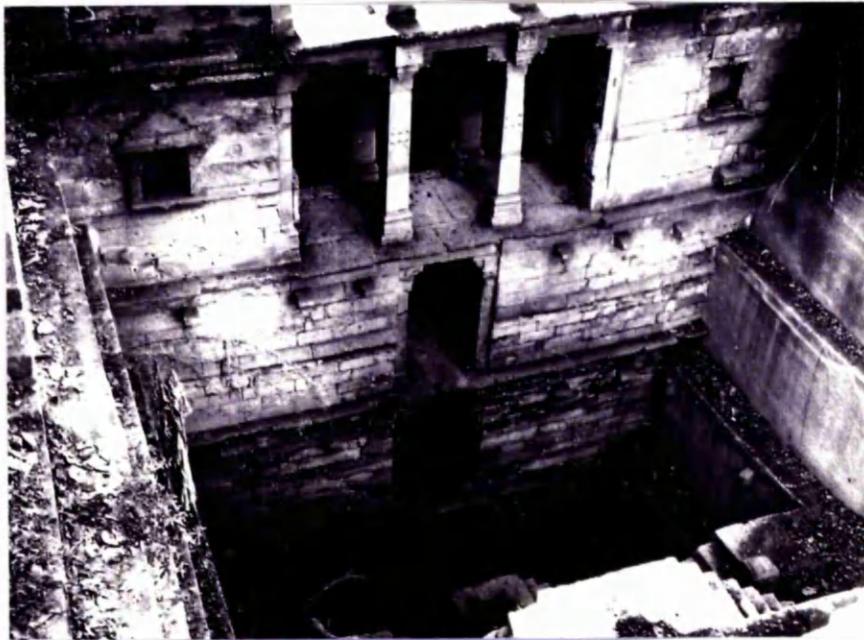
348  
Vanthali,  
Sūrya Kuṇḍ (photo  
A.I.I.S., Varanasi).



349  
Bhubaneswar,  
*kuṇḍa* of the Rāmeśvara  
Temple with water pump  
in the well shaft.



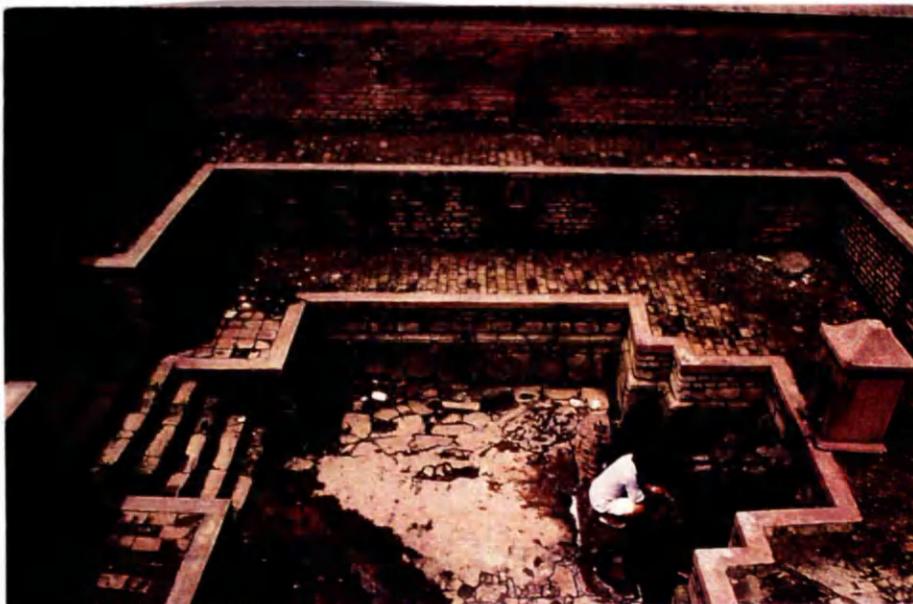
350  
Kanchipuram,  
Maṅgala Tirtham of the  
Ekāmbareśvara Temple.



351  
Bhinmal,  
Dade-li-Vāv.  
A five-storeyed pavilion  
leads from the *kunḍa* to  
the well shaft (photo  
A.I.I.S., Varanasi).



352  
Kathmandu,  
*maṇḍala*-shaped  
Sundhārā.



353  
Patan (Nepal),  
*dhārā* in the south of town.



354  
Polonnaruva,  
Kumāra Pokuna with  
central lotus platform.



355  
Polonnaruva,  
Lotus Pool.



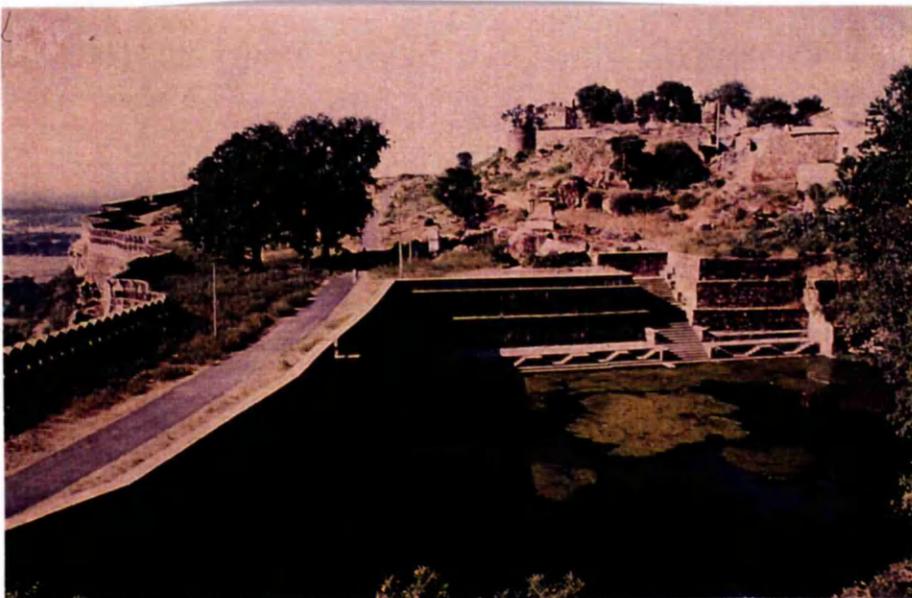
356  
Bhaktapur,  
Palikhyah Hiṭi.



357, 358 Dwarka, Brahmā-jī-kā Kuṇḍ with small Brahmā shrine.



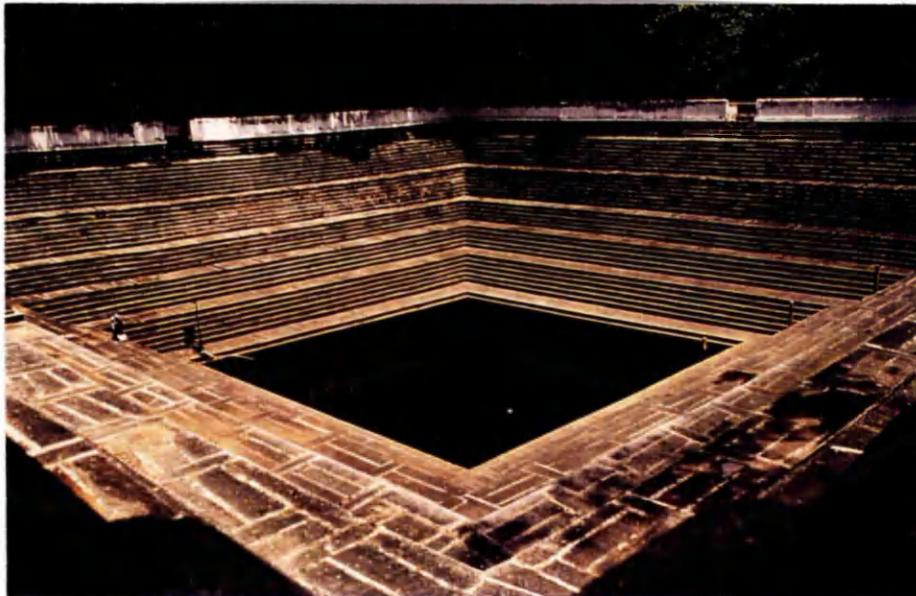
359  
Delhi,  
Sūraj Kuṇḍ.



360  
Chitorgarh,  
Kukadeśvara Kuṇḍ.



361  
Mathura,  
Potarā Kuṇḍ.



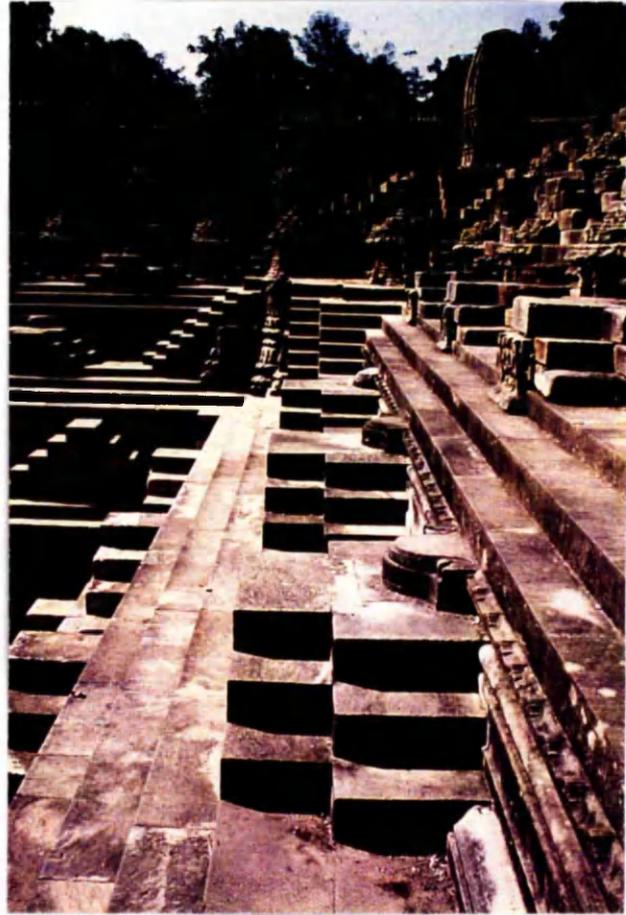
362  
Nandi,  
Amṛt Sarovar.



363  
Bijolia,  
Mandākinī Kuṇḍ.



364 Abaneri, pyramidal step formations in the Chānda Bāoṛī.



365 Modhera, Sūrya Kuṇḍ with double sets of triangular steps.



366 Ahar, small *kuṇḍa* in the complex of the cenotaphs.



367  
Bishnupur,  
Madana-Mohana Temple  
with *kuṇḍa*.



368  
Roda,  
western wall  
in the Roḍā Kuṇḍ.



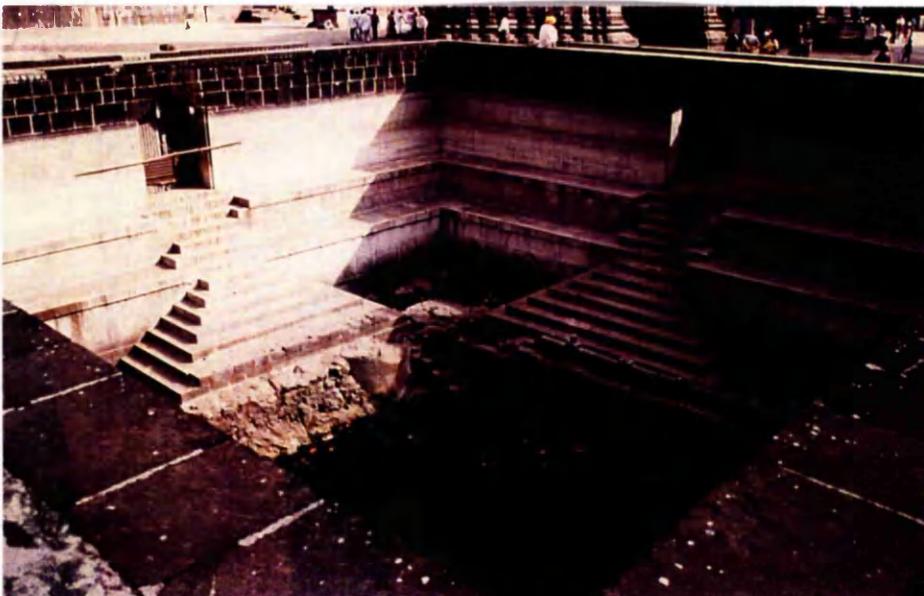
369  
Shihor,  
Brahmā Kuṇḍ  
(photo B. Breitkopf).



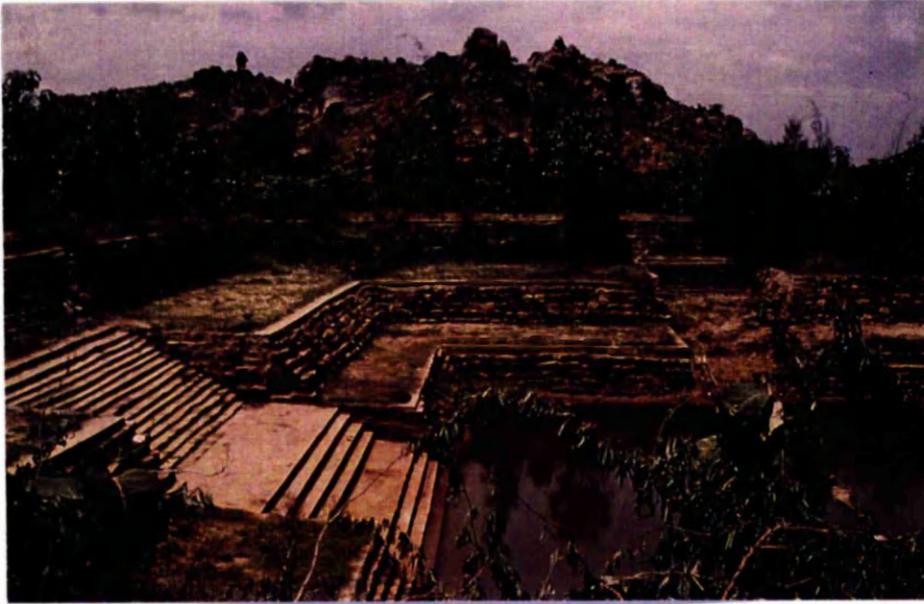
370  
Kapadvanj,  
Kāpaḍvañj Kuṇḍ with  
niches and pavilions.



371  
Vijayanagara,  
'Ritual Bath'.



372  
Trimbak,  
fan-shaped steps in the  
*kuṇḍa* of the  
Trymbakeśvara Temple.

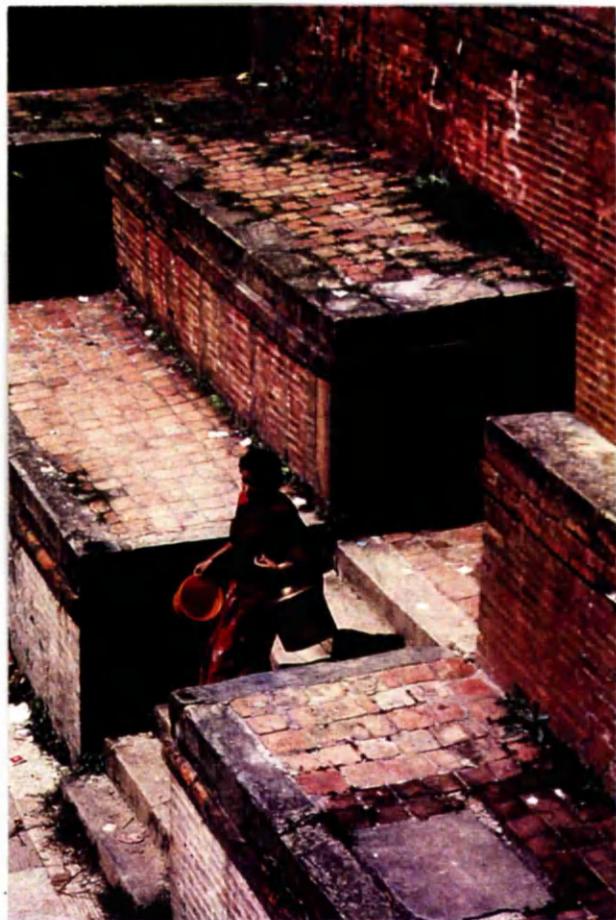


373  
Tiruvannamalai,  
Yama Tirtha.

374 Mandu, Ujālā Bāoṛi with watch tower for royal guards.



375 Patan (Nepal), Manga Hiṭi with large tiers and narrow stairs of small steps.





376  
Nagarjunakonda,  
large *kuṇḍa* of the  
Aśvamedha Complex.



377  
Belur,  
*praṇāli-kuṇḍa* in the  
complex of the Cenna  
Keśava Temple.



378  
Vijayanagara,  
*kuṇḍa* near the  
Rāmacandra Temple.



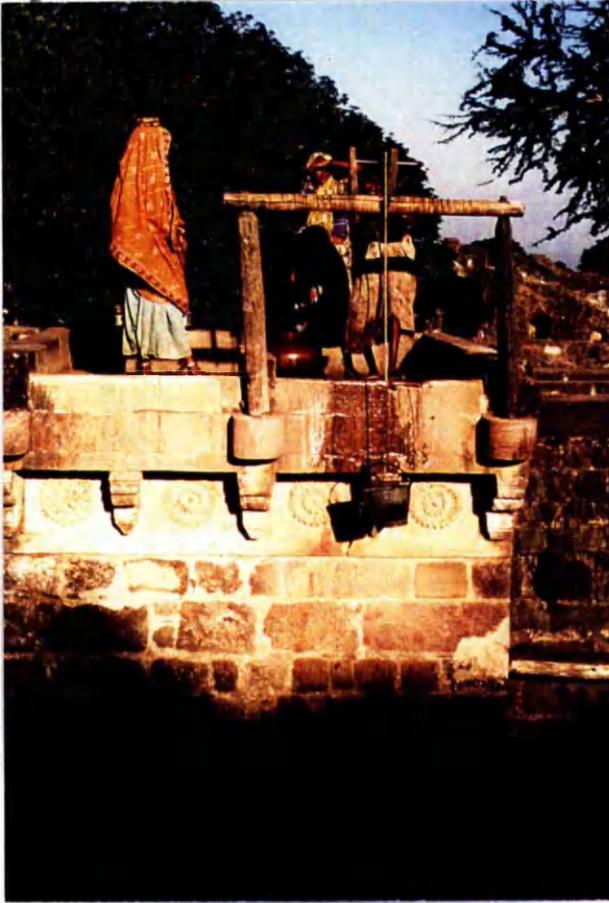
379  
Modhera,  
Sūrya Kuṇḍa.



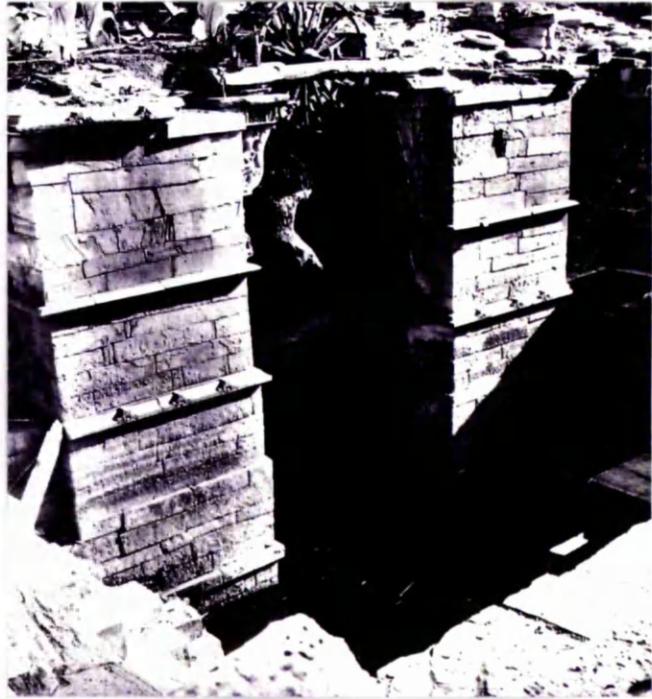
380  
Dedadara,  
'Old Kuṇḍ' (photo  
A.I.I.S., Varanasi).



381 Roda, Kuṇḍa.



382 Mandu, large well with well-head and pulley on top of a risalit.



383 Vasantgarh, *kuṇḍa* with two risalits and a Persian wheel between (photo A.I.I.S., Varanasi).



384 Mandu, large well near the Hiṇḍolā Mahal.



385  
Mandu,  
Ujālā Bāoṛī.



386  
Bundi,  
Nagar Kuṇḍa.



387  
Bundi,  
small *kuṇḍa* in the garden  
of the Citra Mahal.



388  
Kamalapuram,  
Kunḍa.



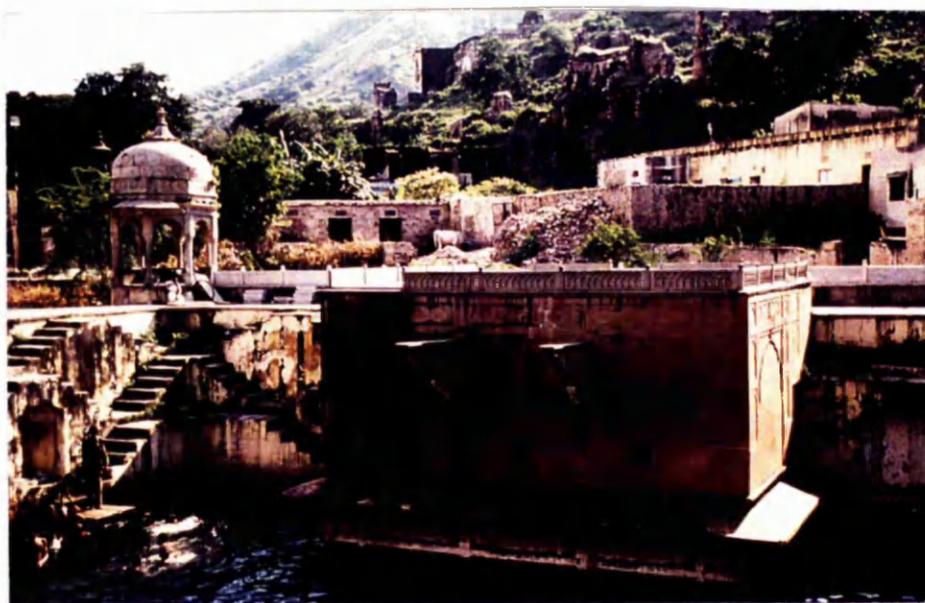
389, 390 Kamalapuram, elaborately carved risalit in the Kunḍa.



391  
Eklingji,  
*kunḍa* with hollow risalit.



392  
Patan (Nepal),  
*kuṇḍa* in the garden of  
the royal palace.



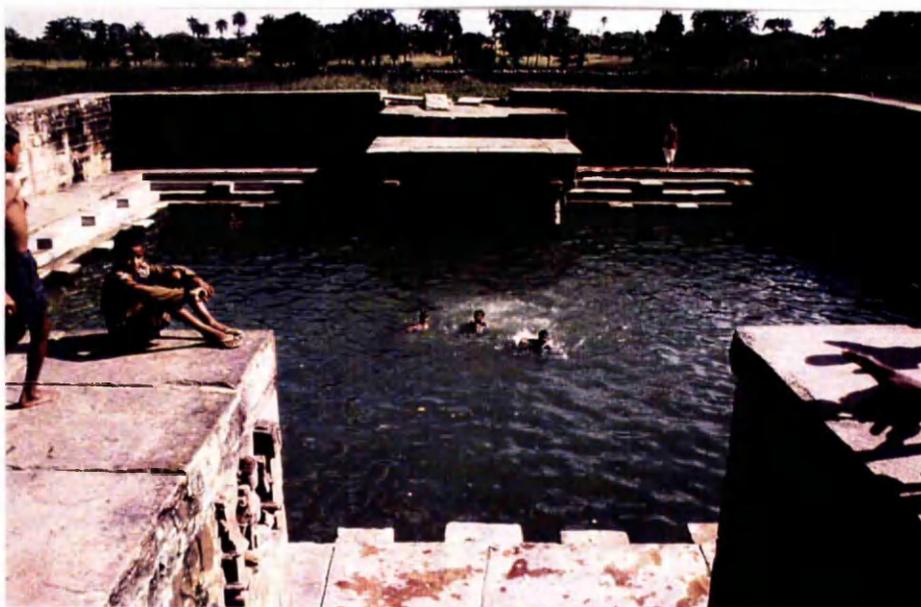
393  
Amber,  
Pannā Miyām Kuṇḍ.



394  
Bundi,  
Sabirna-dha-kā Kuṇḍa.



395  
Bijolia,  
Mandākinī Kuṇḍ, view  
from north-west (photo  
A.I.I.S., Varanasi).



396  
Bijolia,  
Mandākinī Kuṇḍ at high  
water level.



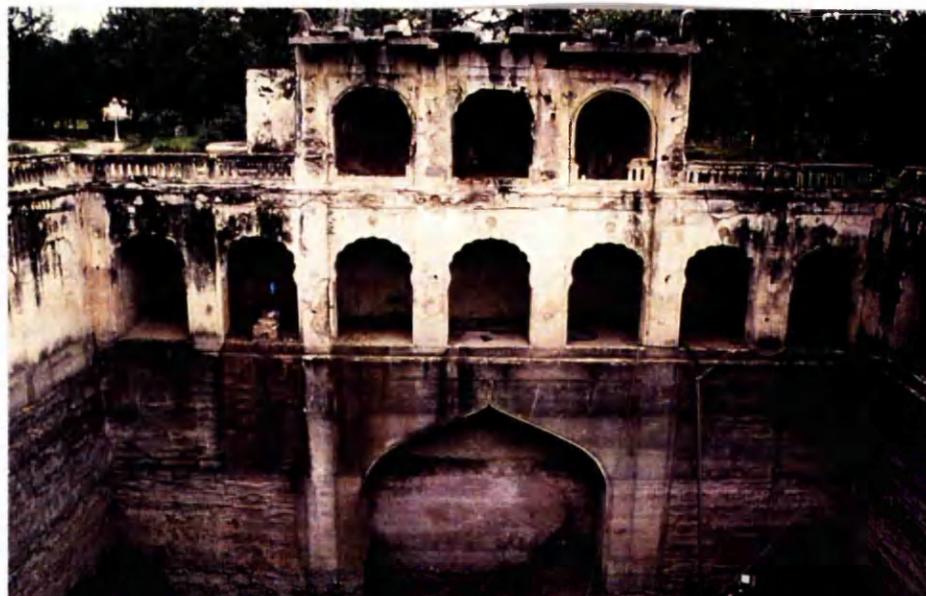
397  
Vijayanagara,  
*kuṇḍa* near the  
'Underground Temple'.



398  
Bundi,  
Jaipuriyā Kuṇḍa with  
open apartment in the  
south side.



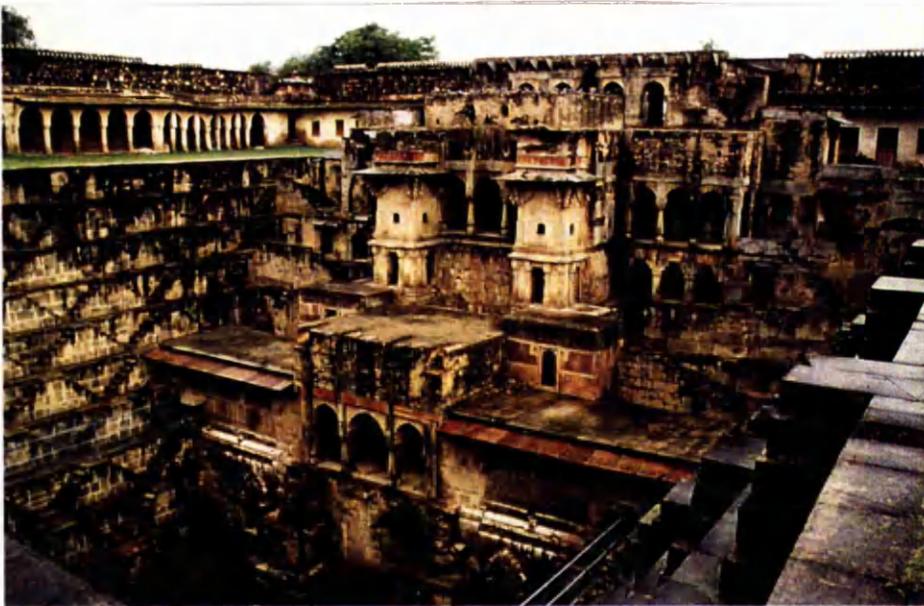
399  
Golconda,  
*kuṇḍa* in the complex of  
the Quṭb Shāhī Tombs.



400  
Golconda,  
Quṭb Shāhī Tomb Kuṇḍa,  
northern side.



401  
Osian,  
Kuṇḍa.



402  
Abaneri,  
Chānda Bāoṛī.



403  
Abaneri,  
funnel-shaped *kuṇḍa*  
basin with colonnade.



404  
Ittagi,  
*kuṇḍa* behind the  
Mahādeva Temple.

405 Ittagi, view of *kuṇḍa* from south.



406 Lakkundi,  
Kuṇḍa at the Manikeśvara Temple.





407  
Halebid,  
*kuṇḍa* of the Jain Basti.

408 Halebid, earlier photographs of the Jain Basti Kuṇḍa by Verardi (G.Verardi, 1980, plate VI).





409  
Lakkundi,  
basin of the *kuṇḍa* in  
front of the Manikeśvara  
Temple.



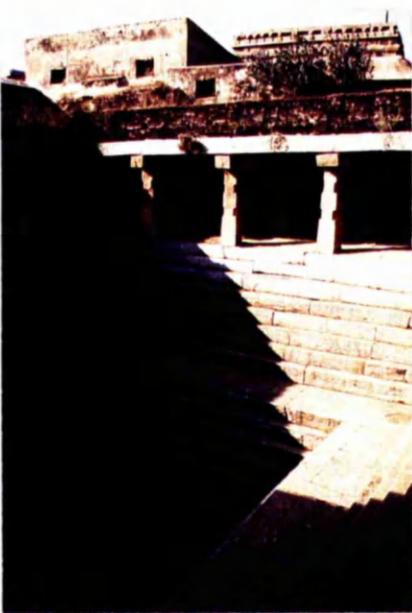
410  
Kukknur,  
*kuṇḍa* in the Navaliṅga  
Complex.



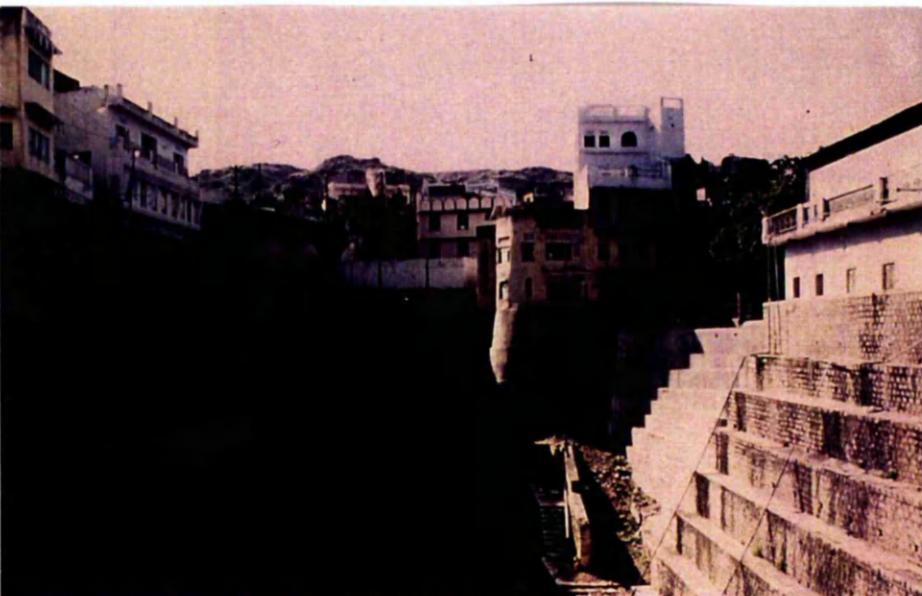
411  
Benares,  
tapering ends of the  
Lakṣmī Kuṇḍ.



412  
Anuradhapura,  
Twin Pools.



413 Nandi village, *kuṇḍa* in the Bhōgaṇandiśvara Temple  
(photo C.P.C. Branfoot).



414  
Ajmer,  
Jhālra Kuṇḍa in the  
Dargāh.

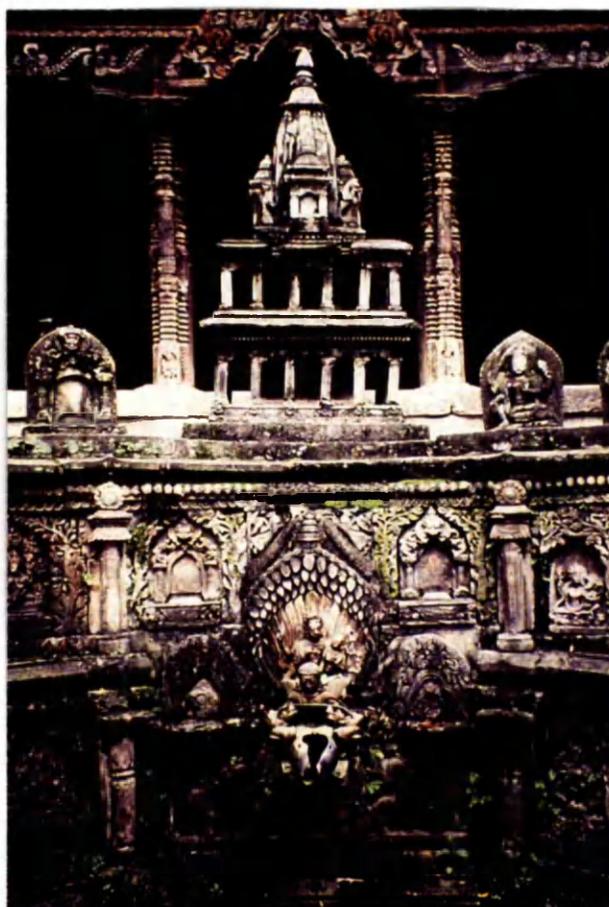


415  
Patan (Nepal),  
*dhārā* in the south-east  
of town.

416 Patan (Nepal), Manga Hiṭī with three  
water spouts.



417 Patan (Nepal), royal bath.

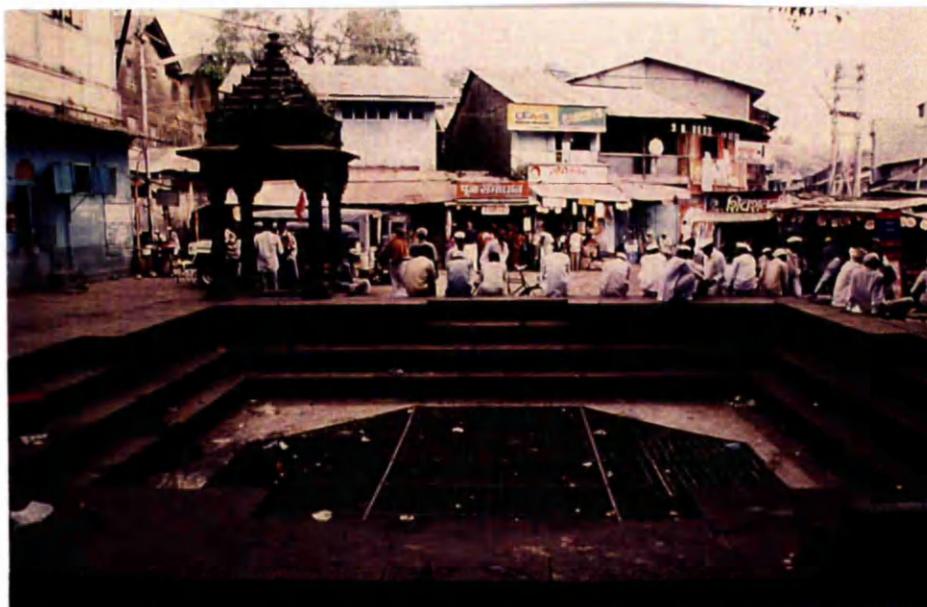




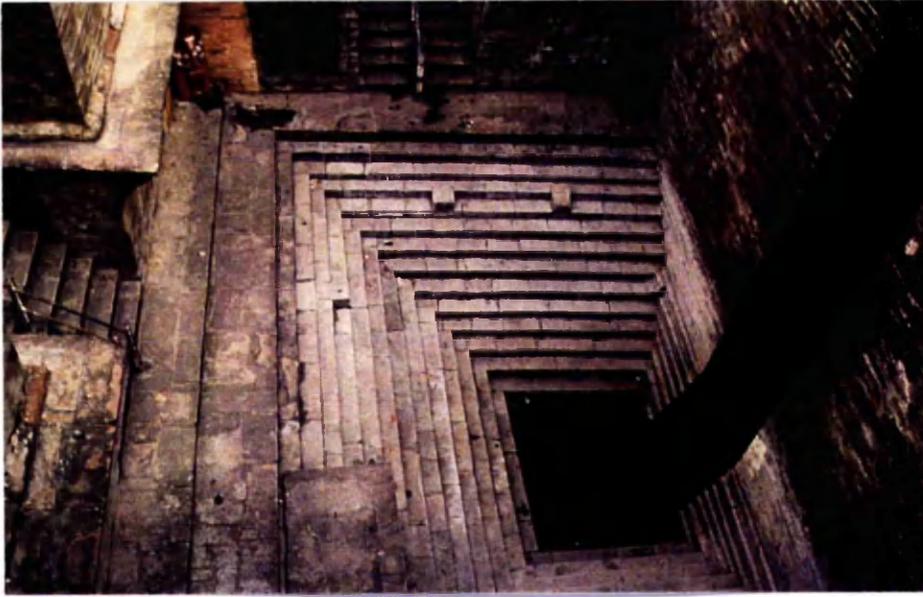
418  
Humcha,  
*kunḍa* near the Sūle  
Basti (photo A.I.I.S.,  
Varanasi).



419  
Polonnaruva,  
crocodile spouts in the  
Kumāra Pokuna.



420  
Trimbak,  
well-*kunḍa* at the  
Kuśavart Tirtha.



421  
Benares,  
Lolārka Kuṇḍa.



422  
Umta,  
Kuṇḍa-vāv, view from  
north-west (photo  
A.I.I.S., Varanasi).



423  
Umta,  
*kuṇḍa* basin of the  
Kuṇḍa-vāv (photo  
A.I.I.S., Varanasi).



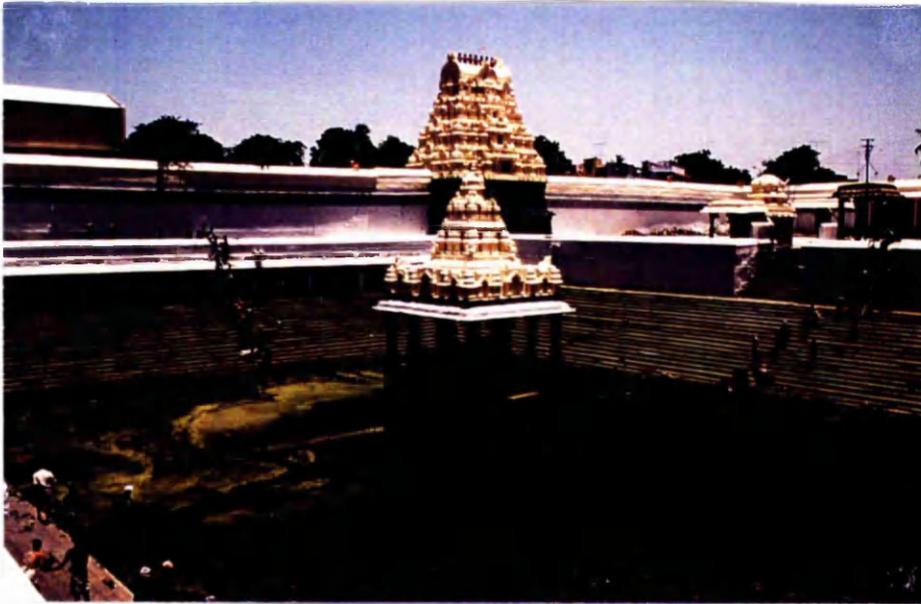
424  
Ellora,  
the Viśvanātha Kuṇḍa  
has a bastion platform in  
each of its four corners.



425  
Amber,  
Pannā Miyām Kuṇḍ with  
pavilions at the outer  
corners of the terrace.



426  
Bijapur,  
*kuṇḍa* in the Ibrahim  
Rauzā.



427  
Kanchipuram,  
*kuṇḍa* of the Kāmākṣi  
Temple.



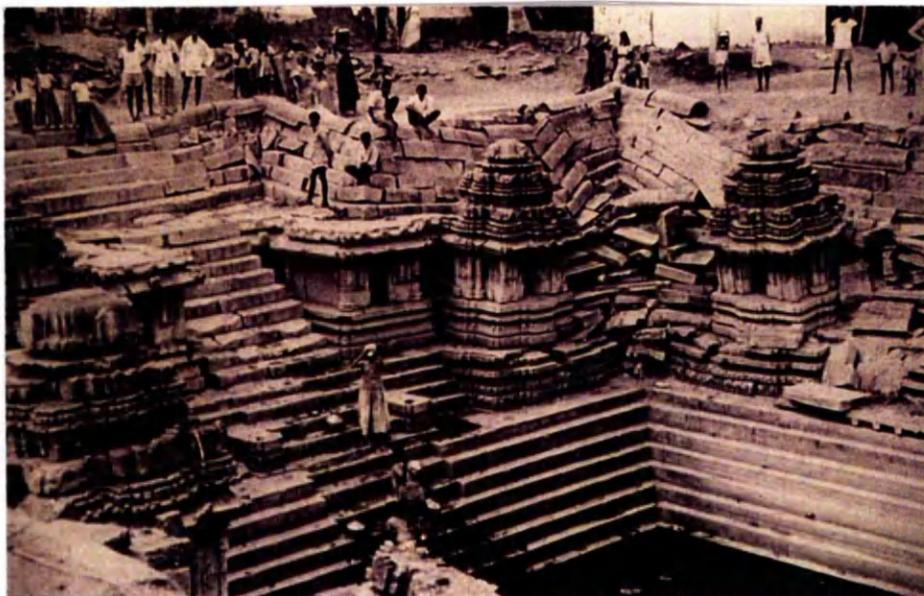
428  
Patan (Nepal),  
*kuṇḍa* with two *pāṭis*.



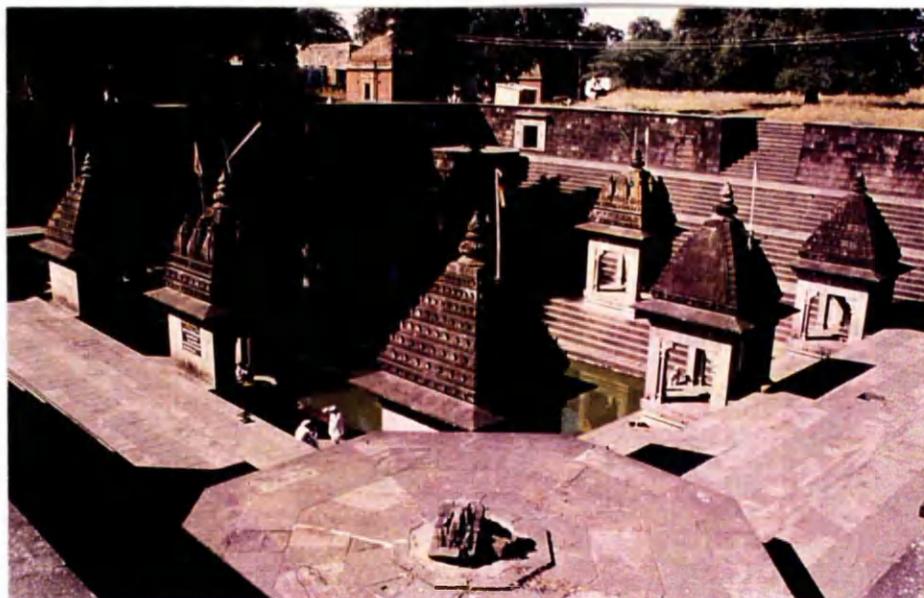
429  
Ahar,  
'Later Kuṇḍa' with island  
and pavilion (photo  
A.I.I.S., Varanasi).



430  
Belur,  
*kuṇḍa* of the Cenna  
Keśava Temple.



431  
Huligere,  
*kuṇḍa* with shrines (G.  
Verardi, 1980, Plate I).



432  
Ellora,  
the eight small temples in  
the Viśvanātha Kuṇḍa.



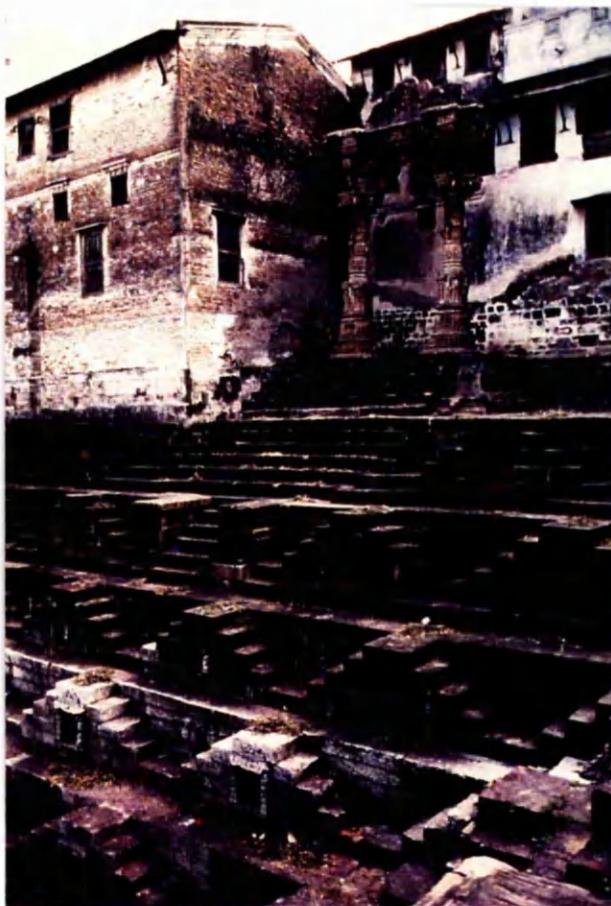
433  
Modhera,  
shrines and temples  
integrated into the sides  
of the Sūrya Kuṇḍa.



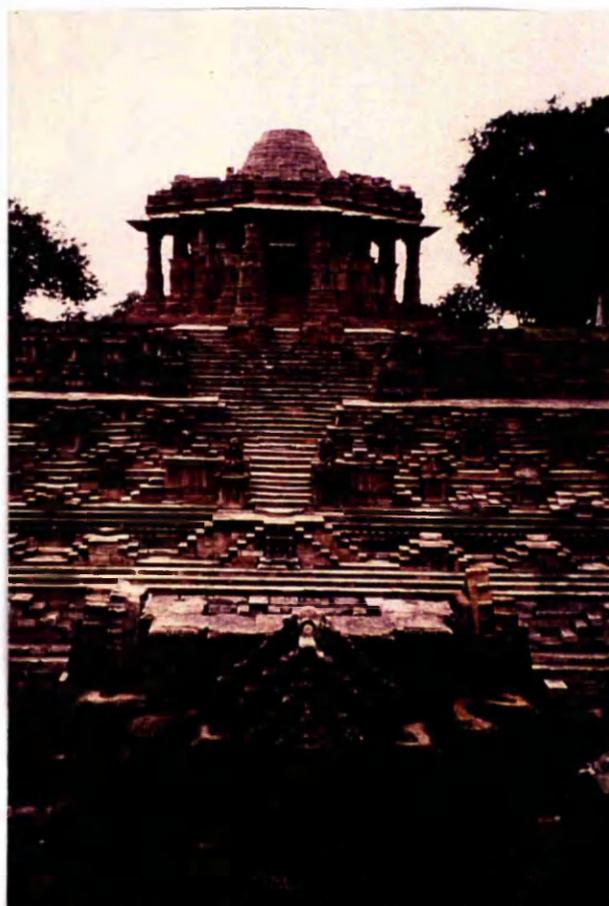
434  
Chitorgarh,  
friezes which are only  
visible from the water of  
the *kuṇḍa*.



435  
Anuradhapura,  
Twin Pools from north-  
western corner.



436 Kapadvanj, *torāṇa* on the eastern side of the *kuṇḍa*.



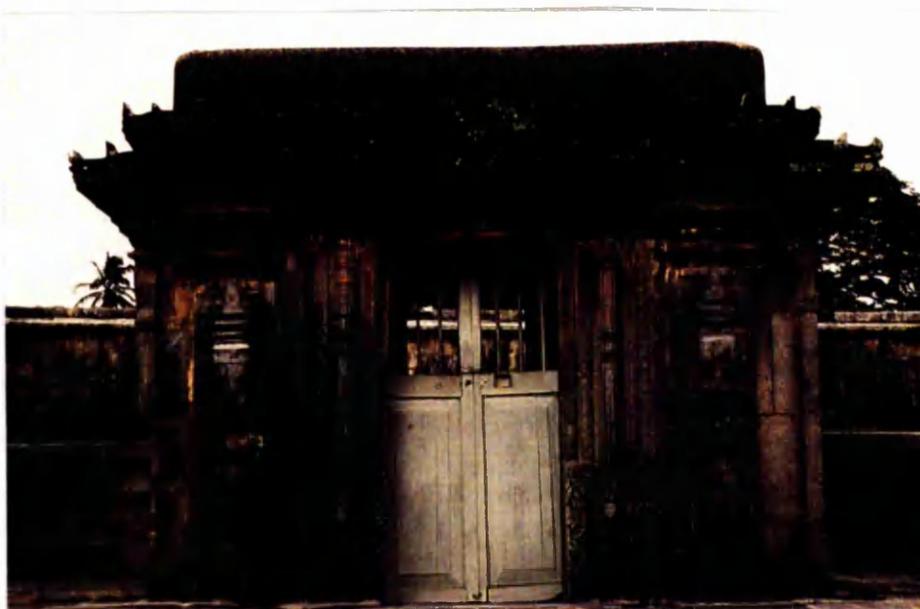
437 Modhera, Sūrya Kuṇḍa with steps leading up to the temple.



438 Vasantgarh, western side of the *kuṇḍa* with gateway-pavilion (photo A.I.I.S., Varanasi).



439  
Vrindavan,  
Gajendra Mukṣ Tirtha  
with four gateway-  
pavilions.



440  
Belur,  
enclosed gate-house of  
the *kunḍa* of the Cenna  
Keśava Temple.

441, 442  
Tiruvannamalai,  
lion gateways leading to  
the waters of Siṃha  
Tirtha No. 2 and 1.





443  
Chitorgarh,  
Khatan Bāoli with  
prominent steps leading  
up to the small temple.



444  
Jaipur,  
*kuṇḍa*-like steps surround  
the courtyard of the  
Jawahar Kala Kendra.



445  
Colombo,  
*kuṇḍa*-like fountain at the  
Kelani Temple.

**Chapter 6:**  
**WELLS**



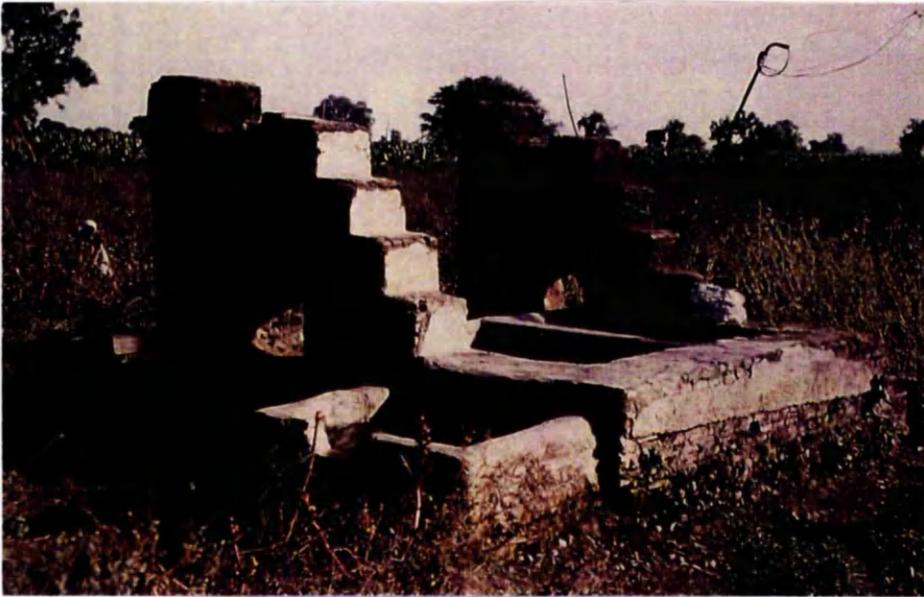
446  
Visavada,  
hero stones next to the  
Jñān Vāv.



447  
Patan (Nepal),  
simple draw well on a  
city square.



448  
Chidambaram,  
draw well with pulley  
mechanism in the  
Natarāja Temple  
complex.



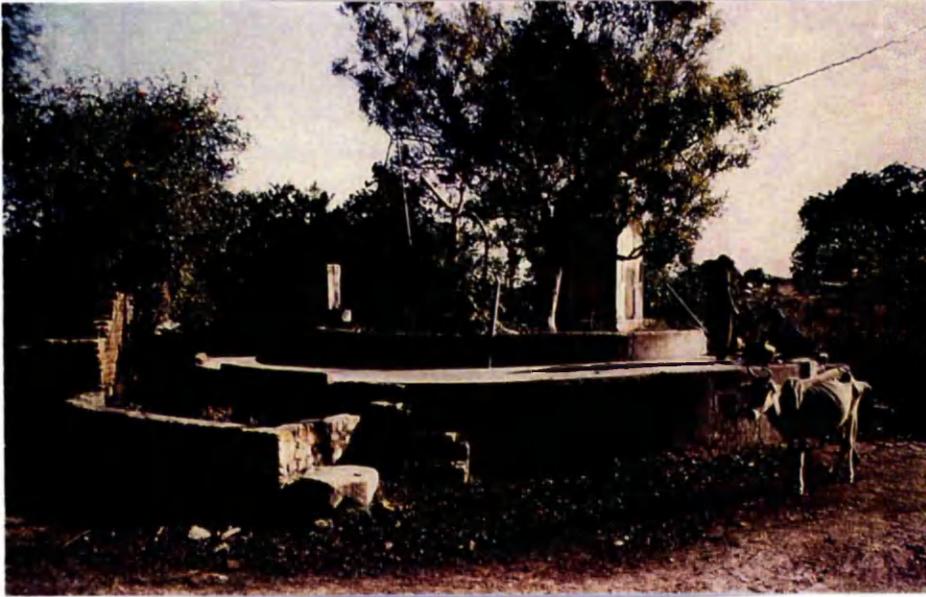
449  
Adivad,  
draw well typical of  
southern Maharashtra.



450  
Raipur,  
draw well in the  
compound of the  
Rāmacandra Temple.



451  
Bundi,  
draw well with raised  
platform.



452  
Sirol,  
draw well in raised  
platform with cattle  
troughs and shrine.



453  
Ghumli,  
Bābūke Vāv with cattle  
trough and irrigation  
channel.

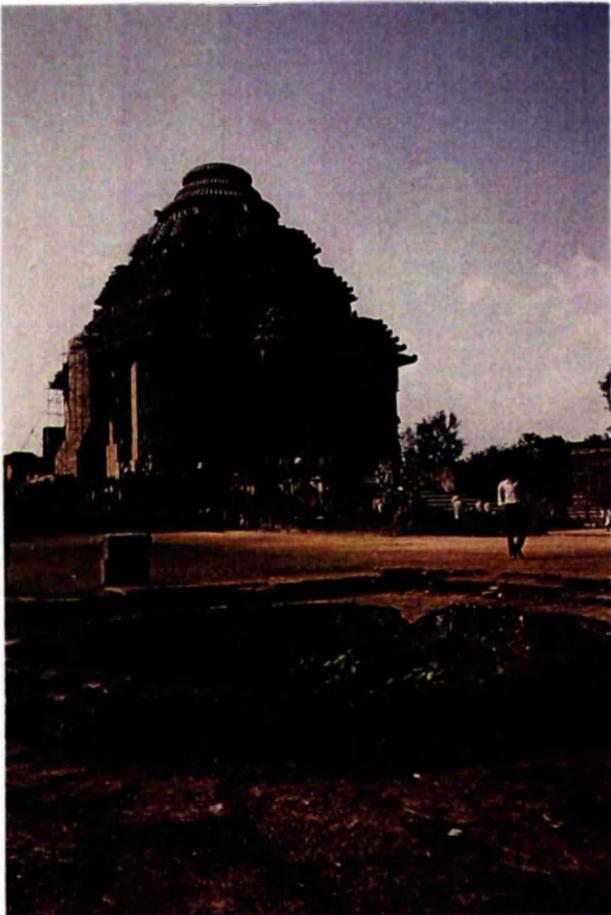


454  
Khajuraho,  
draw well with Persian  
wheel in the fields.

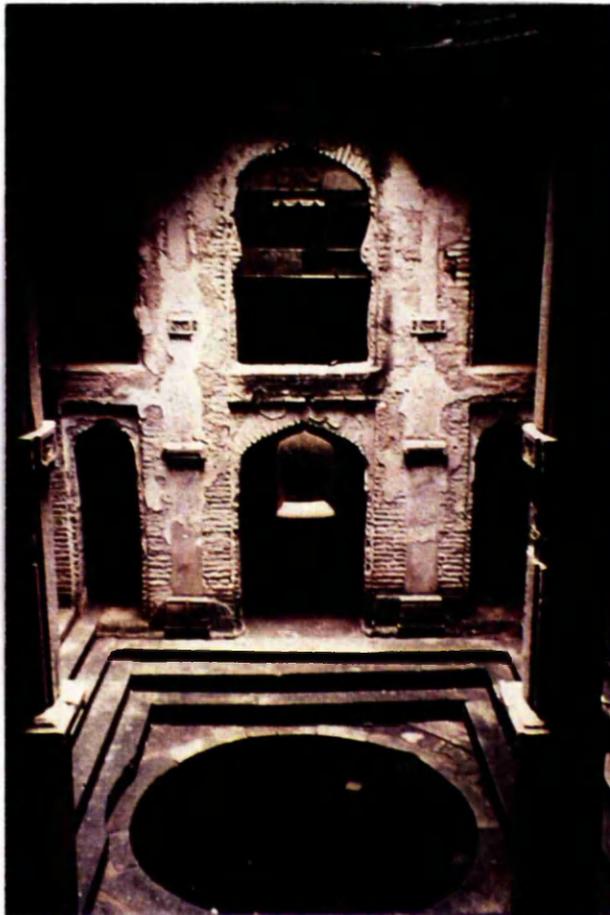


455  
Benares,  
three-storeyed Yūpa  
Sarovar.

456 Konarak, draw well with low parapet wall at the Sūrya Temple.



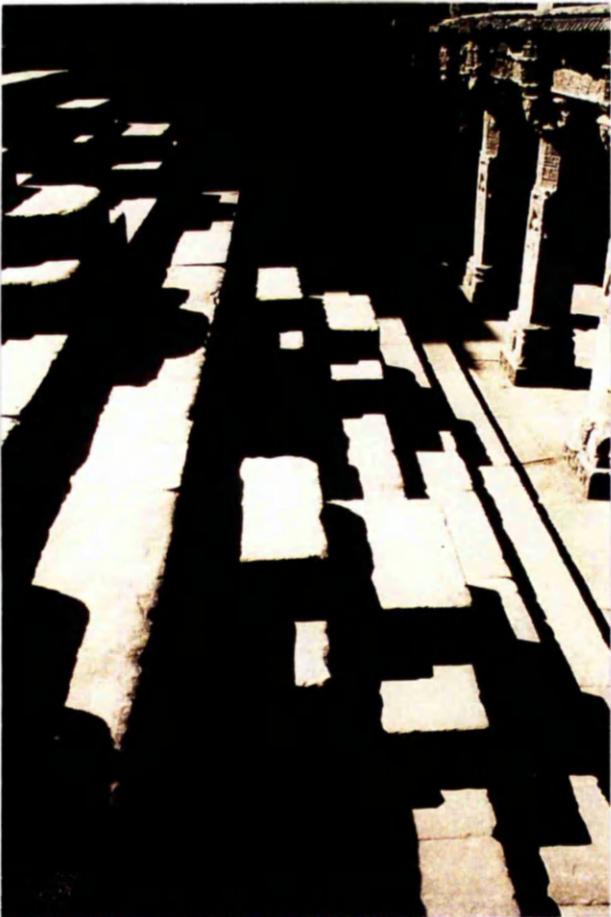
457 Adalaj, stepwell with basin for washing and bathing (well shaft visible in background).



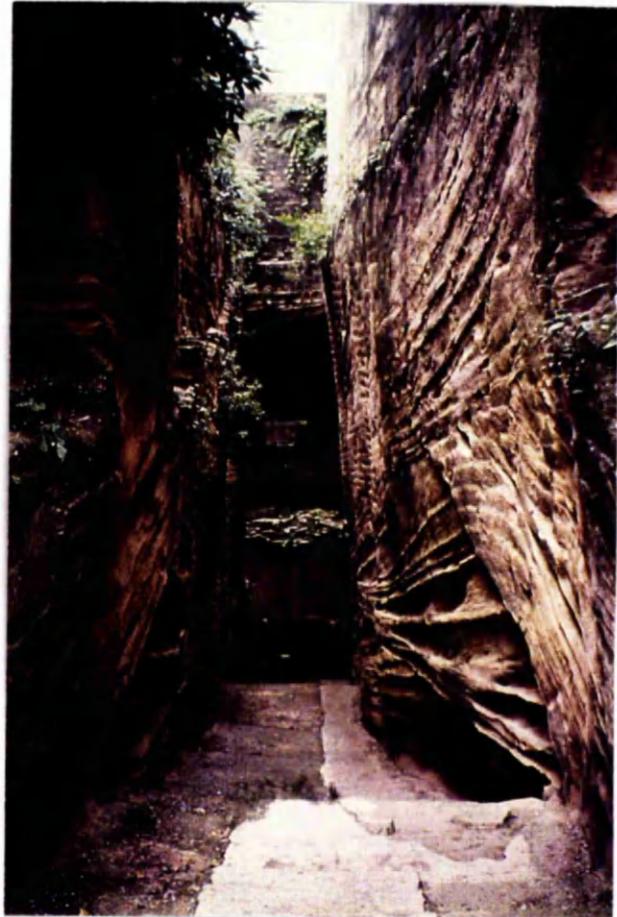


458  
Kapadvanj,  
Bātris Koṭha Vāv with  
pyramidal steps.

459 Patan, Rāṇī Vāv with parallel and lateral  
step formations.



460 Junagadh, Aḍī Kaḍī Vāv.

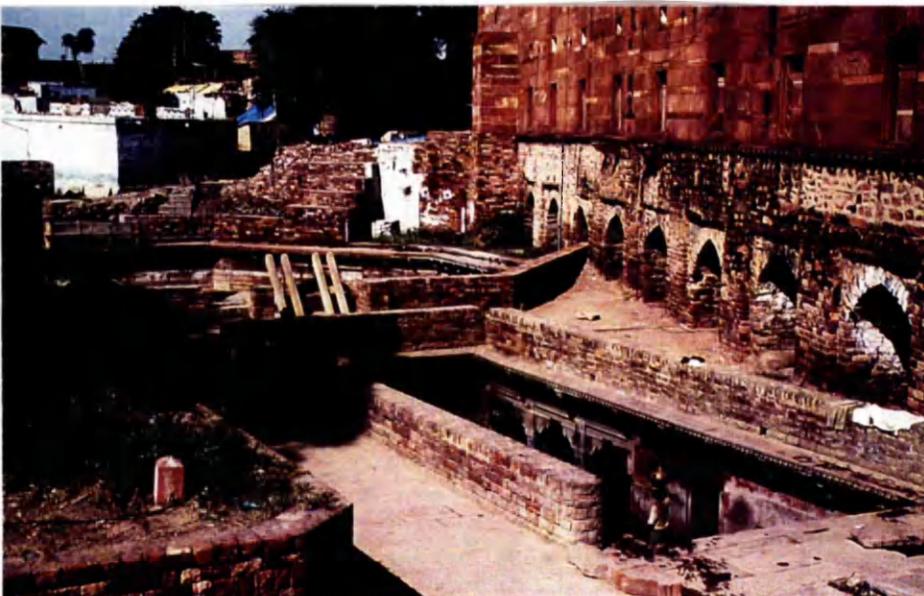




461  
Lakkundi,  
stepwell.



462  
Malpannagudi,  
small stepwell.



463  
Fatehpur Sikri,  
Jhālra stepwell at the  
Buland Darvāzā.



464  
Khajuraho,  
stepwell north-east of the  
Kaṇḍariya Mahādeva  
Temple.



465 Ahar, small stepwell at the cenotaphs.



466  
Delhi,  
Gandhak-ki Bāoli.



467  
Delhi,  
Ugrasen-ki Bāoli.



468  
Sirol,  
Bāoli of Bir Singh Deo.



469  
Delhi,  
Rājon-ki-Bain.



470 Jaipur, Purāṇa-Ghāt-Kanyā Stepwell.



471 Tiruvellarai, the square basin of the Swastika Well.



472  
Tiruvellarai,  
the swastika-shaped steps  
leading to the basin of the  
Swastika Well.



473  
Nagaka Gau,  
Nadir-ki Vāv.



474  
Nagaka Gau,  
Nadir-ki Vāv in raised  
platform.

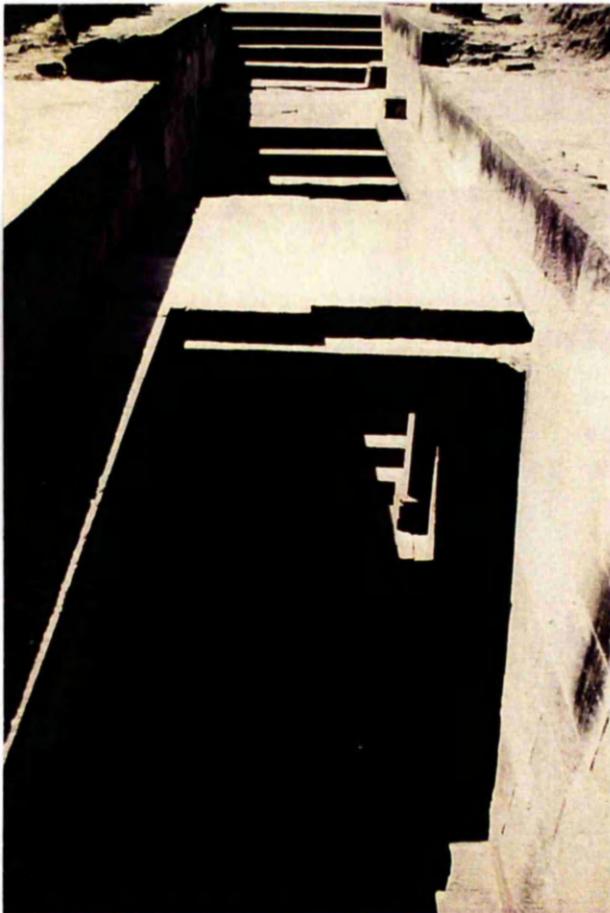
475, 476  
Fatehpur Sikri,  
Shāh Qulī's Bāoli with  
galleries surrounding the  
well shaft and stepped  
corridor.





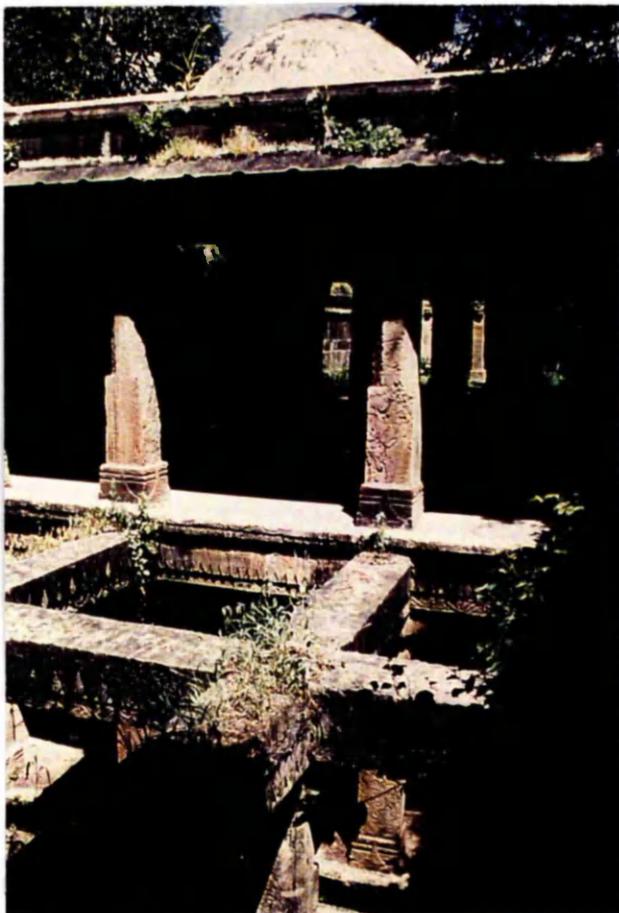
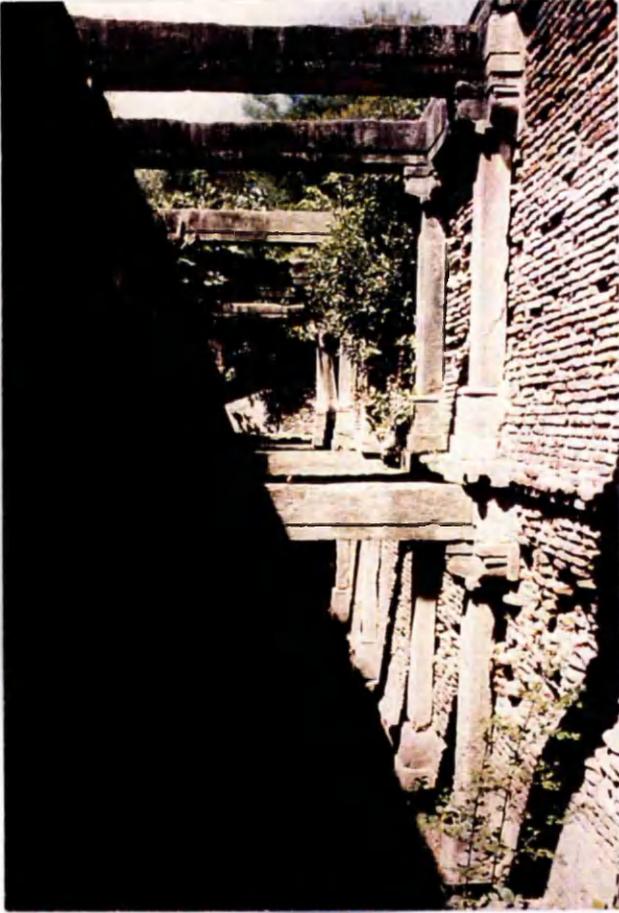
477  
Patan,  
Rāṇī Vāv with *kūṭas* to  
stabilise the side walls.

478 Modhera, Vāv with built in pavilions.



479 Ghumli, Vikia Vāv.

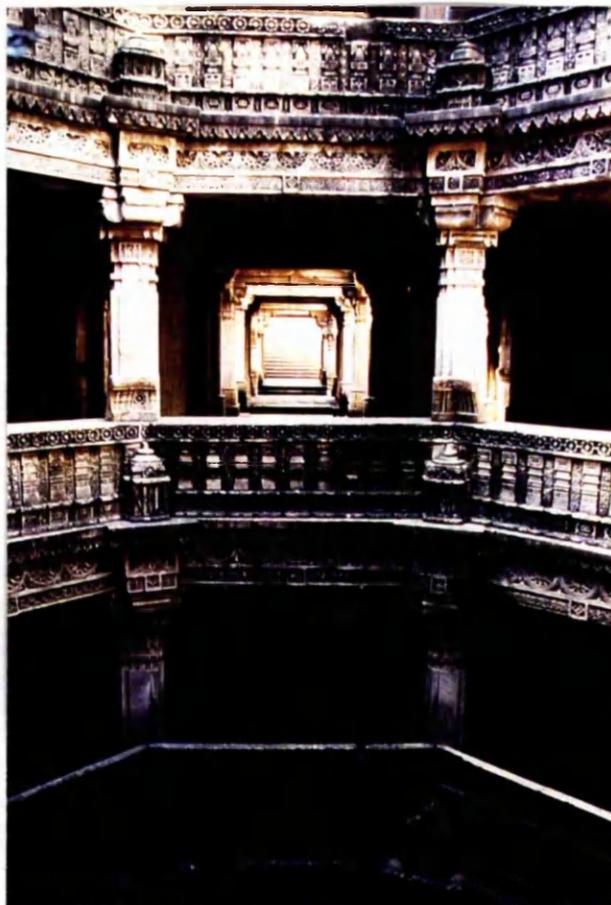
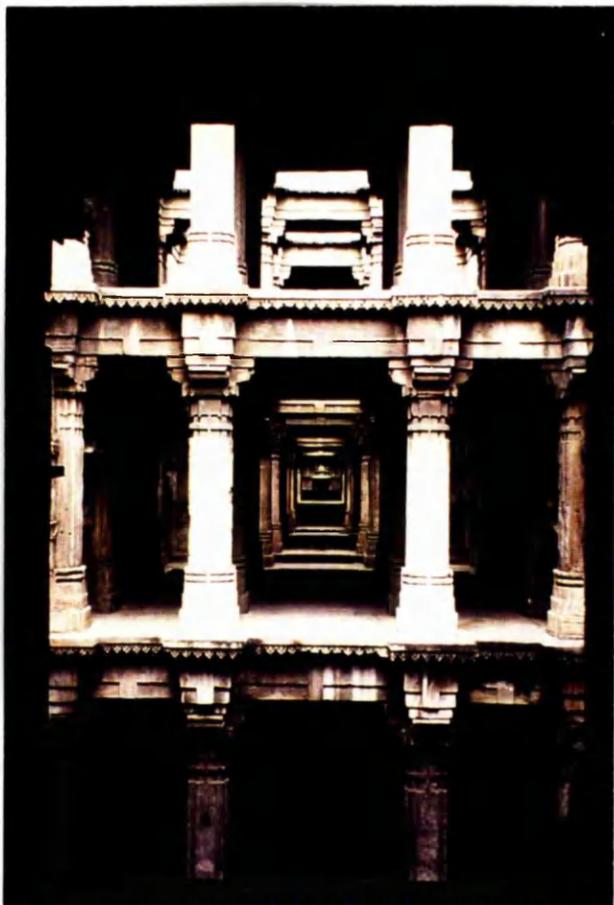




480 Uvarsad, stepwell secured by a framework of lintels and beams (top left).

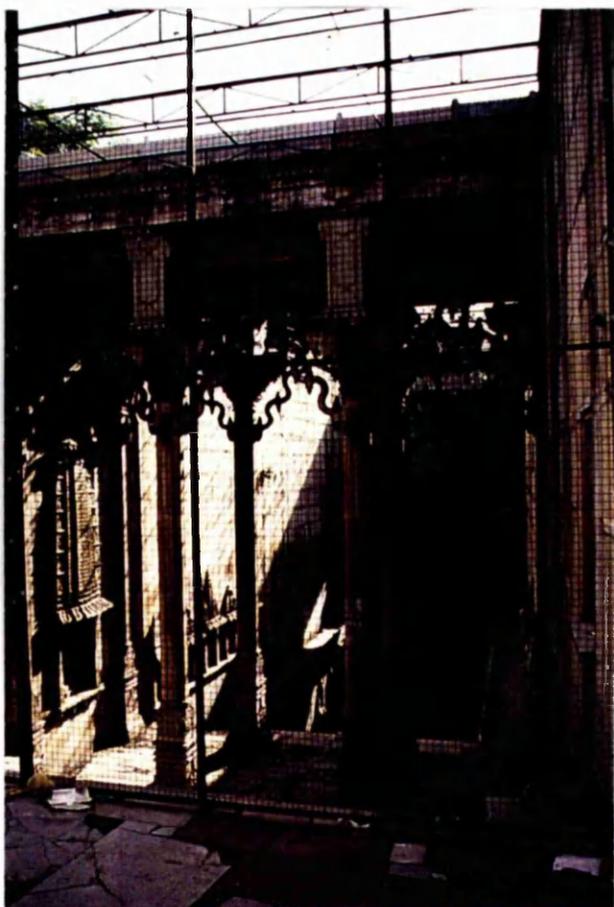
481 Uvarsad, the brick walls were plastered and painted (top right).

482 Baroda, Navalakhi Vāv with pavilions and intermediate framework.



483 Ahmedabad, view through the pavilions in the Dādā Harir Vāv (top left).

484 Adalaj, Ruda Vāv (top right).

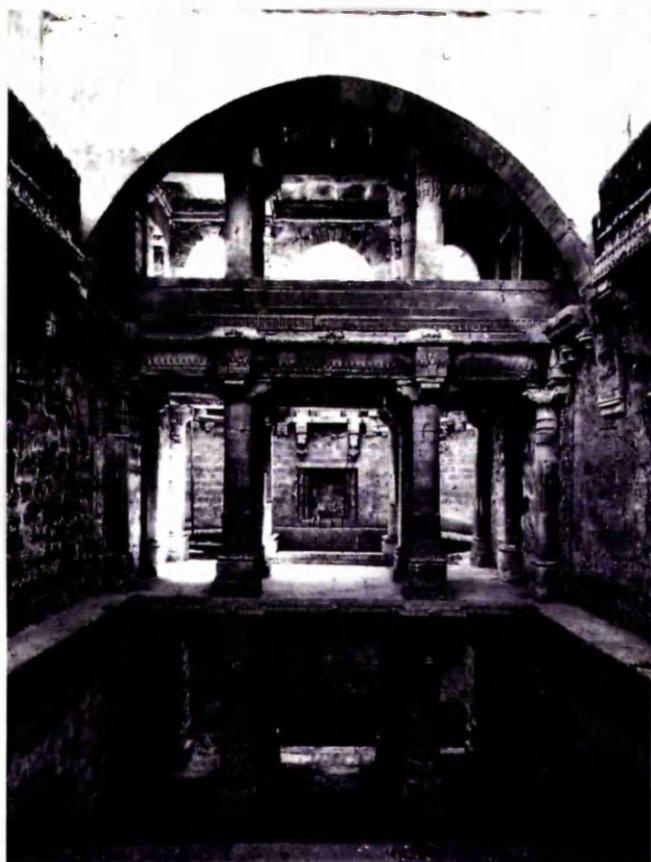


485 Bundi, Rānī-ji-kī Bāoli.

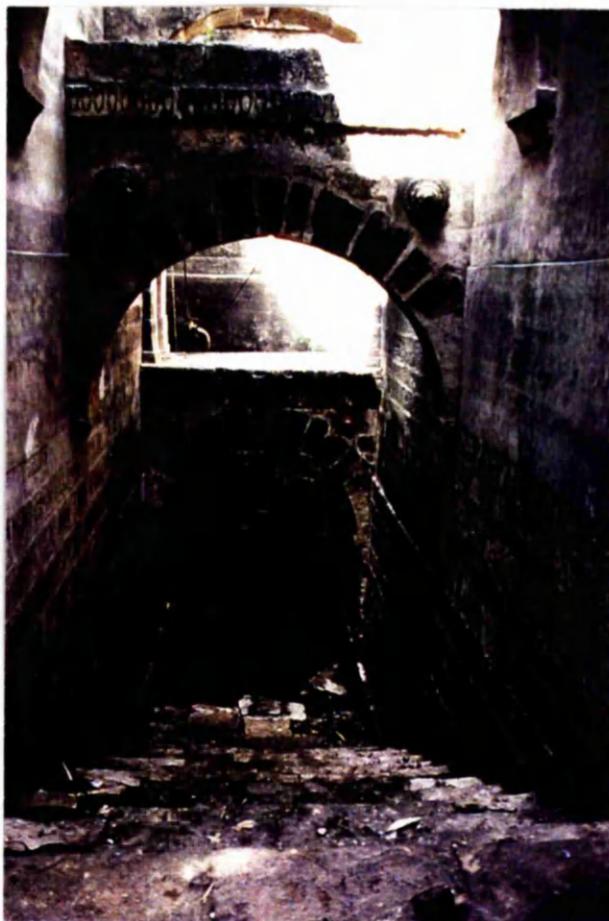


486 Isanpur,  
Jethābhāi Vāv with true arch.

487 Vanthali, Khingar Vāv (photo A.I.I.S.,  
Varanasi).



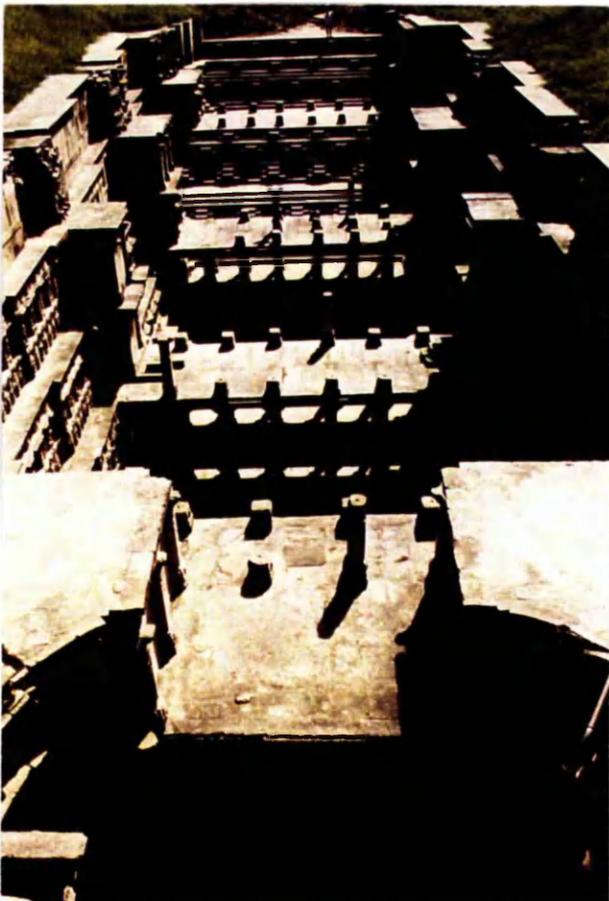
488 Nagaka Gau, Nadir-kī Vāv.



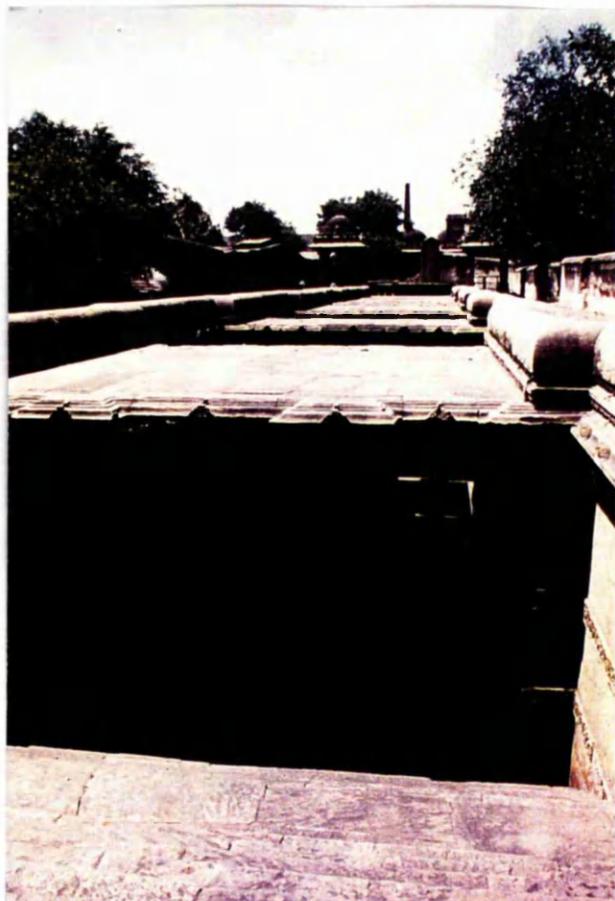


489  
Patan,  
Queen's Stepwell.

490 Patan, Queen's Stepwell seen from the well shaft.



491 Ahmedabad, Dādā Harīr Vāv.  
The pavilions are level with the surrounding ground.





492 Ahmedabad, Mātā Bhavāni Vāv. The pavilions protrude above ground level.

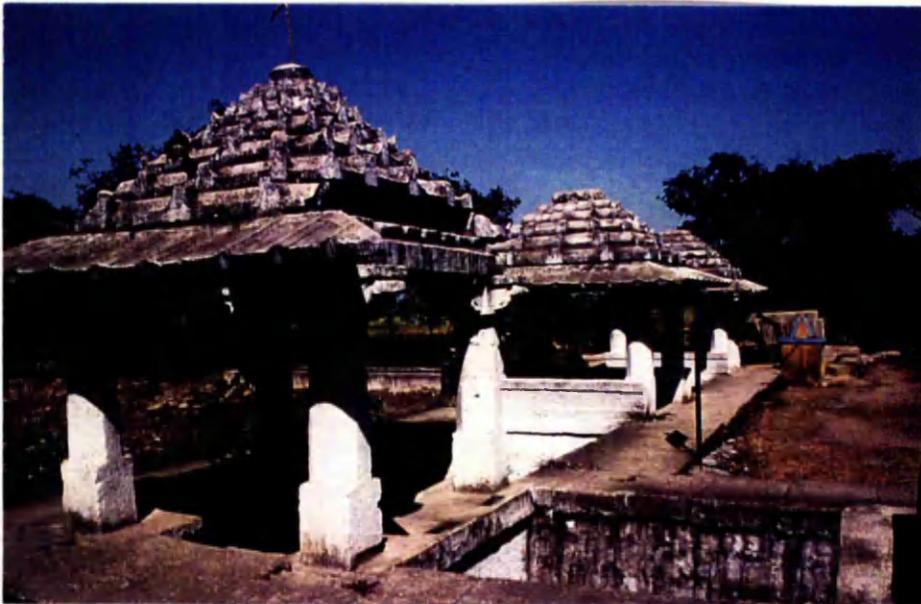
493 Ahmedabad, Dādā Harir Vāv with entrance pavilion and small *chattris* over ground (bottom left).

494 Bundi, Rāni-ji-kī Bāoli with *chattris* above ground level.





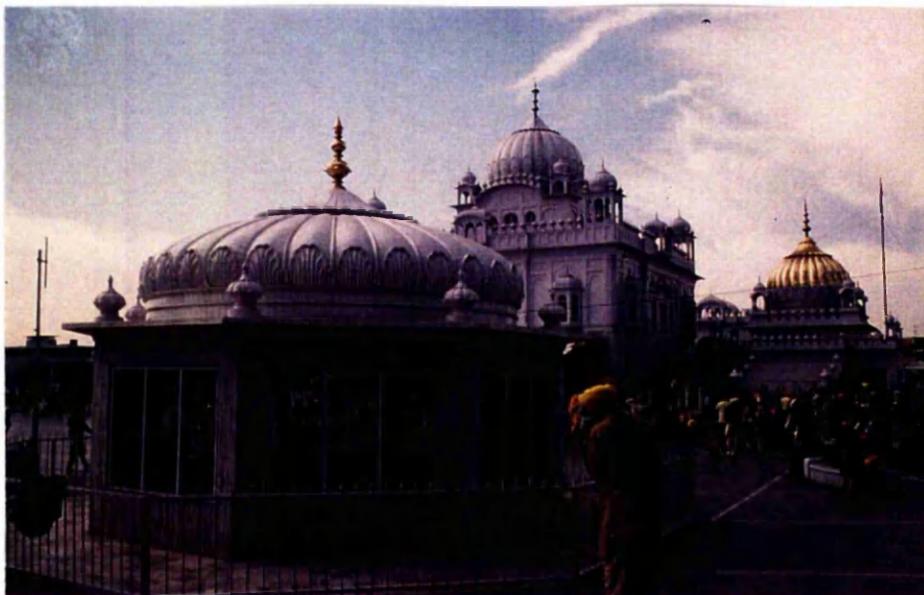
495  
Ghumli,  
the upper level of the  
pavilions in the Vikia Vāv.



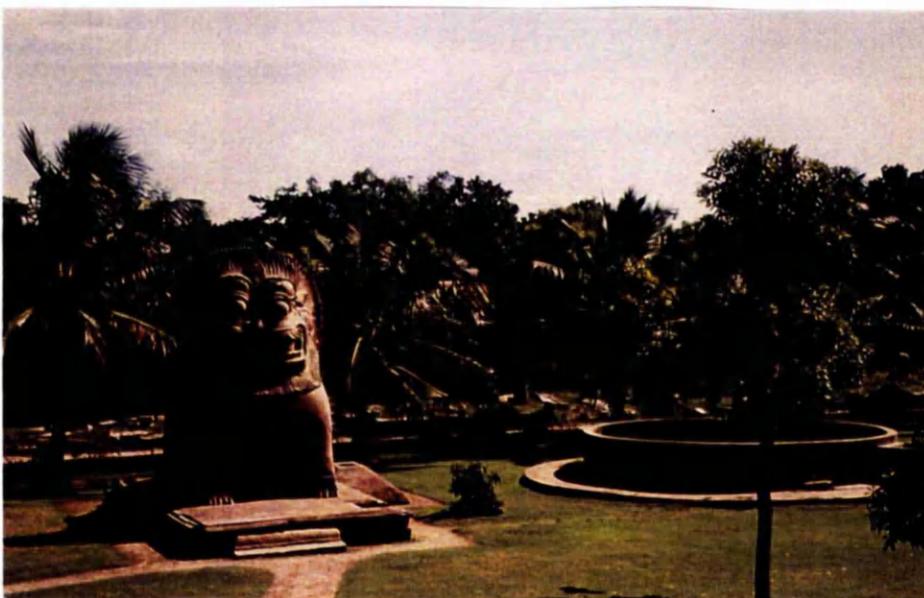
496  
Visavada,  
Jñān Vāv with pyramidal  
pavilions.



497  
Agra,  
covered stepwell with en-  
trance steps (foreground)  
and circular well shaft  
(rear left).



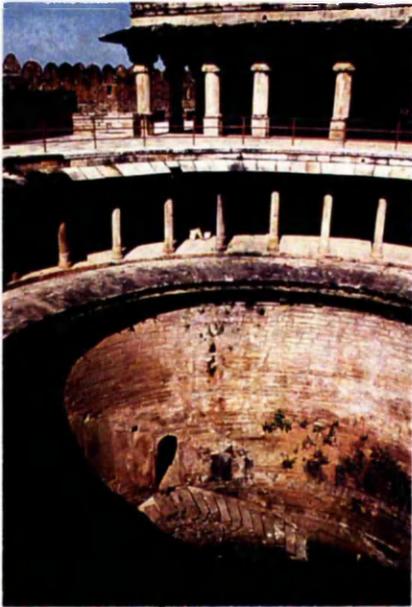
498  
Goindwal,  
Bāoli Sāhib Gurdwārā  
with pavilions over the en-  
trance and the well shaft.



499  
Gangaikondacholapuram,  
Simhakiṇaru covered well.



500  
Surapur (Bhavnagar),  
simple spiral well  
(photo B. Breitkopf).



501 Gwalior, Āssi Khāmbhā spiral-well.



502  
Mandu,  
Champā Bāori.

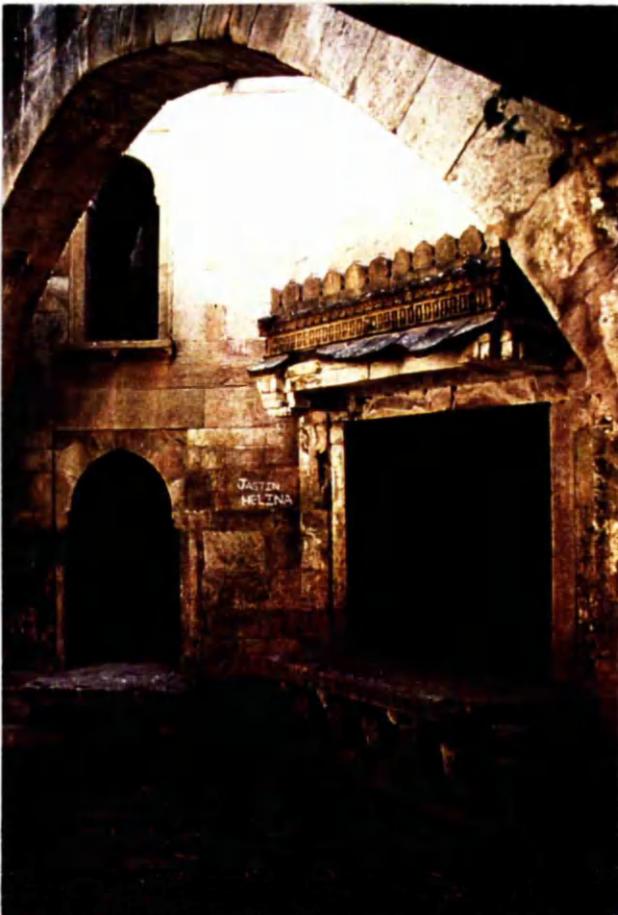


503  
Delhi,  
Circular Bāoli in Firūz  
Shāh Kotlā.



504  
Mehmudabad,  
Bhamaria spiral-well.

505 Mehmudabad, subterranean rooms in the  
Bhamaria well.



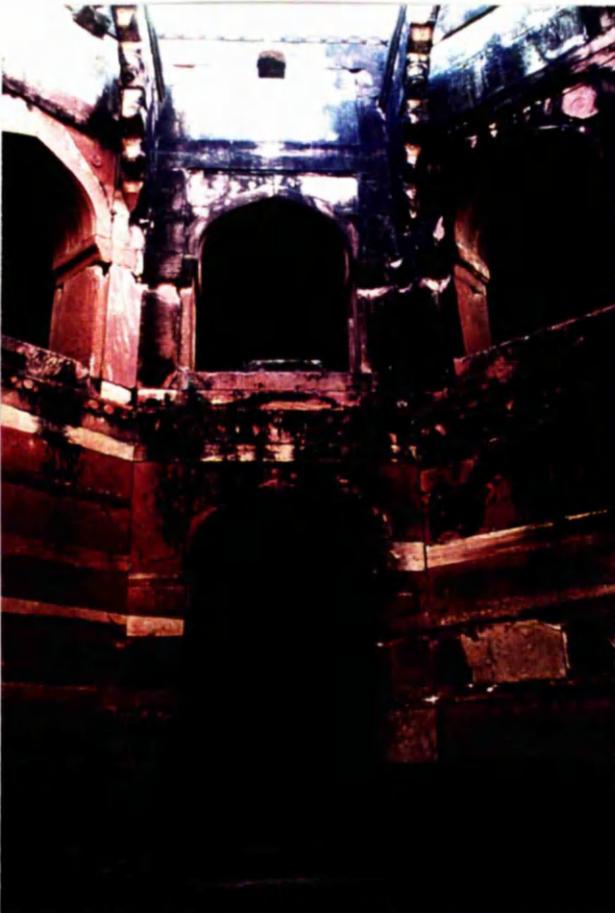
506 Mandu,  
Andheri Bāori.



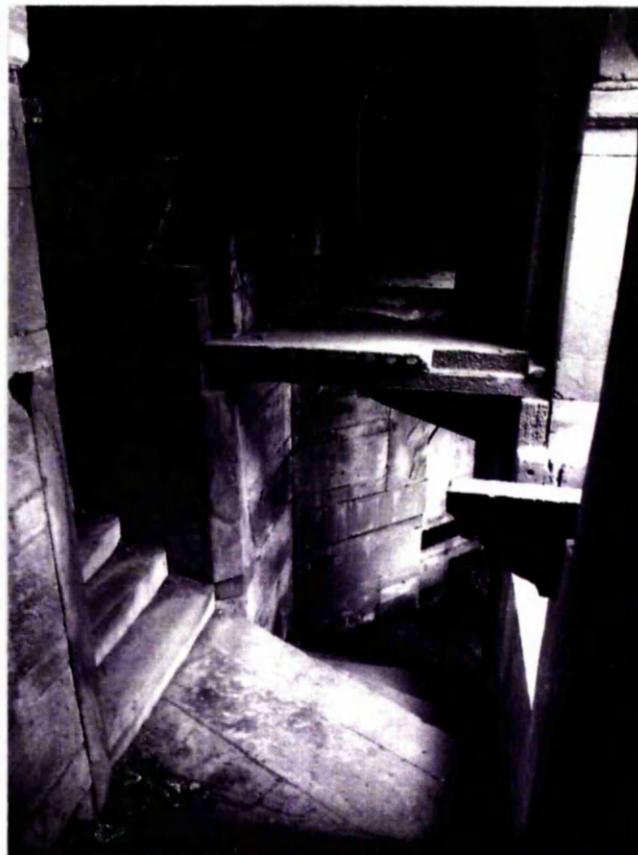


507  
Fatehpur Sikri,  
Saṅgīn Bāoli with  
apartments above ground  
level.

508 Fatehpur Sikri, apartments surrounding the well shaft in the Saṅgīn Bāoli.



509 Fatehpur Sikri, spiral staircase in the Saṅgīn Bāoli (photo A.I.I.S., Varanasi).

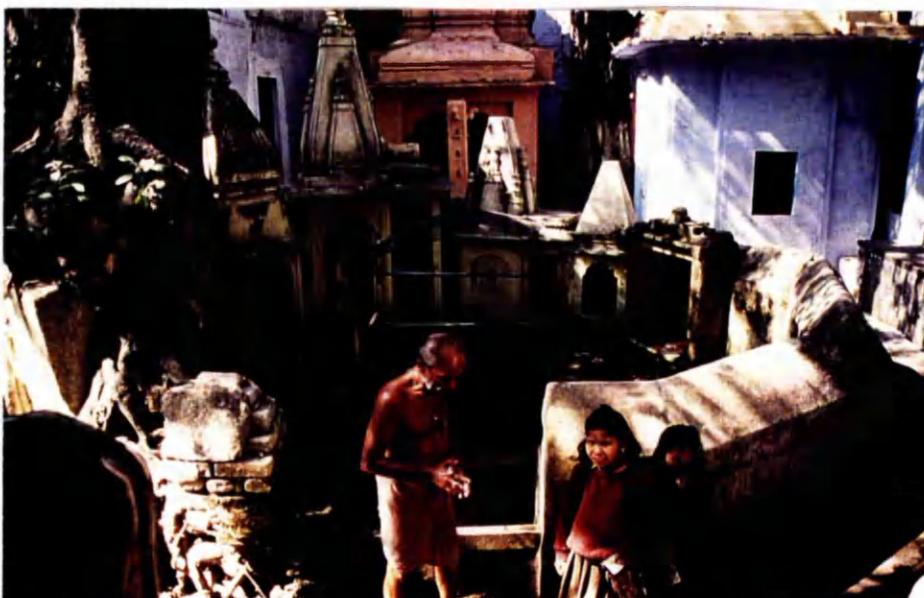




510  
Amritsar,  
draw well with roof and  
popular prints near the  
Gurū-kā Mahal.



511  
Patan (Nepal),  
well with adjacent shrine  
of Avalokiteśvara.



512  
Benares,  
Dharma Kūpa surrounded  
by miniature temples.



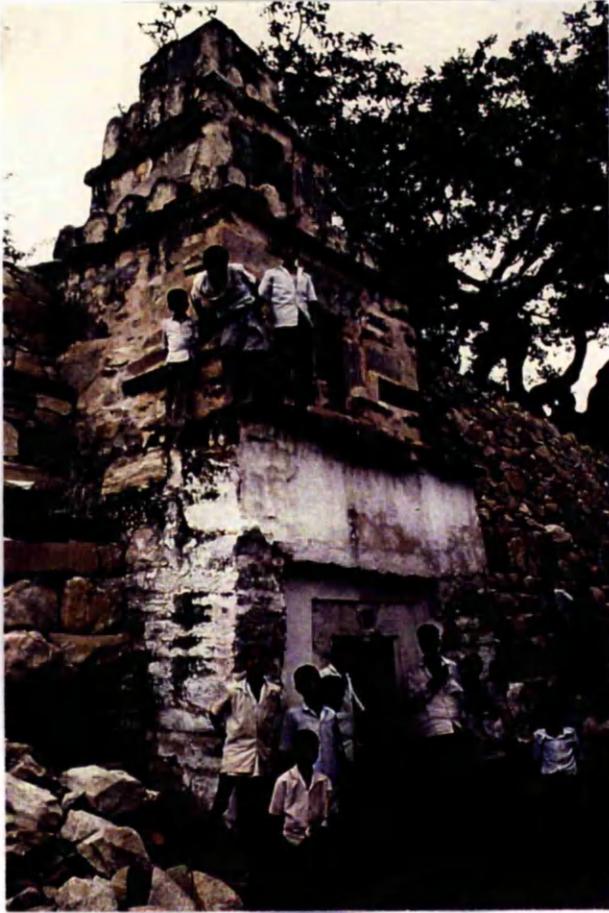
513 Adalaj, Ruda Vāv.



514 Adalaj, vegetal ornamentation  
in the Ruda Vāv.



515  
Visavada,  
Jñān Vāv with niches  
containing religious  
images.



516 Lakkundi, open stepwell with four-storeyed shrines flanking the stepped corridor.

518 Sirwal, Vāpi no. 2 with small shrine constructed over the steps.



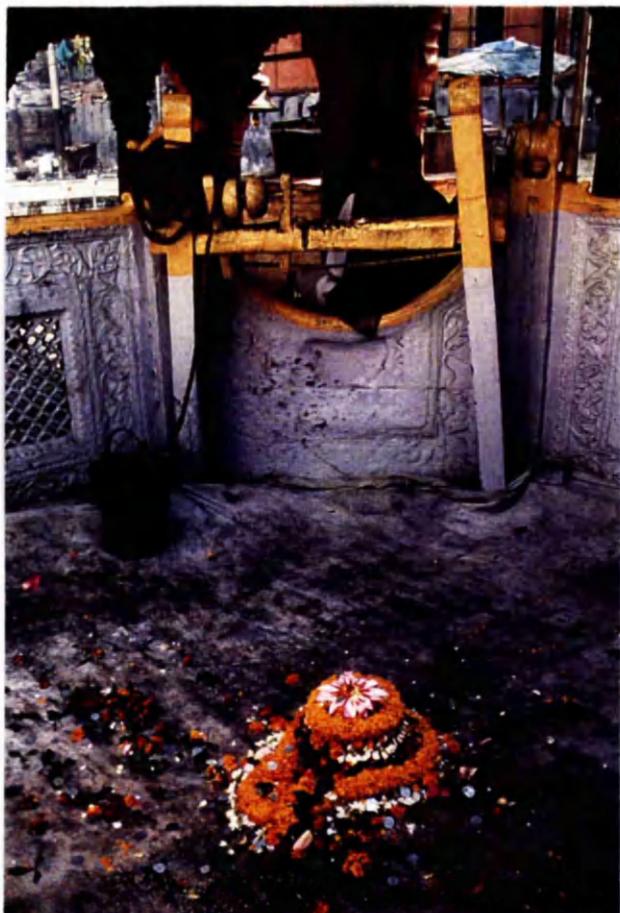
517 Modhera, stepwell with shrine above the stepped corridor.





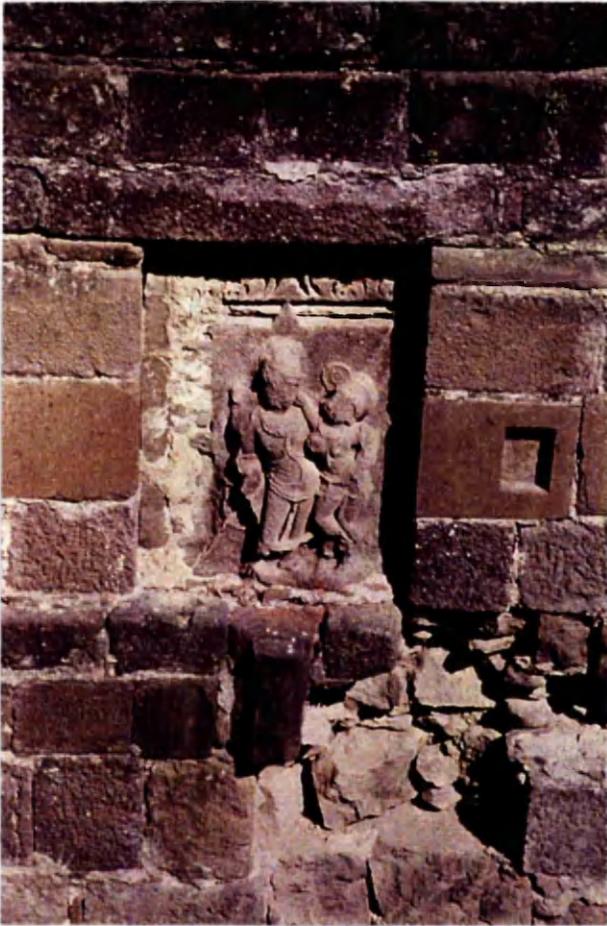
519  
Benares,  
Jñāna-Vāpi Kūp.

520 Benares, *liṅga* made of flower petals in the  
Jñāna-Vāpi Kūp.

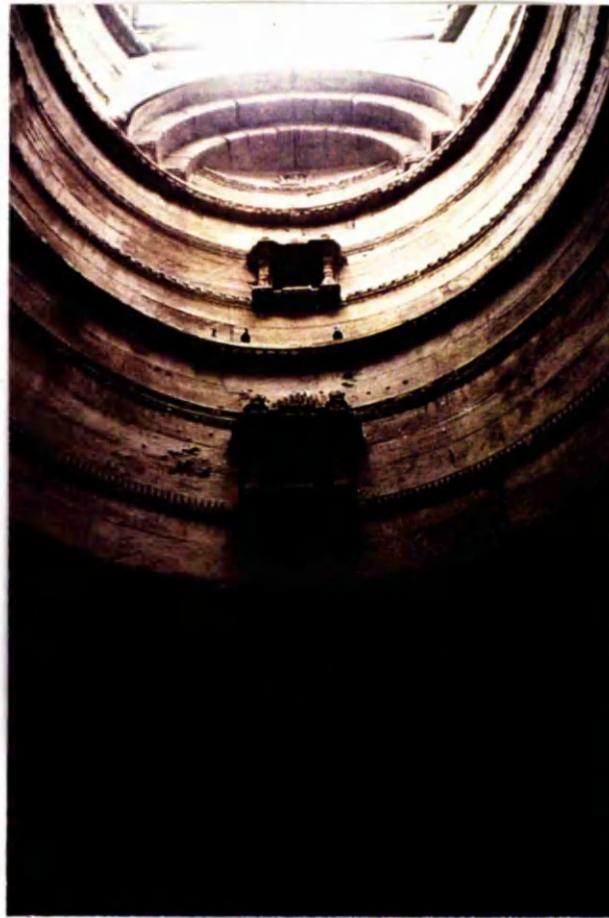


521 Ahar, goddess figure in the well shaft of the  
Vāv at the cenotaphs.

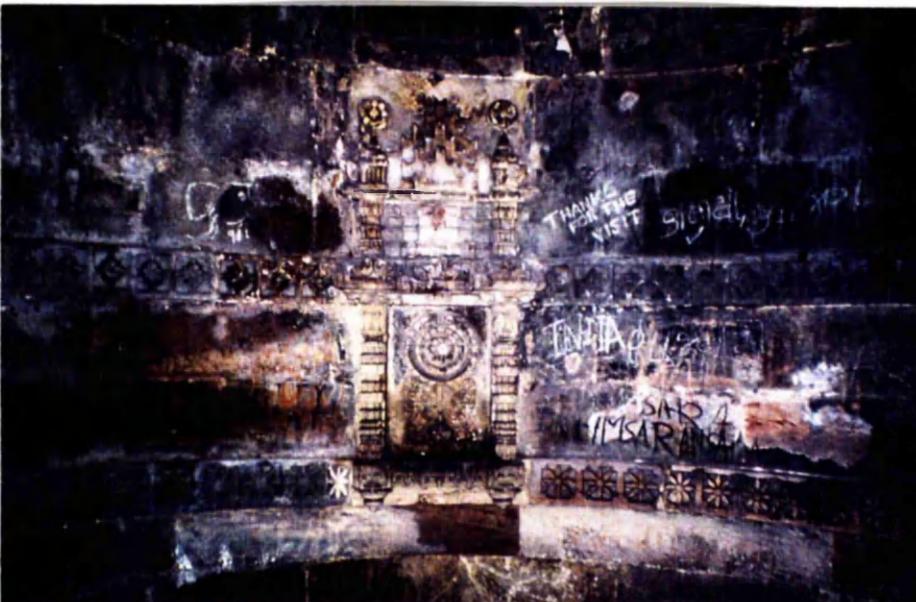




522 Ellora,  
images of Śiva and Pārvati in the well shaft.



523 Adalaj, well shaft of the Ruda Vāv with  
several shrines set one above the other.



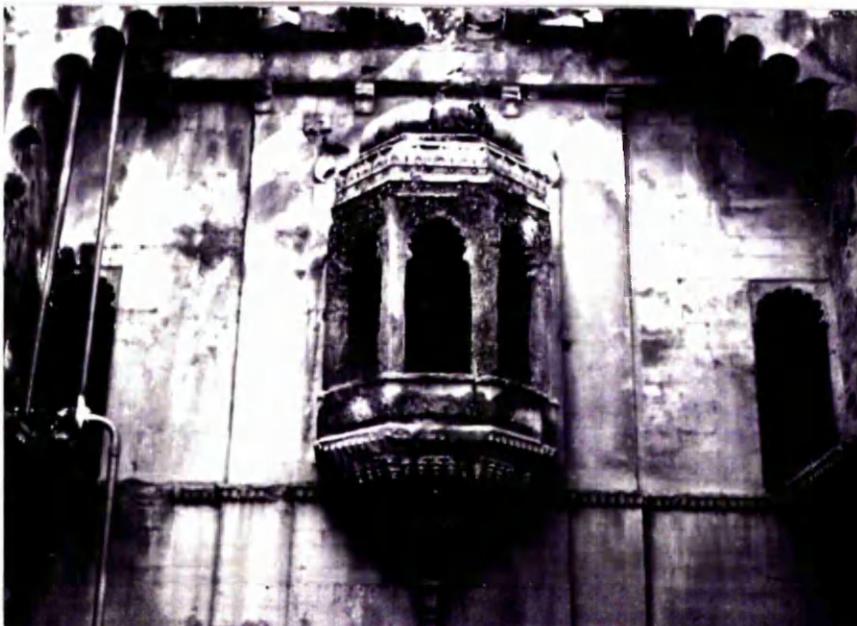
524  
Ahmedabad,  
vegetal ornamentation in  
the well shaft of the Dādā  
Harīr Vāv.



525  
Ahmedabad,  
Mātā Bhavānī Vāv with  
small temple built into  
the well shaft.



526  
Ahmedabad,  
the shrine doors in the  
well shaft of the Mātā  
Bhavānī Vāv.



527  
Ghanerao,  
Dhauri Vāv with pavilion  
built into the well shaft  
(photo A.I.I.S., Varanasi).



528  
Ahmedabad,  
modern shrines and  
sculptures in the Mātā  
Bhavānī Vāv.

529 Ahmedabad, instruments of the well-  
temple musicians in the Mātā Bhavānī Vāv.



530 Ahmedabad,  
*aṅgaṇa* of the Mātā Bhavānī Vāv.





531  
Bhubaneswar,  
Marici Kuṇḍa well to the  
right of the Mukteśvara  
Temple.



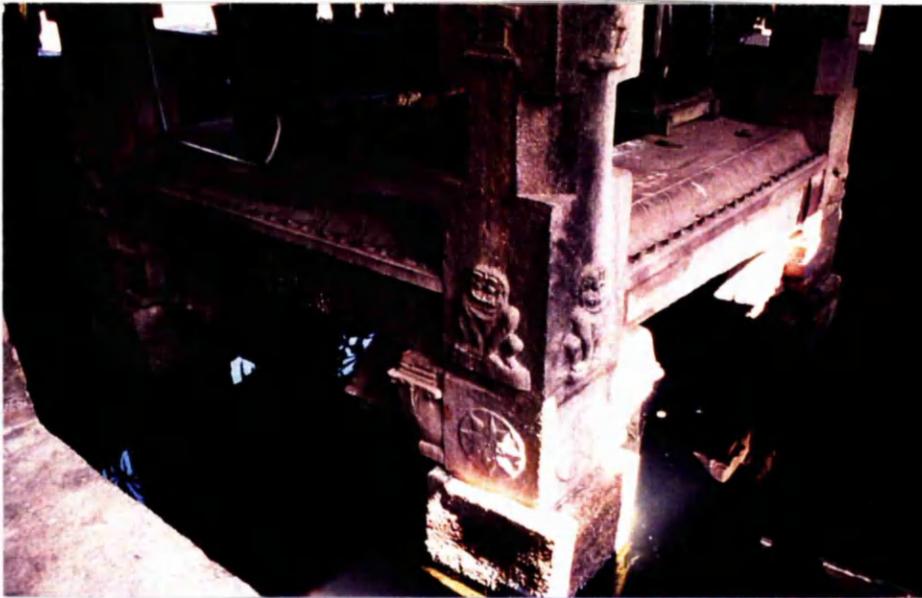
532  
Bhubaneswar,  
carved entrance to the  
Marici Kuṇḍa well.



533  
Menal,  
Bālj Kuāṃ shaped like a  
subsidiary shrine.



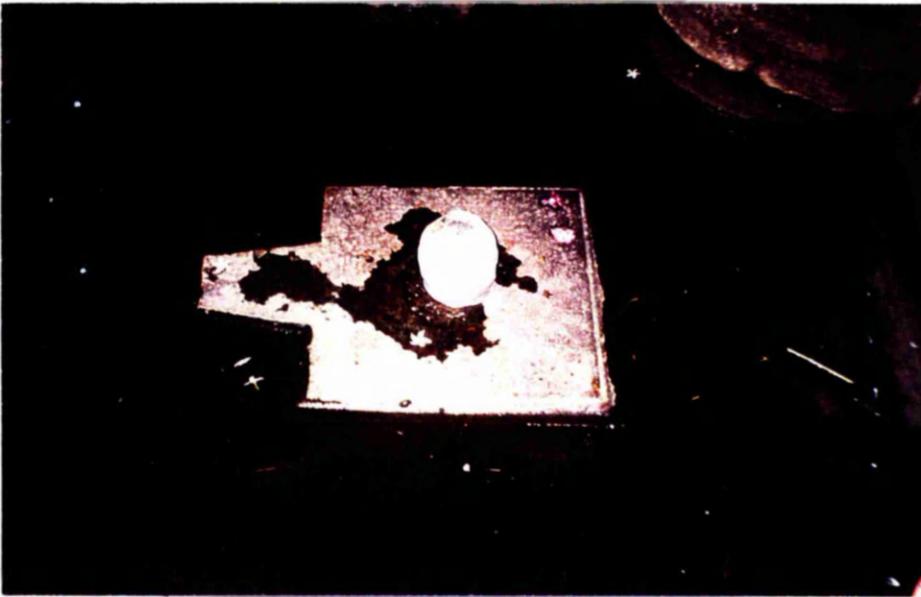
534  
Srisailam,  
Mallikār Guṇḍam well in  
the shape of a *maṇḍapa*.



535  
Srisailam,  
inner construction in the  
Mallikār Guṇḍam well.



536  
Bijolia,  
Bolanāth Mandir  
containing a well in  
its cella.



537  
Bijolia,  
*linga* inside the well of the  
Bolanāth Mandir.

538 Bijolia, well in the Undeśvara Mandir.

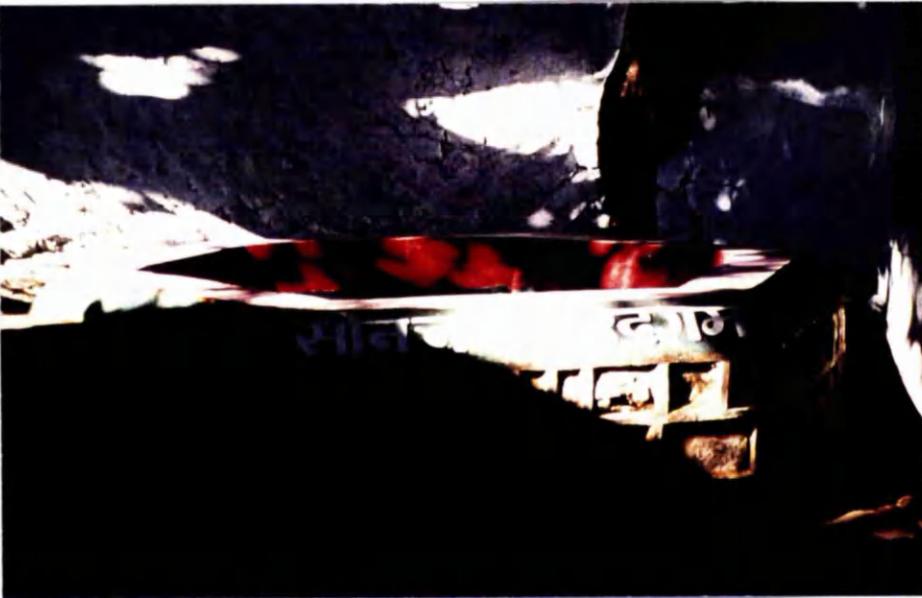


539 Trimbak, the source of the Godavari.





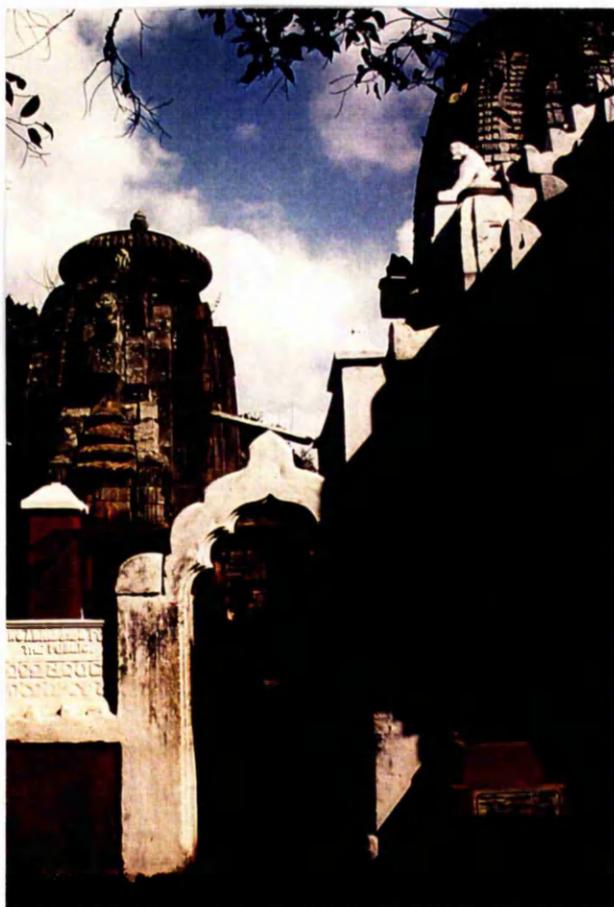
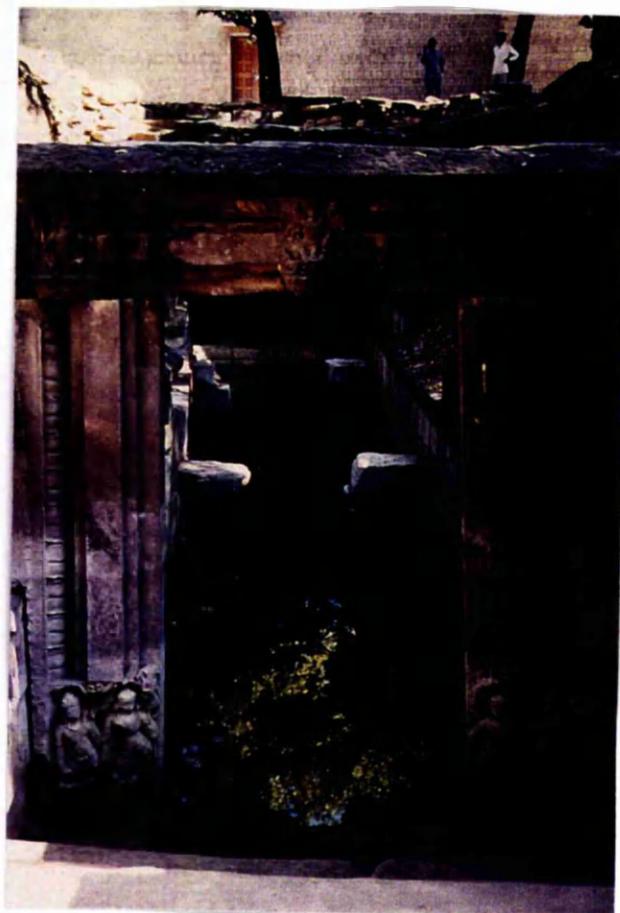
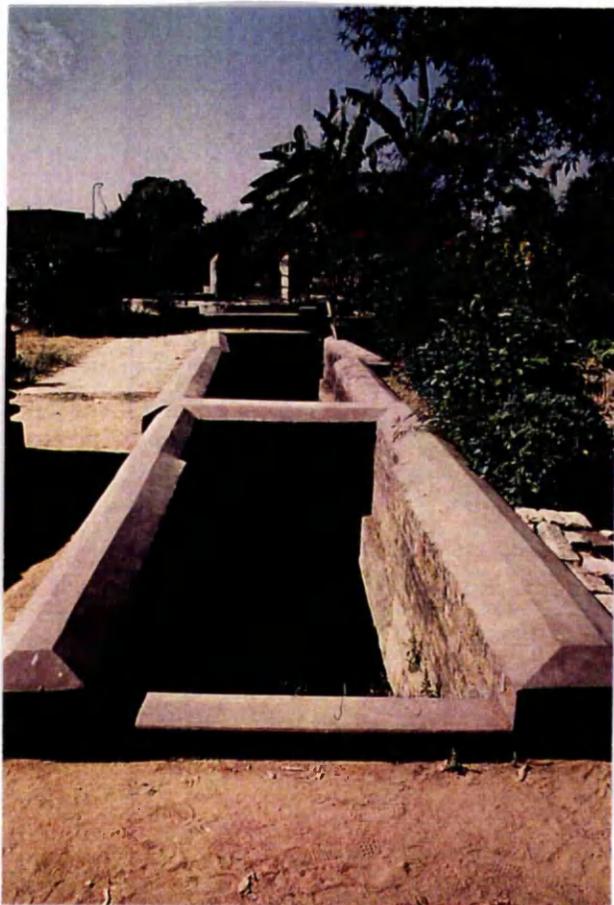
540  
Amarkantak,  
Pātāleśvara well-temple.



541  
Amarkantak,  
the source of the Son River  
in a modern concrete well.



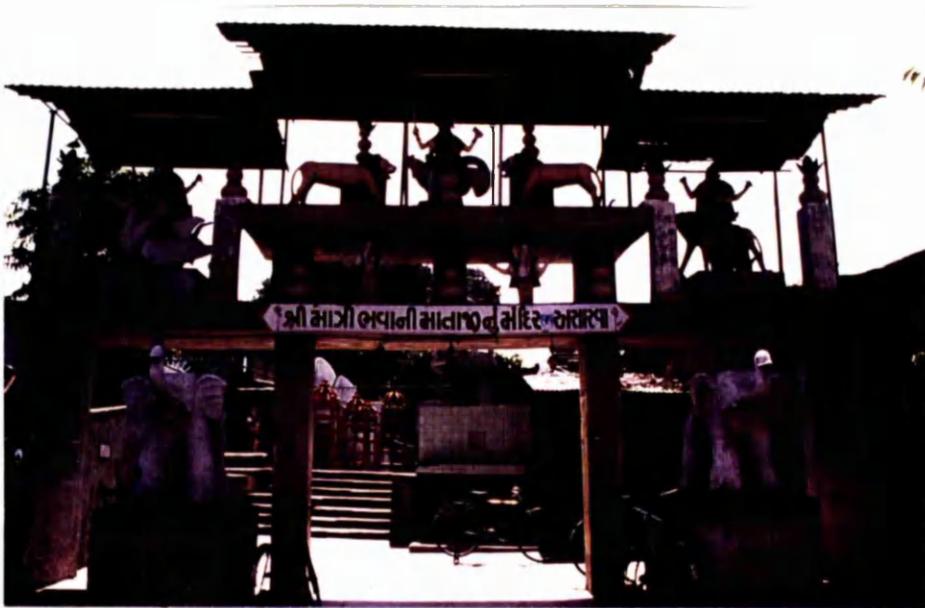
542  
Vidisha,  
Bija Maṇḍal Bāoli.



543 Khajuraho, well with doorway in the compound of the Jain temples (top left).

544 Vidisha, Bija Maṇḍal Bāoli with temple-like doorway (top right).

545 Bhubaneswar, doorway leading to the well adjacent to the Gaurī Temple.



546  
Ahmedabad,  
modern triple *torana*  
leading to the Mātā  
Bhavānī Vāv.



547  
Adavad,  
Hāthi Bāoli with  
monumental gateway.



548  
Adalaj,  
gateway towers on either  
side of the entrance to the  
Ruda Vāv.



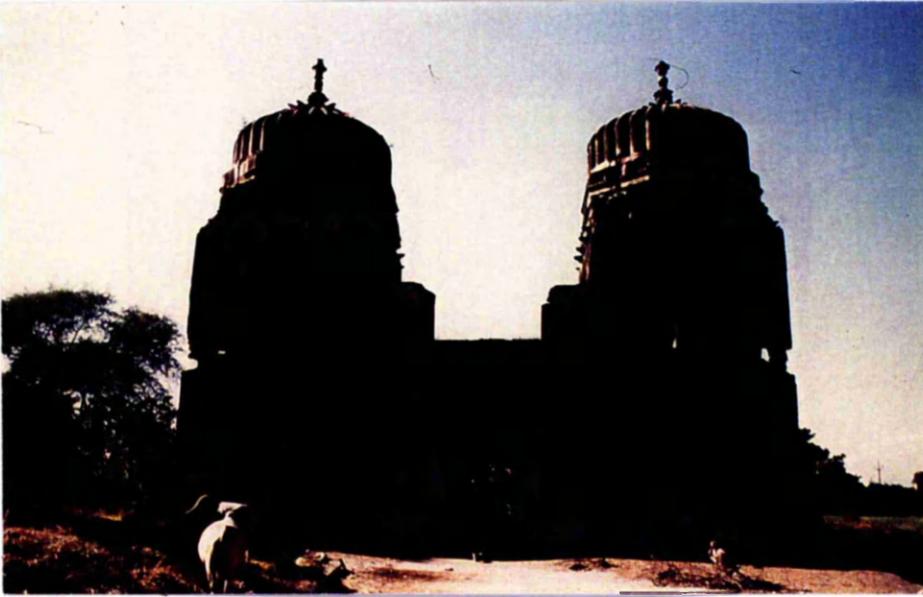
549  
Uvarsad,  
*pratojis* made of brick and  
plaster.



550  
Kapadavanj,  
Vājināth Vāv.

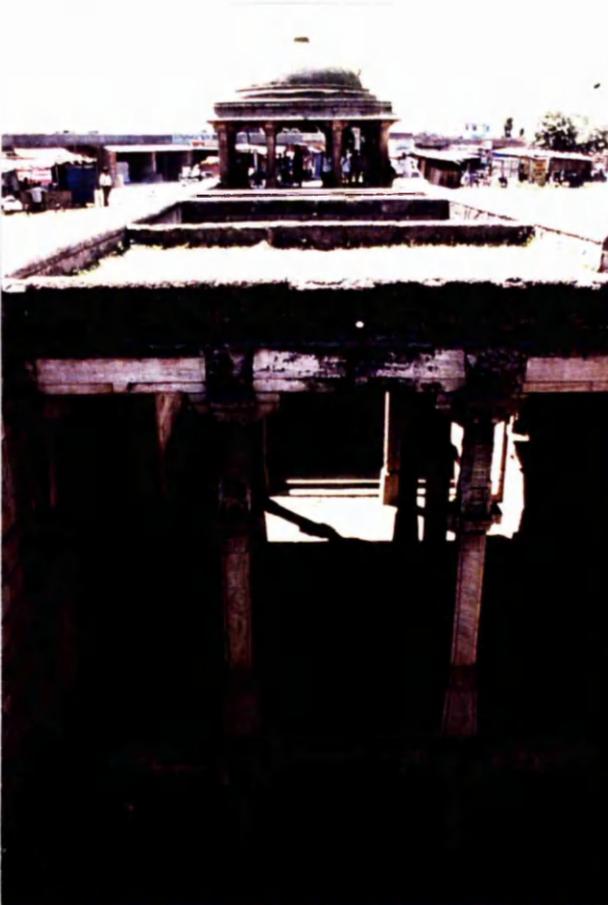


551  
Baroda,  
Vidyadhara Vāv (photo  
A.I.I.S., Varanasi).



552  
Sirol,  
Rājā Bir Singh Deo's Bāoli  
with high towers flanking  
the entrance.

553 Isanpur,  
domed entrance pavilion to the  
Jethābhāi Vāv.



554 Wadhwan,  
Gaṅgā Vāv with pyramidal roofs (photo  
A.I.I.S., Varanasi).

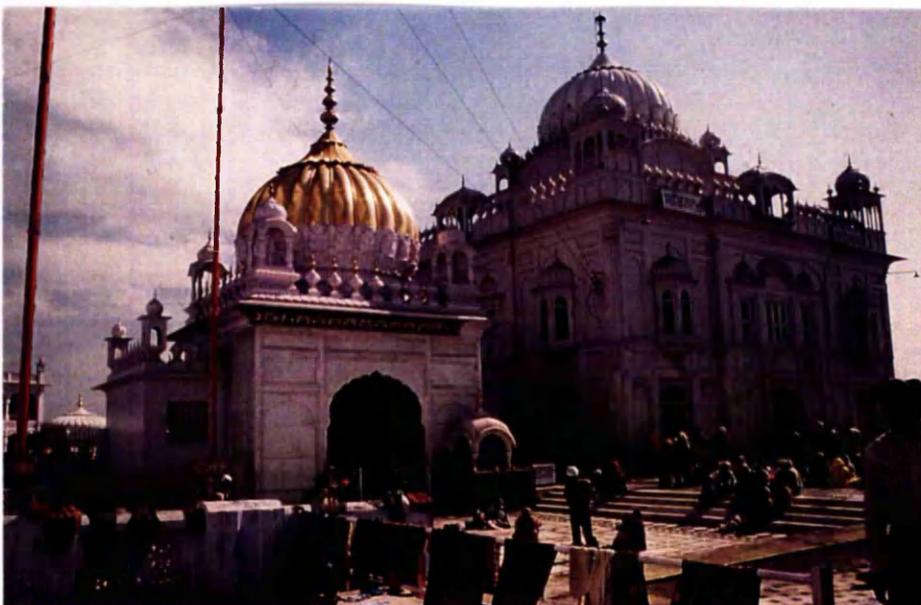




555  
Visavada,  
entrance pavilion to the  
Jñān Vāv.



556  
Gwalior,  
Āssi Khāmbhā with hall  
and large entrance porch.



557  
Goindwal,  
entrance pavilion to the  
sacred well (smaller  
building in foreground).

**Chapter 7:**  
**ORNAMENTAL POOLS**



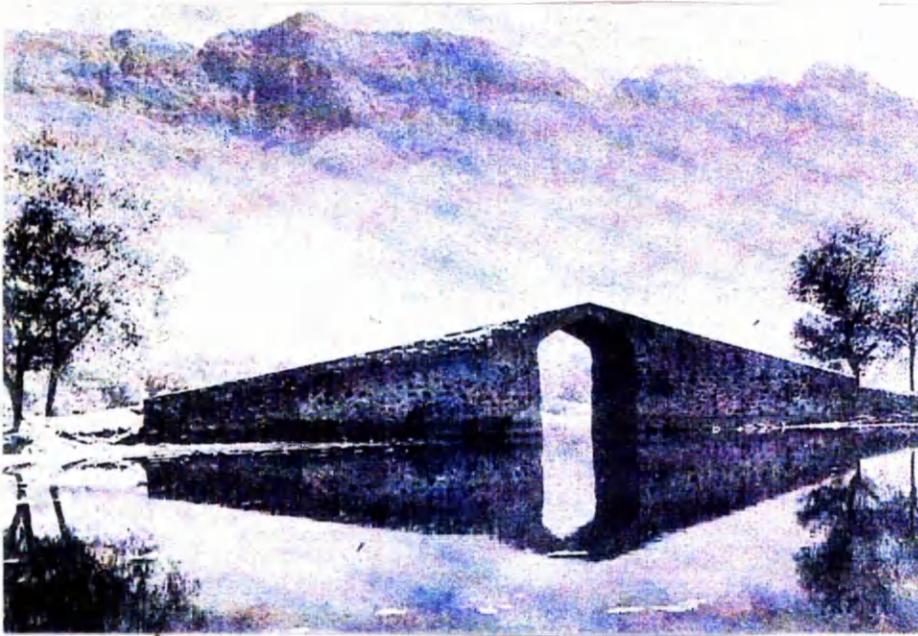
558  
Anuradhapura,  
lotus flowers on the alter  
of the Mahābodhi Temple.

559 Sigiriya, the water gardens seen from top  
of the citadel.



560 Sigiriya, ancient fountains  
in the water garden (UNESCO,  
1993, p. 124).

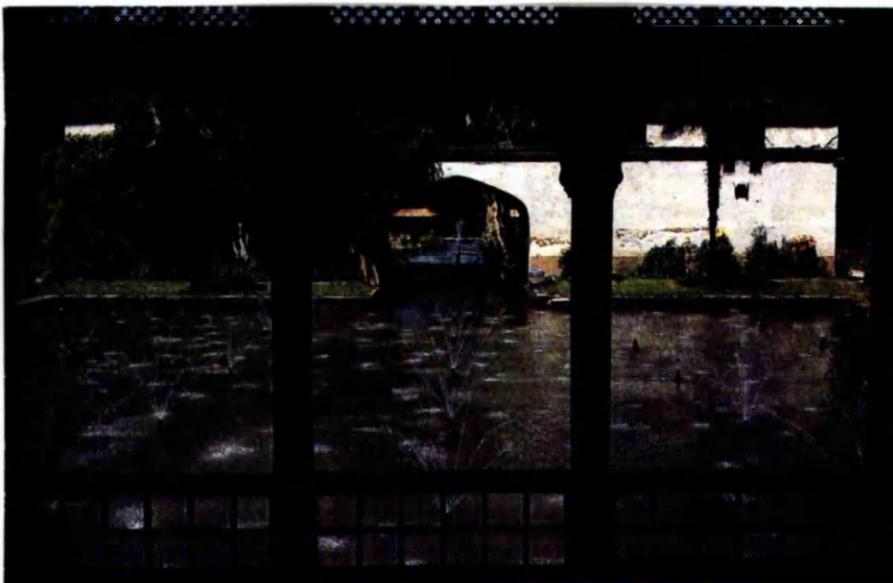




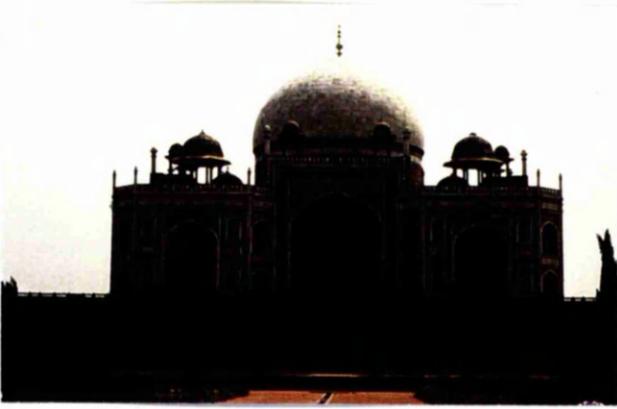
561  
Lake Dal,  
gateway-bridge at the  
Nishāt Bāgh  
(S. Crowe & S. Haywood,  
1972, p. 114).



562  
Lake Dal,  
Cashmā Shāhī Bāgh with  
large free-standing  
gateway (S. Crowe & S.  
Haywood, 1972, p. 141).



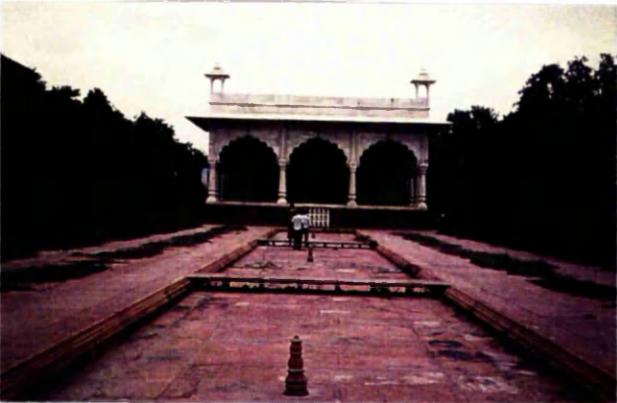
563  
Achabal,  
arched gateway over the  
main water channel (G.  
Plumptre, 1993, p. 41).



564 Delhi, Humāyūn's Tomb with narrow water channels.



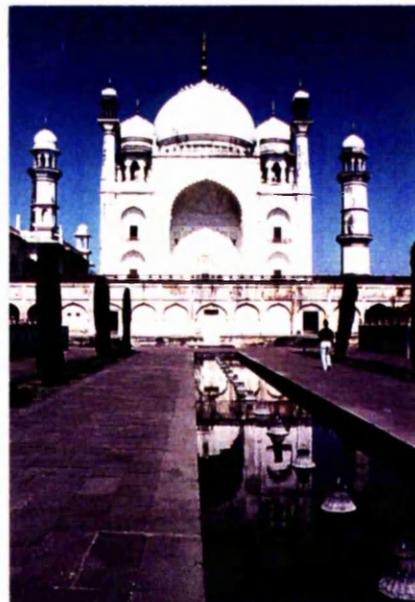
565 Agra, narrow water channels in Bābur's Rām Bāgh (S. Crowe & S. Haywood, 1972, p. 64).



566 Delhi, Hayāt Bakhsh Bāgh, Sāvan Pavilion with water channel.



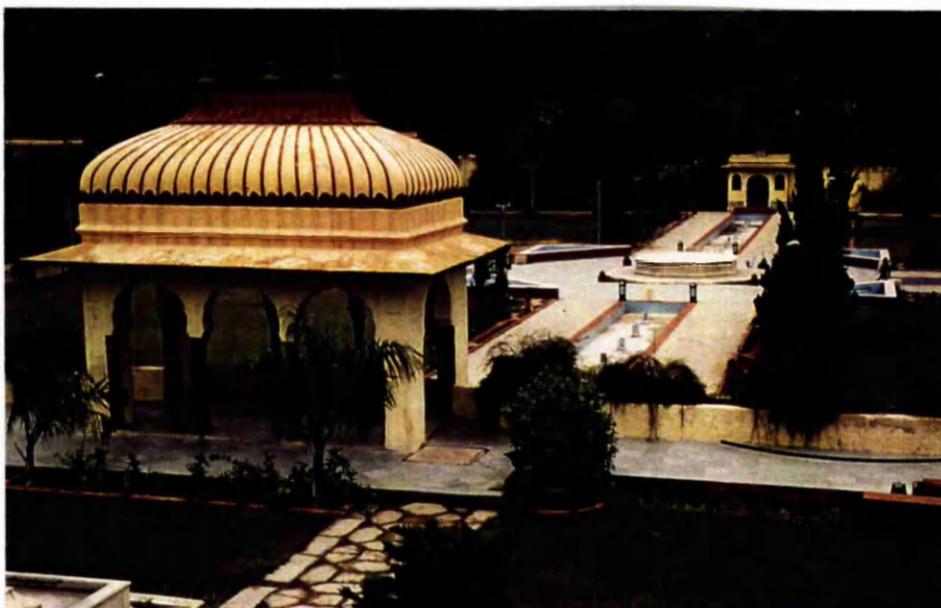
567 Agra, Tāj Mahal with water garden.



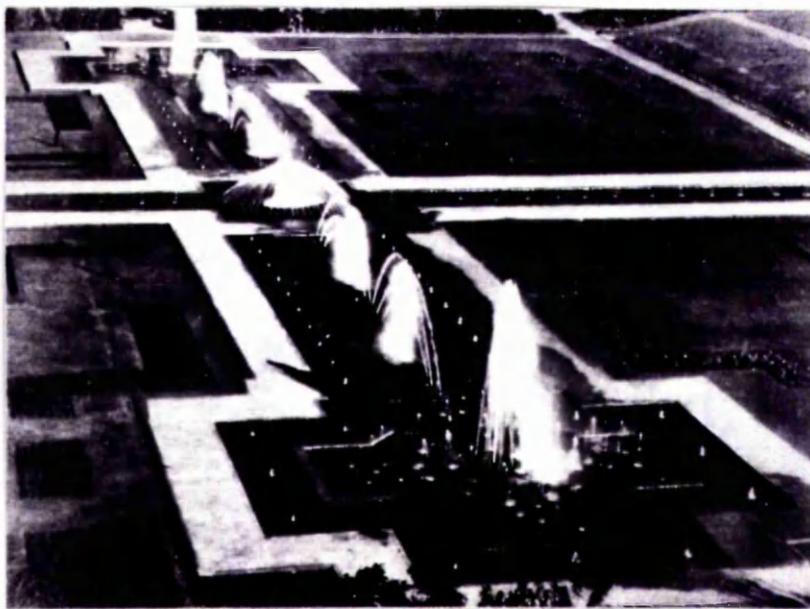
568 Aurangabad, Bībī-kā- Maqbarā.



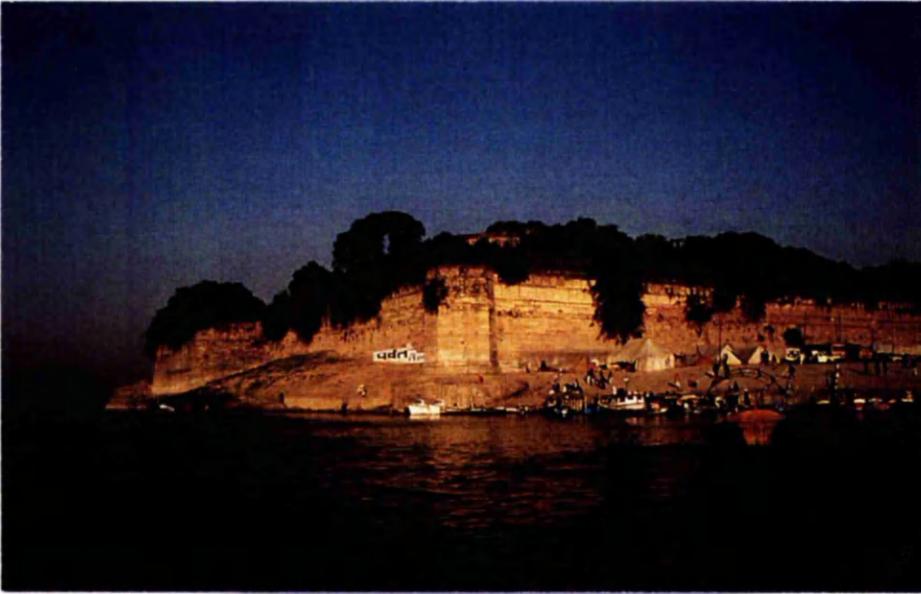
569  
Dig,  
garden palace of the Jāts.



570  
Jaipur,  
Sisodia Rānī Mahal  
gardens.



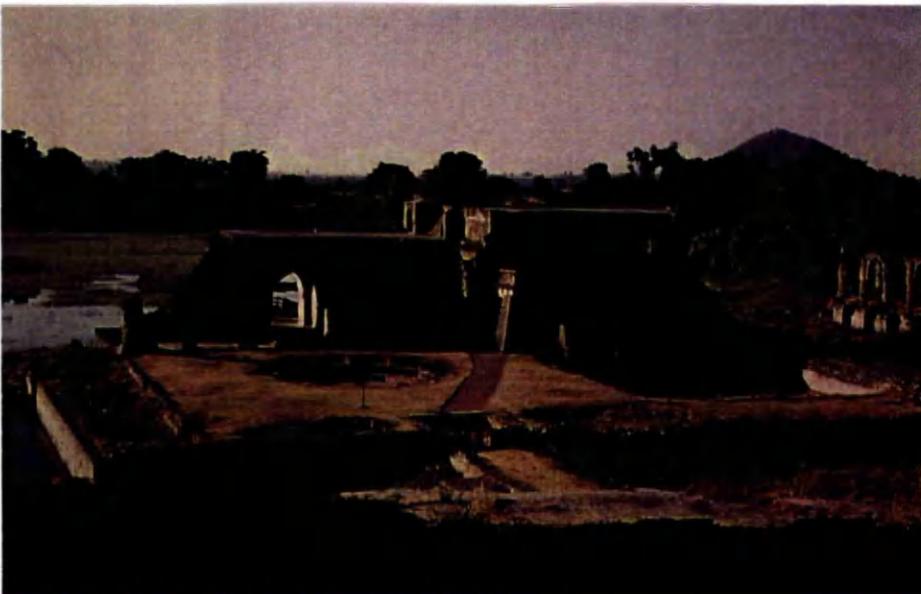
571  
Mysore,  
Brindavan Gardens  
(A.P. Iyer, 1936, between  
pp. 20 + 21).



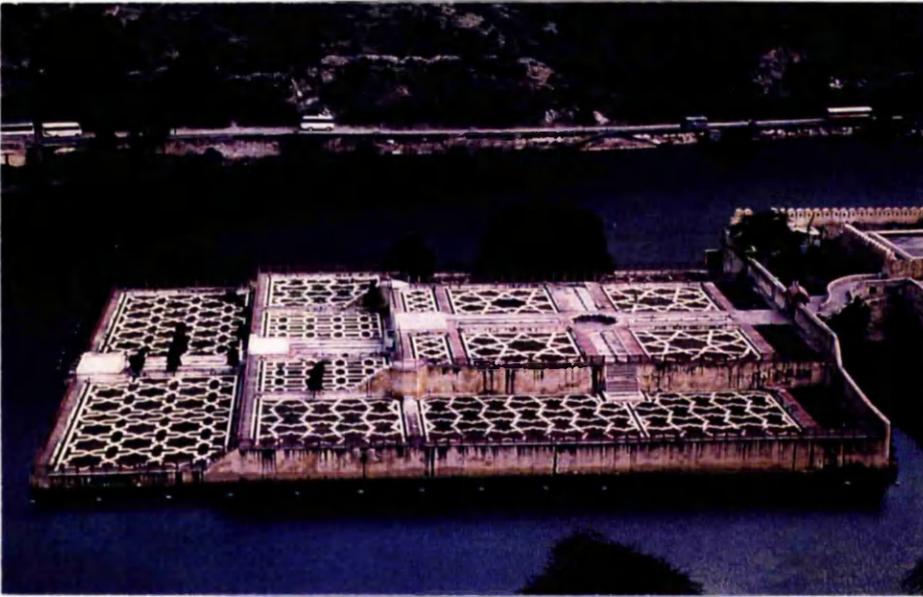
572  
Allhabad,  
Akbar's fort at the  
confluence.



573  
Udaipur,  
City Palace at Lake  
Pichola.



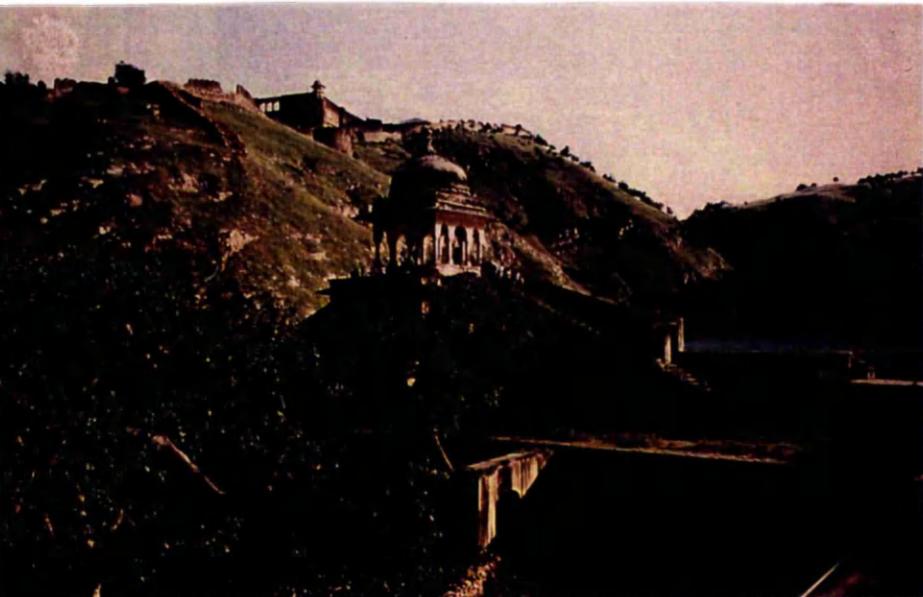
574  
Mandu,  
island with water  
structures in the  
Muñj Tālao.



575  
Amber,  
island carrying the Mohan  
Bāri in front of the fort.



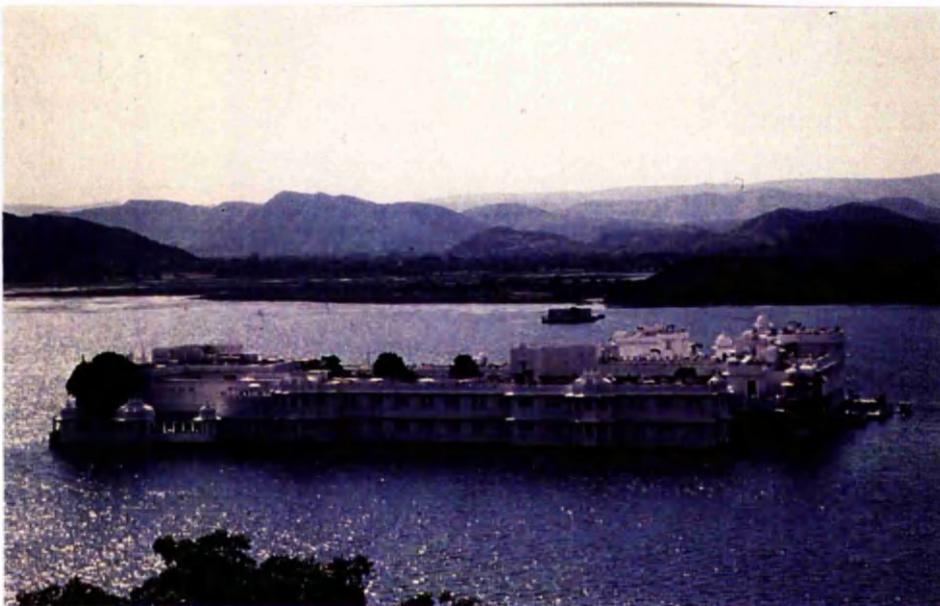
576  
Jaipur,  
Jal Mahal.



577  
Amber,  
small pleasure palace on  
dam between two water  
reservoirs.



578  
Chitorgarh,  
Padmini's Palace.



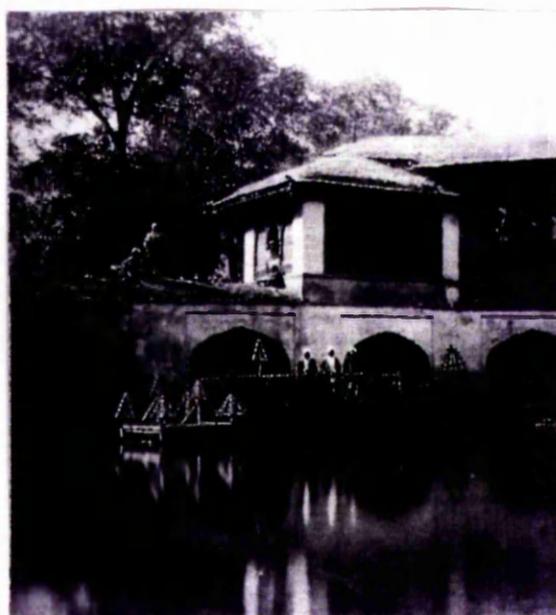
579  
Udaipur,  
Jag Nivās.



580  
Udaipur,  
Jag Mandir.



581 Gwalior, Holi Pool in an underground chamber of the Mān Mandir.



582 Vernag, raft decorated with lights (N. Titley & F. Wood, 1991, p. 59).



583 Udaipur, the Gaṅgaur boat procession (A. Topsfield, 1990, p. 23).

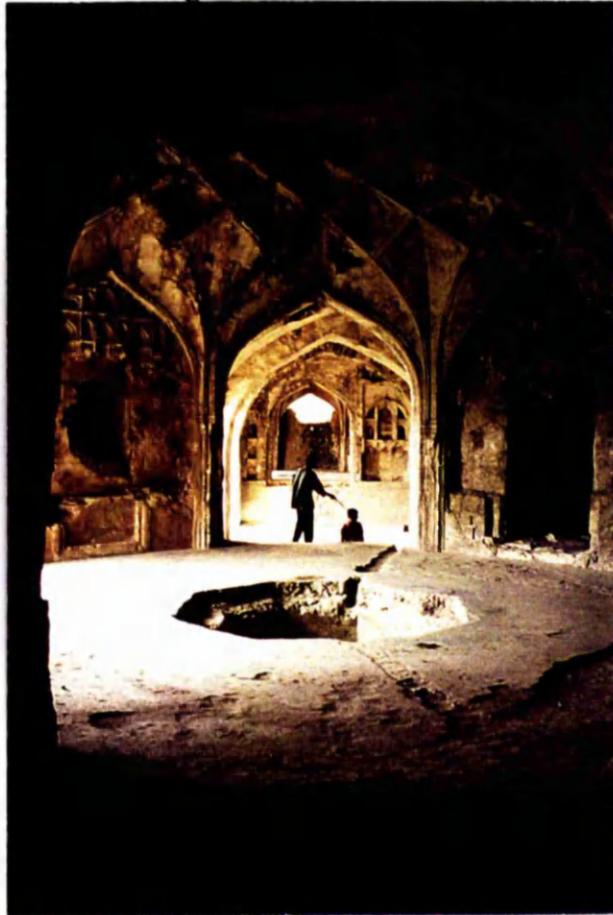


584  
Orchha,  
plain pool in front of the  
throne platform used to  
moisten the air.

585 Warangal, pool inside the Kuś Mahal.

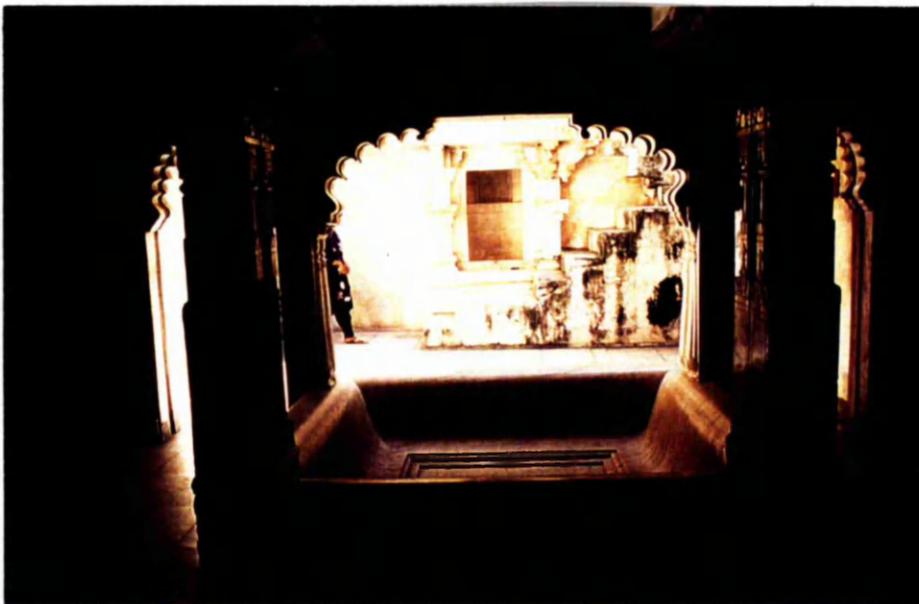


586 Golconda, octagonal pool inside a palace building.





587  
Udaipur,  
pool inside the Baṛī Mahal.



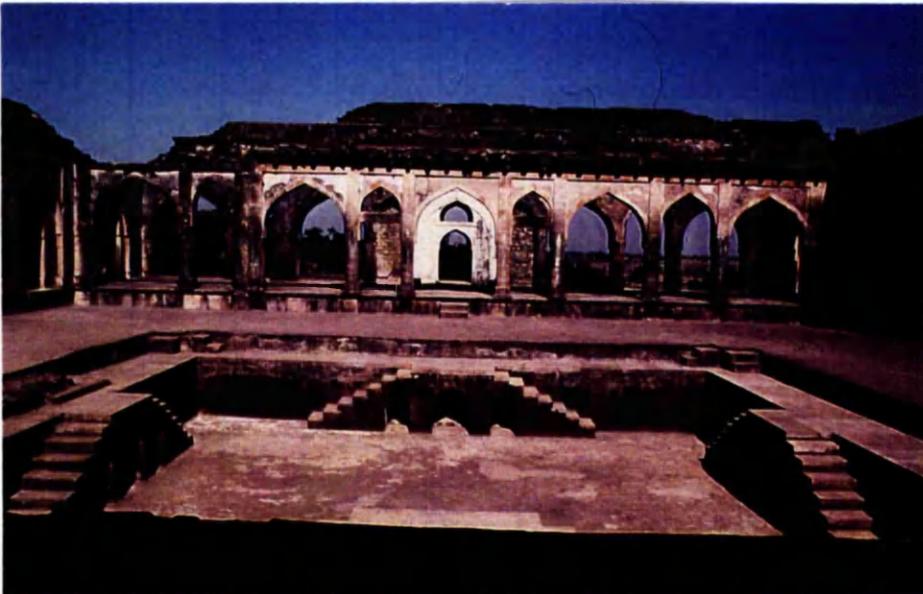
588  
Udaipur,  
pool inside the Candra  
Mahal.



589  
Orchha,  
pool in the Rāj Mahal.



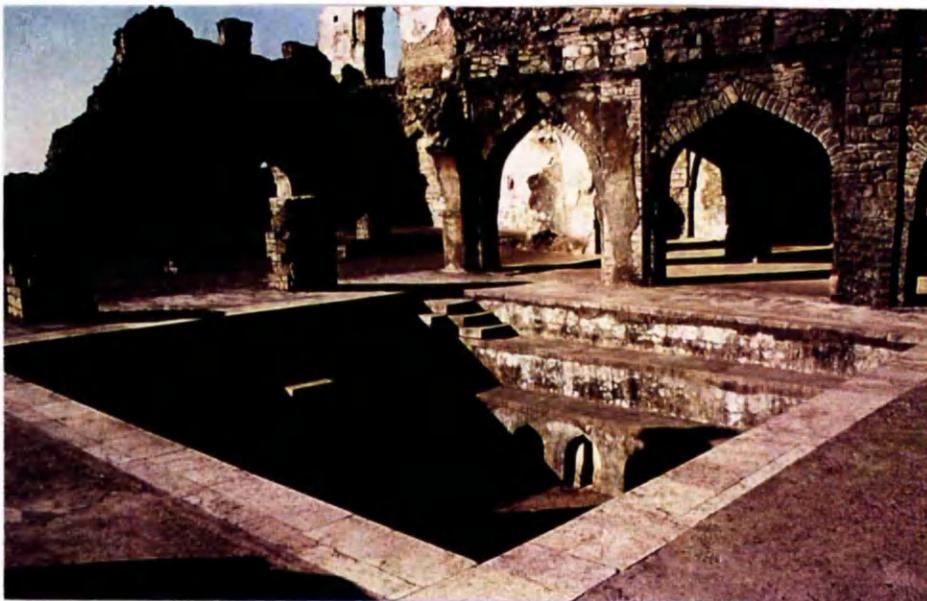
590  
Mandu,  
pool with pyramidal steps  
near the Kesar Kastūrī  
Mahal.



591  
Mandu,  
pool in Bāz Bahādur's  
Palace.



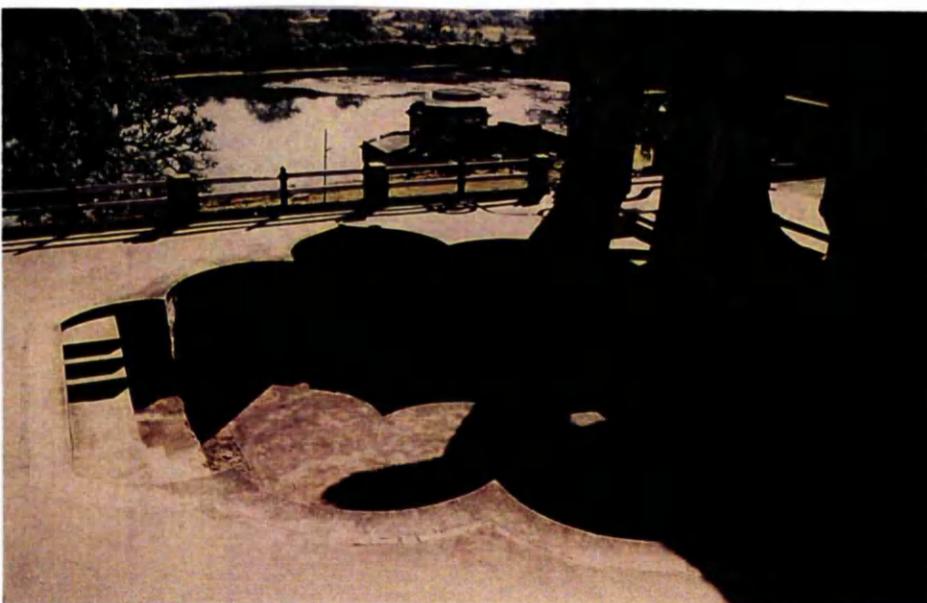
592  
Vijayanagara,  
royal tank near the  
Mahānavami Platform.



593  
Mandu,  
small *kuṇḍa* near the  
*ḥammāms*.



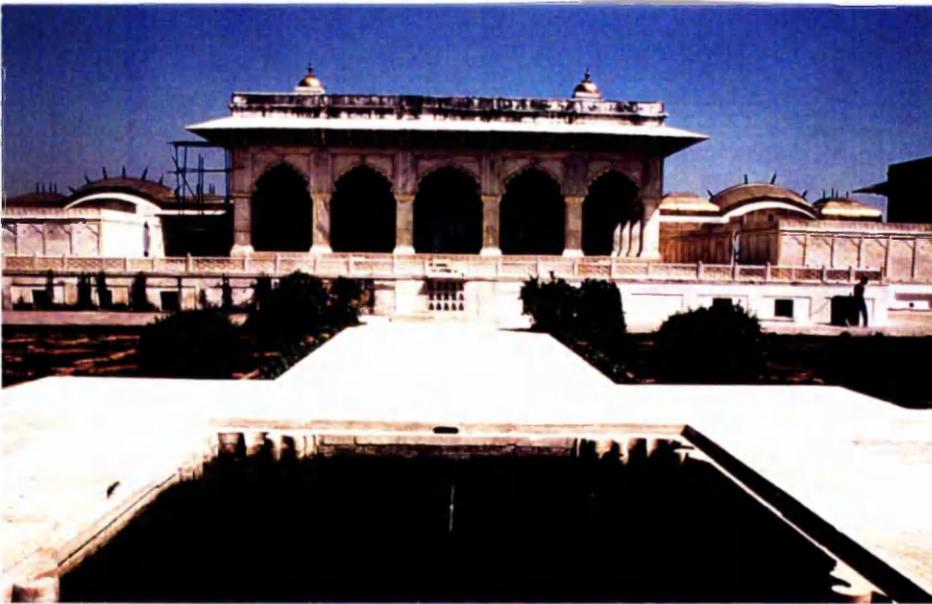
594  
Mandu,  
large lotus pool on the  
island in the Muñj Tālao.



595  
Mandu,  
upper lotus pool in the  
Jahāz Mahal.



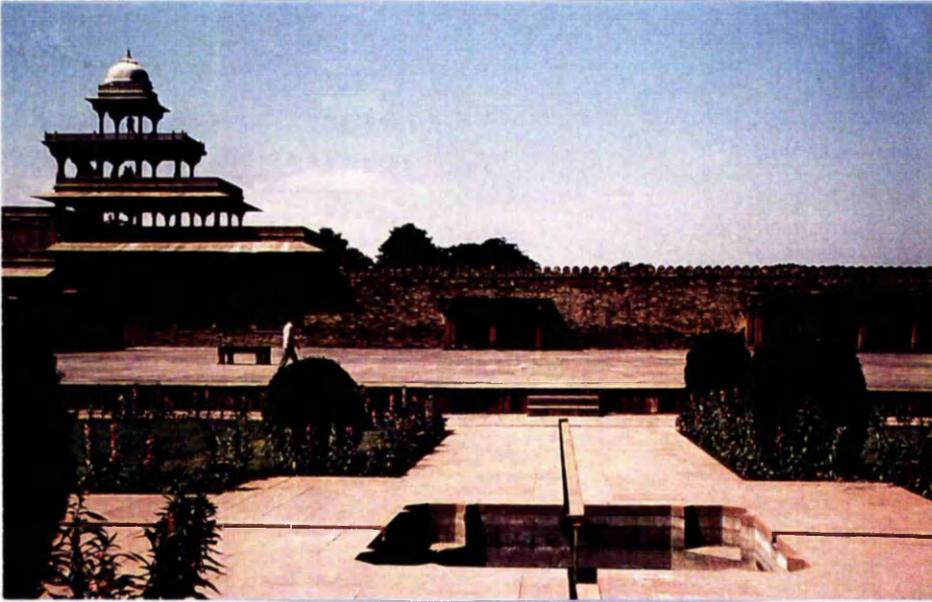
596  
Mandu,  
lower lotus pool in the  
Jahāz Mahal.



597  
Agra,  
central pool of the  
Angūrī Bāgh.

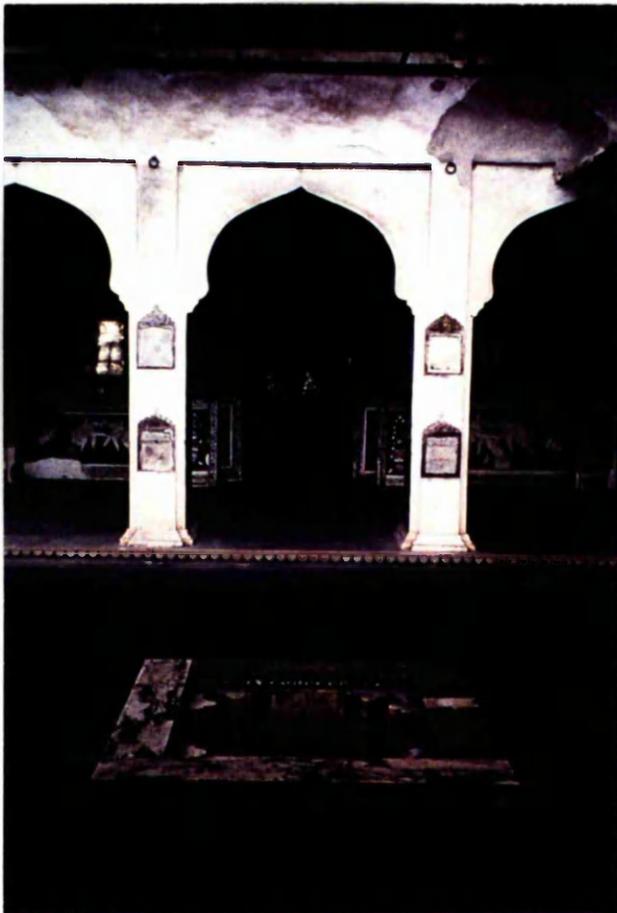


598  
Mandu,  
corner decoration of the  
pool in front of the Kesar  
Kastūrī Mahal.

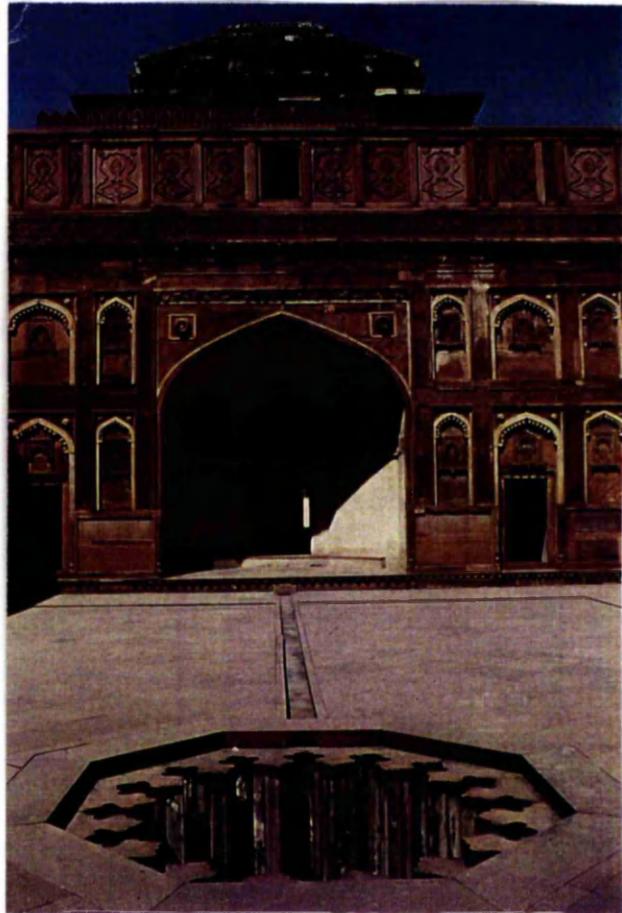


599  
Fatehpur Sikri,  
pool behind the  
Dīvān-i-Ām.

600 Bundi, fluted pool in the courtyard of the  
Citra Mahal.

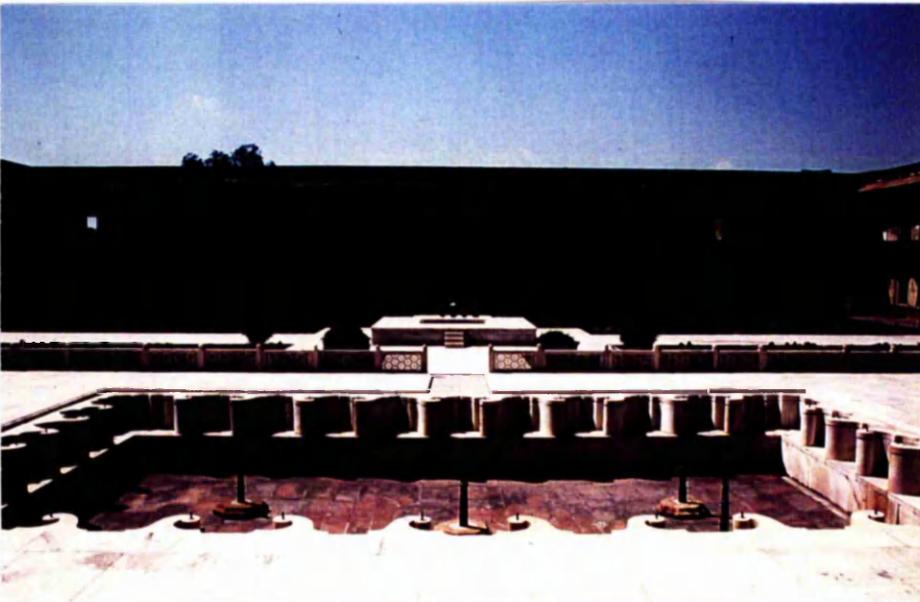


601 Agra, foliated pool at the Jahāngīrī Mahal.





602  
Agra,  
foliated pool opposite the  
Sammān Burj.



603  
Agra,  
pool in the terrace of the  
Khās Mahal.



604  
Agra,  
detail of the ornamentation  
of the Khās Mahal Pool.



605  
Aurangabad,  
pool in the garden of the  
Bibi-kā-Maqbarā.



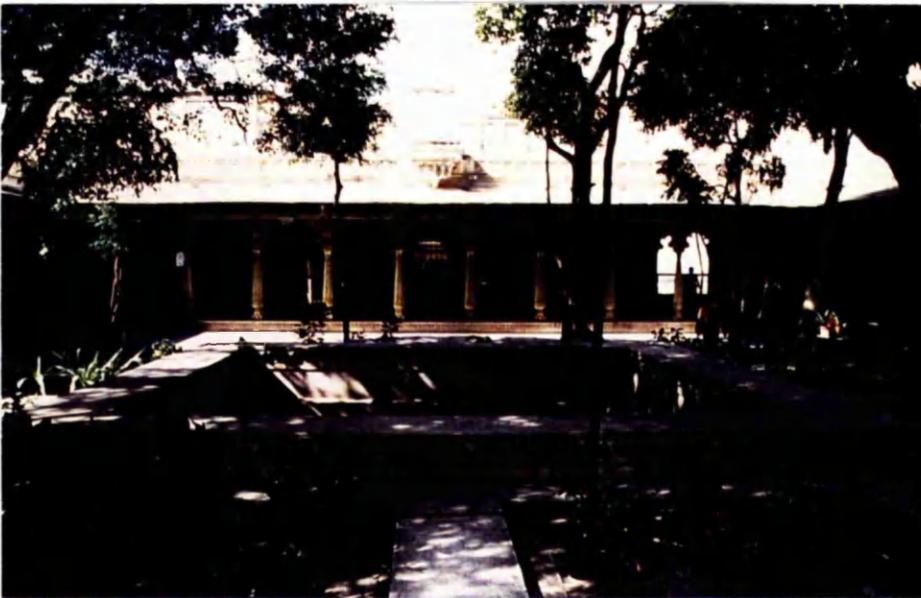
606  
Agra,  
positive and negative lotus  
shapes in the pool at the  
Jahāngīrī Mahal.



607  
Aurangabad,  
detail of the lotus design in  
the garden pools.



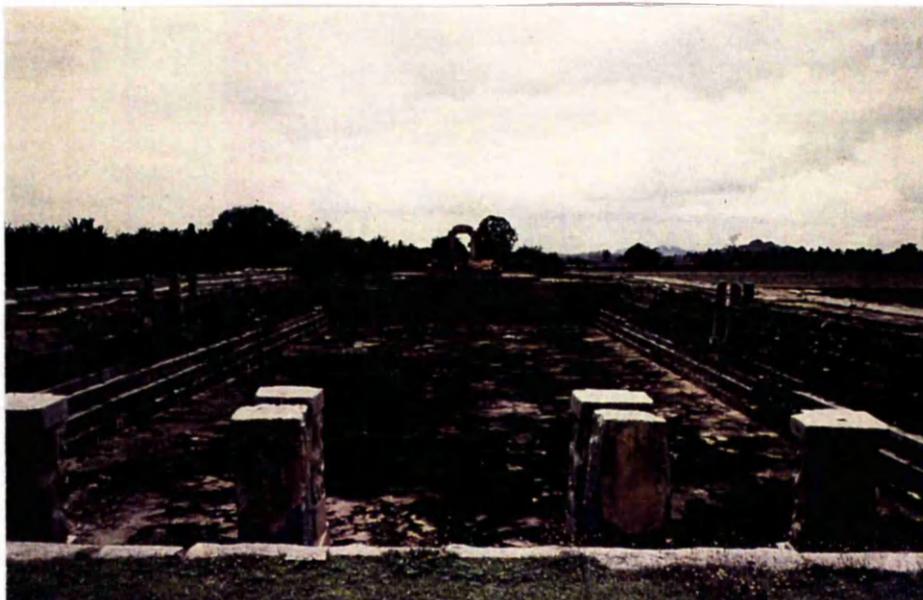
608  
Udaipur,  
lotus pool with complex  
design in the Jag Nivās  
(J. Lehrman, 1980, p. 185).



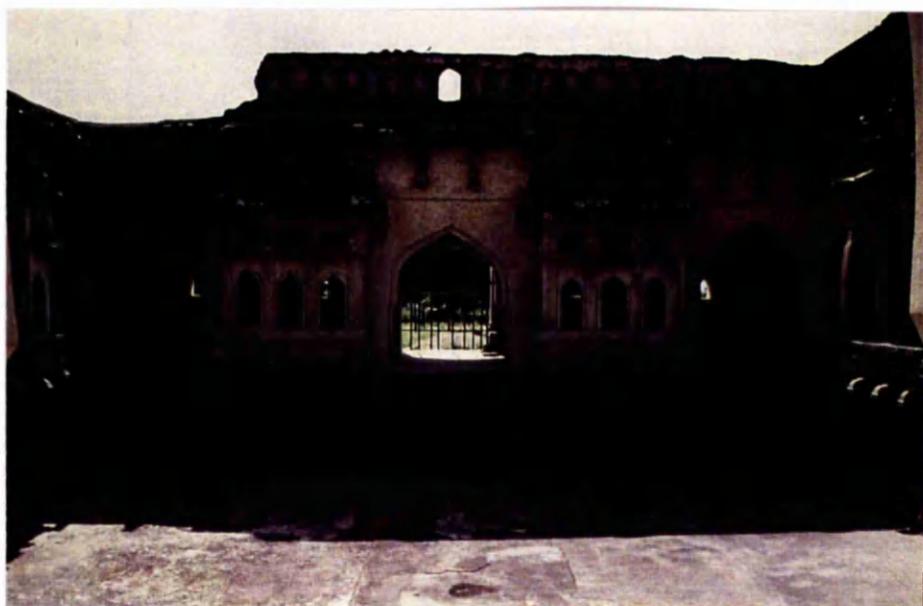
609  
Udaipur,  
Amar Vilās.



610  
Mandu,  
twin pools next to  
the Muñj Tālao.



611  
Vijayanagara,  
the 'Great Bath'.



612  
Vijayanagara,  
the 'Queen's Bath'.



613  
Patan (Nepal),  
royal bath in the  
Sundari Cok.



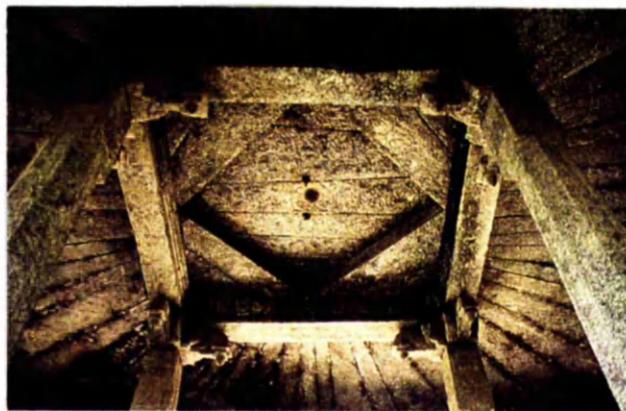
614  
Bhaktapur,  
royal bath with snake pole.



615  
Fatehpur Sikri,  
Maryam-kā- Hauz,  
a roofed over bath.



616 Gingee, palace building containing a large bath.



617 Gingee, the ceiling construction over the bath.



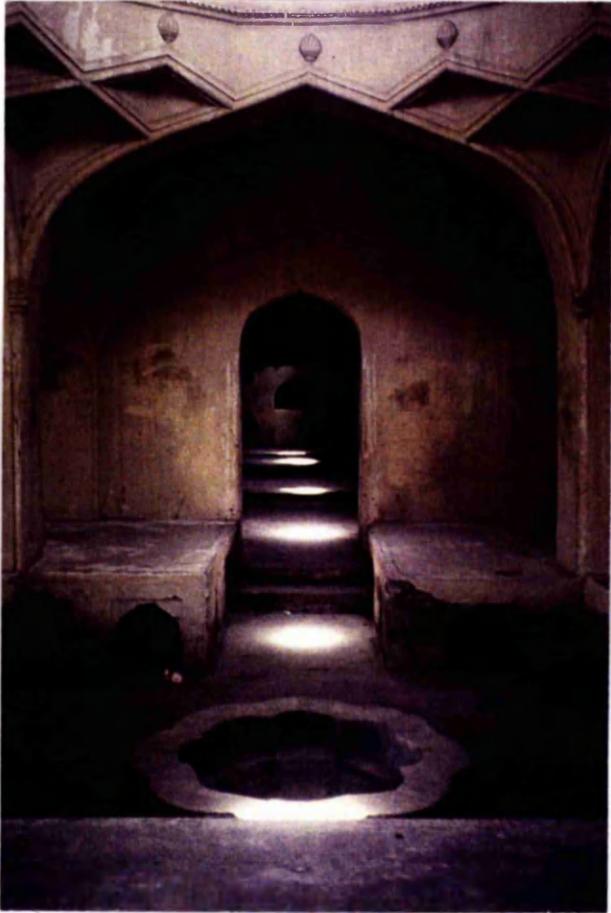
618  
Fatehpur Sikri,  
public *ḥammām* opposite  
the Buland Darvāzā.



619  
Mandu,  
circular chamber with  
water channels in  
a *ḥammām*.



620  
Golconda,  
*ḥammām* near the entrance  
gate of the fort.



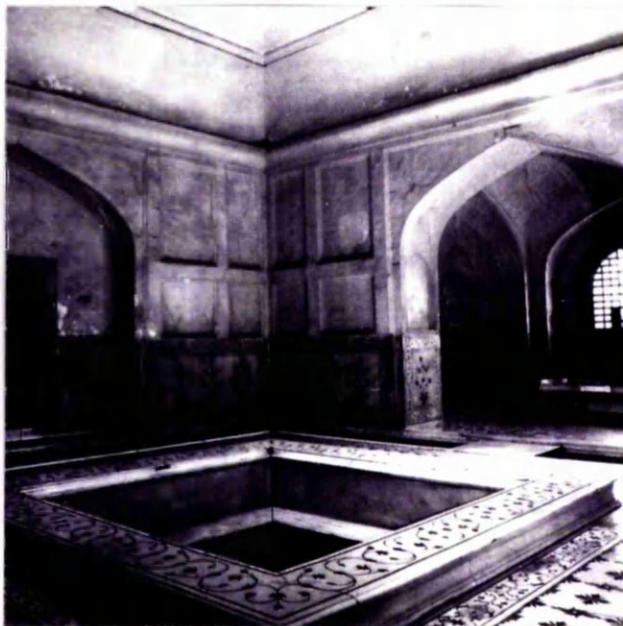
621 Golconda, Badshāhī Ḥammām at the Quṭb Shāhī Tombs.



622 Golconda, the octagonal platform in the Badshāhī Ḥammām.



623, 624 Delhi, interior of the royal *ḥammām* (photo A.I.I.S., Varanasi).

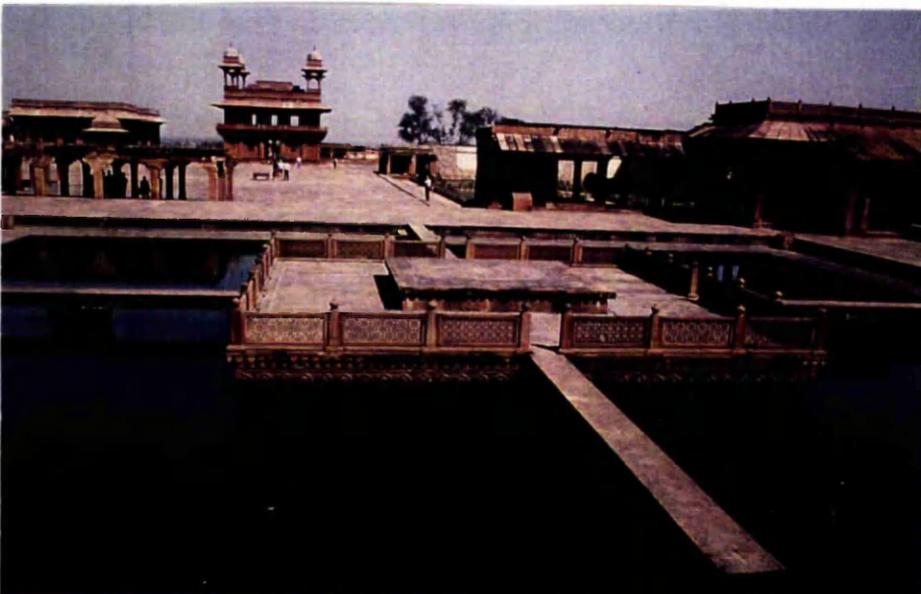




625  
Polonnaruva,  
lotus platform in the  
Kumāra Pokuna.



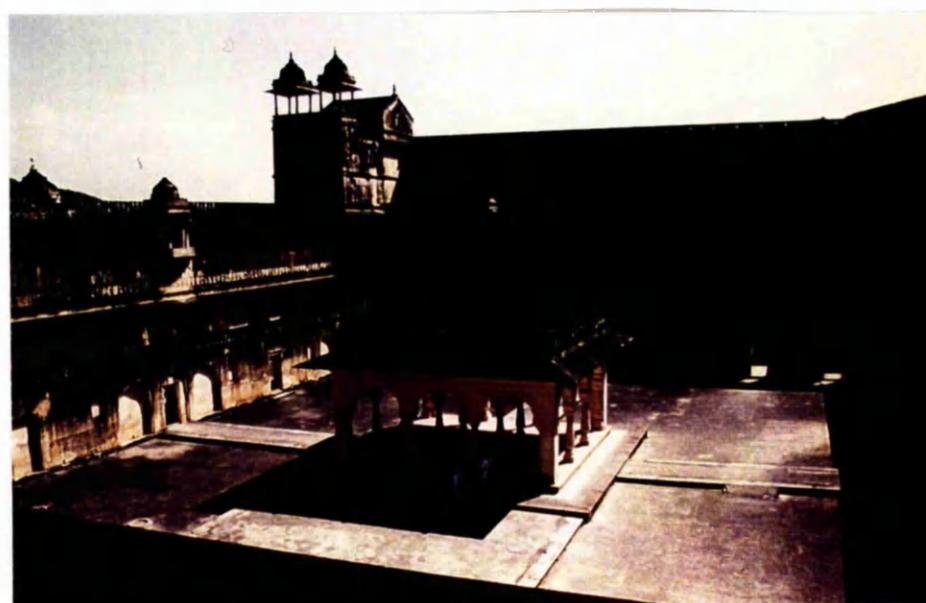
626  
Fatehpur Sikri,  
Anūp Tālao.



627  
Fatehpur Sikri,  
throne platform in the  
centre of the Anūp Tālao.



628  
Amber Palace,  
star-shaped pool with  
platform and bridges.



629  
Amber Palace,  
raised walkways and  
central pavilion in the  
*zenānā* quarters.

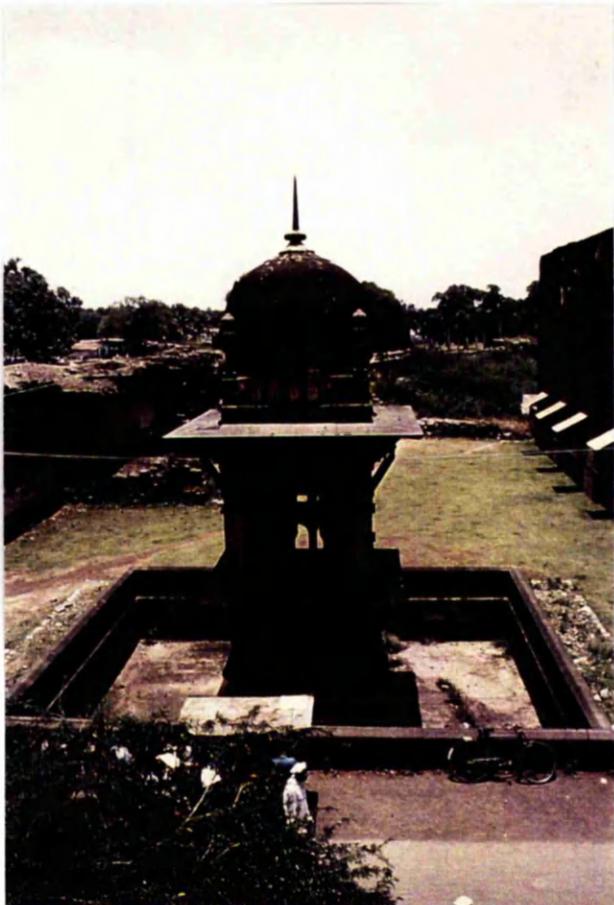


630  
Vijayanagara,  
Octagonal Bath with  
central platform.



631 Gingee, square platform in the Kalyān Mahal Tank (top left).

632 Udaipur, water pavilion in the Saheliyon-ki Bāri (top right).



633 Bijapur, Jal Mahal.

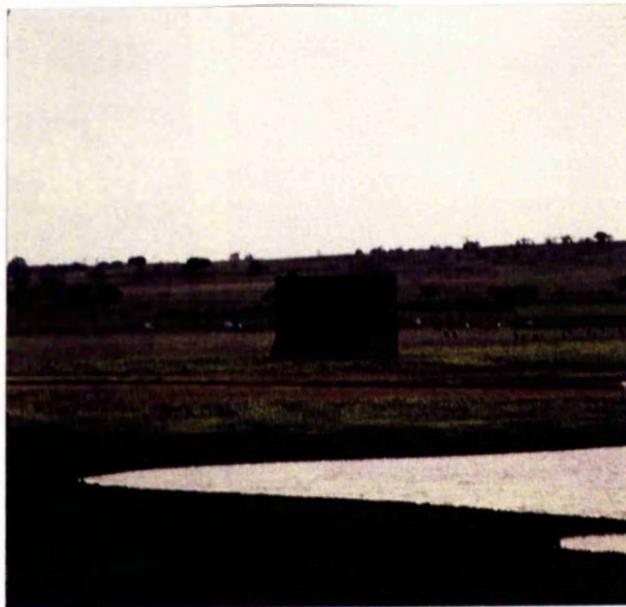


634  
Kumatgi,  
single-storeyed water  
pavilion.

635 Kumatgi, double-storeyed water pavilion.

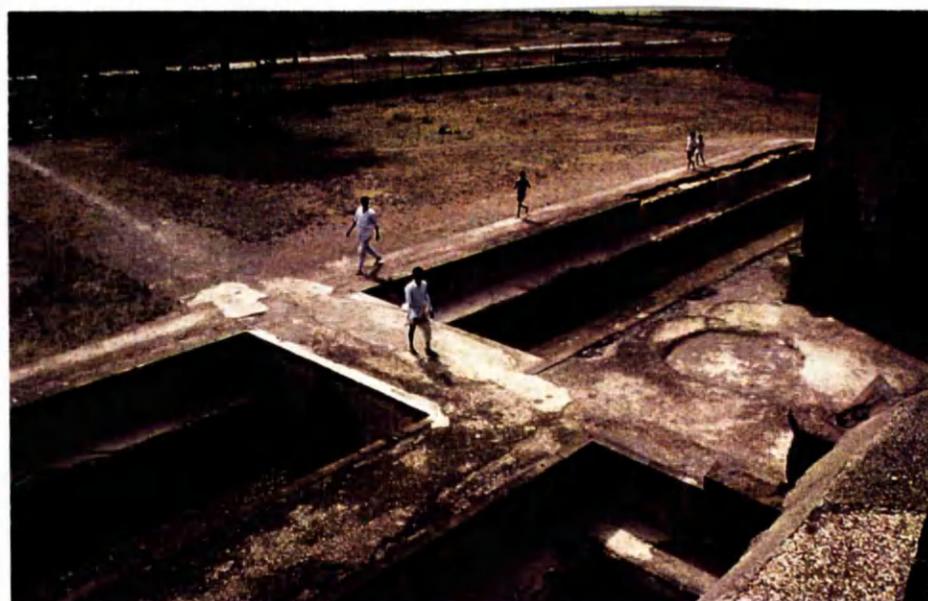


636 Kumatgi, large water pavilion in the dammed  
reservoir.





637  
Kumatgi,  
complex arrangement of  
pavilions and islands in  
pools.



638  
Kumatgi,  
the outer and the inner  
basin with bridge.

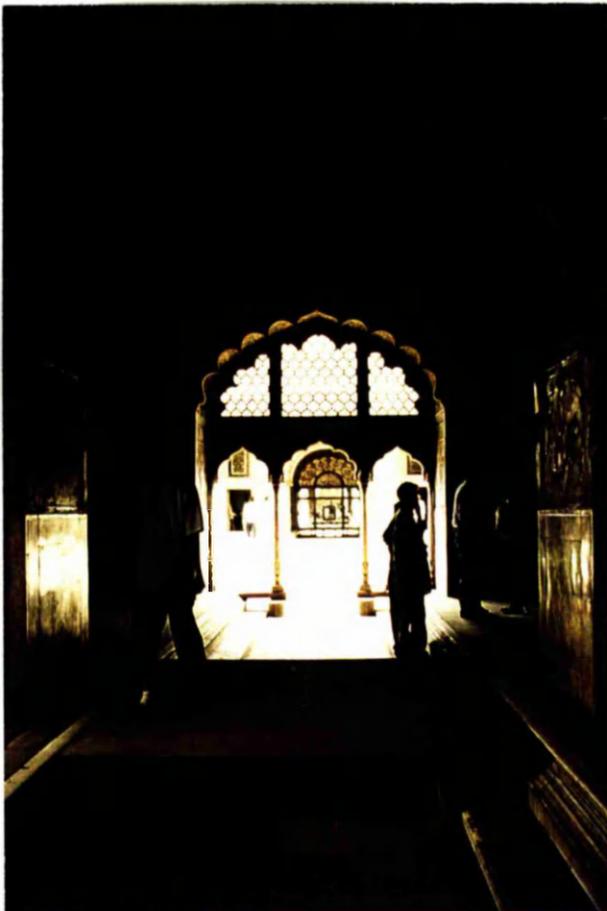


639  
Vijayanagara, platform of  
a decayed water palace.



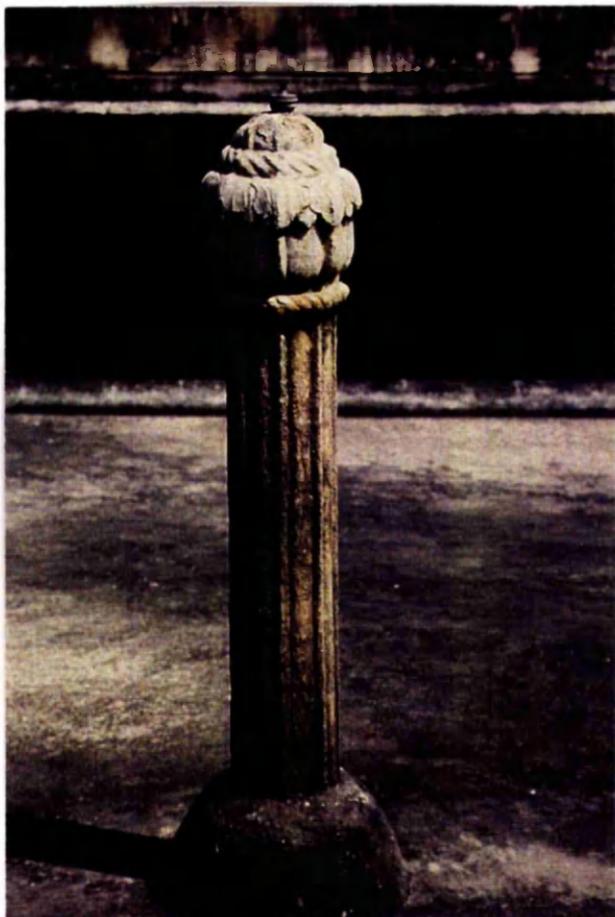
640  
Delhi,  
Hayāt Bakhsh Bāgh,  
Zafar's Pavilion.

641 Delhi, the Nahr-i-Bihisht in the Lāl Qilā.



642 Amber Palace, water chute.

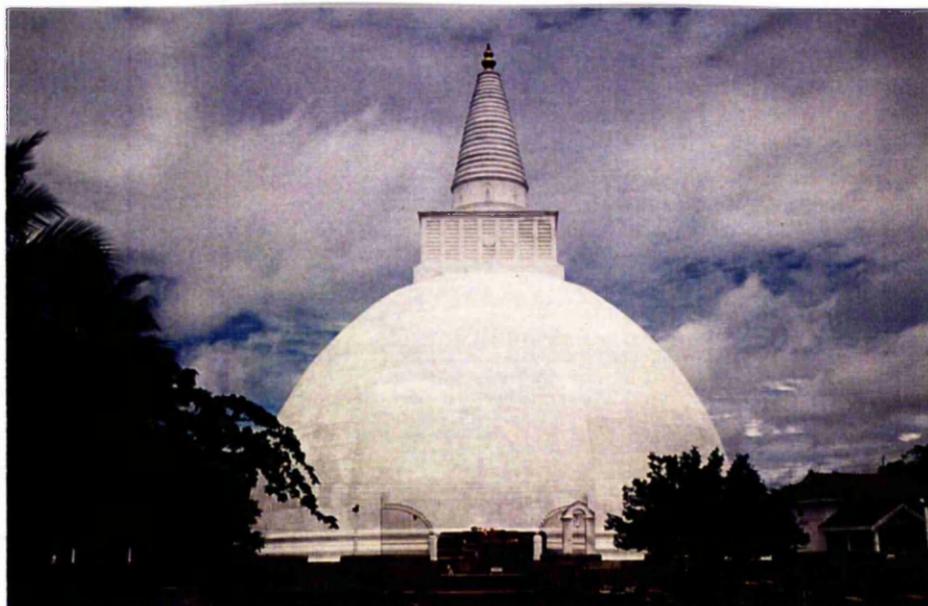




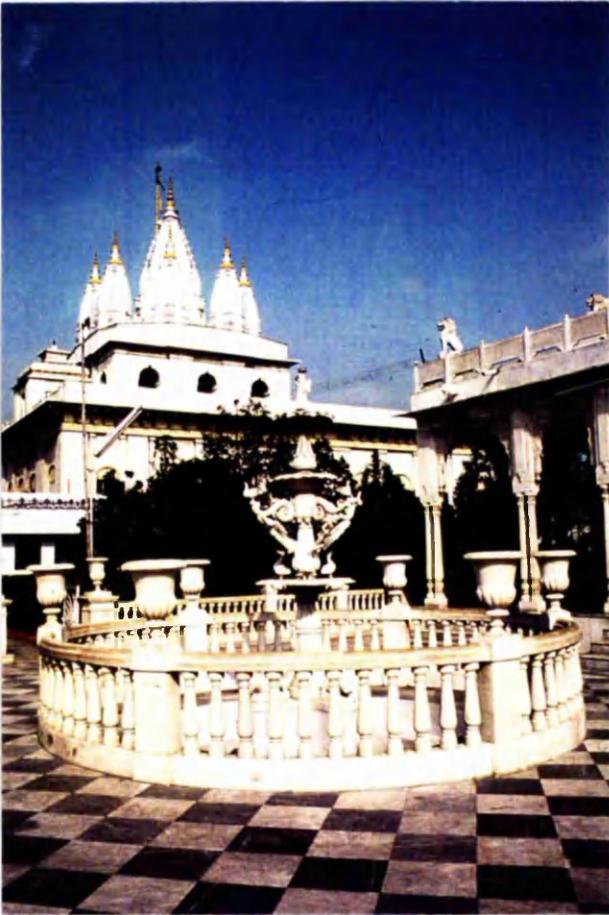
643 Delhi, lotus bud fountain jet at Şafdar Jaing's Tomb.



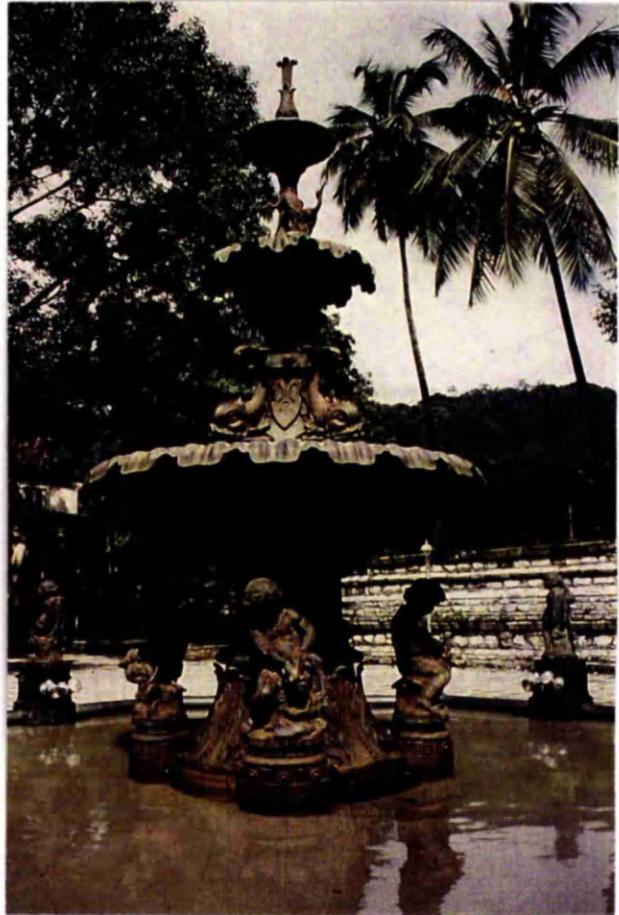
644 Kandy, ablution fountain at the Temple of the Tooth.



645 Anuradhapura, fountain (front left) at the Mirisaveṭiya Dāgoba.



646 Calcutta, fountain of the Dāda Gurūdeva Temple.



647 Kandy, nineteenth-century public fountain.



648 Hyderabad, the fountain in the centre of the Cār Kamān.



649  
Patan (Nepal),  
fountain with central bust  
of Jaṅga Bahādur Rāṇā's  
wife.



650  
Vijayanagara,  
octagonal fountain  
pavilion.



651  
Golconda,  
fountain in the courtyard  
of the Rānī Mahal.



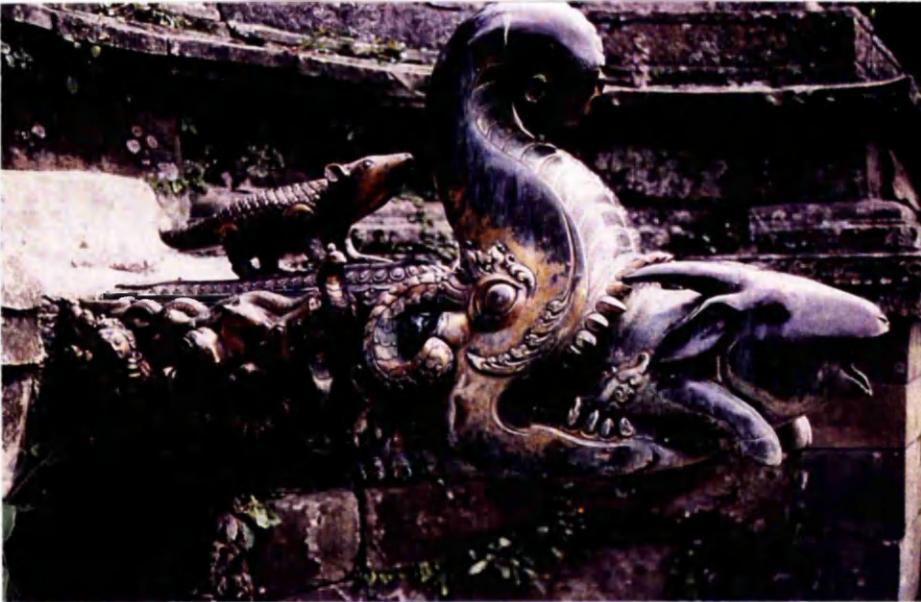
652  
Dig,  
swing in the shape of a  
*torana* facing the garden.



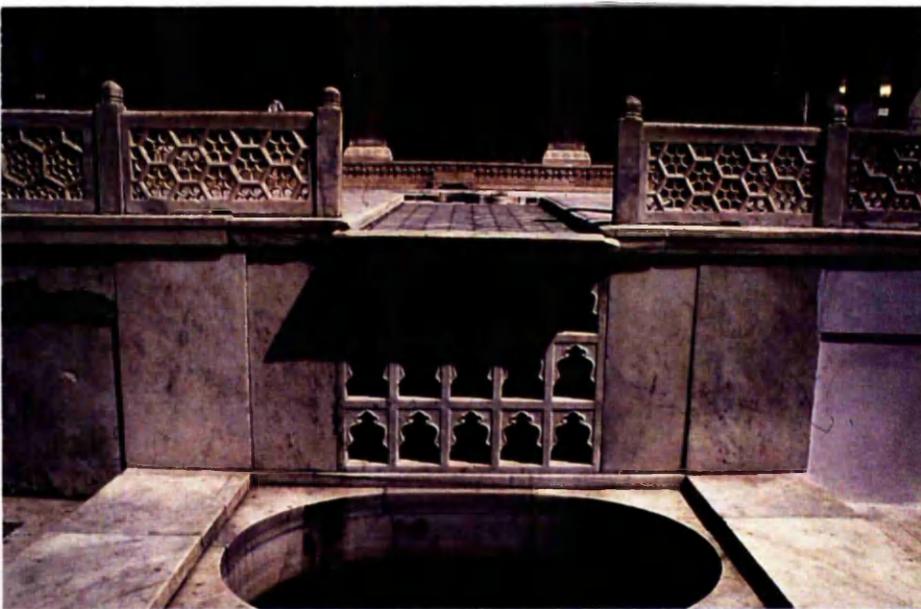
653  
Delhi,  
fountain basin in the Raṅg  
Mahal of the Lāl Qilā.



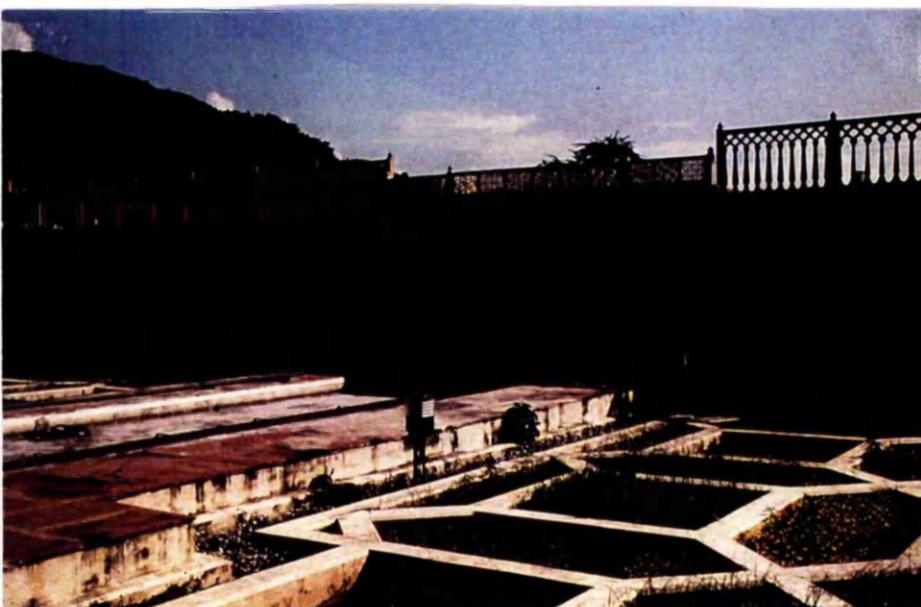
654  
Agra,  
carved fountain basin in  
the Sammān Burj.



655  
Bhaktapur,  
water spout of the royal  
bath.



656  
Agra,  
cascade at the terrace of  
the Khās Mahal.



657  
Amber,  
double cascade in the  
Mohan Bārī.



658 Bijapur, cascade behind the dam of the Rām Liṅg Tank.



659 Agra, water chute in the apartment opposite the Sammān Burj.

660 Aurangabad, chute in the garden of the Bibī-kā-Maqbarā.



661 Ujjain, chute opposite the Kāliyādeh Mahal.





662  
Mandu,  
Nilakanṭh Palace.



663  
Mandu,  
water spiral at  
the Nilakanṭh Palace.



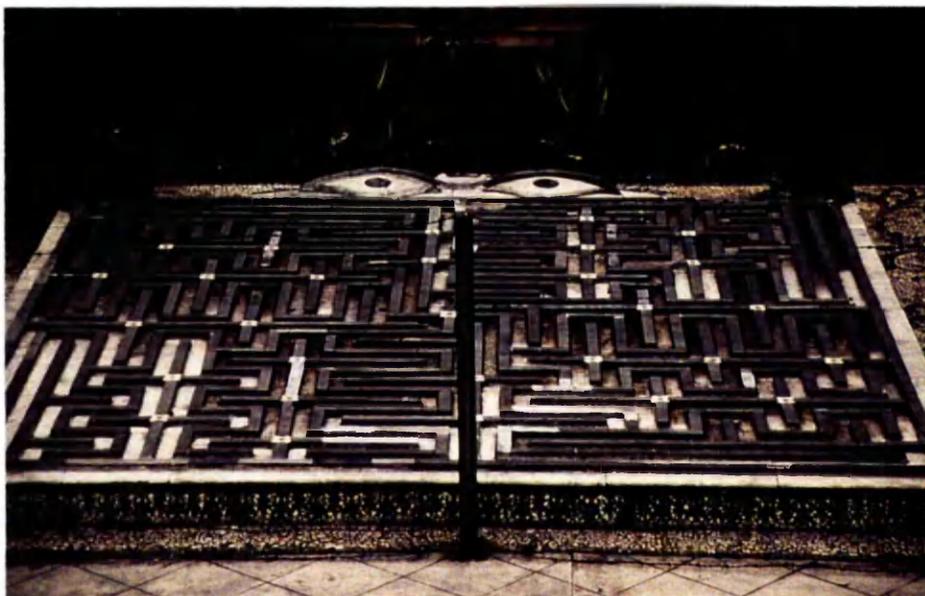
664  
Mandu,  
water spirals on the roof  
terrace of the Jahāz Mahal.



665  
Ujjain,  
water mazes between the  
river compartments.



666  
Alwar,  
water game near the  
cenotaph of Mahārāja  
Bakhtavar Singh.



667  
Calcutta,  
water labyrinth at the  
Śitalnātha Jain Temple.

**Chapter 8: CONCLUSION:  
THEMES AND CONTINUITIES IN  
SOUTH ASIAN WATER ARCHITECTURE**



668, 669 Kapadvanj, the Bātris Koṭha Vāv has fallen into decay, and modern buildings constructed along its edge obstruct access to the upper galleries.



670 Patan (Nepal), modern pumps and faucets in a traditional *dhārā*.



671  
Srisailam,  
modern pumps installed  
in the well shaft of the  
old *kūṇḍa*.



672  
Ghumli,  
the Jethā Vāv is blocked  
and has filled up with  
water.



673  
Bhaktapur,  
traditional *dhārā* with  
blocked drainage.



674  
Calcutta,  
Victoria Memorial Hall  
with water basins.



675  
Jaipur,  
incorporation of water  
into modern architecture  
(Jawahar Kala Kendra).



676  
Pune,  
the stepped courtyard in  
the Centre for Astronomy  
and Astrophysics (H.U.  
Khan, 1995, p. 92).



677  
Jaipur,  
the *kunḍa*-like courtyard in  
the Jawahar Kala Kendra.



678  
Delhi,  
the tank-shaped  
amphitheatre in the  
National Crafts Museum  
(H.U. Khan, 1995, p. 88)



679  
Bhopal,  
complex of the Bharat  
Bhavan with *maṇḍala*-  
shaped fountain basins.

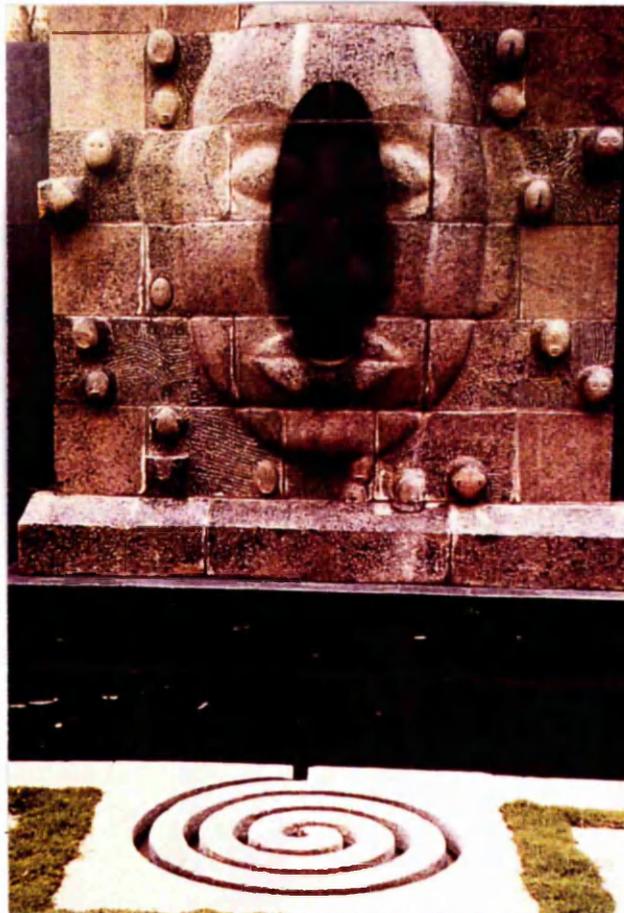


680  
Jaipur,  
fountain in *maṇḍala*  
shape in the Jawahar  
Kala Kendra.

681 Jaipur, basin in snake shape in the Jawahar  
Kala Kendra.



682 Delhi, basin with water spiral and head of  
Śiva in the courtyard of the British Council  
(H.U. Khan, 1995, p. 90).

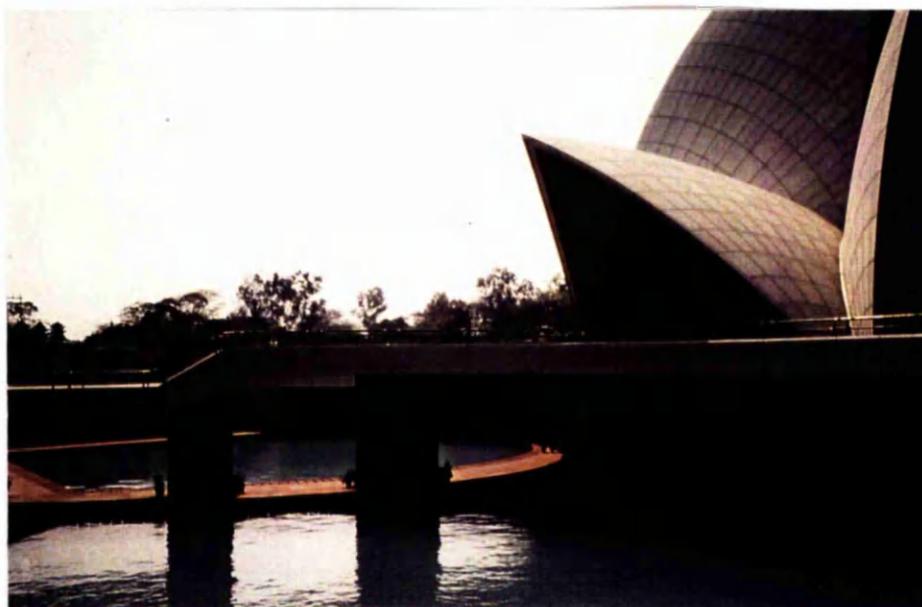




683  
Mandu,  
modern water pumps  
resemble *yonis*  
surrounding *lingas*.



684  
Calcutta,  
religious images protect a  
bridge at Bābū Ghāt.



685  
Delhi,  
Bahā'i Temple.



686  
Ahmedabad, 'Sangath', B.  
Doshi's studio (W.J.R.  
Curtis, 1988, p. 121).



687  
Dambulla,  
Kandalama Hotel (B.B.  
Taylor, 1995, title page)



688  
Colombo,  
G. Bawa's office  
surrounded by water  
(B.B. Taylor, 1995,  
p. 116-117).



689  
Ahungalla,  
Triton Hotel (B.B. Taylor,  
1995, p. 141).



690  
Kotte (Colombo),  
new Sri Lankan  
Parliamentary Complex  
(B.B. Taylor, 1995,  
p. 164).



691  
Chandigarh,  
Palace of Assembly with  
water basins by  
Le Corbusier.