Candi Space and Landscape:

A Study on the Distribution, Orientation and Spatial Organization of Central Javanese Temple Remains

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Acknowledgements

My wish to research the relationship between Ancient Javanese architecture and its natural environment is probably born in 1993. That summer, I made a trip to Indonesia to complete the writing of my BA dissertation. There, on the upper slopes of the ever-clouded Ungaran volcano, looking at the sulfurous spring that runs between the shrines of Gedong Songo, I experienced the *genius loci* of Central Javanese architects.

After my BA, I did many things and had many jobs, not all of them being archaeology-related. Nevertheless, when I finally arrived in Leiden to enroll as a PhD student, the subject naturally imposed itself upon me. Here is the result, a thesis exploring the notion of space in ancient Central Java, from the lay-out of the temple plan to the interrelationship between built and natural landscape.

I would like to thank all those who accompanied me along this path, family members, friends, colleagues and scholars. My first thought goes to my partner, Olivier Merveille, who witnessed my enlightenment at Gedong Songo and kicked me every time I was tempted to give up. To my two little girls, Leïla and Shanti who made things a bit more complicated, especially once they found the on/off button of my computer, but brought so much joy in my life.

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Spelling

Sanskrit words, personal names, and place names, when they occur in an Indian context have been transliterated according to Monier Williams' system, with the difference that *ṛi*, *ṡ* and *sh* are transliterated *ṛ*, *ś* and *ṣ* (Monier Williams 1974).

Sanskrit and Old Javanese words, personal names and place names, when they occur in Old Javanese context, have been transliterated according to the spelling system used by Zoetmulder in his *Old Javanese-English Dictionary* (Zoetmulder 1982).

Indonesian words, personal names and place names are written in accordance with modern Indonesian spelling, except for names of authors, which are spelled as they are found in the respective publications.

Finally, for site names, I have retained the spelling used in the lists given to me by the Indonesian Centre for Preservation of Historical Heritage (Unit Pelaksana Teknis Balai Pelestarian Peninggalan Purbakala), without an attempt to standardize it. Thus, one will read *Arjuna* (with a), but *Loro Jonggrang* (with o's).

Note on the plans

All plans are mine, except where a specific source is mentioned. The reader should nevertheless be aware that they are not archaeological plans and that they have been drawn to fit the format of the present book.

Plans presented here are architectural reconstruction: they do not include deformations undergone by the structures. Furthermore, given the number of temples covered, I had to develop a method of quick drawing, which means that not all the components of the plan have been measured. For each temple, dimensions of the base (at original ground level), the edge of the platform, the temple body (at the base of the foot) and the *cella* have been measured on the four sides. Other parts have been measured on one side only (usually the southern side, except if its state of preservation was not sufficient). Complementary measurements have been taken on the other sides only when necessary.

For plans of large religious complexes – namely Loro Jonggrang, Plaosan, and Sewu – I have used plans of the Indonesian Centre for Preservation of Historical Heritage as background, but details of the shrines are mine.

CHAPTER 1

Introduction: Aims, Background and Methodology

Central Javanese temples were not built anywhere and anyhow, quite the contrary: their position within the landscape and their architectural design was determined by a series of socio-cultural, religious and economical factors. The starting idea for this book was that an analysis of the possible correlations between temple distribution, natural surroundings and architectural design would provide valuable clues as to how Central Javanese people structured the space around them, what factors were at work behind this structure and how the religious landscape[1] thus created developed.

The choice of focusing on religious architecture was dictated by the type of data available: the region has yielded very few material traces of settlement sites clearly attributable to the Hindu-Buddhist period.[2] It is nevertheless hoped that the present book, which gives much thought to the relationship between temples and settlements, will provide a good basis for archaeologists to identify settlement areas and develop excavation programs aimed at uncovering non-religious sites.

The choice of this approach, geographically-broad rather than site-specific, spatial rather than chronological, was of course guided by my own background and interests, but it also responds to a need in the field of Central Javanese archaeology. In the past, most of the works dealing with architectural remains were stylistic studies (Vogler 1949; Williams 1981), inventories (Verbeek 1891; Krom 1914a; Bosch 1915a), general architectural studies (Krom 1923; Chihara 1996) or monographs focusing on a limited set of temples, if not on a single monument (see Krom, Erp 1920; Blom 1935; Dumarçay 1977; 1981; 1993). In most of theses works, chronology was a main concern, whereas little attention was given to the occupation of the territory. The main exception is the recent thesis of Mundarjito (Mundarjito 2002), a work focusing on the relationship between archaeological sites and ecological resources in the districts of Sleman and Bantul (Yogyakarta). There was thus a need for research on temple remains that would complete Mundarjito's pioneer work, a study that would consider the region in its totality and focus on the spatial aspect, locating all the temple remains of Central Java within in a landscape, and, possibly, help to put the Hindu-Buddhist polities of Central Java on a map.

Therefore, my study takes into consideration all the temple remains of the core districts of Central Java, but only from the point of view of their distribution, orientation and spatial organization. Its chronological scope is the Central Javanese

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1 I use here C. Tilley and C. Crumley's definition of landscape as "the material manifestation of the relation between humans and their natural environment" (Tilley 1994:10; Crumley 1994:6). See later p.16

2 Archaeological excavations have focused on the direct surroundings of temples and monasteries. Ceramic surveys, susceptible to revealed settlement sites, have only been carried out in the north eastern part of Central Java (around Demak and Kudus).

The high density of population known in most of the districts of Central Java, the frequency of floods, *lahar* and *banjir*, the extensive wet-rice cultivation (with fields under water most of the year) and the absence of a fixed harvest period makes the planning and carrying out of ceramic surveys difficult and time-consuming – far beyond the time to be devoted to research within the limited context of a PhD. Besides, local ceramic is largely unknown – and thus non datable; baked at low temperature, it rarely resists exposure to heavy monsoon rains.

period (8th-10th century)[3] and it is geographically restricted to the central districts of the province of Central Java. Although I initially intended to cover the whole region, I quickly realized that given the extent of the territory, this would have required far more resources than those available to a single archaeologist in the four year frame of a PhD project. I therefore decided to focus on to the most important area in the history of the Central Javanese kingdoms, that is to say the plain of Yogyakarta, the Progo valley and the region around Mounts Merbabu-Merapi.[4] This area is of critical interest for a number of reasons: it is the cradle of the Central Javanese civilization, the vast majority of the temples were built there, and its contrasting topography introduces an interesting dichotomy between fertile plains and mountain peaks.

Previous Research on Central Javanese Temple Remains

Central Java is by no means a blank page in the history of archaeological research on monuments, and the present study is strongly indebted to the work of both Dutch and Indonesian archaeologists. The chapters focusing on temple distribution in particular could not have been written without the reports and inventories produced during the colonial period. Of the remains that were then visible, many have now disappeared. Without the descriptions published by Dutch travellers, civil servants and scholars, essential information would have been lost, and our view of the territory of the Central Javanese kingdoms would have been far less comprehensive.

As for the chapters exploring temple planning, they are largely based on ground plans drawn by the Dutch and Indonesian architects, engineers and archaeologists who have cleaned, preserved and restored Central Javanese temples, thereby saving them from the ravages of complete destruction and looting.

Colonial Era

Interest in Central Javanese antiquities was already noticeable during the 18th century. While villagers living near temples were often using archaeological remains as stone quarries, some temple sites must have been – as they still are today – regarded as "powerful" for the purposes of meditation. Certain antiquities were endowed with value as *pusaka* or magical artefacts (Lunsingh Scheurleer 2007). Javanese people were by no way insensitive to the Hindu-Buddhist remains of Central Java and considered them as places of interest. Testimony for this is found in several accounts of visits to ruined Hindu-Buddhist shrines, for example the visit to Borobudur by a crown prince of Yogyakarta shortly before 1758, or the tour of Prambanan related in the Sĕrat Cĕnthini, a Javanese text from the 19th century (Krom 1923 I: 335; Day 2002: 130-131).

In the 18th century the first Dutch official accounts of Central Javanese antiquities[5] were written and, in 1778, the *Bataviaasch Genootschap van Kunsten en*

[3] The history of the Old Javanese kingdoms is traditionally divided into two periods, the Central Javanese and the East Javanese, during which the epicentre of power was located respectively in Central and East Java. The shift is usually dated to around 928 A.D., being the date after which inscriptions are almost exclusively found in East Java.

[4] In terms of modern administrative divisions, it represents the Special Province of Yogyakarta (Daerah Istimewa Yogyakarta), and the districts (*kabupaten*) of Klaten, Magelang, Semarang and Boyolali in the Province of Central Java (Jawa Tengah).

[5] A description of Loro Jonggrang, for example, was written by C.A. Lons in 1733 (Leemans 1855: 10-12).

Wetenschappen was founded (Feestbundel 1778-1928; Groot 2006), a society that played an essential role in the development of archaeological research on Java.

From the early 19th century and notably after the pioneering work of Sir Thomas S. Raffles (Raffles 1817), the study of Ancient Javanese history and its material remains developed considerably among Western scholars. Nevertheless, the Dutch government proved slow to take official steps to promote the archaeological exploration of the monuments of Java. It is only in 1840 that the colonial government asked the district heads to collect data concerning antiquities found in their region and to send this information to the *Bataviaasch Genootschap* (Swieten, Kinderen 1862:516). In 1844, F. Junghuhn published the first list of the known temples (Junghuhn 1844).

In the early 1850s, a new impulse was given to "East Indian" studies by the publication of J.F.G. Brumund's *Indiana* (Brumund 1854) and the creation of an institute devoted to the languages and cultures of the Indonesian archipelago (Simons 1853:6). The *Koninklijk Instituut voor de Taal-, Land- en Volkenkunde van Néêrlandsch Indië* (KITLV) was linked to the Delft Institute, created in 1842, where would-be colonial officers for the Dutch Indies were trained (Simons 1853:6). Besides fields of learning that were directly useful for the exercise of colonial power, such as languages and geography, the KITLV also devoted time to the study of ancient history, including epigraphy and archaeology.

The development of scientific knowledge about ancient Javanese history necessitated a systematic inventory of the places of archaeological importance. In 1860, the *Bataviaasch Genootschap* sent a new circular to the district heads, requesting them to communicate lists of antiquities under their administration. In April 1862, J.F.G. Brumund was given the charge of travelling through Java and of drawing up an archaeological inventory (Swieten, Kinderen 1862:515ff). Unfortunately, the Dutchman died in Magelang in March 1863 before he was able to fulfil his mission (Verbeek 1891:2).[6] The same year, R.H.T. Friederich arrived in Java with the task of collecting inscriptions and continuing J.F.G. Brumund's mission. It was one of his travelling companions, N.W. Hoepermans, who finally produced the first inventory of the archaeological sites of Central Java (Verbeek 1891:2) – though it remained unpublished at the time.[7]

The end of the 19th century was a flourishing period for Javanese archaeology. On the one hand, the *Bataviaasch Genootschap*, now led by J.L.A. Brandes, worried by the state of preservation of certain monuments, including Borobudur, urged the colonial government to invest in archaeological research and restoration work (Krom 1923 I: 24). On the other hand, a dynamic, private archaeological society was set up in Yogyakarta in 1885 with J.W. IJzerman as president. In 1887, W.P. Groeneveldt, helped by J.L.A. Brandes, published a *Catologus der Archaeologische Verzameling* (Groeneveldt, Brandes 1887). One year earlier, in 1886, the *Bataviaasch Genootschap* asked R.D.M. Verbeek to investigate antiquities while he was taking part in a geographical survey of the Mojokerto area, in East Java (Verbeek 1891:4). In the following years, he extended his research to the whole island, publishing in 1891 his *Oudheden van Java*, the first official inventory of the antiquities of Java.

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[6] The work done by J.F.G. Brumund between April 1862 and his death in March 1863 was published in 1868 in the *Verhandelingen van het Bataviaasch Genootschap* (Brumund 1868).

[7] N.W. Hoepermans' inventory was finally published in 1913 by the *Oudheidkundige Dienst* (Hoepermans 1913).

Although temple remains were inventoried, cleaned and occasionally excavated and restored,[8] the Dutch Indies did not possess any official archaeological service before the 20th century. It was only in 1901 that the government decided to create such an organ.

The new archaeological service was named *Commissie in Nederlandsch-Indië voor Oudheidkundig Onderzoek op Java en Madura*. According to its official decree, its task was to describe the antiquities of Java and Madura, to draw and photograph them (and possibly to make castings of sculptures and inscriptions) and to prevent their decay (Brandes 1901:1). Under J.L.A. Brandes' leadership, the commission continued with restoration projects, among others at Borobudur, at Mendut and Pawon (Bernet Kempers 1978:49-69), and developed considerably the knowledge of Javanese art history through J.L.A. Brandes' studies on style, ornamentation and iconography (e.g. Brandes 1902; 1904).

From the death of J.L.A. Brandes' in 1905 until the year 1910, the position of head of the *Oudheidkundige Commissie* remained vacant. Consequently, its archaeological activities were slowed down and efforts were focused on the restoration of Borobudur, which was able to go on thanks to the setting up of an independent commission (in 1900) and to the dedication of T. van Erp.

As an inventory of the monuments had already been published in 1891 (Verbeek 1891), the commission decided to concentrate on sculptures, making inventories of collections and loose pieces everywhere on the island. This work was carried on by Knebel, who published his results in various articles in the *Rapporten van de Commissie in Nederlandsch-Indië voor Oudheidkundig Onderzoek op Java en Madoera*, from 1904 to 1911 (Knebel 1909a; 1909b; 1910a; 1910b; 1910c; 1911a and 1911b). From 1912 to 1913, this work was continued by Sell (Sell 1912a; 1912b; 1913).

In 1910, N.J. Krom was named president of the *Commissie voor Oudheidkundig Onderzoek*. With his appointment, interest for non-Javanese antiquities grew.[9] In 1912, he published his *Inventaris der oudheden in de Padangsche bovenlanden* (Krom 1912c). In Central Java, restoration work was initiated at *candi* Ngawen (Bernet Kempers 1978:187).

In 1914, the *Oudheidkundige Commissie* became officially the *Oudheidkundige Dienst in Nederlandsch-Indië*. This was not a mere name change, but brought also a modification of the aim and task of the archaeological service: its competences were extended to "non-Hindu" antiquities and included not only Java and Madura, but the entire territory of the Dutch Indies.

Java, however, was bustling with archaeological activities. It soon appeared necessary to establish an up-to-date list of monuments, including an-up-to date bibliography and references to the numerous photographs taken either by the *Commissie* or by the *Oudheidkundige Dienst*. The new inventory was compiled in Batavia, firstly under the supervision of N.J. Krom, and following him of F.D.K.

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[8] Limited excavation work was carried out, for example, at Borobudur, where it led to the discovery of a first base, hidden by a later adjunct, or at Loro Jonggrang and Ijo, where the temple pit was excavated (IJzerman 1891; Bernet Kempers 1978:69, 114). At the same time, Mendut underwent a first phase of restoration between 1896 and 1901 (Bernet Kempers 1978:54).

[9] During the 19th century, official archaeological research focused on Java, even though some individuals had already drawn attention to Sumatran antiquities, as R.D.M. Verbeek did in his *Hindoe-ruïnen bij Moera-Takoes* (Verbeek, Van Delden, Groeneveldt 1880).

Bosch (Krom 1914a; Bosch 1915).[10] Although both scholars had fieldwork experience, their inventory is first of all a compilation of written sources. Its name is eloquent in this regard: *Inventarisatie der Hindoe-oudheden op den grondslag van Dr. R.D.M. Verbeek's Oudheden van Java samengesteld op het Oudheidkundig Bureau*. The work started by N.J. Krom and F.D.K. Bosch in 1914-1915 was completed in 1923 by M.A. Muusses, who listed the sites of the *residenties* Pasoeroean, Besoeki and Madoera (Muusses 1923).

The newly gathered information would enable N.J. Krom to publish, in 1923, his *Inleiding tot de Hindoe-Javaansche Kunst*, a book that is still a necessary reference for those interested in ancient Java, being even now the only work to offer a complete overview of the evolution of the architecture of the Hindu Javanese period.

The work of the *Oudheidkundige Dienst* was not limited to the inventory of monuments: temple preservation became one of its main tasks. Under the supervision of N.J. Krom and his successors, numerous temples were consolidated and restored. The harsh criticisms of the early restorations at Mendut (1896-1904), Pawon (1903) and Loro Jonggrang (1918-1926), and the general satisfaction with van Erp's work at Borobudur, led to a sharp debate on the necessity for restoration and, finally, to the adoption of a reconstruction technique already well-known in Mediterranean archaeology but new for Southeast Asia: anastylosis. From now on, the use of new stones would be limited to the bare minimum, the aim being to rebuild the monuments with the original stones after careful study and measurement of both *in situ* remains and the loose architectural elements. Numerous shrines were then rebuilt, among others at Gedong Songo, Ngawen, Badut, Merak, Kalasan, Sari, Plaosan and Loro Jonggrang. Archaeological excavations, though, were in most cases limited to necessary restoration, and the emphasis on rebuilding became more strongly felt in the 1930s, when, due to the economic crisis, money was badly lacking.

Post-War Period

During the Second World War and the subsequent war of independence, the work of the *Oudheidkundige Dienst* was considerably slowed down; the heads of the *Oudheidkundige Dienst*, all of them Dutch, were dismissed, and only restoration work was carried on, with limited funds and mixed results (Bernet Kempers 1978:78).

From 1947 to 1953, A.J. Bernet Kempers became the head of the *Oudheidkundige Dienst*, renamed *Dinas Purbakala Republik Indonesia*. In 1953, the function was taken over, for the first time in history, by an Indonesian scholar, R. Soekmono. The *Dinas Purbakala* lacked qualified staff and finances. Between 1956 and 1965 the focus was, once again, on restoration rather than on research (Soejono 1987:213). And, indeed, the most urgent problem facing Indonesian archaeologists had a well-known name: Borobudur. Already in 1955, the young *Dinas Purbakala* understood that the task of restoring the world-famous monument was too huge for its own means. The first approach for assistance was then made to UNESCO, but in vain. An international team was finally set up in 1965; its work lasted until 1976 and involved technicians and scientists from Indonesia, France, the Netherlands and Japan (Dumarçay 1977; Bernet Kempers 1978:212-215).

International cooperation was not limited to the restoration of Borobudur; archaeological research also benefited from it, with the commencement of two joint projects between the *Dinas Purbakala* and the University of Pennsylvania, at Ratu

[10] In 1915, F.D.K. Bosch succeeded Krom as the head of the *Oudheidkundige Dienst*.

Boko and in the district of Rembang, in northern Central Java (Asmar, Bronson 1973; Asmar, Bronson, Mundarjito, Christie 1975).

The growth of archaeological activities led, in 1975, to the division of the former *Dinas Purbakala* into two distinct institutes, a centre for archaeological research, focusing on survey and excavations, and a centre for the preservation of historical heritage. The first heads of the newly created institutes were respectively Satyawati Suleiman and Uka Tjandrasasmita (Bernet Kempers 1978:87). After 1977, R.P. Soejono, Haris Sukendar, Hasan Ambary and Tony Djubiantono succeeded Suleiman as heads of the centre for archaeological reasearch.

This chronological overview of research on Central Javanese temple remains would be incomplete without mentioning the French architect Jacques Dumarçay, from the Ecole française d'Extrême-Orient, whose name will often appear in this work. He dedicated more than 30 years of his life to the study of Central Javanese architecture. His work on the construction techniques and building stages of Central Javanese temples helped in retracing the technical evolution of Hindu-Buddhist architecture and revealed how often and how deeply Central Javanese monuments were modified.

Historical Background: Dynastic History and State Organization

Before going further and discussing my methods of investigation, I would like to present the historical background of the Central Javanese period and, on this basis, explain why I make so little reference to dates, kings and events throughout this thesis.

Early Southeast Asia: Indian migrants, Indianization and Cultural Convergence

Commercial exchanges between India, Southeast Asia and China led, during the 2d and 3d centuries A.D., to the development and enrichment of early Southeast Asian polities, such as Funan, in the Mekong delta, and Lin-yi, in present-day Central Vietnam (Higham 1996:298-304). In Java, the presence of Indian and Indian-like artefacts is attested at the proto-historical graveyard of Batujaya (West Java, 2nd to 5th centuries A.D.) (Manguin, Agustijanto 2006a, 2006b; Higham 1996:303).

By the 5th century A.D., the maritime route passing through the Strait of Malacca became the main trade route between India and China (Higham 1996; Taylor 1992). Contacts between civilizations, and particularly between India and Southeast Asia, intensified, resulting in the emergence of new kingdoms all over Southeast Asia, from Burma to Bali, and in the appropriation by local societies of an Indian language, writing system and religions, along with the re-articulation of Indian culture to fit Southeast Asian realities (Wolters 1999). To what extent Indian ideas and techniques were transformed is not precisely known, and the process of transmission is also not clear, but there is no doubt that Southeast Asian cultures were affected deeply and on a long-term basis by their contacts with India.

Due to the important role played by Indian culture during the very period in which early Southeast Asian polities transformed into true states, it was first thought that state formation in the region was due to the presence of Indian migrants, either traders who settled along the coasts or warriors in search of new territories.[11] This view was

[11] See, among others, Krom 1923:45. For a more complete discussion about the *vaiśya* and *kṣatriya* theories, see: Kulke 1990:9-12; Wisseman Christie 1995:236-237.

first refuted by J.C. van Leur, who, in his 1934 thesis, introduced the concept of Indianization. It was later adopted by F.D.K. Bosch and I. Mabbett (Leur 1934; 1955; Bosch 1961a; Mabbett 1977a; 1977b; Kulke 1990; Vickery 1998). According to this theory, Southeast Asian societies were no more passive spectators, but true actors in the creation of new, Indianized states. In order to legitimize their position, local kings themselves summoned Indian Brahmins to come to Southeast Asia and become their political advisors and ritual specialists.

Nevertheless, the term "Indianization" in itself denotes an Indocentric view of Southeast Asian history. It downplays the role of local societies in their own development, as if they were lacking the tools to transform chiefdoms into states and had to call on India for help (Kulke 1990:13). This problem, already underlined by De Casparis (1983:3), has been highlighted by archaeological discoveries made in mainland Southeast Asia during the last 20 years (see Higham 1989; 1996). These findings showed that the region was a centre of cultural progress and not some backward province, notably so in comparison with South India. This reality led H. Kulke to formulate the hypothesis that cultural convergence between South India and Southeast Asia, rather than domination by one culture of the other, was the key to understanding the mutation of Southeast Asian polities (Kulke 1990:15).

In any case, the exact process of state formation and the introduction of Indian elements into Southeast Asian cultures is still a matter of debate. Conscious of their Indocentric flavour, I have avoided the use of the terms "Indianization" or "Indianized States". Instead, I have opted for the adjective "Hindu-Buddhist", even though it emphasizes the role played by imported religions to the detriment of local beliefs.

Dynastic History of Central Java: The Old and New Hypotheses

On the island of Java, the first tangible traces of a kingdom are the rock inscriptions of King Pūrṇavarman of Tārūma[12] (West Java) dating from *c.*450 (Sarkar 1971-1972:I,1-12), but most of the remains of early states are to be found in Central Java.

From the 8th to the early 10th century the region around the mountains of Merapi and Sumbing, in Central Java, was the centre of powerful kingdoms that built Hindu and Buddhist monuments as prestigious as *candi* Borobudur. Nevertheless, retracing the dynastic history of those kingdoms is not an easy task. Inscriptions, which constitute the main source of information, are scarce (about 200 for a period of two centuries). Moreover, most Central Javanese inscriptions are primarily concerned with details of land grants and not, as in the case of Khmer panegyrics, with royal genealogy. Gaps and uncertainties are therefore numerous and only the very broad lines of Central Javanese dynastic history are known with a decent level of certainty.

The first Central Javanese king to leave an inscription is king Sañjaya of Mataram who, in 732, consecrated a *lingga* at Canggal.[13] However, less than 50 years later, the kingdom founded by this Hindu prince appears to have been ruled by Buddhist kings from the Śailendra dynasty.[14] Around 850, power seems to have fallen again into the hands of a Hindu ruler.[15] A vast programme of temple building was then undertaken, the last one in Central Javanese history.[16] In one century, the Javanese civilization

[12] The name is spelled Tārūma in the Ci-Aruten inscription and Tārumā in the inscription of Jambu.
[13] Inscription of Sañjaya (also named inscription of Gunung Wukir), see Sarkar 1971-72, I, n° III.
[14] Inscription of Kalasan, see Sarkar 1971-72, I: n° 5.
[15] Inscriptions of Tulang Air (850 A.D.), see Sarkar 1971-72, I: n°16-17.
[16] This historical reconstruction is mainly based on Krom 1931; Casparis 1950; 1956; Coedès 1964.

gave to the world Borobudur and Loro Jonggrang, two masterpieces reflecting a refined art brought to a level of superb mastery. Besides those constructions, more than 200 smaller temples were scattered over the region, from the Dieng plateau and the slopes of Mount Ungaran to the banks of the Progo River and the plain of Yogyakarta.

In the first half of the 10th century, the epicentre of the Javanese civilization moved to the eastern part of the island (Krom 1931:206; Boechari 1997). For more than four centuries after this date, kings resided and built their temples in East Java. In contrast to Central Java, the Eastern Javanese period is relatively well known, since it left not only inscriptions but also manuscripts of historical character. Central Java was not to become powerful again until several centuries later, through the impetus given by Islam.

Achieving deeper understanding of the details of this history is a more delicate task. Difficulties arise not only from the scarcity and the nature of the inscriptions, but also from Javanese royal titulature: to name a ruler, inscriptions can use his consecration name (such as Indra Sanggrāmadhanañjaya), his royal title (*śrī mahārāja*) or his apanage title (which differs for each king, for example *rake* Pikatan), not often accompanied by his personal name (*dyaḥ* Saladū in the case of *rake* Pikatan). In such conditions, it cannot always be clearly determined precisely who is being referred to. Two inscriptions, however, throw some light on this rather confusing picture, namely the Mantyāsiḥ I inscription (907 A.D.), also known as "Balitung's list", and the Wanua Tĕngaḥ III inscription (908 A.D.), discovered in the 1980s.[17] The two records give a list of the kings who preceded Balitung on the throne of Mataram. Unfortunately, the lists do not correspond entirely.

In his *Hindoe-Javaansche geschiedenis*, N.J. Krom was of the opinion that the main dynasty of Central Java was a Hindu one, but that the line of Hindu kings had been interrupted by the rule of one or two Buddhist rulers. Kings belonging to this "Śailendra *interregnum*" were *rake* Panangkaran (who issued the inscription of Kalasan in 778 A.D.) and Indra Sanggrāmadhanañjaya, mentioned in the inscription of Kĕlurak (782 A.D.), but not listed in the Mantyāsiḥ I inscription. Using Balitung's list and the inscriptions contemporary with the different rulers, N.J. Krom reconstituted the list of Javanese kings as follows (Krom 1931:95-196):

Apanage title	*Other names*
Ratu Sañjaya	
Rake Panangkaran / Paṇaṃkaraṇa	
Rake Panunggalan	
Rake Warak	
Rake Garung	Samaratungga?
Rake Pikatan	Samaratungga?
Rake Kayuwangi	Sajjanotsawatungga
Rake Watuhumalang	
Rake Watukura	Balitung
Rake Hino	Dakṣa
Rake Layang	Tulodong
Rake Pangkaja	Wawa

Twenty years later, in his ground-breaking thesis, J.G. de Casparis gave a rather different picture (Casparis 1950). Taking up again an idea already expressed by van

[17] For translation and bibliography of the Mantyāsiḥ I and Wanua Tĕngaḥ III inscriptions, see Sarkar 1971-72, II: n° LXX and Wisseman Christie 2002-04: n° 152, 161.

Naerssen (Naerssen 1947), De Casparis considered that the inscription of Kalasan refers not to one, but to two kings, a vassal king named Paṇaṃkaraṇa and his Śailendra suzerain, whose personal name is not mentioned in the inscription. For J.G. de Casparis, the Śailendras were a powerful dynasty, which ruled over Central Java from *c.* 775 A.D. to *c.* 832 A.D. It is only around 838/842 that a Hindu prince from Sañjaya's lineage regained full control of the region. For De Casparis, Central Javanese dynastic history between 732 and 882 A.D. can be summarized as follows (Casparis 1950:133; 1958:20):

Sañjaya family	*Śailendra* family
Ratu Sañjaya (*c.*732-760) *Rakai* Panangkaran (*c.*760-780) *Rakai* Panunggalan (*c.*780-800) *Rakai* Warak (*c.*800-819) *Rakai* Garung (*c.* 819-838) *Rakai* Pikatan (*c.* 838/842-856) *Rakai* Kayuwangi (*c.* 851-882)	Viṣṇu Dharmatungga (*c.* 775-782) Indra Sanggrāmadhanañjaya (*c.* 782-812) Samaratungga (*c.* 812-832)

One of the merits of De Casparis' hypothesis was its explanation of why the Sanggrāmadhanañjaya, mentioned in the Kĕlurak inscription, was not listed by Balitung: the Mantyāsiḥ I inscription would only mention rulers from the Sañjaya dynasty, avoiding invocation of the memory of the Śailendra domination. Although de Casparis sensed a rivalry between both dynasties, he did not consider Central Java as a battlefield for religious wars. Rather, he drew attention to the fact that intermarriage between the two lines did exist, and showed that Buddhism and Hinduism co-existed peacefully (Casparis 1950:131).

Although he repeated and developed his Sañjayava *versus* Śailendra theory in 1956 (Casparis 1956), the hypothesis would never be approved of unanimously by the scholarly community. In a 1958 paper, R.M.N. Poerbatjaraka questioned the very existence of separate Sañjaya and Śailendra dynasties. He equated the kings mentioned in Balitung's list (and thought to be from the Sañjaya dynasty) with kings called Śailendra in other inscriptions.[18] For him, Balitung's list, written in the Old Javanese language, would use Javanese names and titles, while Sanskrit names would be mentioned in Sanskrit inscriptions (Poerbatjaraka 1958:263).

The discovery, in the 1980s, of a second royal list from the reign of Balitung, the Wanua Tĕngaḥ III inscription, shattered the reconstruction of Central Javanese history (Kusen 1994; Wisseman Christie 2001). Although it was written only one year after the Mantyāsiḥ I inscription, Wanua Tĕngaḥ III mentions more royal names, adding new kings in between those known through the Mantyāsiḥ I inscription. Furthermore, the inscription makes no reference whatsoever to dynasties, and does not mention any family relationship between one ruler and the next, showing the limited state of our understanding of lineage and succession during the Central Javanese period.

In the light of the Wanua Tĕngaḥ III inscription, J. Wisseman Christie proposes the following historical framework (Wisseman Christie 2001:32-47):

[18] In Java, the name Śailendra is mentioned in the inscriptions of Kalasan (778 A.D.), Kĕlurak (782 A.D.), Abhayagiriwihāra (792-793 A.D.) and Kayumwungan (824 A.D.). It is also mentioned in inscriptions found in the Malay Peninsula and in India (Wisseman Christie, 2002-04: n°7).

Phase I:	Foundation	(716-746)	*ratu* Sañjaya
Phase II:	Expansion and consolidation	(746-827)	*rake* Panangkarana *dyaḥ* Pañcapaṇa =? Indra Sanggrāmadhanamjaya *rake* Panaraban/Panunggalan =? Dharmmottunggadewa *rake* Warak *dyaḥ* Manara =? Samarattungga *dyaḥ* Gula
Phase III:	New directions and Eastward expansion	(828-885)	*rake* Garung *rake* Pikatan *dyaḥ* Salaḍū *rake* Kayuwangi *dyaḥ* Lokapāla
Phase IV:	Political turbulence	(885-898)	*dyaḥ* Tagwas *rake* Panumwangan *dyaḥ* Dewendra *rake* Gurunwangi *dyaḥ* Bhadra *rake* Wungkal Humalang *dyaḥ* Jbang
Phase V:	Stabilization and growing East Javanese influence	(898-910)	*rake* Watukura *dyaḥ* Balitung

Although it provides a basic chronological framework, the Wanua Tĕngaḥ III inscription is far from being a solution to all the problems of Central Javanese chronology. It does not, for example, mention a Śailendra dynasty, neither does it use Sanskrit names. Do some of the kings listed in the Wanua Tĕngaḥ III inscription belong to the Śailendra dynasty? Not everybody would answer this question in the affirmative. Boechari, Kusen and Wisseman Christie, following in this the single dynasty theory of Poerbatjaraka, have tried to equate the Śailendra kings known through Sanskrit inscriptions with the various *rake* listed in the Wanua Tĕngaḥ III record (Poerbatjaraka 1958:263; Kusen 1988; 1994; Boechari 1989; 1990; Wisseman Christie 2001:34-35). Hence Wisseman Christie's identification of *rake* Panangkaran with Indra Sanggrāmadhanamjaya, *rake* Panaraban with Dharmmottunggadewa, and *rake* Warak with Samarattungga (Wisseman Christie 2001:35) .[19] As for R. Jordaan he has strongly opposed the single dynasty model, insisting on the existence of evidences in inscritpions and Chinese records showing that they were at least two centres of power in Central Java (Jordaan 2003:3). Besides, the problem of the existence of a Sañjaya dynasty remains: we know, from a series of inscriptions, that at least three kings of Central Java claimed to belong to a Śailendra dynasty,[20] but there is no mention in any inscription of a *Sañjayavaṃśa*.

State Organization in Central Java

Although during the first half of the 20th century and directly after World War II, scholarly emphasis lay mainly on dynastic history, the 1960s have seen interest in economic, political and administrative history growing considerably. Influenced by the decolonization process and the intellectual trends which have marked the disciplines of sociology and anthropology, historians have proposed contrasting

[19] J. Sundberg, without dismissing the single dynasty theory, has rightly noticed that the Wissmeman Christie's argument is specious, since there are no royal administrative inscriptions from the reigns of Panangkarana, Panaraban and Warak that would come to confirm that Javanese titles were used in the more prosaic Javanese language inscriptions (Sundberg 2006:21).

[20] These kings are known as Sanggrāmadhanamjaya (Kĕlurak - 782 A.D.), Dharmmottungadewa (Abhayagiriwihāra - 792-793 A.D.) and Samarottungadewa (Kayumwungan - 824 A.D.). See Sarkar 1971-72, I: n° 6, 6a and 10.

analyses of Central Javanese statehood, oscillating between a centralized kingdom and a mosaic of inter-connected, though independent polities (Heine-Geldern 1942:21; Weber 1978:53; Kulke 1986; Wisseman Christie 1986).

The overstated picture of a unified state ruled over by a powerful *mahārāja* was questioned by, among others, Boechari and H. van Naerssen. Both scholars insisted on the multiplicity of centres that would have characterized the Central Javanese period. For Boechari, the kingdom was divided into autonomous areas governed by *raka*s who could act independently from the king (Boechari 1963). For his part, H. van Naerssen insisted on the existence, at least until 873 A.D., of several independent rulers (Naerssen 1976:297-298; 1977:38-40).

The reflection on the nature of Central Javanese states led Wolters to formulate his *maṇḍala*-theory. According to him, Ancient Javanese states were organized as *maṇḍala* (Wolters 1982:16-32). At the centre, a *mahārāja* claims hegemony over surrounding vassals, while the latter enjoy substantial independence. Such a *maṇḍala* state would have been a rather unstable political construction with fluctuating boundaries; petty rulers came in and out the *mahārāja*'s sphere of influence, according to their own interests of the time.

These theories, both the centralized state and the *maṇḍala* model, have received strong criticism (Wisseman Christie 1986). On the one hand relationships between central government and local communities seem to have been of a more complex than presented in the *maṇḍala* model. On the other hands these relations seem to have evolved over time – whereas the state of the *maṇḍala* is of a rather static nature.

The state apparatus seems to have been quite limited and, according to the inscriptions, the *raka* were the only level of administration between the *mahārāja* and the villages (Casparis 1986:51, 56-59; Wisseman Christie 1986:70). There are no traces of the multiple-tiered administration of centralized states. Nevertheless, the authority of the centre was not purely ritual, as suggested by the *maṇḍala* theory: the *mahārāja* was directly entitled to levy taxes and transfer tax rights. However, neither the *mahārāja* nor the *raka* held rights over land: most of the land ownership remained in the hands of villagers; the king's rights were mainly limited to its produce (Wisseman Christie 1992:182).

Some *watěk*s - the main administrative division of the Central Javanese period - appear to have evolved out of the old independent chiefdoms - sometimes quite recently, such as the *watěk* of Halu. These newly incorporated territories, where the power of the local ruler – the *raka* – was probably still strong, seems to have remained geographical units for a while (Wisseman Christie 1986:70), whereas a process of geographical disintegration was already on its way in other parts of the region. At all events, by the second half of the 9th century, the territories under the jurisdiction of the different *watěk* no longer formed a geographical unit. *Watěk* holdings had become highly dispersed and, by that time, *raka*s were certainly not ruling over autonomous, potentially independent regions as formulated in the *maṇḍala* model (Wisseman Christie 1986:70-71).

The picture created from all this, therefore, is neither one of a strongly centralized state helped by a multiple-tier administration, nor that of a mosaic of independent states. Unfortunately, no satisfying alternative model – i.e. a model that would account for the relative autonomy of village communities, the role of the *raka* over time and the growing importance of the central administration – has been formulated yet.

Chronology of Central Javanese Monuments: Absence of Consensus

Another major and recurring problem of Central Javanese archaeology is dating temples. There is, in this matter, little consensus among scholars – and there are almost no certainties. Specialists agree on one thing: the vast majority of the remains of Central Java date back to the Central Javanese period. In other words: they were built between the 8th and the middle of the 10th century. Nevertheless, almost everything else is open to debate, commencing with the starting date of the Central Javanese period. D. Chihara and R. Soekmono proposed the second half of the 7th century (Chihara 1996:91; Soekmono 1979:458-459), but other scholars usually prefer the date of 732 A.D., which corresponds to the earliest dated inscription of Central Java, the inscription of Canggal (Williams 1981; Dumarçay 1993).[21]

Where other sources are lacking, the association of a temple with a dated inscription is the only way to ascribe an absolute dating to the building. However, using inscriptions to date Central Javanese temples can be quite tricky. In contrast to the Khmer tradition, Central Javanese stone inscriptions are not carved on doorjambs, but on movable slabs.[22] Almost none of them has ever been found *in situ*, that is to say, in direct physical proximity to a construction.

Dating a temple is made even more complex by the numerous restorations, rebuildings and transformations undergone by some structures. Neither Borobudur, Sewu, Sojiwan nor Kalasan - to cite but a few of the best-known temples - was built in one phase. Before associating a temple with an inscription, one should question the epigraphic record and determine with precision what is being dated by the inscription: the foundation of the shrine, a restoration, a land donation, etc. Two temples nicely exemplify the complexity of dating Central Javanese temples on the basis of inscriptions: *candi* Gunung Wukir and *candi* Kalasan.

Candi Gunung Wukir is usually associated with the inscription of Canggal,[23] which was found on the Gunung Wukir hill.[24] The geographic proximity with *candi* Gunung Wukir and the mention, in the inscription, of a *śaiwa* sanctuary on a hill (which nicely fits *candi* Gunung Wukir) makes the association highly probable. Therefore, remains of *candi* Gunung Wukir were thought to date back to 732 A.D., corresponding to the date mentioned on the stone slab. The temple was then used to define an early Central Javanese architectural tradition, characterized by the use of square, flat mouldings (Soekmono 1979:472; Williams 1981:38). Nevertheless, on the basis of a study of building techniques, Dumarçay was able to show that the temple underwent restoration work at a later time, probably around the mid-9th century (Dumarçay 1993:80). The temple visible today should not, therefore, be used to exemplify an 8th century tradition.

A similar process is witnessed at *candi* Kalasan, which is associated with the inscription of Kalasan (778 A.D.). The latter record was discovered several hundred meters from the temple, beside the railway tracks (Brandes 1886a:240), in an area

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21 The inscription of Tukmas is thought to be earlier. It is dated on paleographical grounds around the mid 7th century A.D. (Wisseman Christie 2002-04: n°1).

22 This is true for the dated stone inscriptions, most of which record the foundation of and donations to temples. Undated, short inscriptions have however been found on temple walls, at Borobudur and Plaosan for example. For the latter, see de Casparis 1958.

23 For a transcription and English translation of the Canggal inscription, see Sarkar 1971-72, I: n°III.

24 The exact location of the main fragment is not known, but the corner was found during excavations of the temple's remains (Bernet Kempers 1938:18).

where there are found several other Buddhist remains. Even if the association of the Kalasan inscription with *candi* Kalasan is correct, and that is already questionable, it is clear from the text that it relates to the temple foundation. In 1940, Dutch archaeologists dismantled part of the temple and discovered that the present-day remains covered an older shrine (Bernet Kempers 1940:20). Further research showed also that the temple visible nowadays was remodelled after construction (Bernet Kempers 1982:49-53). As in the case of *candi* Gunung Wukir, the inscription refers to the temple foundation, that is to say to the original *candi* Kalasan. Therefore, even if indeed the inscription relates to *candi* Kalasan, temples showing similarities with Kalasan should not be dated to *c*. 778 A.D., but must be related to the second or third building phase of *candi* Kalasan.

Scholars studying Central Javanese art and archaeology have tried to come up with a relative chronology of the temples, locating each construction in a logical sequence according to changes in their ornamentation (Vogler 1949; 1952; 1953), mouldings (Soekmono 1979; Williams 1981) or building techniques (Dumarçay 1981; 1993). Nevertheless, their different approaches have sometime led to strikingly different results.

E.B. Vogler proposed a division of the architectural history of Central Java into five different phases, the first two phases being hypothetical (since no building from those stages could have been preserved up to the present), that last one corresponding with the East Javanese period (Vogler 1953).

Phase III	*760-812 A.D.*	*Candi* Arjuna, Semar, Gatotkaca, Borobudur, Pawon, Mendut, Kalasan, Sari, Lumbung, Sewu.
Phase IV	*812-838 A.D.*	Ngawen.
	838-898 A.D.	Puntadewa, Gedong Songo C, Plaosan, Sojiwan.
	898-928 A.D.	Loro Jonggrang.
Phase V	*928 A.D.-*	Sembodro, Ratna (Gedong Songo I), Gunung Wukir, Pringapus, Srikandi, Gedong Songo A and B.

In contrast, R. Soekmono, in his *Archaeology of Central Java before 800 A.D.*, proposes more ancient datings and a different chronological sequence. *Candi* Arjuna, placed by E.B. Vogler early in the period from 760 to 812 A.D., is ascribed a date between 650 and 730 A.D. by R. Soekmono (Vogler 1953:269; Soekmono 1979:466, 472). In a similar way, *candi* Srikandi is considered by R. Soekmono as one of the earliest temples of Central Java, together with *candi* Arjuna, while E.B. Vogler was of the opinion that it was a late monument, contemporary with the East Javanese period (Vogler 1953:272; Soekmono 1979:466, 472)

R. Soekmono's tentative chronology of Central Javanese temples built before 800 A.D. is as follows (Soekmono 1979:472):

Phase I	*650-730 A.D.*	Arjuna, Semar, Srikandi, Gatotkaca.
Phase II	*730-800 A.D.*	(a)[25] Puntadewa, Sembadra, Bima, Gedong Songo, Muncul.
		(b) Gunung Wukir, Pringapus, Kalasan, Sewu.
		(c) Batumiring, Sambisari, Gebang, Lumbung.

A similarly early chronology is used by D. Chihara, while J. Williams and J. Dumarçay date the earliest temples to 720-750 A.D. and the latest ones to 850-900 A.D. (Williams 1981; Dumarçay 1993; Chihara 1996). A predominant concern of these three chronologies is to take into consideration the various building phases of the temples and to distinguish the dating of these phases. The architect J. Dumarçay based his study on building techniques, and was particularly careful in examining the possible rebuildings and transformations undergone by the temples. This is reflected in his chronology of the monuments of Central Java.

730-750 A.D.	Gunung Wukir 1, Arjuna, Semar, Puntadewa 1, Gatotkaca.
c.750 A.D.	Srikandi, Puntadewa 2, Gedong Songo II-VI.
750-790 A.D.	Kalasan 1, Sewu 1.
790-800 A.D.	Kalasan 2, Sewu 2, Sojiwan 1, Lumbung 1, Bubrah 1, Mendut 2, Borobudur 2.
800-830 A.D.	Bima 2, Gedong Songo I, Pawon 1-2, Ngawen, Kalasan 3, Borobudur 3.
832-856 A.D.	Loro Jonggrang
830-900 A.D.	Plaosan, Sambisari, Gebang, Banon, Banyunibo, Sari, Sewu 3, Mendut 3, Borobudur 4, Pringapus, Lumbung (Muntilan), Asu, Pendem, Ijo, Barong, Merak.

A simple look at the above tables shows the magnitude of the problem of dating Central Javanese temples. Even though everyone seems to agree that *candi* Arjuna is one of the oldest temples, there is no consensus about what 'early' means in terms of absolute chronology. It is 650-730 A.D. for R. Soekmono, 680-730 A.D. for D. Chihara, 730-750 for Dumarçay, 730-770 for J. Williams and *c*. 760 for E.B. Vogler (Vogler 1953; Soekmono 1979; Williams 1981; Dumarçay 1993; Chihara 1996). As for Gunung Wukir, it is dated *c.* 730 A.D. (on the basis of the inscription) by R. Soekmono, D. Chihara and J. Williams, but, according to E.B. Vogler, its style makes it more likely that it dates back to the East Javanese period (Vogler 1953; Soekmono 1979; Williams 1981; Chihara 1996).

Chronological framework of the present book

The great uncertainties concerning the chronology of Central Javanese monuments have compelled me in this research to limit my references to dates, and to implement very broad chronological lines. The only chronological framework I refer to is the classification of Central Javanese temples into an early and a late group – based on a stylistic analysis of several ornamental motifs - as proposed by M.J. Klokke in a recent publication (Kokke 2006).

[25] In this phase, (a), (b) and (c) corresponds to different architectural traditions called by R. Soekmono (a) New Dieng Style (in contrast to Phase I, which he names Early Dieng Style), (b) Early Śailendra Style and (c) a merging of the New Dieng style and the Early Śailendra style (Soekmono 1979:472).

Early period (up to c. 830 A.D.)	*Late period (after c.830 A.D.)*
Candi Banyunibo, Borobudur, Bubrah, Dieng, Gana, Gebang, Gedong Songo,[26] Kalasan, Lumbung (Prambanan), Mendut, Merak, Pawon, Pendem, Ratu Boko,[27] Sari, Selogriyo, Sewu.	Candi Asu, Barong, Gedong Songo I, Ijo, Kedulan, Loro Jonggrang, Lumbung, Morangan, Ngawen, Plaosan Kidul, Plaosan Lor, Pringapus, Ratu Boko,[28] Sambisari, Sojiwan.

This periodization represent the first result of a research on style and chronology which, together with the present thesis, is part of a wider project directed by M.J. Klokke and entitled *Spatial structures and meaningful motifs: temple networks as visual representations of the religious foundations of Central Javanese kingdoms (c. A.D. 750-850)*. The results presented here – dealing mainly with space – will later on be merged with the conclusions from the stylistic research conducted by Klokke (2006).

The main drawback of the absence of absolute chronological references is that it does not allow a precise mapping of the evolution of the religious occupation of the territory, even though the factors and mechanisms that led to the development of the built landscape (relations between temples and settlements, trade routes, natural features etc.) can be traced back - to some extent. The maps presented here show all the remains from the Central Javanese period, but the temples to which they correspond are not necessarily contemporaneous with one another. Even if a stylistic study one day comes up with an accurate chronology of Central Javanese shrines, it will not solve all the problems: only excavations would give us adequate information to determine the duration of the occupation of the various sites. Unfortunately, the archaeology of Central Java is still in its infancy: sites are still widely non excavated, old-fashioned excavations techniques make the analysis of excavation material difficult[29], there is a lack in ceramic expertise[30] and science-based dating is unavailable for most of the sites. However, until we have this type of information at our disposal, it will be difficult to get a precise idea of the actual religious landscape at any specific date in the history of Central Java. Some early buildings were obviously still in use in later times – such as Gunung Wukir and Pikatan[31] – but it might not be the case with all the shrines and monasteries. One should keep this in mind when looking at the maps, since they might easily lead the unaware reader to over-estimate the number of temples in use at any one time.

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[26] At the exception of Gedong Songo I.

[27] The meditation platform (*pendopo*) in the southeast part of the site.

[28] Western *gopura* and entrance gates to the bathing complex.

[29] Shards and other archaeological artefacts are numbered according to excavation square and depth (the reference being the modern ground level), but, most of the time, not according to archaeological unit. Problems arise when one suspects a sloping of the archaeological layers, a foundation trench, a pit hole or any other sort of disturbance.

[30] Local ceramics are broadly classified into coarse and fine paste, but attempts to trace stylistic and technical developments are still to be made, as well as attempts to characterised assemblages. Imported wares are better known; only a handful of sites have been gratified with visits of experts in Chinese ceramics though.

[31] The foundation of *candi* Gunung Wukir goes back to the first half of the 8th century, but it was apparently largely rebuilt during the 9th century (see below, p. 162, note 50) The first recorded land grant to the monastery of Pikatan (the remains of which are still to be identified) is dated to 746 A.D., but additional land was given to the same monastery in 908 A.D. (Wanua Tengah III inscription; see Wisseman Christie 2002-2004, nr 161).

Landscape archaeology in Central Java

Although this book says little about chronology, it says much about space. As mentioned above, my intention was to favour a geographically broad approach, and to consider temples as parts of a landscape. Therefore, I have employed the usual tools of landscape archaeology, plotting all the sites on a map, identifying concentrations of temple remains and cross referencing information from distribution maps with topographical and hydrographical data. I have concluded this approach with a reflection on the built landscape of of Central Java.

In this book "landscape" and "environment" have a specific, distinct meaning which, as they come over and over, is probably worth explaining here. In the absence of a more appropriate term, I use the words "natural environment" to designate geographical features such as hills, mountains, rivers etc. – everything that is related to topography and hydrography, while "landscape" is used in quite a different way. Following C. Tilley and C. Crumley, I regard it as a medium rather than a container for human action; it is understood as the material manifestation of the relation between humans and their natural environment (Tilley 1994:10; Crumley 1994:6). According to this point of view, landscape shapes human experience and is in its turn shaped by man. The result is a complex palimpsest of human society, reflecting its practical exigencies, but also its mythical, cosmological and ritual aspects. To quote Tilley:

> The landscape is continually being encultured, bringing things into meaning as part of a symbolic process by which human consciousness makes the physical reality of the natural environment into an intelligible and socialized form. The landscape is redolent with past actions, it plays a major role in constituting a sense of history and the past, it is peopled by ancestral and spiritual entities, forms part and parcel of mythological systems, is used in defining social groups and their relationships to resources. (Tilley 1994:67)

In the present thesis, although I sometime analyze Central Javanese landscape in the light of ecology and exchange networks, I have tried to introduce elements inspired from a more phenomenological and symbolic approach to landscape. In my analysis, I have considered not only the position of a site on a map, but also what is actually seen by a human subject visiting the place. In my analysis of temple orientation, besides the technical approach, I took into consideration not only the architecture itself, but also how architecture may guide the sight of the devotee towards a specific point in the landscape. References to the religious and cosmological background of Central Javanese society were also important in my approach. I have scrutinized inscriptions for clues to understand how ancient Javanese people viewed their landscape in inscriptions.[32] Besides, comparisons between actual temples of Central Java and precepts exposed in Indian treatises on architecture have yielded interesting results, showing how the architects managed to relate a physical building with Hindu-Buddhist cosmological concepts.

In this respect, the present study differs from and complements the work of Mundardjito, the pioneer of spatial analysis in Central Javanese archaeology (Mundardjito 2002). While Mundarjito focuses on ecology and uses temple remains exclusively to throw light on settlement patterns in Central Java (Mundardjito

[32] I am myself neither an epigraphist nor a Javanist and I had to rely mainly on other people's translation. It goes without saying that the subject of the perception of landscape in epigraphical record would require a more thourough study by an expert of the field.

2002:35), I have for myself tried to keep a broader approach, considering temples not only as markers for settlements – which they not always are, but also as possible remnants of other human activities, such as trade and religious practices. Mundarjito himself, in his conclusion, touched on the problem of his exclusive ecological approach in the following terms:

> (…) there is a small number of sites which are not situated on land of high potential, or, in other words, the location of these sites is not based on the abovementioned ecological potential. […] Other archaeologists should of course approach them using other points of view. (Mundardjito 2002:376)

The geographical scope of the present study is wider than that of Mundarjito. Mundardjito focused on the districts of Sleman and Bantul, in the province of Yogyakarta; I chose to include not only Yogyakarta, but also parts of the province of Jawa Tengah (Central Java).

Those who have read the thesis of Mundardjito will notice that I draw on a more limited amount of sites for Sleman and Bantul than he presents in his book. Mundardjito uses three types of archaeological sites: 1) unmovable archaeological remains, that is to say (ruined) buildings and building foundations, 2) loose architectural elements, 3) movable artefacts believed to be in their original location. My own inventory, however, only takes into consideration buildings (standing or in foundation) and certain sites belonging to Mundarjito's second category. I have deemed it too problematic to determine whether "movable artefacts" (i.e. loose sculptures) had actually been moved or not. In the absence of precise archaeological record mentioning the conditions of discovery of the sculptures and knowing that today and in a recent past, statues have attracted collectors of all kinds, I have decided not to include sites where only sculptures were found.[33]

Methodology

The research presented here followed three steps: data gathering (through literature and fieldwork), drawing of archaeological maps, and analysis.

As no inventory of Central Javanese temple remains had been published since 1915, it soon appeared that a new, up-dated inventory was needed. Therefore, I first gathered information from Dutch and Indonesian sources.

Temple remains: a definition

In contrast to the older inventories, my inventory only takes into account temple remains. Sites where only a few sculptures, an inscription or metallic material have been found are excluded. This choice was made in order to gather a corpus as homogeneous and reliable as possible for a distribution study. Temples are fixed landmarks whereas inscriptions and sculptures are easily moved from one place to another, and are more difficult to use within the framework of a historical study of the territory.

Paradoxically, identifying a temple is not as easy as it may seem. Many of them have been reduced to a few scattered stones lying along a country road. I considered as temple remain any site that 1) still shows *in situ* building features, 2) has once been recognized as a construction, 3) shows stones in sufficient quantity and variety to

[33] In a few exceptional cases, however, such sites are mentioned in the inventory: see p.18.

suggest the former presence of a temple,[34] and 4) the location of the discovery of an unusually large *yoni*[35] or sculpture of sufficient dimensions to make it unlikely that it could have been moved.[36]

Data gathering

As noted above, an up-to-date inventory of Central Javanese temple remains was required in order to take into account the research completed since the last one was produced (1915).

I collected data from the older Dutch inventories and the modern Indonesian lists. Information was then completed by reading the various archaeological reports, both Dutch and Indonesian, with an emphasis on reports issued during the last three quarters of the 20th century.[37] As far as possible, I tried to trace back changes in temple names and to build up a table of correspondences between the different inventories.

From these printed sources, I drew up a provisional list of temple remains, including localization and description (when available). Sites were plotted on topographical maps as precisely as possible given the available information. At this stage, various maps were used, in order to find the *desa* and district names mentioned in the different inventories. Four sets of maps were utilised in the present research:

1:25 000 – Java en Madoera – Topografische Dienst: first made in the 1910s, revised in the 1930s.

1:50 000 – Java en Madoera – Topografische Dienst: first made in the 1910s, revised in the 1920s and late 1930s.

1:50 000 – Java, Madura and Bali – US Army Map Service: 1940s.

1:25 000 – Peta Rupabumi Digital Indonesia – Bakosurtanal: 1990s.

In order to check the accuracy of data and information given in written sources, I carried out fieldwork in the regions of Yogyakarta, Magelang, Semarang and Boyolali, where most of the temple remains are located. Unfortunately, due to a lack of time and resources, I could not carry out fieldwork in the outer regions. Information for the areas around Temanggung, Wonosobo and West Central Java comes therefore mainly from written sources, although I visited the main sites. The choice not to investigate those regions through fieldwork was a painful one, but it was made with the knowledge that the area was the only one for which I could rely on a modern, up-to-date inventory, published by the Balai Arkeologi (Tjahjono 1994-2000).

The first 6-months period of fieldwork focused on the Daerah Istimewa Yogyakarta and the southern part of the district of Magelang and was carried out from

[34] I set the limit at a minimum of 15 stones. These should include plain stones as well as carved ones. Carved stones are indeed less representative: because of their artistic value, they are often moved and used in gardens and mosque as ornaments. Exceptions have been made for sites where the stones were still partly buried in the ground.

[35] Pedestal for a *lingga* or śaiwa image, usually square, with, on one side, an outgrowth cut by a small drain for lustral water.

[36] I arbitrarily fixed the limit to 1m square for *yoni* and 1.5m height for sculptures. I nevertheless excluded large pieces when there were good reasons to believe they were parts of an antique collection rather than *in situ* artefacts.

[37] This work was carried out from July 2001 to February 2002 for the D.I. Yogyakarta and the district of Magelang, from September 2002 to February 2003 for Semarang and Boyolali and in the last trimester of 2003 for the surrounding areas.

March to August 2002. Northern Magelang, Semarang and Boyolali were surveyed during a second fieldwork period, from March 2003 to July 2003. In both cases, the survey was based on the information gathered from printed sources. I visited all the villages where temples stones had previously been reported, included when the stones were reported as missing in later reports, questioning *kepala desa* and villagers about the possible existence of other ancient sites or places of interests (springs, Muslim holy places, meditation grounds, body of water with special virtues etc.), consulting lists held by village authorities whenever they existed.[38]

In the first trimester of 2004, printed information and fieldwork data were merged to create a new descriptive inventory of Central Javanese temple remains[39] and to draw an archaeological map.

Drawing archaeological maps

The resulting archaeological maps proposed in this book are based, according to scale, on the following topographical maps:

1:50 000 – Java, Madura and Bali – US Army Map Service: 1940s.

1:25 000 – Peta Rupabumi Digital Indonesia – Bakosurtanal: 1990s.

1:250 000 – Indonesia – Series T503 – US Army Map Serice: 1950s.

The maps have been scanned and re-worked on Illustrator software to keep only contour lines and river systems. Both the descriptive inventory, initially written as an Access database file, and the maps (digitized using Illustrator) have been introduced into MapInfo, a simple geographical information system, in order to enable multi-level spatial requests.

Analysis and hypotheses

The various maps have provided the basis for a visual analysis of distribution, orientation and spatial features. Using multiple queries, I have tried to find correlations between several variables: geographical location of the remains, altitude, local topography, distance from a river, position compared with a river, religion, spatial arrangement, number of buildings, orientation, ground plan and moulding composition. Maps have been generated for each query in order to identify the distribution patterns of the selected sites and highlight correlations between distribution and the other variables.

My main hypothesis was that Central Javanese temple remains reflect at the same time the political and economical occupation of the territory, the spiritual aspects of the relationship between man and his natural environment, and the abstract concepts of space inherited from local and imported traditions. To address this hypothesis, I have considered three aspects of the architectural space: location within the landscape, orientation and ground plan design.

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[38] On average, I spent one day per site mentioned on my provisional list in order to localize it, measure and describe the remains – when they were still visible.

[39] See appendix 1 for a detailed description of the organization of the inventory, appendixes 2-4 for the inventory itself.

CHAPTER 2

Presentation of the secondary sources

Printed sources used in the present study consist mainly of inventories written in Dutch and lists of temple remains more recently drawn up by Indonesian archaeologists (in Indonesian).

Dutch Sources

My main Dutch sources are the inventories written by N.W. Hoepermans, R.D.M. Verbeek, J.W. IJzerman, N.J. Krom and F.D.K. Bosch.

N.W. Hoepermans' Hindoe-oudheden van Java

N.W. Hoepermans carried out his researches in the 1860's, but his inventory was published only in 1913 in the *Rapporten van den Oudheidkundigen Dienst in Nederlandsch-Indië* (Hoepermans 1913). This inventory covers West and Central Java, including also Madiun and Kediri. However, Banten (in West Java) as well as the easternmost tip of the island were not surveyed.

Although the text has no introduction dealing with the methods used for collecting data, it is obvious from numerous passages that this Dutch scholar visited all the places mentioned in his inventory. He did not rely only on data given by local civil servants: his information was first-hand. Hoepermans often describes the approaches leading to the remains, the perspectives of the sites, and his difficulties in attaining his goal or the opinions of local people concerning some of the ruins.

A clear example of this can be read on p. 152:

> From Magelang, after having crossed the Progo River, one goes to Bandongan, 2 ½ *paal* away, via a very good road. From this place, there is a secondary road that runs through the hills and the valleys that form, so to say, the foot of Mount Sumbing. One finally arrives at Silogrio, where stands a temple named "Batoe roema" by the natives. Although this temple must have another name, we have not been able to dig it up, as no Javanese people, not even the Wedhono of this district, gives it another names or knows about it.[1]

N.W. Hoepermans describes the antiquities he encountered province by province, district by district, including temple remains as well as sculptures, metallic finds and private collections.

It is interesting to note that numerous Dutch civil servants appeared to have already gathered quite large collections of Javanese antiquities by that time. In Magelang alone, N.W. Hoepermans lists 30 pieces in front of the house of the Regent (district head) along with 22 smaller antiques inside, while 73 other sculptures would

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[1] "Van Magalang, gaat men na de rivier de Proggo, overgestoken te hebben naar Bandongan 2 ½ paal langs eene zeer goede weg, echter van af deze plaats ligt eene binnen weg die over heuvelen en dalen loopt en welke om zoo te zeggen de voet van het gebergte Soembing uitmaakt, tot dat men eindelijk komt te Silogrio, waar zich eene tempel bevindt, door de inlanders Batoe roema genaamd; hoewel deze tempel eene andere naam moet dragen, heeft men dezelve niet kunnen opdiepen, daar geen Javaan, noch de Wedhono van dit district, eene andere naam weet op te geven of bekend is." (Hoepermans 1913:152)

have been in front of the house of the Resident (*residentie* head).[2] The habit of collecting antiquities was not limited to civil servants. Hoepermans also mentions a certain Mr. Rivière, owner of an estate near Prambanan, who had more than 50 pieces in his domain (Hoepermans 1913:235). However, this interest in antiquities was very much limited to sculptures and the fate of temple stones did not attract much attention. While Dutch men built museums or decorated their houses with antiques, Javanese villagers moved stones from their original sites. Their motives were both secular and religious. Stones from *candi* Sieng-on (Prambanan area) were used to build water ducts (Hoepermans 1913:253), while temple stones, among them a *yoni*, were included in the base of a mosque in Brongkol village (Temanggung district) (Hoepermans 1913:173). However, ancient stones did not always have such mundane uses, and were also gathered in graveyards and used for tombs, as was the case in Mongsing-boemen village (Hoepermans 1913:173).

As the first witness to the state of preservation of many Central Javanese archaeological sites, Hoepermans' work is highly valuable, although his inventory is not always as systematic as one would have hoped.

Localization of the sites is certainly the main problem. As there is no map attached to his list, one has to rely on the administrative division. While *residenties* and districts are always given, sub districts are only occasionally mentioned. Sometimes, the Dutch scholar also includes names of nearby villages, but his use of notions as vague as "close to", "not far from" or "in the neighbourhood of" do not always help. Hoepermans' information concerning the localization of Pikatan, for example, is limited to the following passage (Hoepermans 1913:172):

> Dessa Pikatan (District Temangong). Within the *dessa* there are traces of a foundation (…).[3]

Based on such a short note, it is rather difficult to find the village on a map (if it was ever mapped by the *Topografische Dienst*). Taking into consideration the order in which the sites are mentioned in the report may help, but only in a limited way. And when the village name is as common as "Tjandi/Candi" the task is often impossible. The only solution is then to compare Hoepermans' data with information coming from R.D.M. Verbeek's inventory (Verbeek 1891), which included an archaeological map. However, the sites mentioned by Hoepermans do not always figure on Verbeek's map.

R.D.M. Verbeek's Oudheden van Java

In 1891, R.D.M. Verbeek published the first official inventory of the antiquities of Java in the *Verhandelingen van het Bataviaasch Genootschap*, under the title "Oudheden van Java. Lijst der voornaamste overblijfselen uit den Hindoetijd op Java met eene oudheidkundige kaart".

Although Verbeek's inventory has its downsides, it is certainly a highly valuable work. Not only for the up-to-date list of archaeological remains, but also for the map

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[2] In Hoepermans' time, Java counted several *residentie*'s. Central Java was divided between the *residentie*'s of Pekalongan, Banjoemas, Bagelen, Kedoe, Semarang, Japara, Djocdjakarta and Soerakarta. Each *residentie* was further divided into districts. A district head was called Regent, while the highest civil servant of a *residentie* was a Resident. Magelang was the administrative centre of both the *residentie* Kedoe and the district of Magelang.

[3] "Dessa Pikatan (District Temangong). Binnen in de dessa vindt men sporen van een fondament (…)." (Hoepermans 1913:172)

that accompanies them. Verbeek was a geographer; he took care to plot most of the sites on his map, and he included sketches of the Prambanan area and the Dieng plateau. His work offers the first archaeological map of Central Java, even though its scale is too large to be really precise.

Verbeek's inventory deals with the whole island, including Banten and east Java. Like his predecessor, he lists all the places of archaeological interest, i.e. not only temple remains, but also sculptures, inscriptions and other small finds. His inventory is not descriptive: as mentioned in the title, it is a list. For example, the entry for *candi* Pawon is limited to:

> **266. Tjandi Pawon.** A small temple, not far from Bara Boedoer.[4]

For further details, one has to refer to the bibliography (supplied with each entry).

Even though we know that Verbeek did travel to East Java, it is less clear to what extent he actually did field work in Central Java. In the introduction to his inventory Verbeek expresses lengthy gratitude to the civil servants and district heads who helped him. In a number of areas, he relied on their accounts alone. In some cases, mainly in the Magelang area, Verbeek states clearly that he had not visited the site. For *candi* Batur (Selogono), one finds the following note:

> **259. Sela gana or Tjandi gana.** Two entirely collapsed temples, on the Soekarini hill, near *doekoeh* Ngoboran in *desa* Bawang. According to the *Controleur* Kruijsboom foundations can still be seen. Not visited by me.[5]

Under Kanggan, one can read:

> **264. Kanggan.** A *desa*, approximately 1 kilometer to the west of Bara boedoer, along the main road to Salaman. Here stands a pedestal. Earlier a stone staircase led down to it; the staircase is now covered with earth. Communication of the *Controleur* of Moentilan, C.J. Hasselam.[6]

The quality of his information relies on the contributions of his informants and these varied in quality from place to place.

Furthermore, it is often impossible to distinguish data coming from written sources from first-hand information. This may partly be due to Verbeek's very impersonal style, but it might also be that, for some entries at least, he relied exclusively on written sources. I reproduce below R.D.M. Verbeek's text for *candi* Argakusuma.

> **141. Tjandi Arga koesoema** (District Bodja, *afdeeling* Semarang). To the NNE of Medini; from Soesoekan, one goes eastwards to Kloerak (Kloewak on the topographical map); not far from this *desa* there is a hot spring called Argatapa and, near to it, the two collapsed temples [named] Arga koesoema. The first one used to be 7m large and 8 meter long, with the entrance on the northern side; the second temple was 6m by 7m. Earlier Friederich was still able to recognize the wall of [temple] nº 1. Higher in the mountains there must have been 3 other temples, but they were not

[4] "266. Tjandi Pawon. Eene kleine tempel, niet ver van Bara Boedoer." (Verbeek 1891: no 266)

[5] "259. Sela gana of Tjandi gana. Twee geheel vervallen tempels op den berg Soekarini bij doekoeh Ngoboran der desa Bawang. Volgens den Controleur Kruijsboom zijn fundamenten nog te zien. Niet door mij bezocht." (Verbeek 1891: no 259)

[6] "264. Kanggan. Een desa, ongeveer 1 kilometer ten westen van Bara boedoer aan den grooten weg naar Salaman. Hier staat een voetstuk, waarnaar men vroeger met een steenen trap afdaalde; de trap is nu met aarde overdekt. Mededeeling van den Controleur van Moentilan, C.J. Hasselam."(Verbeek 1891: no 264)

> visited by Friederich. The sculptures coming from these temples have been brought to Bodja.[7]

The use of past tenses, unusual elsewhere in Verbeek's text, and the reference to "temples not visited by Friederich" lead in this case to the conclusion that information concerning the dimensions of the temples and the possible existence of further structures comes from Friederich's account alone – not much is known of the state of preservation in Verbeek's time.

Unfortunately, it is not always so easy to identify the source of the information. Telahap constitutes a good example of this difficulty:

> **235. Telahap.** A large inscribed stone, in two pieces, found near the *paal* 28. Transported to the house of the *Controleur* in Magelang, now apparently lost. At Telahap, on the 23rd of April, further to a landslide on the banks of the Gandoel River, a stone staircase of 89 steps was discovered.[8]

Was the staircase still visible in Verbeek's time? This cannot be established. All this information could well have come from the written sources mentioned in the bibliography.

It appears that for the area of Magelang Verbeek's work is often based on second hand information and therefore not always of high standard. The most striking evidence is the case of *candi* Ngawen. Ngawen is a temple compound made of at least 5 temples, located between Borobudur and Muntilan, not far from *gunung* Sari. As it lies along a main road and in a flat area, the place is not difficult to reach. However, Verbeek did not visit *candi* Ngawen. In his inventory, he relies mainly on a communication made by a local civil servant, mentioning only briefly N.W. Hoepermans' description:

> **298. Ngawen.** A fairly large, but damaged, statue, near the road to Muntilan. Communication of the *Controleur* Hasselman. According to Hoepermans there was once a temple as well.[9]

However, this description is biased: *candi* Ngawen is not limited to a statue and they was at the time clear evidence to associate Ngawen with a temple. When Hoepermans visited the site, a mound and many temple stones were visible, scattered all around the area. Either they disappeared (which is not likely, because the site is rather large and mentioned in early 20th century literature as a temple, see for example Krom 1914a: no 826) or Verbeek's informant simply did not care about temple stones and thought that only sculptures were worth mentioning. The result is that in Verbeek's inventory, Ngawen appears as a sculpture, rather than a temple.

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7 "141. Tjandi Arga koesoema (District Bodja, afdeeling Semarang). Ten N. N. O. van Medini; men gaat van Soesoekan oostwaarts naar Kloerak (op de topographische kaart Kloewak); niet ver van deze desa ligt eene warme bron, genaamd Argatapa, en daarbij de 2 vervallen tempels Arga koesoema. De 1e was 7 bij 8 meter breed en lang, ingang aan de noordzijde; de 2e tempel was 6 bij 7 meter. Bij Nº 1 was voren door Friederich de muur nog te herkennen. Hooger in het gebergte moeten nog 3 tempels gelegen hebben, ook geheel vervallen, maar door Friederich niet bezocht. Beelden van deze tempels zijn naar Bodja gebracht." (Verbeek 1891: no 141)

8 "235. Telahap. Een groote beschreven steen, in twee stukken, gevonden bij paal 28. Vervoerd naar de controleurswoning te Magelang, nu zoo het schijnt verloren. Bij Telahap is bij gelegenheid van eene aardstorting op 23 April 1866 aan de oevers der rivier Gandoel een steenen trap van 89 treden gevonden." (Verbeek 1891: no 235)

9 "298. Ngawen. Een tamelijk groot doch geschonden beeld, dicht bij den weg naar Moentilan. Opgaaf van den Controleur Hasselman. Volgens Hoepermans had hier ook een tempel geweest." (Verbeek 1891: no 298)

As for the locality of the archaeological sites, Verbeek is not always very precise. The *residentie* is always mentioned, but the smaller administrative boundaries are not always given. As he himself emphasises in the introduction (Verbeek 1891:16), in the case of the *Gouvernements-landen,*[10] details of the relevant district and *afdeeling*[11] are provided, while for Surakarta, only *afdeelingen* are mentioned, and for Yogyakarta only *regentschap*.[12]

The correspondences between Hoepermans' and Verbeek's inventories are not always easy to establish. First of all, during the lapse of time that separates these researches, Central Java underwent administrative modifications. In Hoepermans' time, the area was divided into *residentie's* and districts, and in some cases sub-districts. However, when Verbeek conducted his researches, the *afdeelingen* had been introduced, some ancient districts had disappeared, others were merged and some borders had been redefined. In the 1860's Ngadirejo was a district, but in the 1880's it is no longer mentioned as such and seems to have been integrated in the district Kedoe, *afdeeling* Temanggoeng. The sites of Jamoes/Kramat, Perot or Pringapoes, mentioned by Hoepermans under Ngadirejo, are to be found under Kedoe. Hoepermans' Temanggoeng district is divided into the districts of Djětis and Soemawana, *afdeeling* Temanggoeng [13] . The sites of Pikatan, Brongkol and Kědoenglo, formerly in Temanggoeng district, were given in Verbeek's work either in Djětis or in Soemawana. Further, certain district boundaries were modified and as a result some sites, formerly in one district, then found themselves in another. Borobudur and Pawon, formerly under the district of Probolingo, are in the 1880's under the authority of the Minoreh district, *afdeeling* Magelang. These are but a few examples of the administrative changes that occasionally make it confusing to compare these two early inventories.

Another source of confusion is the changes in site names. This is a recurrent problem in Javanese archaeology. As the original names are not known, one has to rely on modern names. However, those names might change according to the conventions of the villagers, the fluctuation of the administrative boundaries, the system used to transcribe Javanese language or even the ear of the researcher. Fortunately, Verbeek gives at least some of the correspondences between names used in his inventory and those appearing in Hoepermans' work. For example, writing about Sumberwatu, he underlines that "he (Hoepermans) calls the statue of Ganeça "Batoe Capella" (…)"[14] (Verbeek 1891:172). Unfortunately, all the correspondences are not given. Sometimes, geographical information and/or phonetics give enough clues for the correspondences to be established. For example, "Kobla" is "Geblak" (Hoepermans 1913:253; Verbeek 1891:174), "Sijwoe 3" is "Asoe" (Hoepermans, 1913:266; Verbeek 1891:360), and "Kedatong" is "Ratoe Baka/Dawong" (Hoepermans 1913:252; Verbeek 1891:174). There are four archaeological sites showing temple stones that are mentioned by Hoepermans, but which I have not been able to trace in Verbeek's inventory: Tjandi (Semarang, Ungaran), Batu Kenteng

[10] That is to say, the entirety of the Javanese territory with the exception of the sultanates of Yogyakarta and Surakarta.

[11] These divisions are roughly equivalent to the modern *kecamatan* and *kabupaten* (sub-district and district).

[12] Name given to an *afdeeling* in the sultanate of Yogyakarta.

[13] Both districts existed already in Hoepermans' times but were not then as extensive.

[14] "Hij (Hoepermans) noemt het ganeça-beeld "Batoe Capella" (…)" (Verbeek 1891:172)

(Kedu, Ngadirejo), Tjandi (Kedu, Probolingo) and Salakan (Kedu, Probolingo) (Hoeperman 1913:202, 159, 143 and 140).

Verbeek adds twenty-eight new temple remains to Hoepermans' list, most of them in the area of Prambanan. This had been made possible by the impressive work of another person: J.W. IJzerman.

J.W. IJzerman in Prambanan

Between 1885 and 1886, J.W. IJzerman, who then lived in Yogyakarta, started exploring the temple remains of the Prambanan area. Carefully and systematically, he visited the sites, described them and plotted them on a map. He returned to the Netherlands probably in the first half of 1887 and published parts of his archaeological investigations in the *Verslagen en mededeelingen der Koninklijke Akademie van Wetenschappen (afdeeling letterkunde)* under the modest title of "Iets over de tempelruïnen van Prambanan" (IJzerman 1887). Verbeek made ample use of this work in his own inventory.

In 1891, the same year that Verbeek published his *Oudheden van Java*, IJzerman finally had occasion to publish properly his own researches. His book, *Beschrijving der oudheden nabij de grens der residentie's Soerakarta en Djogdjakarta* is a *modèle du genre*, both scientific and readable, is well illustrated and accompanied by drawings and maps (IJzerman 1891). It is certainly the most precise and complete account concerning the archaeological remains of that area and one wishes IJzerman had had the time and opportunity to extend his work to other parts of the island.

N.J. Krom and F.D.K. Bosch: Inventaris der Hindoe-oudheden

The last inventory of Javanese antiquities made by the Dutch archaeological services was the work of N.J. Krom, F.D.K. Bosch and M.A. Muuses (Krom 1914a; Bosch 1915; Muuses 1923).

This work is certainly the most comprehensive and systematic inventory of Javanese antiquities ever published. It covers the whole island, listing sites of archaeological interest *residentie* by *residentie*, *afdeeling* by *afdeeling*, district by district. Administrative localizations are much more precise than in the former works. For the first time, photographs are referred to in the bibliography. However, the inventory does not include an archaeological map. Of course, one can still use Verbeek's map, but the new inventory adds no less than 71 temple remains to Verbeek's list. Fortunately, almost at the same time, in the early 1910's, the *Topografische dienst* of Batavia started to publish a series of topographical maps of Central Java, at scale 1:25 000 and 1:50 000. As administrative divisions are roughly the same as those given by Bosch and Krom, these maps can be used, to some extent, to plot the sites mentioned in the inventory. Nevertheless, as the maps do not include any index, it is a rather hazardous and lengthy process.

In the 23 years that separate Verbeek's list and the inventory of the *Oudheidkundige Dienst*, Central Java underwent some administrative changes. The former *residentie* Bagelen was integrated into the *residentie* Kedoe. In Kedoe, numerous districts changed names, especially in the *afdeelingen* Magelang and Temanggoeng. One searches in vain for *candi* Bradjanalan in the district Minoreh: it has become *candi* Banon, district Salaman. The former *candi* Goemboelan, district Ngasinan, is listed as Poetjang, district Grabag. Similarly, *candi* Goenoeng Pertapan, district Kedoe, is Bagoesan, district Parakan and *candi* Plikon, Soemawana, became Gandoelan, Kaloran. There are many other examples where both temples and district

(and sometimes even *afdeeling* and *residentie*) have changed names. Krom and Bosch were conscious of the problem: they took great care to give a list of the correspondences between new and old inventory numbers.

This new – and last – Dutch inventory of the antiquities of Java (published in 1915) is a remarkable piece of work, even if it is a little imprecise here and there. Maron (nº 1238) is described as "two *banaspati* brough to Karang-geneng"[15] (Bosch 1915: no 1238), whereas Verbeek mentioned that there were indeed two "*banaspati*" but also temple stones (Verbeek 1891:163). According to Bosch, "in the *desa* Pelem and Tampir there had been earlier two temples" (Bosch 1915:94).[16] There is no precision whatsoever about the state of preservation in 1915.[17] But Krom and Bosch's work was a compilation of existing materials, and they did not have the means to check their information, or to raise doubts about it. On that point, the interpretation of the reliefs of *candi* Abang is significant. Bosch follows the opinion that the reliefs are Buddhist (although he mentions the presence of a *lingga*) (Bosch 1915:43). This statement is taken from Verbeek (Verbeek 1891:169), who, in his turn, based himself on IJzerman (IJzerman 1878:289; 1891: 123-124). However, whereas Verbeek presents it as a fact, J.W. IJzerman expresses it as mere opinion. The latter actually wrote that the seated male figure of the central niche was in "usual Buddha pose"[18] and that he was dressed like a *bodhisattwa* (i.e. not as a monk). IJzerman added that the sculpture could represent Awalokiteśwara. As Verbeek did not check his information by fieldwork, he could not have known that the *lingga* was directly excavated out of the natural rock in front of the so-called Buddhist figure and that, in the northernmost of the three niches, were clear *śaiwa* reliefs (i.e. Durgā, Agastya and two *dwārapāla*s). As a result, the association of *candi* Abang with Buddhism should be treated with care.

Sometimes Dutch inventories tend to overestimate the role of Buddhism in classical Java. In the absence of clear evidence, some sites or sculptures are presumed to be Buddhist: the case of *candi* Loro Jonggrang is well known[19]. This approach is found particularly frequently in early works and has been translated into the archaeological vocabulary itself. Hoepermans, for example, frequently uses the term "boedhakop" to designate what is now known as a *kāla*.[20] Simultaneously, there is a tendency to avoid the word "yoni", which is replaced by "voetstuk" (pedestal). Mention of such "pedestals" in the cases of *candi* Keblak and Kanggan, or the presence of a "linga met voetstuk" in *candi* Ijo makes it clear that we are dealing with *yoni*s rather than simple, unspecified pedestals.

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15 "Twee *banaspati*'s overgebracht naar Karang-geneng"

16 "Bij de desa's Pelem en Tampir hebben vroeger twee tempels gestaan" (Bosch, 1915:94, *candi* Pahingan).

17 Actually, one of the two temples is still clearly visible today.

18 "Gewone Boeddha houding".

19 Before the cleaning of the temple by Ijzerman, it was common place to associate Loro Jonggrang with Buddhism (Brumund 1868:12; Leemans 1855:420, 23). For a recent discussion on the possible Buddhist banckground of Loro Jonggrang, see Jordaan 1993.

20 This is rather clear on p. 148, where Hoepermans mentions "een monsterachtige boedhakop met slangtanden (van boven de ingang eener temple)". Such a sculpture is unmistakenly a *kāla* (Hoepermans 1891:148). The *kāla* is also known as *banaspati* or *monsterkop*. See, for example, Verbeek 1891:136, n°237; Vogler 1949.

Indonesian Sources

In recent times, the National Centre for Archaeological Research and the National Heritage Institute have also made inventories of sites and artefacts. However, in contrast to their Dutch predecessors, these inventories are mainly non-standardised, unpublished lists of remains. Descriptions are most of the time absent and certain areas, especially in the province of Jawa Tengah, are poorly covered.

In the area that constitutes the focus of the present study, three institutions have carried on surveys: the *Suaka Peninggalan Sejarah dan Purbakala Daerah Istimewa Yogyakarta* (SPSP DIY), the *Suaka Peninggalan Sejarah dan Purbakala Jawa Tengah* (SPSP JT)[21] and the *Balai Arkeologi Yogyakarta*,[22] a local office of the National Archaeological Institute (*Pusat Penelitian dan Pengembangan Arkeologi Nasional*).

SPSP DIY

The SPSP DIY has made two inventories of two types, one dealing with the movable archaeological artefacts, the other listing temple sites.

The inventory of the movable archaeological artefacts covers the whole province of Yogyakarta. Each artefact, sculpture, loose temple stone or metallic object, is given an inventory number, measured and often photographed. Its administrative location is given. Data is gathered in various series of lists according to *kabupaten* or *desa*. The main series are: *Hasil pengumpulan data kepurbakalaan*, *Laporan inventarisasi benda cagar budaya*, *Laporan peninjauan situs kepurbakalaan* and *Laporan inventarisasi kepurbakalaan*. One has to emphasise that these lists do not include *in situ* temple remains and, although they are of high interest, they can be difficult to use. Artefacts are listed according to inventory number/discovery date and not according to location. Artefacts found in the same village are not specifically listed together, so that it is difficult to get an idea of the site in its totality and to propose a correct interpretation of it (that is, whether it has been dismantled or not).

Actually, besides these small-scale lists of antiquities, the SPSP DIY possesses a general inventory of the province, named *Daftar peninggalan sejarah dan purbakala benda bergerak di propinsi DIY*. However, it was made in 1985 and is today rather incomplete, so that one has to go through all the smaller lists to find reliable information.

As a parallel project with the artefact inventories, the SPSP DIY is now in the process of building up a new list, including only temple remains.

SPSP JT

In the province of Jawa Tengah, the situation is more confused. The extent of the area makes any inventory a much more difficult enterprise. However, some districts have been the object of in-depth surveys by the SPSP JT, surveys that ended up in inventories such as *Daftar inventaris peninggalan purbakala Jawa Tengah, Karesidenan Semarang*, or *Laporan hasil pengumpulan benda-benda purbakala di*

[21] Since the fieldwork was carried out, both SPSP have changed names. They are now the *Unit Pelaksana Teknis Balai Pelestarian Peninggalan Purbakala DIY* and *JT* (UPT BP3 DIY and UPT BP3 JT).

[22] At the time of writing, the new name of the *Balai Arkeologi* is *Unit Pelaksana Teknis Balai Arkeologi* (UPT Balar).

daerah Klaten. For other areas, like *kabupaten* Magelang, only brief lists of antiquities exist and they do not really give any details concerning the finds, their dimensions and nature. In some cases, like the Boyolali area, the best information does not emanate from the central office of the SPSP JT, but from the various *kepala desa*, who generally hold a list of the antiquities found within their village limits.

Balai Arkeologi

While the two SPSP officially deal with the conservation and restoration of the archaeological remains, another institute is in charge of archaeological research: the Balai Arkeologi, a branch office of the Pusat Arkeologi (national archaeological service).

Its researches concerning the so-called marginal sites on one hand and the brick architecture in the Magelang area on the other have led the Balai Arkeologi to produce a series of local inventories, covering mainly west Central Java and the *kabupaten* of Magelang.

The inventory of west Central Java first appeared in a series of unpublished works by B.D. Tjahjono (Tjahjono 1994; 1995; 1997; 1998). The data was later gathered in a single volume, published by the Balai Arkeologi in 2000, as part of the collection *Berita penelitian arkeologi*, under the title *Budaya marginal masa klasik di Jawa Tengah* (Tjahjono 2000). This highly valuable work gives a list with administrative localizations and description of all the archaeological remains (including sculptures and architecture) in the *kabupaten* Kulon Progo (DIY), Purworejo, Kebumen, Cilacap, Banyumas, Purbalingga, Banjarnegara, Kendal, Batang, Pekalongan, Pemalang, Tegal and Brebes. It is accompanied by a few photographs and a map at scale 1:1 500 000. Unfortunately, the more precise maps (at scale 1:200 000) that were present in the earlier reports have been omitted in the later publication.

A list of temple remains of the *kabupaten* of Magelang appeared in another work of B.D. Tjahjono (Tjahjono 2002: table 1). This list includes the temple name, its administrative localization, geographical coordinates, place (village, field, graveyard…) and the state of preservation. Unfortunately, the data included in this table may differ from the data mentioned within the text, so that it is sometimes difficult to determine which version is the correct one. For instance, on p. 16, one reads concerning *Situs Tempurrejo*, that it is located in *dusun* Semirejo II, *desa* Tempurrejo, *kecamatan* Tempuran, with coordinates 7º 34’ 22” S, 110º 10’ 72.8” E. In table 1, the same site is located in *dusun* Kemirirejo II at 7º 34’ 57” S, 110º 10’ 53” E. We can see here that not only do the *dusun* and the coordinates differ, but that, in the first case, the coordinates are not properly written.[23] Similar mistakes are visible on p. 14-15 for the coordinates of Gombong, Candi, Samberan, Sigentan and Dimajar. Furthermore, on p. 7, the coordinates mentioned for *candi* Wurung are 7º 37’ 18” – 110º 12’25”, while in the table they are 7º 35’ 23” – 110º 07’ 08”. 110º 12’ 25” corresponds with a place around Borobudur, while Wurung is located several kilometres to the west of the prestigious Buddhist monument.

Furthermore, as administrative boundaries as well as some temple names have changed over the time, it is often difficult to establish a correlation between Dutch and Indonesian inventories.

[23] 110º 10’ 72.8” is an impossible number, but even if one converts this decimal number into seconds, it gives 43.7” and does not correspond to the coordinates given in the table.

Fieldwork data

Previous inventories provided me with highly valuable information, allowing glimpses of the past that can no longer be observed. However, since the last published inventory of Java (1915), archaeologists, both Dutch and Indonesian, have done an amazing amount of work and brought new sites to light. After almost one century of archaeological research, a revised inventory is badly needed.

Furthermore, previous inventories suffered from several shortcomings: absence of information concerning the method of data gathering, confusion between first hand and second hand data, absence of a reliable archaeological map and problems of locating the site (due either to a lack of precision or to modification of the administrative boundaries).

My examination of the existing inventories led me to the conclusion that my research could not treat these as absolute authorities. Above all, I needed to sift through them in order to extract only the information that would be valuable to me, i.e. temple remains.

Based on the drawbacks of the available inventories, I drew a list of the points that should be treated with care in order to have a practical, user-friendly inventory. In short, if I wanted to avoid as far as possible my predecessors' weaknesses, I had to be systematic and precise, but I also had to find a way to avoid the difficulties linked to modification of administrative boundaries. Although the inventory should remain succinct, it had to be descriptive to be really useful, especially to non-archaeologists. Furthermore, a clear distinction should be maintained between second-hand information and first-hand data, in order to provide the reader with a clear idea of what once existed and what still remains at the date of the inventory.

The result is found in the appendixes: a new inventory of Central Javanese temples in the special region of Yogyakarta and in the districts of Magelang, Semarang, Klaten and Boyolali.

CHAPTER 3

Temple Remains of Central Java : Corpus

A Short Geography of Central Java

Topography

The island of Java is an elongated stretch of land, more than 1000 km long and about 100 km from north to south (Figure 1). Its northern coast, facing the Java Sea, is bordered by an alluvial plain, the width of which may vary, in Central Java, from 40km (near Tegal), to a few kilometers (between Pekalongan and Kendal). Further inland, parallel to the coast, runs the impressive North Serayu Ridge. Its main summits are, from west to east, Slamet (3432m), Ragajembangan (2177m), Prahu (2565m) and Ungaran (2050m). The North Serayu Ridge is continued to the east by the Kendeng Hills, which reach 899m. South of these mountains lies the central depression zone of Java, which encompasses plains of varying size, such as the plains of Purwokerto, Magelang, Yogyakarta, Solo, Purwodadi and Ngawi. The depression zone is partly capped by a series of high volcanoes: Mounts Sundoro (3155m), Sumbing (3371m), Merbabu (3145m), Merapi (2947m) and Lawu (3265m). The Central depression zone is further divided by the presence of the South Serayu Mountains and the Menoreh Hills. In most parts of the island, the Central depression zone is bordered to the south by the Southern Mountains, a steep mountainous chain that prevents access to the Indian Ocean.

In Central Java, however, with the exception of its easternmost part, the central depression zone is not bordered by mountains. The plains gently slope southward to the ocean (fig.2). Historical Central Java,[1] which encompasses the Progo valley and its direct surroundings, constitutes a transition zone between the closed, mountainous landscape of the west and the open plains of the east. From a geographer's point of view, it is the border between Central and East Java.

Hydrography

Central Java possesses four main hydrographical basins (Figure 2): the Serayu, the Progo, the Serang and the Solo basins.

The Serayu River begins on Mount Sundoro and flows westwards through the Wonosobo-Purwokerto plain, until it reaches the Indian Ocean in the neighbourhood of Cilacap. The Progo River is the main watercourse of historical Central Java. Unlike

[1] By historical Central Java, I mean the area that is the cradle of the Central Javanese Hindu-Buddhist civilization, i.e. the DIY and the central districts of the province of Java Tengah (i.e. *kabupaten* Purworejo, Wonosobo, Magelang, Temanggung, Kendal, Semarang, Kota Semarang, Kota Salatiga, Boyolali and Klaten). DIY stands for *Daerah Istimewa* Yogyakarta (Special Region of Yogyakarta), which forms one of the six main administrative divisions of the island of Java, together with the provinces of Jawa Barat (West Java), Banten, Jakarta Raya, Jawa Tengah (Central Java) and Jawa Timur (East Java).

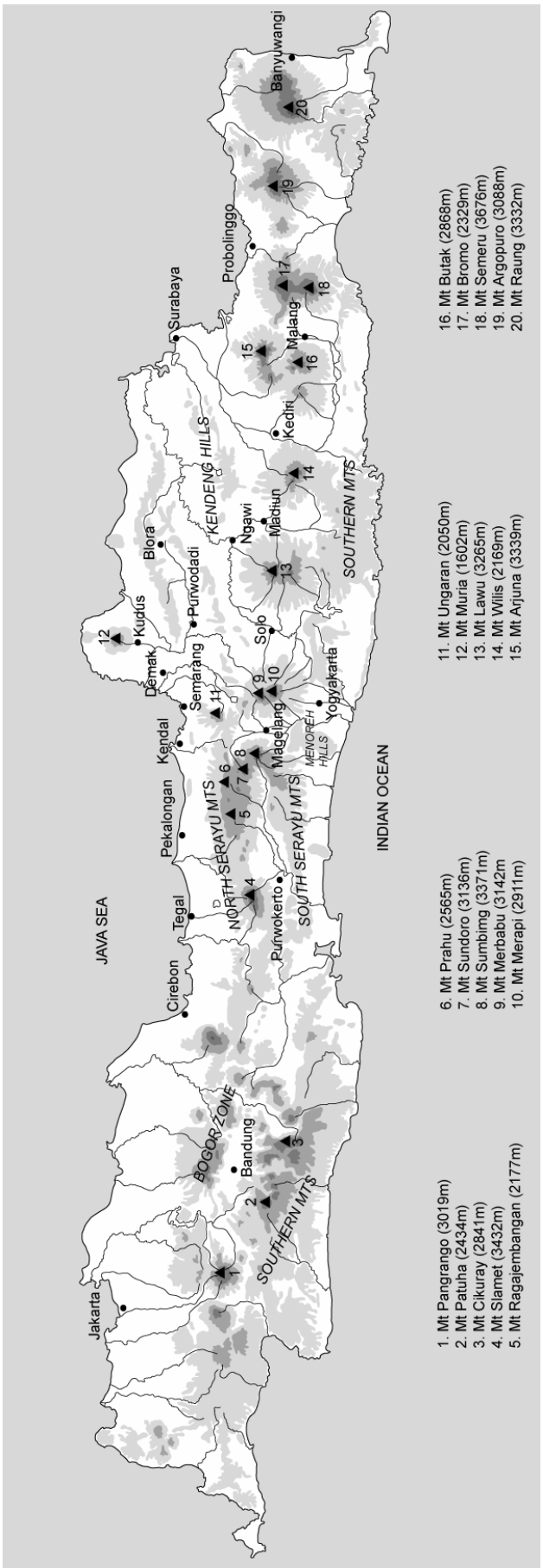

Figure 1: Morphological Map of Java

the other rivers that originate from the Central depression of Java and run east or westwards, the Progo River flows directly from north to south.[2] Its source is located high on Mount Sundoro, while its main tributary, the Elo River, takes its source on Mt Merbabu.

The third main hydrographical basin of Central Java is the Serang River, and its main tributary is the Lusi River. The Serang flows down the northeastern slope of *gunung* Merbabu to the area of Purwodadi, where it meets the Lusi. From Purwodadi, the Serang River continues north-westwards until it reaches the Java sea, not far from Kudus and Demak. Its main tributary, the Lusi River, originates from the area of Blora and flows from east to west through the plain of Purwodadi.

The last large river of Central Java, the Solo River, is also the longest river of the island. The Solo River has its source in the southern part of the Solo plain. It flows first northwards, receiving tributaries originating from the slopes of Mounts Merapi-Merbabu and Lawu, before heading to the northeast and ending its course faraway in Eastern Java, a little to the north of Gresik.

Apart from these three main hydrographical basins, Central Java possesses numerous short rivers flowing northwards through the northern coastal plain or southwards between the south Serayu Mountains and the Indian Ocean.

Composition of the Temple Corpus

Now that we have an idea of the natural landscape of the region, we are in a position to obtain a perspective of the archaeological sites and how they are distributed over the region. More than 280 temple remains were once visible in Central Java, scattered all over the region. Today, however, a large part of these ruins has vanished. Some of them were used as stone quarries to build new houses, mosques or bridges. Others were simply victims of the ravages of time or were buried under residues from human activities. The situation is scarcely better for the majority of the remaining sites: many former temples have been reduced to a few dozen stones scattered in a field or along a road. On the other hand, certain buildings were relatively well preserved and anastylosis granted them a new life. Restored from top to bottom, these temples are now waiting to be visited and admired.

Information about temples and temple remains is therefore highly heterogeneous. The corpus is huge if one focuses on distribution, but it is quite limited for someone interested in architecture or iconography. This means that the number of temples I take into account in the chapters dealing with distribution is much larger than what I could use for the study of orientation and temple planning.

On the other hand, the amount of remains to be plotted on a map was so huge that I could not afford to check everything through field survey. For the present study, fieldwork has been carried out in the regions of Yogyakarta, Klaten, Magelang, Boyolali and Semarang (excluding Kotamadya Semarang). Data about temple remains of these areas has been gathered together in a new, up-to-date inventory (Appendix 1-3). Because distributional studies benefit from broadness of coverage, I have also introduced data concerning the surrounding regions, borrowed from older inventories

[2] In the central depression of West Java, as well as in that of the Western part of the modern province of Jawa Tengah, rivers flow either from east to west or from west to east. In the inner plains of east Java, rivers originating from the mountains meander their courses to the northeast to reach the Java sea. This is due to the fact that in all the other areas of the island, the central depression is separated from the Ocean by a mountain ridge.

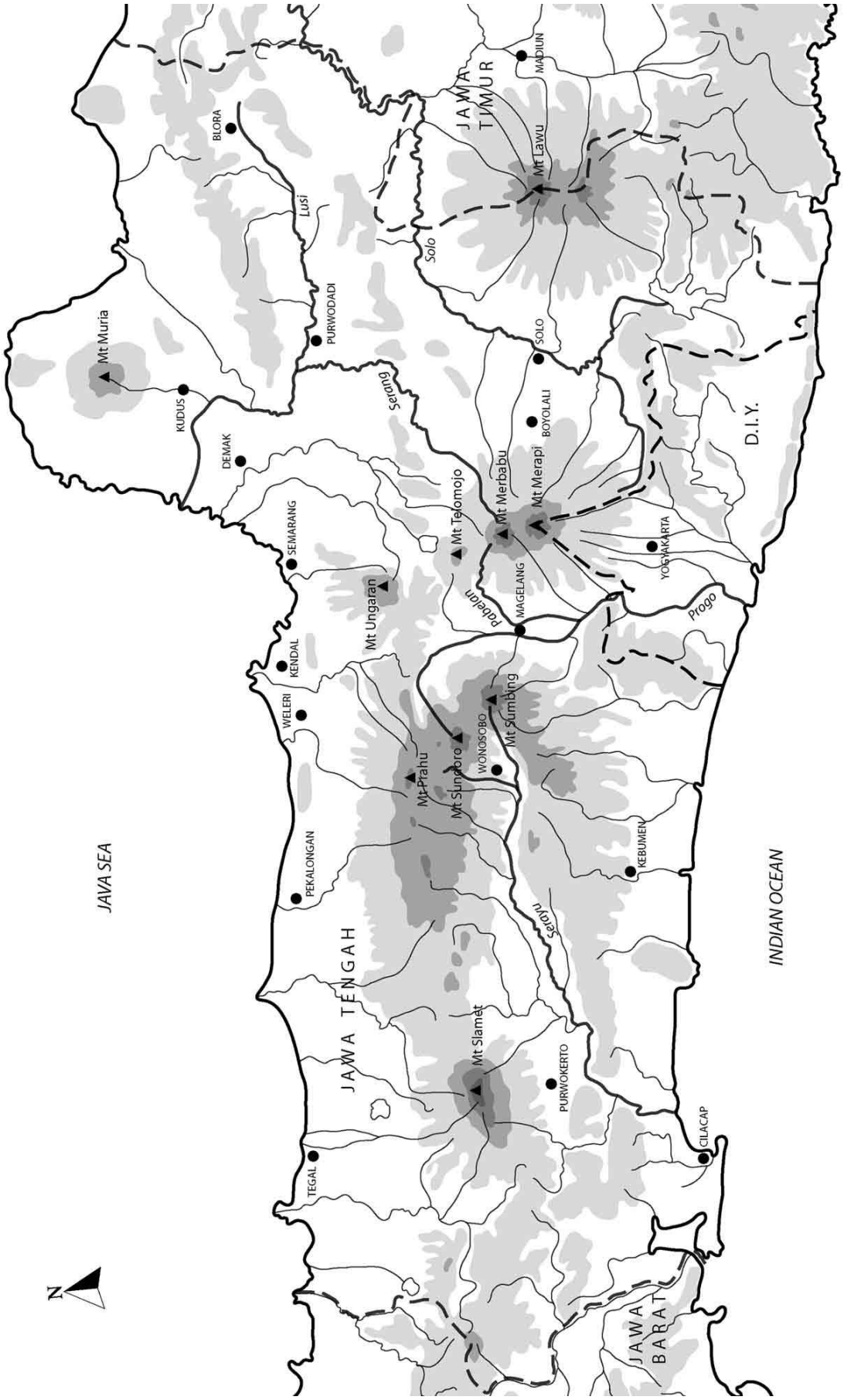

Figure 2: Morphological Map of Central Java

and, to a large extent, from the work of Baksoro Daru Tjahjono (Tjahjono 2000). Unfortunately, as the latter survey focuses on the western and southern parts of Central Java, the inventory of 1914 (Krom 1914a) is the main reference for the eastern districts. It appears that, around the modern town of Solo, very few remains are known, with the exception of the later temples of Sukuh and Ceto.[3]

The region including the DIY and the *kabupaten* of Klaten[4] counts 110 sites that can be considered as being (or having been) temple remains (Table 1). The district of Magelang contains 80 sites, Boyolali 10, Semarang 21,[5] Kotamadya Semarang 5,[6] Temanggung 23, Wonosobo 5,[7] Kendal 7,[8] Batang 4,[9] Kebumen 1, Banyumas 7, Purbalingga 1, Pemalang 2,[10] Tegal 2, Brebes 2, Purwodadi 1, Kudus 1, Purworejo 1[11] and Banjarnegara 6.[12]

However, these numbers certainly do not represent exactly the historical situation: some temples may have disappeared without leaving noticeable traces and some temple remains may have once formed a single site rather than separate sanctuaries.

Population density is a critical problem for the preservation of temple remains, and provides an advantage within the context of an archaeological survey. The region is so densely populated that ancient stones and sculptures lying on the ground can hardly go unnoticed[13]. Besides, local officials (district heads since the middle of the 19th and village heads since the middle of the 20th century) have the duty to report finds of antiquities. Furthermore, the development of building activities and its corollaries (exploitation of riverbeds as sand quarries, brick making etc.) bring new remains to light.

As both the environmental and the human conditions are approximately equivalent over the whole region, probabilities of finding temple remains are, from that point of view, quite comparable in the different districts. Only three areas might pose exceptions: the southwest slope of Mount Merapi, Yogyakarta and Semarang. The morphology of the summit of Mount Merapi favoured large mudflows in the direction of Muntilan and Yogyakarta. As the discoveries of Sambisari and Kedulan exemplify, it is possible that these *lahar* cover temples. However, it would not change the general picture much: it is already the richest area in terms of archaeological remains. As for the land now covered by the cities of Yogyakarta and Semarang, it is more difficult to estimate to what extent it conceals unknown sites. The significant urbanization of Yogyakarta is a recent phenomenon, but Semarang has long been a bustling city. With

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3 Actually only one temple dating from the Central Javanese period has been recorded: *candi* Bendo.

4 The *kabupaten* Klaten (district of Klaten) is part of the Jawa Tengah province. It is located east of Yogyakarta and South of Boyolali.

5 Including the seven temple groups of Gedong Songo.

6 Information concerning this district comes from printed sources.

7 Dieng is here counted as a single site.

8 Apart from these supposed temple sites, sculptures from the Hindu-Buddhist period have also been found in other locations within the district of Kendal.

9 Without counting the five additional sites where only sculptures have been found.

10 In these two cases, only a couple of stones have been discovered.

11 Besides these remains, which actually are composed of two stone bases and a *lingga* and a *yoni* located near the Seplawan cave, two caves of the district of Purworejo bear traces of an occupation during the Hindu-Buddhist period. In three other villages isolated *yoni* have been found.

12 Actually, four of these sites may be gathered together: the temples located on the Dieng plateau, namely the buildings of the Arjuna group, *candi* Dwarawati, Gatotkaca and Bima.

13 At the exception, of course, of the uppermost part of the volcanoes, where cultivation is very limited or even impossible.

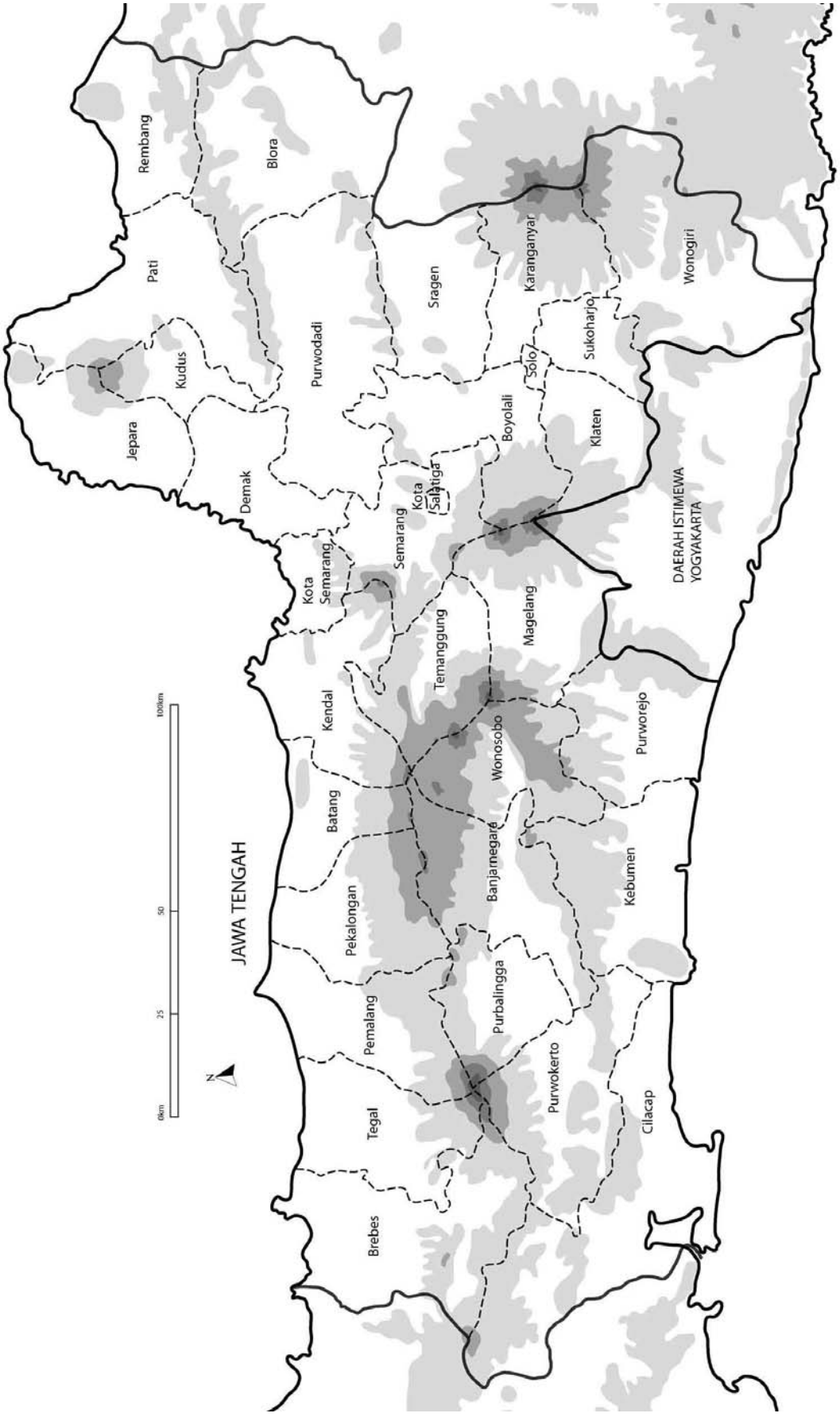

Figure 3: Administrative Map of Central Java

its ideal location along the northern coast, Semarang, still today a main port, would be a perfect location for an ancient harbour. Developing a programme of urban archaeology would probably bring interesting results here.

Another source of potential bias in our estimation of site distribution results from the use of two different building materials, namely bricks and stones. As one might guess, stone temples tend to resist the equatorial climate of Central Java better than their brick counterparts. Especially when, as it is often the case, bricks are baked at low temperature.[14] As brick temples seems to have been slightly more frequent in the district of Magelang – and maybe Semarang – it is possible that more temples vanished in this area than, for example, around Prambanan – where stone construction is more of a tradition.

The perception of Hindu-Buddhist antiquities by local populations may also have influenced the survival of temple remains. Temples are key-role attractions for the tourism industry in the DIY and around Borobudur. In those places, the perception of temples as potential sources of income may have played a role in the survival of Hindu-Buddhist remains.[15]

Southern Central Java

As mentioned earlier, resolving the question of whether remains constitute a single site or originate from different sanctuaries is not simple. In south Central Java (DIY and Klaten district), the sites at which differentiations of this kind remain doubtful are: 1) Burikan, Jumeneng, Konteng and Candi; 2) Maron and Ngepos; 3) Sumur Bandung and Ijo.

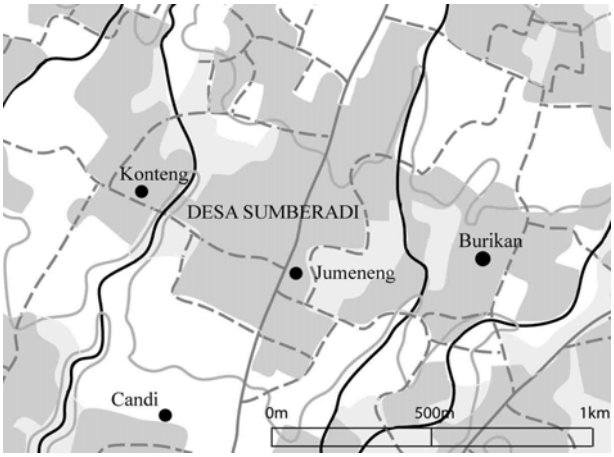

Figure 4: Location map of the temple remains at Burikan, Jumeneng, Konteng and Candi (Sumberadi, Mlati, Sleman, DIY)

Burikan, Jumeneng, Konteng and Candi are four hamlets, located within *desa* Sumberadi (*kecamatan* Mlati, *kabupaten* Sleman), where loose temple stones and sculptures have been found (Figure 4). The distance between the different hamlets is short: Jumeneng is located 600m from Burikan, 500m from Konteng and 600m from Candi. Apart from this close proximity, the nature of the stones could also be revealing. Plain blocks were found only in Burikan and Konteng, while only carved stones were found at Candi, and only sculptures at Jumeneng. Only Burikan shelters a large variety of stones: plain blocks, fragments of finials, antefixes, *yoni*, *makara*, a statue of Śiwa and

[14] I have not carried out an extensive and systematic study of the subject, but I have noticed that in some of the bricks used to build *candi* Retno and Ngampin, the actual rice shaft used as temper was still present – and not its mere trace, suggesting low baking temperatures.

[15] Ther might be more than just an ecomic reason. During my fieldwork, I noticed at several occasions that the status of *juru kunci* (guardian) of site was still a mark of status in the villages of the DIY (especially in *kabupaten* Gunung Kidul. I didn't notice it in Jawa Tengah.

that of a goddess, as well as earthen jars that could have been part of a temple deposit. It is therefore possible that we are not dealing with the remains of four different temples, but rather two (at Konteng and Burikan) or even only one (at Burikan).

The spreading of stones belonging to a single temple over a distance of more than 1km is not surprising: antefixes from *candi* Merak were found in *dusun* Bogor, 1km away from their original site, and other carved stones belonging to the same temple were used to build a crossroads 2km north of Merak (Perquin 1927b: pl. VII). Although carved pieces have always been favoured by those who would remove stones from their sites, plain blocks have also travelled quite far from their original location. During fieldwork in the village of Pringapus, near Salaman (Magelang, Jawa Tengah), I noticed a garden fence made of nice andesite blocks. When I questioned the owner, I was told that a family member used to work in the area of Borobudur and brought the blocks back from there, i.e. 9km away from their present location.

A second case of dubious differentiation is Maron and Ngepos. The two hamlets are located roughly 600m from one another, in *desa* Donoharjo, *kecamatan* Ngaglik, *kabupaten* Sleman. In Maron a few loose temple stones were found, together with a Kāla (Verbeek 1891:163), while in Ngepos plain stone blocks, a *lingga*, a Durgā, 2 Gaṇeśa, 2 bulls and a male figure were once visible (Bosch 1915a:18; *Daftar Peninggalan Benda DIY* 1985: 96, 98, 103). Again, the proximity of the sites and the fact that elements show greater variety in Ngepos might suggest that we are dealing with the remains of a single structure, although this cannot be regarded as a certainty.

Sumur Bandung and Ijo reflect a different situation. Sumur Bandung is located 150m away from *candi* Ijo. The only thing visible there is the foundation of a wall, although two sculptures were once found on this spot, a Narasingha and a Triwikrama (Santoso 1992:58). Remains of the Ijo complex have not been entirely explored yet and there are strong possibilities that the wall of Sumur Bandung is actually part of an enclosure wall linked to *candi* Ijo.

Therefore, for the regions of Yogyakarta and Klaten, we might actually not have 110 temple sites, but, rather, 105. The possibility that remains found in different villages belong to a single structure should be kept in mind while analysing the distribution patterns and the site density in a particular area: lots of dots on a distribution map might not always reflect a concentration of temple remains, but a misinterpretation of the archaeological data. The problem only becomes more important if one introduces location of movable artefacts (especially sculptures and metallic objects) found outside an archaeological context. Even the discovery of such materials buried in the ground does not guarantee that they are *in situ* – the first thing would be to try to determine how, why and when they were buried.

Progo Valley

Those problems are, of course, not limited to southern Central Java. In Magelang, several sites are so close to each other that, in the absence of *in situ* remains, it is almost impossible to determine if there used to be one or several temples – and, if only one, in which village it was located.

Dipan, for example, is located 700m from Jowohan and Barepan is only 600m further away. A brick base has been discovered in Dipan, but only loose bricks were found in Jowohan, and only one *yoni* in Barepan. It is possible that the bricks and the *yoni* originally came from a temple located in the village of Dipan, and that Jowohan and Barepan should not be counted as separate sites.

The situation is similar in the following cases: 1) Kanggan and Karangrejo (located 500m away from one another), 2) Wurung, Mulosari and Pringapus, 3) Dimajar and Samberan, 4) Cetokan and Retno, and, finally, 5) Singabarong and Mantingan. Based on this, the amount of temples in the district of Magelang might be reduced to 74 instead of 80.

In Temanggung, Verbeek was already of the opinion that the temple stones used for the construction of the mosque of the village of Brongkol had been taken from a temple located in Wonokerso (Verbeek 1891: n° 252 and 256). Similarly, many artefacts (chiefly sculptures and antefixes) that are now to be found in the village of Candi (Parakan, Temanggung) were most probably gathered from the neighbouring villages of Bongkol, Bumen and Gunung Kembang, where temples once stood. However it is nowadays impossible to trace the origin of each sculpture.

Sometimes, however, it may work to the opposite effect, as in the case of *candi* Pringapus and Perot. In the late 19th centuries, two temples were standing in Pringapus, a village in the neighbourhood of Ngadirejo: *candi* Perot and *candi* Pringapus (Hoepermans 1913:160; Krom 1914a: nº 959). *Candi* Perot was located within the hamlet of Candi, while Pringapus was several hundred meters to the east. Today, however, there is a nice row of stones just in front of *candi* Pringapus. When the tree growing on *candi* Perot was blown over by the wind, the temple collapsed (Krom 1923, I: 209). Some time after this event, the villagers moved the stones of Perot to the temple site of *candi* Pringapus.

In the present book, the unit of analysis is the site. On the various maps, each black spot marks a (religious) site, not a building. The choice of a unit of analysis is a tricky one, since both the site and building have, for my purpose, advantages and disadvantages. The main positive point of using the building as unit is its objectivity. It is an object easily defined and identifiable.[16] By definition it also gives a more accurate picture of the temple density; the reader becomes more aware of the differences between the built landscape of the Prambanan area and that of the Progo valley. However, beyond this seeming objectivity, the building, as unit of analysis, tend to deform some essential parameters. By giving the same importance to a subsidiary shrine than to the main temple (a simple dot on a map), it may distort our perception of the settlement patterns (multiplication of dots being likely to be confused with the existence of numerous villages) and confuse the study of temple orientation. It also erases the physical relationship existing between the buildings of a single temple complex. Opting for the site as unit of analysis is, on the contrary,

[16] Although one might discuss the case of the *stūpa*, since it does not correspond to the usual perception of a building as a structure with a roof and walls.

Table 1: List of Central Javanese temple remains

D.I. Yogyakarta

Abang	Grogol	Maron	Sambiroto
Arca Ganesa	Gunung Mijil	Miri	Sambisari
Balangan	Gupolo	Miring	Sampangan
Banyunibo	Ijo	Morangan	Sanan
Barong	Jatiwangi	Mulungan Wetan	Sari
Bogem	Jetis (Cangkringan)	Ngaglik (Mlati)	Sawo
Besalen	Jetis (Nglempak)	Ngaglik (Prambanan)	Semarangan
Bugisan	Jetis (Sleman)	Ngepos	Sentono
Burikan	Jetis (Wonosari)	Ngesong	Singo
Candi (Mlati)	Jumeneng	Nogosari	Sosrokusuman
Candi (Ngaglik)	Kadisoka	Palgading	Sumberwatu
Candi (Pakem)	Kalasan	Panggeran	Sumur Bandung
Candirejo	Karangtanjung	Payak	Susukan
Cebongan	Karang Tengah	Planggak	Tanjungtirto
Cepet	Keblak	Plaosan	Tangkisan
Condrowangsan	Kedulan	Plembutan	Tawangrejo
Cupuwatu	Kepitu	Plumbon	Tegalsari
Dawangsari	Klaci	Polangan	Tinjon
Dengok	Klodangan	Polengan	Wadas
Gajah	Konteng	Pondok	Warak
Gampingan	Krapyak	Pringtali	Watugilang
Gatak	Lengkong	Punden	Watugudig
Gebang	Loro Jonggrang	Puren	Wiladeg
Glagah	Malang	Ratu Boko	Wringinrejo
Grembyangan	Mantup	Risan	

Klaten

Bubrah	Karangnongko	Merak	Sojiwan
Gana	Kulon	Plaosan Kidul	
Kaliworo	Lor	Plaosan Lor	
Kalongan	Lumbung	Sewu	

Magelang

Asu	Giombong	Krincing	Retno
Banon	Gombong	Lumbung	Salakan
Barepan	Gunung	Mantingan	Samberan
Batur	Gunung Gono	Mendut	Seketi
Batu Rong	Gunung Lemah	Mulosari	Selogriyo
Bengkung	Gunung Pring	Mungkidan	Semawe
Blaburan	Gunung Sari	Nambangan	Setan
Bobosan	Gunung Wukir	Ngampel	Sidikan
Borobudur	Jeronboto	Nganten Kidul	Singabarong
Bowongan	Jlegong	Ngawen	Sigentan
Bringin	Jomboran	Ngrajek	Soborojo
Brongkol	Jowahan	Pakem	Sumber
Candi	Kalangan	Pawon	Tempurrejo
Cetokan	Kalimalang	Pendem	Tiban
Dampit	Kanggan	Pirikan	Tidaran
Dimajar	Kaponan	Plandi	Tumbu
Dipan	Karangrejo	Pringapus	Umbul
Gedongan	Kemiren	Progowati	Wates
Gedungan	Kendal	Pucanggunung	Wurung
Gejagan	Ketoran	Rambeanak	

Boyolali

Cabean Kunti	Kuwarigan	Pahingan	Tampir
Candipetak	Lawang	Sari	
Candirejo	Mangis	Sumur Songo	

Temanggung			
Argapura	Gondosuli	Ngabean	Plikon
Bongkol	Gunung Kembang	Ngepoh	Pringapus
Brongkol	Gunung Pertapan	Nglarangan	Tlahab
Bumen	Jamus	Perot	Traji
Butuh	Karangbendo	Piatak	Wonokerso
Candi	Kedunglo	Pikatan	
Semarang		Banyumas	
Arca Ganesa Besar	Ngempon	Aracwinangun	Tugu
Bedono	Ngentak	Banyumudal	
Butak Wetan	Renteng	Candinegara	
Dukuh	Sanjaya	Kalibening	
Gedong Songo	Sidomukti	Kaliduren	
Gentong	Wujil	Kaliencit	
Kaliklotok		Lembu Ayu	
Wonosobo		Kotamadya Semarang	
Bongkottan	Dieng	Candi	Ngresep
Candi	Karangsari	Duduhan	Tugurejo
Candi Bogang		Kangkung	
Kendal		Banjarnegara	
Ganawerti Wetan	Krincing	Banjarkulon	Karanggodang
Gunung Gentong	Nglimut	Candiagung	Karangpucung
Jumbleng	Pengilon	Codong	Kromong
Kentengsari			
Batang	Pemalang	Tegal	Brebes
Bendosari	Banyumudal	Bantarsari	Karangdawa
Kauman	Kalilingseng	Muncang Larang	Krikil
Kecepit	Plawangan		
Simangli			
Purwodadi	Kudus	Purworejo	Kebumen
Medang Kemulan	Prawat	Gua Gong	Kemijing
Purbalingga			
Brengkol			

underlining this link, recognizing the architectural unity wanted by the constructors. It is, however, difficult to define with precision and objectivity what a site is. In this book the term "(religious) site" is used to designate an isolated shrine, a series of shrines enclosed within wall or a series shrines built next to one another and organized according a recognizable pattern. According to this understanding of the term, *candi* Pawon (an isolated shrine of the Muntilan area) is a site on the same basis than Loro Jonggrang (an impressive sanctuary composed of 232 shrines enclosed within a series of three walls) and Gedong Songo III (a group made of two shrines in a line and a secondary structure facing the main temple). On the other hand, the temples of Asu, Lumbung and Pendem, in the village of Candi Pos (*kabupaten* Magelang), although they are also known under the generic name "*candi* Kuning", are considered as three separate sites, just as the different temple groups of Gedong Songo.

State of Preservation

The state of preservation of the temple remains varies greatly from site to site and from one region to another. In southern Central Java (DIY and Klaten), 50 temples out of the 110 listed are no longer visible (45.5%), while 19 (17%) are loose, scattered stones. In only 41 cases (37.5%) remains are still partly *in situ* (Table 2). In the district

Figure 5: Remains of miniature shrines at Mantup (Bantul, DIY) – June 2002

Figure 6: Candi Retno (Secang, Magelang) – April 2003

of Magelang, 53,75% of the sites have vanished (43 sites), 27.5% are now loose stones (22 sites) and 16,25% are constituted by *in situ* remains (13 sites).[17] In Boyolali, out of the 10 temple remains, 3 have disappeared, 2 are reduced to scattered stones and 4 are still present as *in situ* structures.[18] In Semarang, out of the 20 sites, 4 are no longer visible, 6 are mere loose stones and 9 are *in situ*.[19]

For the areas outside the scope of my fieldwork, the data derived from the Dutch inventories and the work of Tjahjono suggests that the vast majority of the sites is composed of loose architectural elements. In 2000, apart from the relatively well-preserved temples at Dieng (in Wonosobo district) and Pringapus (in Temanggung), only 3 sites present *in situ* remains: Bantarsari (in Tegal), Karangdawa (in Brebes) and Gua Gong (in Purworejo).

From the point of view of preservation, the fate of temple remains has been slightly better in the area of Yogyakarta than elsewhere in Central Java. This state of affairs probably does not have a natural origin: volcanic hazards and landslides are at least as frequent in Yogyakarta as in Magelang. Part of the explanation may lie in the fact that, for the small province of D.I. Yogyakarta, tourism is an important source of income. The role of tourism within the local economy might have stimulated a greater consciousness of the value of archaeological remains. Another relevant variable is that almost all the temples of the region of Yogayakarta are made of stones, while more fragile brick structure are relatively frequent in Magelang and Semarang.

Table 2: General state of preservation of temple remains per province/*kabupaten*

Province/kabupaten	*Total*	*Disappeared*	*Loose stones*	*In situ*
DIY/Klaten	110	50 (45.5%)	19 (17%)	41 (37.5%)
Magelang	80	43 (53.75%)	22 (27.5%)	13 (16.25%)
Semarang	20	4	6	9
Boyolali	10	3	2	4

Southern Central Java

In southern Central Java, among the 41 sites that preserve *in situ* remains, only 23 structures are relatively well-preserved (at least up to the foot of the temple body), which represents a mere 1/5 of the total number of sites. In other words, while there is enough data to create a distribution map giving a fair idea of the ancient built landscape, the information available for the study of both orientation and spatial organization is more limited. In many cases only a few layers of stones are preserved (Figure 5). Sometimes, the *in situ* remains are even limited to a mound of earth mixed with stones or bricks (Table 3).

The present list contrasts with the older inventories. Both Verbeek and Bosch listed 44 temple sites in their work (Verbeek 1891; Bosch 1915a).[20] Among the 44 temple remains mentioned by Verbeek for southern Central Java, 12 were loose stones, while 15 were "completely collapsed",[21] 10 were "collapsed"[22] and only 7 were still standing (namely Jetis, Kalongan, Loro Jonggrang, Lumbung, Plaosan Lor,

[17] I have not been able to visit Baturong and Gunung Lemah, so their present state of preservation is not known.

[18] I have been unable to identify the location of Candirejo, Boyolali.

[19] I have been unable to locate Gentong.

[20] The other sites mentioned in the old inventories are find-spots of sculptures and metallic objects or collections of artifacts.

[21] "Geheel vervallen".

[22] "Vervallen".

Sewu and Watugudik).[23]

To Verbeek's list, Bosch adds three newly found temple remains (then still *in situ*): Cebongan, Cupuwatu and Plumbon.[24] He also noticed that most of the structures seen by Verbeek in the valley of the Sorogeduk/Gawe River (south of Prambanan, along the northwestern edge of the Gunung Kidul) had disappeared: Grembyangan, Krapyak, Nogosari, Polangan, Polengan, Sawo, Semarangan and Tinjon.[25] This was also the case for *candi* Kulon and Lor, in the vicinity of Sewu.

Even though some temples were in a better state of preservation in Verbeek's time than today, excavations carried out before and after World War II have extended our knowledge of some important structures. Banyunibo, Barong, Gebang, Ijo, Loro Jonggrang, Plaosan Kidul, Plaosan Lor, Ratu Boko, Sewu, and Sojiwan, all of which used to be in a critical state of decay, have been (or are being) restored with some success.

Sixty-six remains have been added to the 44 temple sites mentioned in the older inventories for the area of Yogyakarta-Klaten. Most of them are no more than gatherings of loose stones, but some are *in situ* structures still clearly visible. This is the case with Gampingan and Payak in *kabupaten* Bantul, Dengok and Plembutan in *kabupaten* Gunung Kidul, Kaliworo and Merak in *kabupaten* Klaten, Glagah and Sambiroto in *kabupaten* Kulon Progo, and, finally, Dawangsari, Gebang, Kadisoka, Kedulan, Lengkong and Sambisari *kabupaten* Sleman.[26]

Table 3: State of preservation of *in situ* temple remains in southern Central Java (DIY and Klaten)

State of preservation	*Amount*	*Site names*
Mound	5	Abang, Dengok, Plembutan, Sambiroto, Tinjon.
Foundation	1	Sumur Bandung.
Base only	10	Dawangsari, Gana, Glagah, Kadisoka, Kaliworo, Karangnongko, Klodangan, Miri, Ratu Boko, Watugudig.
Base and temple foot	4	Bubrah, Gampingan, Mantup, Risan.
Base and temple body	5	Kedulan,[27] Lumbung, Merak, Morangan, Sojiwan.
Up to superstructure	14	Banyunibo, Barong, Gebang, Ijo, Kalasan, Lengkong,[28] Loro Jonggrang, Payak,[29] Plaosan Kidul,[30] Plaosan Lor, Pringtali,[31] Sambisari, Sari, Sentono,[32] Sewu.

[23] According to the spelling used by R.D.M. Verbeek: Djĕtis, Watoe goedig, Prambanan, Sewoe, Loemboeng, Plaosan and Kalongan.

[24] According to the spelling used by F.D.K. Bosch: Tjebongan, Ploembon and Tjoepoe Watoe.

[25] Actualy, loose stones from *candi* Semarangan, Sawo and Nogosari are still visible today, while *in situ* remains of *candi* Tinjon are still standing along the road leading from the plain of the Sorogeduk to *candi* Ijo. That Bosch thought that Tinjon had disappeared is easily explainable: the site is quite far from *dusun* Tinjon, and most inhabitants of *desa* Tinjon do not know its existence. This mere mound of earth and stone fragments is not easily noticeable either.

[26] Dengok, Plembutan, Glagah, Sambiroto, Kaliworo, Gampingan, Payak, Kadisoka, Sambisari, Kedulan, Dawangsari and Lengkong were discovered by the Indonesian archaeological services, while the other sites were excavated before World War II by Dutch archaeologists.

[27] This temple is under restoration work and will probably be restored up to the superstructure, given the number of stones preserved.

[28] *Stūpa*.

[29] Bathing place.

[30] Two secondary shrines were restored up to the superstructure, while the central structure has disappeared.

[31] Miniature temple.

[32] Cave.

Magelang

In the district of Magelang, temples are usually not as well preserved as in southern Central Java (Table 4). During the last century, the number of visible remains has drastically decreased, so that, in the attached inventory, most of the sites are recorded on the basis of the older information taken from Krom and Verbeek. In his inventory, Krom mentioned 45 sites showing *in situ* structures. Nowadays, only 13 structures are still to be seen. In 22 other cases, the amount and variety of the scattered stones testify to the former presence of an ancient building.

Table 4: State of preservation of *in situ* temple remains in the district of Magelang

State of preservation	*Amount*	*Site names*
Foundation	1	Wurung.
Base only	4	Gunung Sari, Gunung Wukir, Retno, Samberan.
Base and foot	3	Asu, Lumbung, Pendem.
Base and temple body	1	Ngawen.
Up to the superstructure	4	Borobudur, Mendut, Pawon, Selogriyo.

A couple of new sites, such as Samberan, have been identified by Indonesian archaeologists. Furthermore, more recent archaeological excavations have widened our knowledge of certain sites already known through Dutch inventories. This is the case, among others, with Gunung Sari, where several buildings have been discovered; Wurung, where an octagonal brick foundation has been brought to light; and Retno, where the temple plan is now known (Figure 6).

One of the greatest losses for the region – and for Javanese archaeology -- is certainly the disappearance of *candi* Setan. Nothing is left of this temple, which was still partly standing in the early 20th century. The site, described by N.J. Krom, was composed of a single elongated brick terrace on which stood 7 temples in a row. The central temple measured 4.85m and was flanked on each side by 3 smaller shrines (Krom 1923, I: 408; 1914a: 236; 1914b: 56; 1914c: 189). Such an organization is, to my knowledge, unique in Central Java. Given that no less than fourteen sculptures of Gaṇeśa were found at the site, the Dutch scholar was of the opinion that the temple was dedicated to the elephant god, which would also be unique in Java (Krom 1923, I:408).

Kabupaten Boyolali

The region of Boyolali is not particularly rich in archaeological remains and, in terms of visible sites (Table 5), the situation is roughly the same as at the beginning of the last century. Intensive restoration programs have, however, transformed Lawang as well as Cabean Kunti, turning the former heaps of stones into standing buildings.

Table 5: State of preservation of *in situ* temple remains of *kabupaten* Boyolali

State of preservation	*Amount*	*Site names*
Foundation	2	Sari, Sumur Songo.
Base and foot	1	Lawang.
Up to the superstructure	1	Cabean Kunti.

Kabupaten Semarang

In the *kabupaten* of Semarang, the *in situ* temple remains that were once visible in Butak Wetan, Klero, Renteng and Sidamukti have disappeared. The latter site had already been destroyed in the early 20th century: its stones had been used by the

Topografische Dienst for the construction of a topographical marker (Krom 1923, I: 222). On the other hand, two new sites, Ngampin (Dwiyanto, Nitihaminoto, Pinardi 1981) and Ngempon (Soekmono 1951-1952:19) have been discovered and excavated by the archaeological service of Indonesia (Table 6).

Table 6: State of preservation of *in situ* temple remains of *kabupaten* Semarang

State of preservation	*Amount*	*Site names*
Base	2	Dukuh, Gedong Songo VII.
Base and foot	1	Gedong Songo V.
Base and temple body	1	Ngempon.
Up to the superstructure	5	Gedong Songo I, II, III, IV and VI.

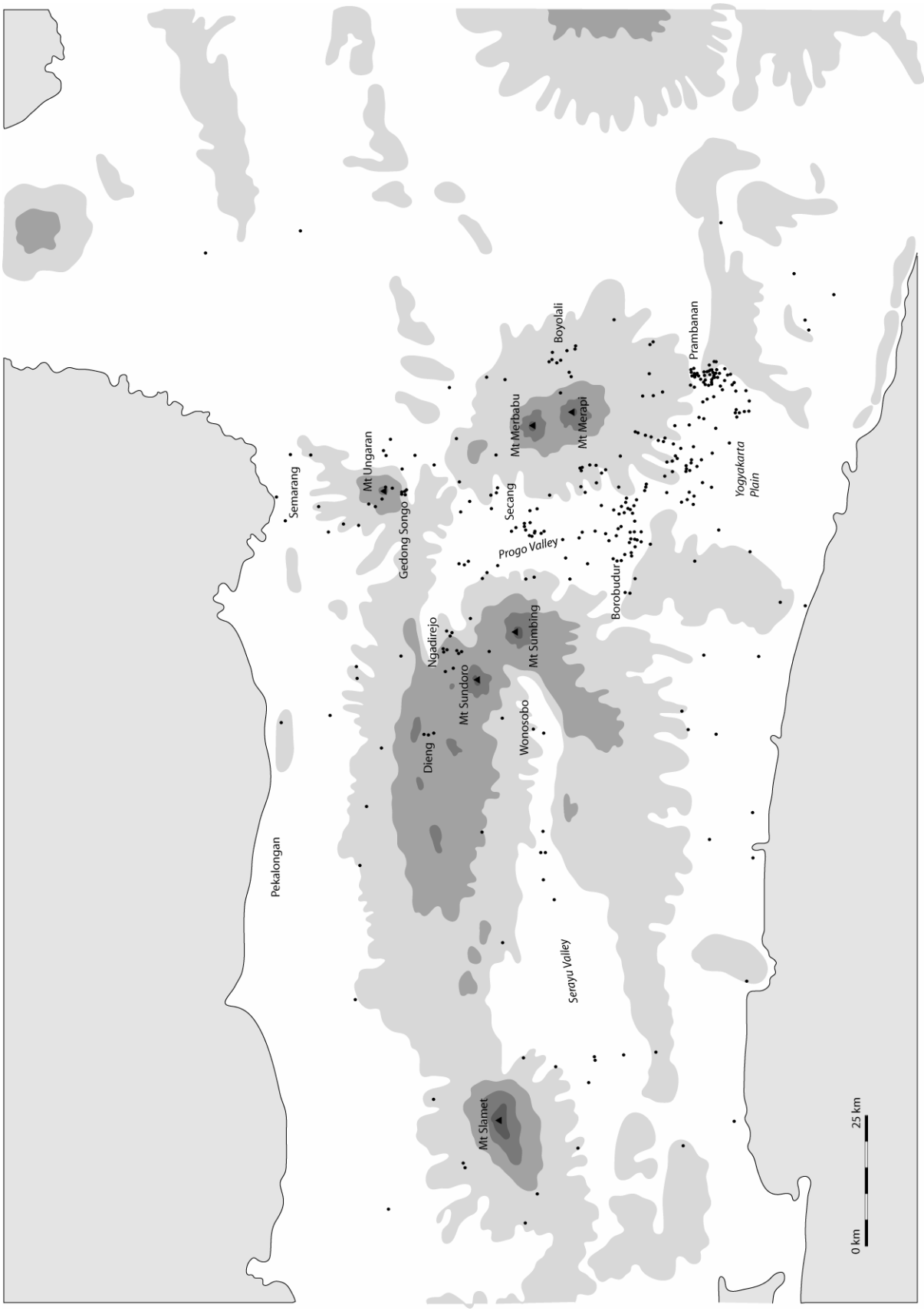

Figure 7: General distribution of Central Javanese temple remains

CHAPTER 4

Distribution of Temple Remains: General Trends and Patterns

In this chapter, I will describe the general distribution trends and patterns of Hindu-Buddhist temple remains, first at a regional level (Central Java), then at a sub-regional level (namely southern Central Java, the Progo valley area and the area around Mt Ungaran). In the course of the discussion, I will present more in depth the geography of the sub-regions and introduce a first series of hypotheses that might explain the distribution patterns observed. In the following chapter (chapter 5) I will try to correlate the distribution patterns with specific natural features and show how it helps to understand the religious landscape of Central Java.

Regional distribution trends: extent of the Hindu-Buddhist sphere of influence

Temple remains of the Central Javanese period are found in most of the districts (*kabupaten*) of the provinces of Jawa Tengah and DIY, with the exception of the eastern ones.[1] The density of remains, however, varies widely. Actually, Hindu-Buddhist shrines are clearly clustered in the Yogyakarta plain, the Progo valley and the surrounding volcano slopes – the area which is the focus of the present book (Figures 7 and 8). To the east of this zone, there are almost no remains. As for the western part of the province of Central Java, it is dotted with Hindu-Buddhist remains, though the density is considerably lower than in the core region.[2] In western Central Java, the remains are mainly dispersed along the southern coastal plain, the Serayu valley and on the lower slopes of the Mounts Sumbing and Slamet.[3]

In the core region itself, site density is not homogeneous (Figures 7 and 8). Zones with the highest density of temple remains occur around the two largest known sanctuaries of Central Java: Prambanan (*kabupaten* Sleman) on the one hand, and Borobudur (*kabupaten* Magelang) on the other hand. A medium-density corridor stretches between these two centres and extends northwards, following the course of the Progo River, up to the area of Secang (northern Magelang district). Three other areas of medium temple density can be seen on the map, respectively around Ngadirejo (to the northwest), Mount Ungaran (to the north) and Boyolali (to the east).

Differences between the core region (Progo valley – Yogyakarta) and its periphery are not limited to density (high *versus* low) or distribution pattern (clustered *versus* dispersed): the size and the character of the remains are also at variance. With the exception of Dieng, Gedong Songo[4] and – maybe – *candi* Bogang (in Wonosobo), none of the remains of the peripheral regions can match in size the temples of Magelang or Yogyakarta. In many cases, the only significant piece is a *yoni*

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1 No temple remains from the Central Javanese period have been recorded in *kabupaten* Blora, Demak, Jepara, Karanganyar, Pati, Rembang, Sragen, Sukoharjo and Wonogiri. See above, p.34.

2 There is 0.1055 site per 25km^2 in the districts west of the Sundoro-Sumbing massif, whereas the mean density is 1.7266 per 25km^2 in the Progo valley-Yogyakarta area.

3 A nearest neighbour analysis of the area comes up with a nearest neighbour value of 0.8874, i.e. a tendancy towards randomness. See Hodder, Orton 1976: 38-40; Wheatley, Gillings 2002: 129-130.

4 Dieng and Gedong Songo are considerably vast complexes, but they are made of small-size structures, in contrast to the most important sanctuaries of Kedu and Prambanan, which are articulated around (a) large shrine(s).

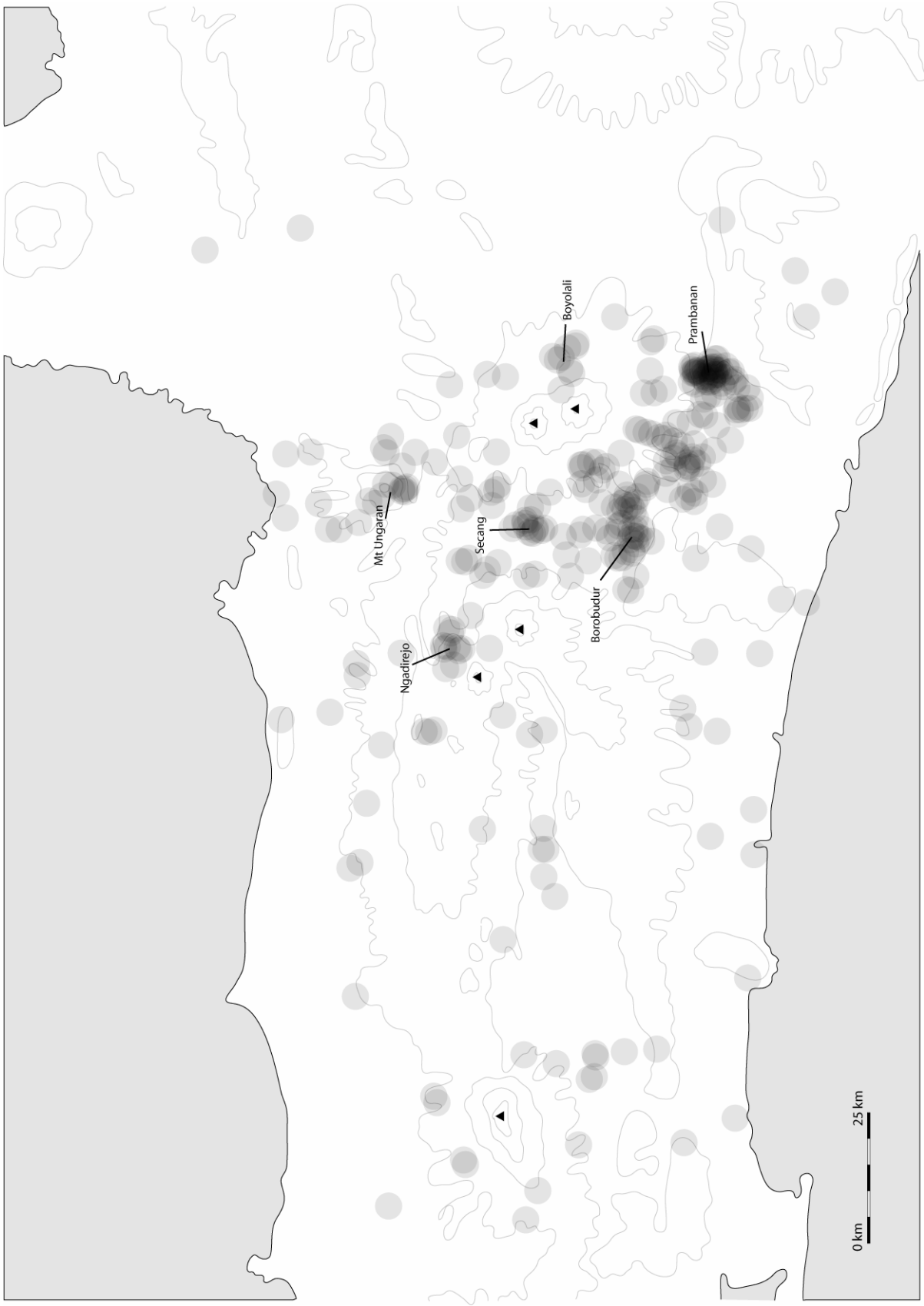

Figure 8: Density of temple remains

accompanied by some cut stones. It is possible that we are not always dealing with the previously discussed type of brick or stone temple, but, possibly, with more rudimentary structures, such as terraces or light shelters for *lingga* and *yoni*.

The lay-out of the site of Seplawan would support this idea: two small, simple platforms, one supporting a *yoni* (Soekatno 1982:223). A similar, open-air worship place has been discovered in the village of Tumbuk (Batang). There, four rectangular inscribed pillars were surrounding a bull (Oemar 1981). Although the text engraved on the pillars is illegible, palaeographic analysis has ascribed the script to the late 9th or early 10th century (Wisseman Christie 2002-2004, n° 174).[5]

The scarcity and simplicity of the known remains in the districts surrounding the Progo valley area suggest that those regions were already at the fringe of the Central Javanese kingdoms.[6] The kings who built Borobudur and Loro Jonggrang seem to have ruled directly over the Yogyakarta-Prambanan plain, the Progo Valley and, at some point, the northern coast, but they were maybe not directly involved in the administration of the western regions.

In some areas, and particularly in the district of Pekalongan, megalithic traditions seem to have played an important role. A couple of sites further suggest that there was some connection between the megalithic and the Hindu-Buddhist traditions, since Hindu-Buddhist sculptures are sometimes found in places of worship belonging otherwise to the megalithic tradition. The site of Baron Sekeber (Gunung Garamanik) is a well-known example of this relationship. The five terraces shaped from the Gunung Garamanik hill have indeed yielded artefacts from both traditions: half a dozen menhirs and several *batu lumpang*[7] as well as 2 *dwārapāla* and one (small) *yoni* (Krom 1914a:132; Tjahjono 2000:41). Dating the megalithic sites, however, is problematic: megalithic cultures were still active in some parts of Indonesia until the last century and it should not be taken for granted that menhir and other similar remains date back very far in time. Without any single piece of archaeological evidence, part or all of the megalithic sites of Central Java may be contemporaneous with – or even more recent than – Hindu Buddhist remains (Bellwood 1997:287-293; Heine-Geldern 1945; Suleiman 1976:8).

Megaliths are not absent from the heartland of Central Java. A 2m long stone phallus, for example, is in the archaeological depot of *candi* Sambisari. It was apparently gathered from the nearby village. This type of artefact recalls the art of the quite late *candi* Sukuh (*kabupaten* Karanganyar, east of Solo) or the numerous wooden drums still in use in the Yogyakarta area. A thorough study of the megalithic traditions of Java would be needed to assess the age and extent of these cultures – and to determine whether the Progo valley and the Prambanan area shared a megalithic tradition with the surrounding regions before the development of the Hindu-Buddhist

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5 In the absence of a clear archaeological context (these two sites are at ground level and have never been excavated) it is not certain that the structures are in their original state. The different elements, the platforms and *yoni* in the case of Seplawan, the pillars and the bull for Tumbuk, might have been combined after the classical period to build a *punden*, a place of worship for villagers from the surroundings. Artefacts from the Hindu-Buddhist period are indeed quite frequent at such places. See, for example, the Jurang terracottas (Sujatmi Satari 1981:1-2). My own field experience, however, told me that, in many cases, there might also have been continuity in the use of sacred places. Some modern *punden* or meditation places are clearly *in situ* archaeological remains (such as *candi* Dukuh in Semarang, *candi* Dengok in Gunung Kidul or *unur* Lempeng at Batujaya, West Java).

6 I mean the *kabupaten* Banjarnegara, Banyumas, Batang, Brebes, Cilacap, Demak, Jepara, Kebumen, Kendal, Kudus, Pekalongan, Pemalang, Purbalingga, Purworejo and Tegal.

7 Circular stone with a small cavity in the centre. See on next page, footnote 8.

polities.[8]

Distribution patterns in southern Central Java

Geography of DIY and Klaten

The geography of southern Central Java is quite complex and requires a closer look if one wants to understand temple distribution (Figure 9). From a topographical point of view, the area is characterised by the presence of the two rich agricultural plains of Yogyakarta and Solo, bordered by high hills (the Menoreh hills and the Gunung Kidul), and dominated by Mount Merapi.

The plain of Yogyakarta is bordered to the northwest and to the west by the Menoreh hills, a chain of steep hills that culminates at 1022m. To the southeast, the ring of the Gunung Kidul marks the border between the plain of Yogyakarta and the Wonosari depression, while to the northeast the impressive Mount Merapi guards the access to the Solo and Kedu plains.

Located in the southeastern part of the DIY, the depression of Wonosari is a dry area surrounded on all sides by a chain of high hills commonly known as Gunung Kidul.[9] Its highest summit within DIY culminates at 785m above sea level.

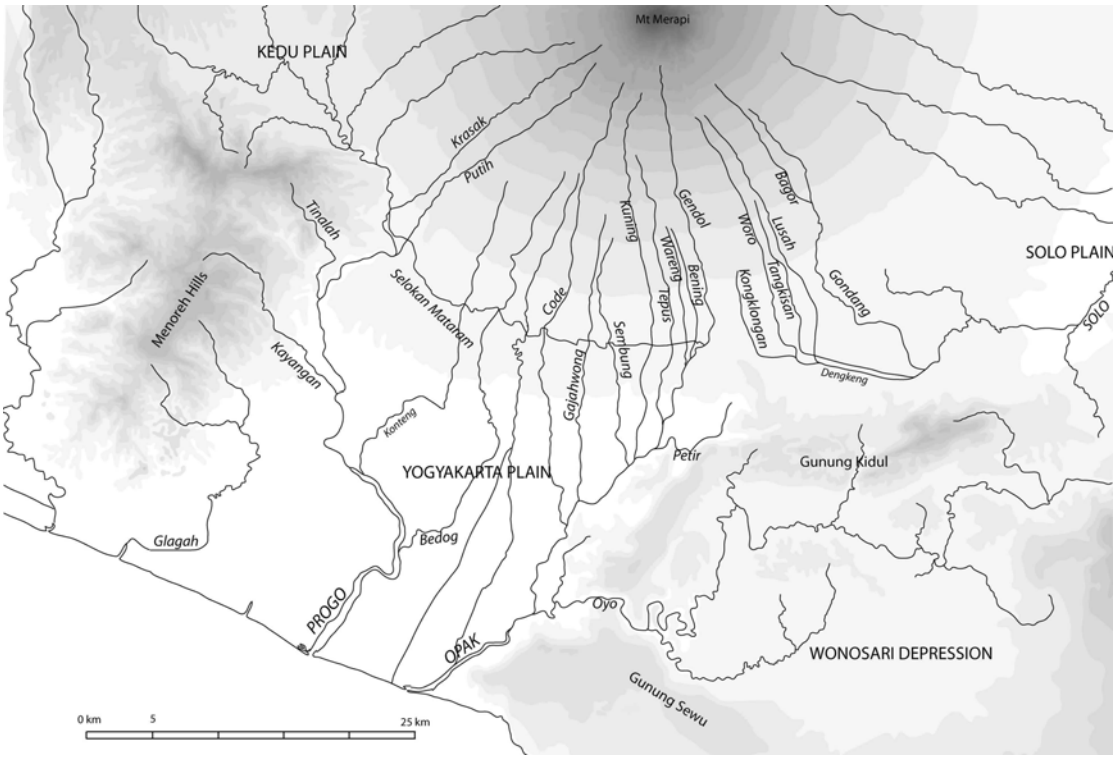

Figure 9: Southern Central Java, topography and main rivers.

[8] Apart from proper megaliths, there are, in Central Java, quite a lot of mortar stones. Some are small and round, others are large and rectangular. Their area of distribution goes at least from Brebes to Magelang. Some of them are associated with temple remains. This is the case at Bumiayu (Brebes) (Tjahjono 2000:48), Gunung Wukir (Magelang), Kalimalang (Magelang) and Ngrajek (Magelang). Several rectangular mortar stones have been found in the village of Payak (DIY) where an ancient bathing place has also been unearthed. But this list is certainly not exhaustive.

[9] The southern ridge of the Gunung Kidul, parallel to the coast, is named Gunung Sewu.

The other plain of the area, the plain of Solo, geographically belongs to East Java. Mount Merapi and the northern tip of the Gunung Kidul separate the Solo plain from the Progo valley and the plain of Yogyakarta.

The most impressive landscape marker of the DIY is Mount Merapi. It is actually the southernmost summit of a volcanic chain extending northwards to Mount Ungaran and including Mounts Merbabu, Telomoyo and Soropati. Mount Merapi is a stratovolcano of which the present summit, Mount Anyar (2947m), is located to the southwest of the older Batulawang volcano (Neumann van Padang 1951:24).[10] On the southern slope of Mount Merapi, close to the summit, are located the sulfatara fields of Kawah Gendol and Kawah Woro.

Mount Merapi is one of the most active volcanoes of Indonesia. Its activity is characterised by the growth and collapse of a summit lava dome, accompanied by lava flows, *lahar*,[11] ash falls and pyroclastic flows.[12] While lava flows are generally limited to areas close to the summit, pyroclastic flows, ash falls and *lahar* may have more dramatic consequences.[13]

Whereas the plain of Solo and the depression of Wonosari are fenced off from the ocean, the plain of Yogyakarta gently slopes down to the sea (Figure 10). This access to the southern ocean is of limited economical interest: the area is classified as a high wave-energy coast and offers no shelter from wind, oceanic streams and waves (Swan 1979:10, fig.1.7). In other words, it is not suitable for navigation. As far as we know, trade ships have always preferred the northern coast, which is a low wave-energy area and offers numerous safe anchorage places.

The region possesses four important rivers, namely the Progo, Opak, Oyo and Dengkeng. The source of the Progo River is high on Mount Sundoro, in northern Central Java (Figure 2). In the DIY (Figure 9), it follows the foothills of the Menoreh before heading into the plain and flowing down to the ocean. Along its course, the Progo River receives many tributaries, originating from both the Menoreh Hills and Mount Merapi.

The Opak River flows southwards from the upper slopes of Mount Merapi until it reaches the northern tip of the Gunung Kidul. Then it bends to the south-southwest. In

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[10] The estimated height of the original Batulawang volcano is 3300m (Neumann van Padang 1951:25). Its summit collapsed to the south-southwest following an eruption. R.W. van Bemmelen and M. Neumann van Padang were of the opinion that the collapse happened in 1006 A.D. (Van Bemmelen 1949:560; Neumann 1951:25). However, more recent studies prove that the collapse – together with the formation of the Gendol hills – did not take place in historic times, but rather during the late Quaternary (Bahar, quoted in Voûte 1999:9). It seems that, during the Central Javanese period, Mount Merapi did not know any increase in volcanic activity. An eruption is dated 870 A.D. (± 100 years, radiocarbon) and another 940 A.D. (± 100 years, radiocarbon), but they were by no means as dramatic as the collapse of the Batulawang (http://www.volcano.si.edu/world/volcano.cfm?vnum=0603-25=; access date: 26/04/2008).

[11] A *lahar* is a mixture of rock debris and water that originates on the slopes of a volcano. The speed of a *lahar* may vary from a few meters per second to tens of meters per second.

[12] A pyroclastic flow is a ground-hugging avalanche of hot ash, rock fragments and volcanic gas. Its temperature may be greater than 500º C and its speed is typically greater than 80km per hour (http://www.volcano.si.edu/world/tpgallery.cfm?category=Pyroclastic%20Flows; access date: 02/01/2004).

[13] In 1984, ash falls from the Merapi were reported as far as Weleri, Kendal and Semarang. In 1872, pyroclastic flows rushed down the Apu, Tlising and Senowo rivers, destroying all the villages above 1000m (http://www.vsi.esdm.go.id/mvo/mvosummary.html; access date: 26/04/2008). In 1975, a *lahar* in the Krasak river crushed the bridge linking the provinces of DIY and Jawa Tengah, on the Yogya-Semarang highway, about 25km southwest from the summit (http://www.ipgp.jussieu.fr/~beaudu/vsi/monitor.html; access date: 26/04/2008).

its lower course, it receives the waters of the Oyo River. With the exception the Oyo River, all the tributaries of the Opak originate from Mount Merapi.

The third important river of the area is the Oyo River. Unlike the other ones, its source is in the depression of Wonosari, draining water from the surrounding Gunung Kidul hills. It flows westwards until the neighbourhood of Imogiri, where it meets the Opak River.

The last main watercourse is the Dengkeng River (Figure 8). The Dengkeng belongs to a different water basin. While the Progo, Opak and Oyo rivers are part of the Progo valley zone and flow to the Indian Ocean, the Dengkeng flows down Mount Merapi before bending east and meeting the Bengawan Solo, the longest river of Java. The Solo River (Bengawan Solo) flows through the plain of Surakarta, and then crosses the whole eastern Java before reaching the Java Sea slightly to the north of Gresik, near Surabaya (Figure 2).

Most of the rivers flowing down the southern side of the Merapi are natural pathways for pyroclastic flows, avalanche debris and *lahar* heading down the volcano. This is especially true for the Krasak, Boyong, Gondang, Kuning, Gendol and Woro rivers.

Although the general characteristics of the natural landscape are dictated by long-existing physiographic features (namely Mount Merapi and the Gunung Kidul) and have therefore remained similar since the Hindu-Buddhist period, local modifications inevitably happened – and are difficult to evaluate properly.

First of all, the impact of the activity of Mount Merapi in ancient times is not well known. Although it was not more active than it is today, the exact shape of its summit is unknown, nor are the most frequent channels for pyroclastic flows and *lahar.* Generally speaking, however, all the areas above 1000m and/or around main river

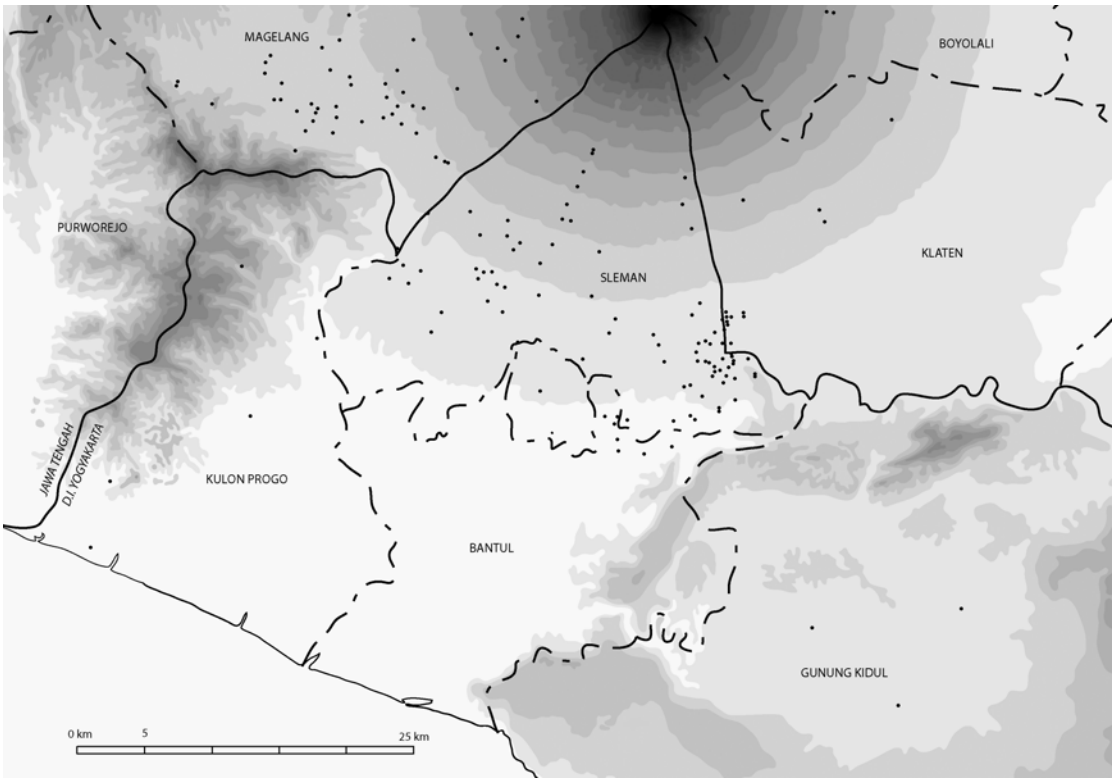

Figure 10: Temple remains in south Central Java, distribution map

beds, should be considered as dangerous, especially on the southern and western slopes of the volcano.[14] *Lahar* may also have had an impact on river courses, as the debris they carry may block tributaries, changing river flows in the upper areas.

Secondly, the impact of human activity is difficult to estimate. In most of the upper Yogyakarta plain, changes in river courses due to man seem limited, as rivers are not canalised. The main waterworks are the *selokan* Mataram, a channel built under the Japanese occupation. It collects water from the Progo River and goes eastwards, crossing river beds with the help of bridges and distributing water along its way. However, the upper courses of certain rivers, well known for being channels for *lahar*, have been fortified by dykes. This is the case for the Krasak, Gendol and Woro rivers.

In the plain of Yogyakarta and Bantul, only two important watercourses have been canalised (namely the Winongo and the Winongo Kecil). The picture is quite different in *kabupaten* Klaten. In this zone, the lower beds of numerous rivers were canalised, as early as under Dutch colonial rule, in order to suit the demand for water of sugarcane fields and sugar factories. The courses of the following rivers were straightened: Kongklangan, Woro, Tangkisan, Lusah, Dengkeng and Ujung.

Furthermore, everywhere on over-populated Java, water is diverted from natural rivers into small channels that carry it to the rice fields. The extension and intensification of agriculture was planned to respond to the needs of a population that increased significantly from the 19th century onwards (Owen 1987). Before that period, as population pressure was not so strongly felt, it is probable that less land was cultivated and irrigated. Therefore, during the Hindu-Buddhist period, less water would have been diverted from the rivers and watercourses would have had a greater water flow than today.[15]

Temple distribution: general distribution trends

In southern Central Java, the *kabupaten* correspond roughly to the geographical divisions of the area: *kabupaten* Kulon Progo encompasses the dry Menoreh Hills, Gunung Kidul the southern mountains and the depression of Wonosari, Bantul the lower plain, and Sleman the middle plain, on the southern slope of Mount Merapi.

Temples are most numerous in *kabupaten* Sleman (more than 70%), then in Klaten (12.7%), but they are quite scarce in other districts (Table 7).

Table 7: Distribution of temple remains per district in southern Central Java

Kabupaten	*Sites*	%
Gunung Kidul	4	3.6
Kulon Progo	5	4.6
Bantul	7	6.4
Klaten	14	12.7
Sleman	80	72.7

It can be observed that the area of DIY and *kabupaten* Klaten is almost entirely scattered with temple remains, with the exception of the centre south (Bantul) and extreme east (eastern Klaten). However, the ruins are unequally distributed. They are far more numerous in *kabupaten* Sleman and its direct surroundings (north Bantul and west Klaten): 101 temple sites, i.e. 91.8% of the total number of remains.

[14] The eastern slope is partially protected by the remains of the Batulawang volcano.

[15] During the 18th century, ships could navigate in some rivers of the Prambanan area, as testified by Sterrenberg (quoted in Jong 1878, X:45).

Furthermore, none of the sites located outside this area can match the size of the remains of the Prambanan plain, except *candi* Risan (*kabupaten* Gunung Kidul).[16]

It is clear that, at the end of the Central Javanese period at least, the whole area was within the sphere of influence of the Hindu-Buddhist culture. However, this Hindu-Buddhist presence does not translate into the same density of sanctuaries all over the area. The highest density of temples is to be found to the north (east), i.e. on the southern slope of Mount Merapi, and, especially, around the modern town of Prambanan (Figure 10). The heterogeneity of the distribution may express a difference either in population density and/or in degree of penetration of the Hindu-Buddhist culture.

Within *kabupaten* Sleman and its direct surroundings, we can notice three different spatial patterns: to the east (Prambanan area), sites are densely clustered; to the west, sites are more dispersed, with a tendency towards regular distribution;[17] while higher on the Merapi, we can notice a series of sites in a line (Figure 10).

Site clustering around Prambanan: central place or religious centre?

An intriguing feature of distribution of Hindu-Buddhist temple remains in Central Java is the location of the highest density zone in the Prambanan area. I would like to show here that this feature is best explained if we consider Prambanan not as a population centre, but as an essentially religious place built originally at the easternmost limit of the Hindu-Buddhist polity of Central Java. To do so, I will first propose an alternative view, *i.e.* that Prambanan was a population centre, and show how it fails to explain satisfactorily temple distribution in the area.

If temples are linked to settlements – at least those located in fertile areas, as suggested by Mundarjito (2002: 375), temple density would be proportional to population density. Prambanan would then be the largest settlement of Central Java. According to the usual understanding of the central place theory, providing that the environment is uniform, the existence of a large – and thus high order – settlement (providing high order services, such as well-furnished markets, learning centres etc.) implies that there are low order service centres around it (Christaller 1933; Hodder, Orton 1976:60). Nevertheless, in the case of Prambanan, the smaller shrines that would testify for the existence of such lower order settlements are only found to the west. Site density is indeed quite high west of Prambanan, where sites scatter the landscape up to Borobudur, while, to the east, the density drops sharply and temple remains are almost non-existent. In other words, there are no traces of smaller centres east of Prambanan.

This singularity could have three main origins: 1) the central place theory as such is not applicable in Central Java, 2) the model is generally applicable to Central Java but it disturbed by factors proper to the Prambanan area, 3) Prambanan is not a population centre.

The central place theory is a geographical model that seeks to explain the size and distribution of towns and villages. In Central Java, however, the very existence of towns has received strong criticism by J. Wisseman Christie (1991). She has argued that, since no inscription refers to towns, the economical landscape of Central Java

[16] *Candi* Risan is in a poor state of preservation. Its dimensions, though, are still impressive. It is composed of two buildings on the upper slope of a high hill. Both constructions are of 12-13m square.

[17] The nearest neighbour formula produces a value of 1.1265 for that area (on the map, within the rectangle).

should better be perceived as a network of markets deserving villages, with no tendency towards urbanization. Is the central place theory applicable to a culture without cities? The idea behind the central place model is that small settlements do not provide sufficient demand to support certain activities or services. These services or activities are thus supplied by larger centres only – which are normally located close to smaller centres but far away from other larger centres. The emphasis is thus less on urbanization (the abandonment of agriculture and concentration of population in a single place) than on the function of towns as market places and the existence of a sufficient demand for high-ranking goods and services. Now, a densely populated area where villages adjoin one another uninterruptedly may have a demand sufficient enough to sustain a high order market - even if a great part of its activity is agricultural. Such places would then be considered central places. As we see, there is thus *a priori* no reason to think that the model could not be applied to Central Java, all the more because it has already been stressed that markets functioned in a hierarchical networks, with high order markets catering for more specific goods.

If the model applies to Central Java but does not fit with the case of Prambanan, then it could be that local factors have disturbed expected settlement patterns. Such disturbances are well-known, since the central place model only works perfectly in the case of a uniform land; a change in the natural environment can indeed lead to a modification of the pattern. However, there is, to my knowledge, no significant difference in resource availability east and west of Prambanan. Neither is there a change in climate or topography. Rivers large enough to restrain land passage but too shallow to allow river transportation exist in the west as well.[18] The natural environment is actually quite uniform and fails to explain the drop in temple remains. Nevertheless, we have to take into consideration the possibility that the disturbance is of another nature, not geographical, but political: the area could have constituted the easternmost limit of the Central Javanese polity.

This last hypothesis deserves attention, since not only temple remains, but also inscriptions suggest that this was indeed the case. Although they must be treated with caution – since inscriptions are usually easily movable artefacts, inscriptions apparently show distribution patterns similar to those already noted for temple remains. Kalasan, Ratu Boko, Sari and Sewu, the most ancient remains of the Prambanan plain[19], are all clustered in a small area. Towards the east, building activity seems to have been at first limited to *candi* Merak.[20] After *c.*830 A.D., starts another, later phase of building activity in and around Prambanan. This time a temple is built well to the east of the Konklongan River: *candi* Morangan.

The distribution of the find spots of inscriptions presents a comparable situation. For the period from 732 A.D. to 855 A.D., 40 inscriptions were found in Central Java[21] (Figure 11), but only three were found east of Prambanan: the inscriptions of

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18 See for example the Opak River.

19 See p.15 for the dating of these temples.

20 Remains of what was probably another temple were found also at Candirejo, near Tulung, in the district of Boyolali.

21 These are the inscriptions of which the original find spot is known. 7 other inscriptions, most probably from Central Java, are of "unknown origin" and cannot be used within a distribution map.

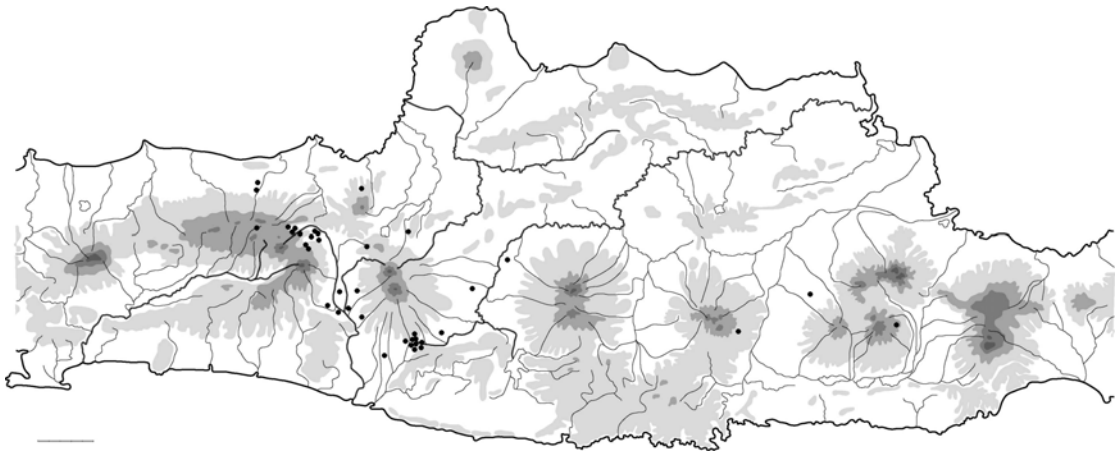

Figure 11: Inscriptions of Java (732-855 A.D.), distribution map (adapted from Wisseman Christie 2002-2004)

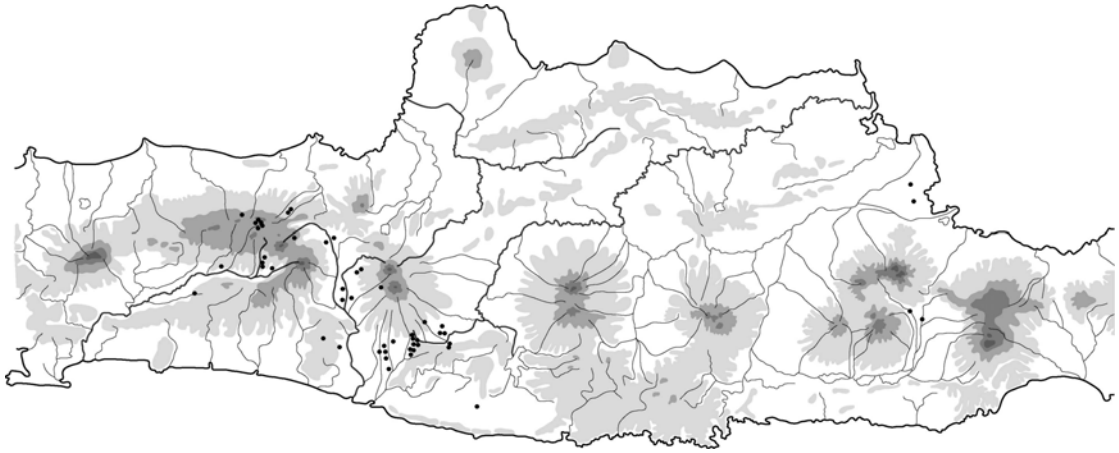

Figure 12: Inscriptions of Java (855-898 A.D.), distribution map (adapted from Wisseman Christie 2002-2004)

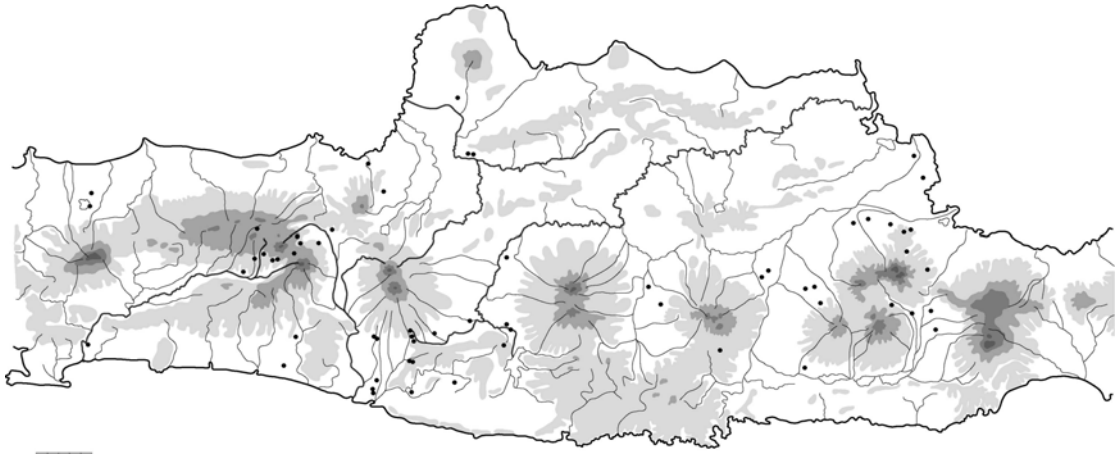

Figure 13: Inscriptions of Java (898-928 A.D.), distribution map (adapted from Wisseman Christie 2002-2004)

Garung (819 A.D., found near Boyolali), Abhayānanda (early to mid 9th c., found near Klaten) and Sragen (id.?, found to the northeast of Solo) (Soekarto 1969:18-21; Sarkar 1971-1972: n° 8; Jordaan 1999: 34, 85 n.39; Wisseman Christie 2002-2004: n°32, 37, 47). For the period from 855 A.D. to 898 A.D (Figure 12), the discovery of 6 inscriptions[22] around the modern town of Klaten suggests that the influence of the Central Javanese polity had then extended a little more to the east. From 898 A.D. to 928 A.D. inscriptions of Central Javanese kings are found from Wonosobo, in western Central Java, to Mojokerto and Malang in East Java (Figure 13).

Distribution of inscriptions and temple remains seems to indicate that, at least prior to 855 A.D., the Central Javanese polity extended little beyond Prambanan. It further suggests that the area with the highest density of temple remains in the whole of Central Java was not at the heart of the polity, but at its periphery. This observation could well explain the lack of low order settlements to the east: the proximity of the border would have impeached those settlements to develop, since land to the east of Prambanan would have belonged to a different polity.

It is possible to imagine that the political border between the Hindu-Buddhist polity of Central Java and the adjacent territories was so sealed that it prevented the natural development of lower order settlements – or at least lower settlements belonging to the same culture. This hypothesis, however, runs counter to most models of state organization proposed for Central Java.[23] There seems indeed to be a consensus among historians on the fact that boundaries of Javanese states were not fixed, but rather fluctuant. With fluctuating borders, the presence of a (very) large settlement at the eastern fringe of the kingdom would certainly have had as consequence to make adjacent territories fall under the sphere of influence of this settlement and thus to push the boundary further east. Now, it did not happen in the Prambanan area. We are thus left with two possibilities: either we reject the idea of fluctuating boundaries, or we consider that Prambanan did not develop to the east because it was actually not a settlement – or at least not a large one.

As other possibilities have been discarded (changes in natural settings or hermitically closed border), the absence of temples to the east of Prambanan would suggest that temples of the area were actually not linked to a major settlement centre, that, in this case, temple density is slightly misleading and that the area was maybe not more densely populated than the rest of *kabupaten* Sleman. It can indeed not be assumed that one temple stands for one village, although there is a relationship between temples and village: no temple can survive without income from village communitie(s) and all Hindu-Buddhist settlements must have had access to a place of worship – the stone or brick temple being the most appealing one. In the case of Prambanan, distribution patterns should probably be best interpretated as a sign that the temples built there were only loosely related to villages, that their function was not to serve a large community. The numerous land gifts and place names enumerated in the *sīma* charters found in the area suggest that, during the 2nd half of the 9th century – when most of the temples were already in use, the plain of Prambanan was a succession of villages and rice fields, and that forests were limited to the peripheral

[22] Namely the inscriptions of Upit (866 A.D.), Anggĕhan (875A.D.), Pastika (881 A.D.), Ngruweng (882 A.D.), Kuringan (885 A.D.) and Kaduluran (885 A.D.). See Stutterheim 1940: 29-32; Soekarto 1969: 6-7, 22-24; Sarkar 1971-1972: n°33, 60; Soekarto 1975: 247-253; Wisseman Christie 2002-2004: n° 75, 87, 113, 116, 122, 123.

[23] See above, p.10.

areas north and south of Prambanan,[24] but the same picture arises for many places in Central Java. Prambanan would then not be a particularly important centre of population, nor a main trading centre – this central place could have been located anywhere to the west of Prambanan, somewhere between Prambanan and Borobudur, in order to serve as many villages as possible within the polity.

How can we then explain the concentration of temple remains and the distribution patterns? Why are there so many temples in a single place, all the more if it was a peripheral settlement far away from the heart of the realm and probably not a main market centre? My hypothesis is that the importance of a place cannot be judged on the sole basis of population and trade. It is obvious that Prambanan – and the Ratu Boko hill – were centres of religious importance since the very beginning of the Hindu-Buddhist period. The remains of the original *candi* Kalasan are among the most ancient vestiges of Central Java and references to Sinhalese monks and Indian religious teachers are found in inscriptions of the area.[25] My explanation to the singular distribution patterns of temple remains around Prambanan is that Prambanan was not a population nor a trading centre – at least not at first: it was above all a religious centre at the fringe of the kingdom. The existence of important religious foundations far away from the centre of political power is a phenomenon that has already been observed for later periods. Religious practices of the 14th century Majapahit kingdom, for example, included a "Royal Progress" during which the king visited various ritual sites dispersed around his kingdom and sometimes at quite a distance from the *kraton* (Hall 1996).

The *Nāgarakĕrtāgama*, an East Javanese text of the 14th century commissioned by King Hayam Wuruk, gives a fairly detailed description of the Royal Progress of 1359. During this progress, the king worshipped at the temples of his ancestors and of previous rulers, as well as at the shrines of mountain deities. The places he visited included *candi* Jawi, Bureng and Panataran, situated several days of travel away from the royal capital of Majapahit (*Nāgarakĕrtāgama* 57.5; 17; 38; Pigeaud 1962, 4:236). In addition, the king undertook an annual pilgrimage to Panataran, after which he proceeded to Lodaya and Simping, located further south (Hall 1996:113). Hall's interpretation is that, through his progress to distant ritual sites, the king of Majapahit acknowledged local practices and incorporated worship of indigenous spiritual forces into the official religion (Hall 1996:116-117). The royal patronage of local places of worship was therefore of the utmost importance for the cohesion of the kingdom. My hypothesis is that Prambanan acquired its importance due to its religious value, rather than to a political key-position, and that it played in the southern part of the kingdom the role probably played by Dieng and Gedong Songo in the north.[26]

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[24] The inscription of Panggumulan I (902 A.D., found north of Yogyakarta) mentions the existence of a forest-visitation levy, while the Rumwiga I inscription (904 A.D., discovered at Payak, southwest of Prambanan) lists a hunting official among the members of the Rumwiga community. Both indices suggests the presence of forests in the area – but they were maybe already under pressure, since officials were required to manage their resources. Forest officials are listed in the inscriptions of Tunahan (873 A.D.), Humaṇḍing (875 A.D.) Jurungan (876 A.D.) and Haliwangbang (877 A.D.), all found near Polengan, south of the Ratu Boko hill. To my knowledge, no mention of forests is found in inscriptions coming directly from Prambanan, whereas references to wet-rice cultivation are overwhelming. For translations of these inscriptions, see Sarkar 1971-1972: n° 64; Christie 1996:275-278; Wisseman Christie 2002-2004: n° 82, 88, 90 and 144.

[25] See Abhayagiriwihāra and Kelurak inscriptions (Sarkar 1971-1972: n° 6 and 6a).

[26] As will be shown later, both sites are located on grounds unsuitable for rice cultivation and are unlikely to have been associated with large settlements. Nevertheless, both count an extensive number

We should nevertheless not consider religious, population and political centres as static classification. What was initially a place of religious importance may, over the years, evolve into a major population/political centre. I have mentioned earlier that from around 820 A.D. (inscription of Sragen) and even more after 855 A.D. temple remains and inscriptions start to appear east of Prambanan, suggesting an extension to the east of the Hindu-Buddhist sphere of influence and, maybe, a modification of the status of Prambanan. It is possible that at this point, Prambanan had seen its demographic and/or political importance grow. New, major temples – namely Plaosan Lor and Loro Jonggrang – are built in Prambanan. Besides, the Śiwagṛha inscription, issued in 856 A.D. and most probably referring to the building of *candi* Loro Jonggrang (Casparis 1956:303), mentions that the king established his (new) palace at Medang in Mamrati. It is possible that the text refers to the transfer of the capital from the Muntilan area to the Prambanan area. This would explain why Prambanan began to develop its sphere of influence in four directions only after 855 A.D., while, before that date, it seems to have constituted some kind of eastern border settlement. The development of Prambanan from 855 A.D. could further be seen as the first step in the extension of the Central Javanese polity to East Java.

From 898 A.D. to 928 A.D. inscriptions of Central Javanese kings are found in East Java as well (Figure 12). Within the context of a kingdom including both Central and East Java, Prambanan now appears to be a logical location for the capital. It is still close to the cradle of the realm, but it is closer to its new geographical centre than Muntilan and, especially, it is located at the starting point of the road linking the Progo valley to the Brantas plain.[27] Inscriptions dotting the southern part of Java, from Prambanan to Malang can testify to the presence of such an axis in early times.[28]

The final stage of the eastwards extension of the kingdom is well known: it is the transfer of the capital from Central to East Java, most probably under the authority of Siṇḍok, around 928 A.D. From this time onwards, most inscriptions and monuments are found in East Java.

This is not the place to enter into a discussion about the reasons for the shift to East Java. However, I agree with Barrett Jones that this event is not the consequence of a dramatic eruption or earthquake, but rather a gradual process beginning around 855 A.D., under the influence of the growing commercial power of the eastern part of the island (Barrett Jones 1984:6, 23-45). On the one hand evidence for a natural cataclysm is missing,[29] on the other hand temple distribution and find spots of inscriptions show us that the shift from west to east was already underway well before 928 A.D.

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of buildings and were occupied during a very long period. All factors make them likely to have been ritually significant places rather than large population centres.

[27] See below, p.86-90.

[28] Inscriptions, mostly related to king Balitung, were discovered in the plains of Wonogiri, Madiun, Blitar, Malang and Mojokerto: inscriptions of Tĕlang (904 A.D.) along the Bengawan Solo near Wonogiri, of Taji (901 A.D.) near Ponorogo, of Kinĕwu (907 A.D.) near Blitar, of Sugih Manek (915 A.D.) near Singosari and , finally, the inscriptions of Kĕtanen I (904-905 A.D.) and Kaladi (909 A.D.) in the neighbourhood of Mojokerto. For these inscriptions, see respectively Sarkar 1971-1972: n° 65, 61, 75, 84; Wisseman Christie 2002-2004: n° 143; Barett Jones 1984: 178-194.

[29] My own observations of the stratigraphic history of *candi* Kedulan show that the temple was covered several times by mudflows which do not seem to have been particularly important. Given that Kedulan is located near a river – and therefore near a potential *lahar* channel, it is expected that areas located further away from river beds were less damaged – or not at all.

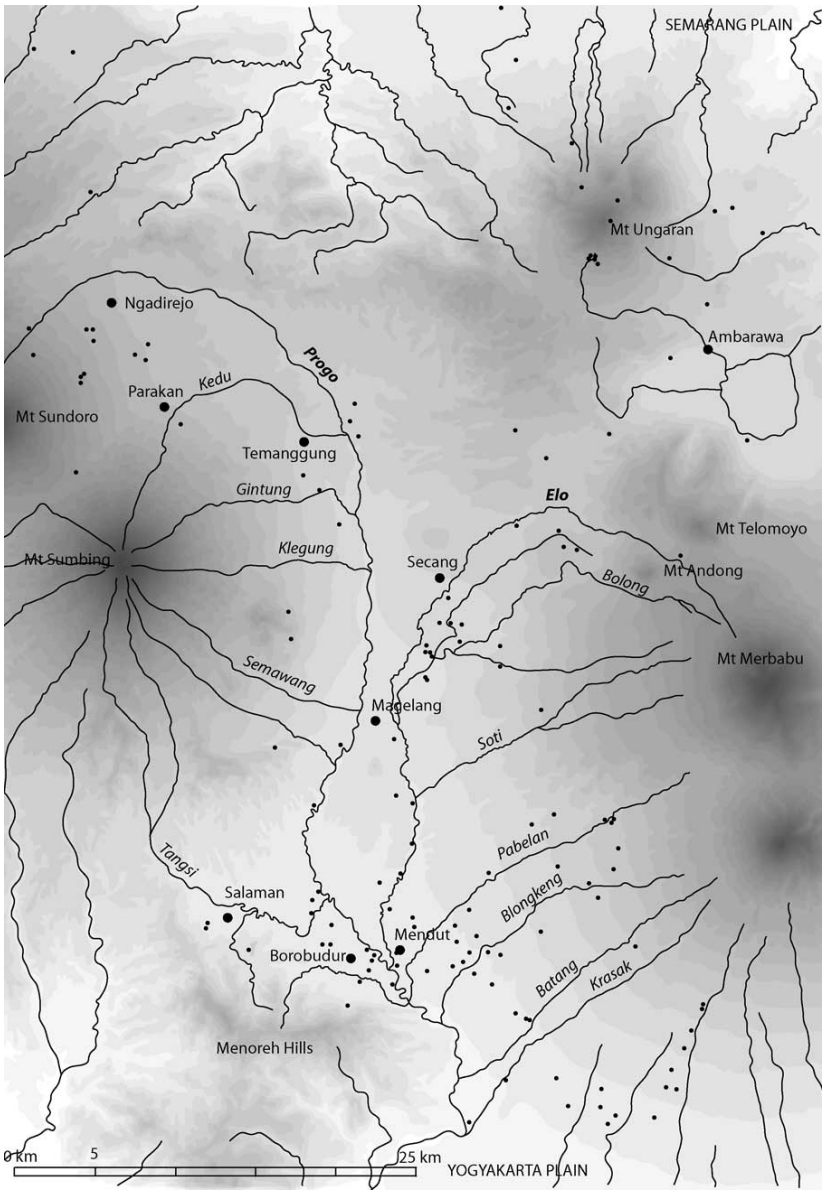

Figure 14: Progo Valley, topography and rivers

Remains in the Progo Valley

If we leave the region of Yogyakarta and head north, we reach the Progo valley. This area is the cradle of Javanese civilization. It is here, on the slopes of Mount Merbabu, that the inscription of Tuk Mas – probably the earliest epigraphic record of Central Java – was discovered. It is also from a hill overlooking the Progo River that the first inscription to mention a Javanese ruler, *narapati* Sañjaya, comes.[30]

[30] Inscription of Canggal, on the Gunung Wukir (Sarkar, 1971-1972: n° 3).

Geography of the Progo Valley

The landscape of the area is quite different from that of the Prambanan plain. The view is not open; the sight is obstructed by a barrier of high peaks and steep hills (Figure 14). The Progo valley is edged to the north by the North Serayu Ridge and Mount Ungaran (2050m). To the west are the twin peaks of Mount Sundoro and Sumbing, while to the east the valley is separated from East Java by the mountainous massif formed by Mounts Merapi, Merbabu, Andong and Telomoyo. To the south the valley is almost closed by the steep and dry Menoreh Hills.

The only easy access to the Progo valley is to the south-southeast, between the Menoreh hills and Mount Merapi. Other, more difficult, passages exist to the northeast (between Mount Ungaran and Telomoyo), the northwest (north of Parakan, through the Serayu Ridge), and to the west (through the highlands of Wonosobo or through the hilly zone around Salaman). The Progo valley itself is hilly in the north and becomes progressively wider to the south, where it transforms into a plain (in the region of Borobudur).

The topography of the whole area located to the east of the Progo River is shaped by the Merbabu-Merapi massif and its volcanic deposits. The northern peak of this massif, Mount Merbabu is a high volcano (3145m) with a heavy outline. It is not as active as its southern neighbour, the Merapi. Mount Merbabu has indeed erupted but once (in 1797 A.D.) since the year 1600.[31]

Mt Sumbing, to the west, has a similar volcanic record, with one eruption in 1730 A.D.[32] Mount Sundoro is a slightly more active volcano: its last recorded eruption dates back to 1971. Traces of a prehistoric debris avalanche are visible on the north-eastern flank of Sundoro and old (historical) pyroclastic flow deposits extend as far as 13 km from the summit.[33]

Down in the valley, between the volcanoes, flows the Progo River. Its source is located high on the slopes of Mount Sundoro. It flows to the northeast before making a large clockwise bend. From Temanggung to Borobudur it follows a roughly north-south course and there it is deviated to the southeast by the Menoreh Hills.

The main tributary of the Progo River is the Elo, a wild watercourse that originates near the summit of Mt Merbabu and merges with the Progo River in the vicinity of *candi* Mendut.

Other important tributaries of the Progo River are, from north to south, the Gintung, Klegung, Semawang and Tangsi, and, south of Mendut, the Pabelan, Blongkeng, Kedu, Batang and Krasak. The main tributaries of the Elo River are the Bolong and the Soti rivers.

Temple Distribution

The Progo valley has the second highest density of temple remains, after *kabupaten* Sleman (in D.I. Yogyakarta). However, temples are not evenly distributed over the area: Magelang has 80 temple remains, *kabupaten* Temanggung only 23. Furthermore, temple remains are far more numerous in the southern sub-districts of Magelang (around Muntilan) than anywhere else in the Progo valley (Figure 15). Two

[31] http://www.volcano.si.edu/world/volcano.cfm?vnum=0603-24=&volpage=erupt; access date: 28/04/2008.
[32] http://www.volcano.si.edu/world/volcano.cfm?vnum=0603-22=; access date: 28/04/2008.
[33] http://www.volcano.si.edu/world/volcano.cfm?vnum=0603-21=; access date: 28/04/2008.

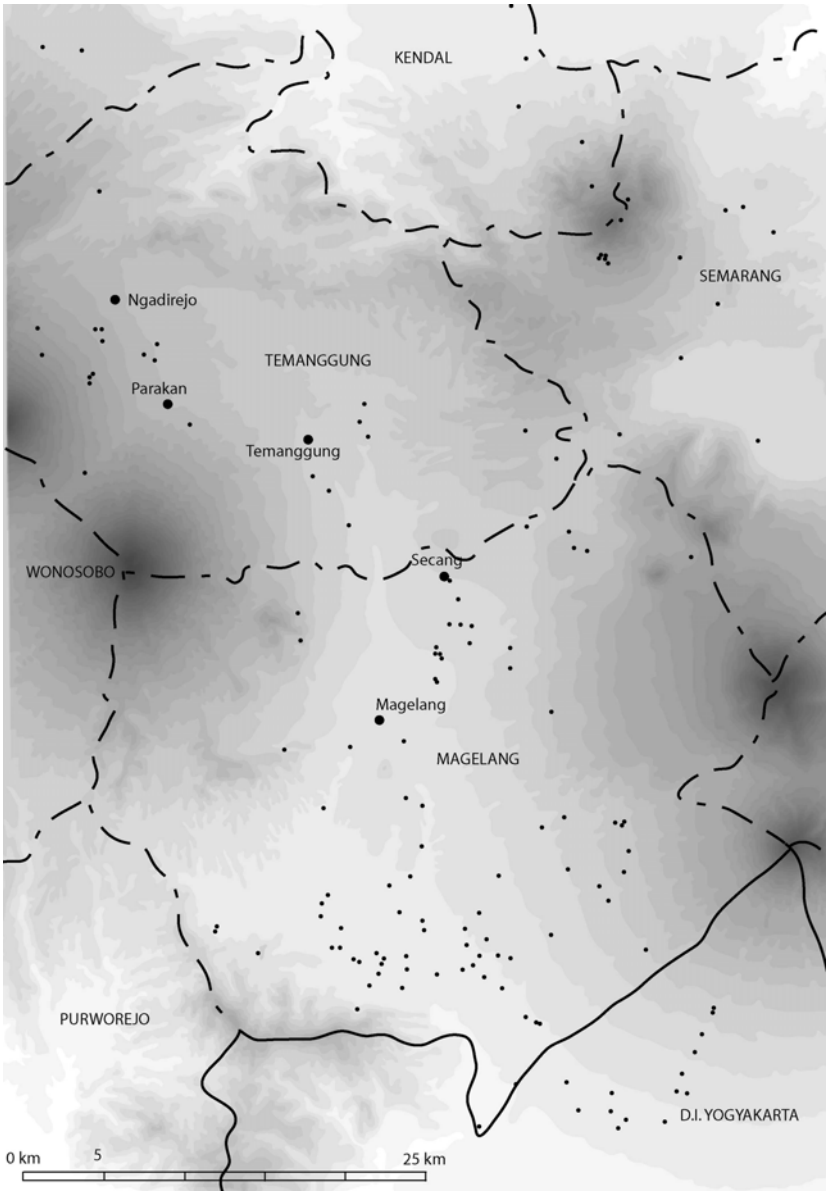

Figure 15: Temple remains in the districts of Magelang and Temanggung

other zones show (small) aggregates of remains: Secang and the area around Ngadirejo and Parakan.

While remains are numerous around Muntilan, they are not all clustered in a small area, as it is the case in Prambanan: they are dispersed, apparently at random, with no sign of clustering. The occupation of the lower Progo valley, in terms of temple remains, is less dense than that of the Prambanan plain, but more dense than the areas directly to the southeast (i.e. between Prambanan and Muntilan)[34] and to the north. In other words, temple density, relatively high around Muntilan,[35] decreases gradually when one goes away from the centre.[36] Even though it is at present not possible to

[34] The mean nearest neighbour distance is 0.8758 km in the region of Muntilan, while it is 1.4 km for *kabupaten* Sleman (excluding the Prambanan area).

[35] The centre of this high-density zone is roughly around *candi* Mendut.

[36] To the south, however, site density drops more sharply, since the plain is interrupted by the dry and

locate more precisely the main population and trading centre(s), the distribution of the sites all over the plain could fit with a central place model. Furthermore, the fact that temple density is significantly higher than in any other place in Central Java – Prambanan excepted, the Muntilan area appears as a likely place for an administrative/political centre,[37] thus possibly fitting with the Chinese annals.[38]

Not only the number but also the dimensions of the temples built around Muntilan suggest that this area was an important one. It was at least important enough for numerous noblemen, officials, members of the royal family or rulers to have a shrine built in the area, and it might thus be hypothesized that some important Central Javanese families had their stronghold in the Kedu plain. Inscriptions discovered in the Progo valley confirm that several high officials had tight relations with religious foundations located around Muntilan and Temanggung. So, the sole inscription recovered from the reign of Sañjaya,[39] the first known Central Javanese king, is from the Muntilan area, suggesting that the region might be the cradle of a part of the royalty. Furthermore, high officials bearing the titles of *sang pamgat* Tiru Raṇu,[40] *sang ra* Sbang[41] and *rake* Layuwatang,[42] who have contributed to the royal foundation at Plaosan Lor, have otherwise left inscriptions only in the Magelang-Muntilan area.[43]

Besides, the reading of the Chinese annals might suggest that the centre of Hindu-Buddhist Central Java was located in the area. The Sung annals, though dating from the Eastern Javanese period (960-1279 A.D.), give a description that corresponds

steep hills of the Menoreh chain.

37 Especially since, in Java, it does not implies a large settlement, but only a *kraton*.

38 See below p.64.

39 Inscription of Canggal (732 A.D.). See Sarkar 1971-1972: n° 3.

40 Tiru Raṇu is found in one of the minor inscriptions of *candi* Sewu. *Sang pamgat* Tiru Raṇu *pu* Langkā is one of the donors of Plaosan Lor (830-850). One of his successors, *sang pamgat* Tiru Raṇu *pu* Apus was responsible for a religious foundation at Salingsingan, according to the inscriptions of Kurambitan I-II (869 A.D.). Apus later gained the high title of *sang pamgat* Hino (inscription of Śrī Manggala II, 874 A.D.) and his foundation received gifts on behalf of king Kayuwangi (inscription of Salingsingan, 880 A.D.). Given that the Śrī Manggala II inscription was found near *candi* Asu and Pendem (Dukun, Magelang), it is possible that the inscription relates to one of these temples. Further, people from villages belonging to the *watĕk* Tiru Raṇu are cited as witnesses in the inscriptions of Palĕpangan (906 A.D., discovered near Borobudur), Sīma Bhaṭārī (907 A.D., from the Wonosobo area), Rukam (907 A.D., from Parakan) and Lintakan (919 A.D., probably from Temanggung). See Casparis 1950:115; 1958; Sarkar 1971-1972: n° 7, 28, 42, 68, 86; Wisseman Christie 2002-2004: n° 157, 158.

41 A *sang ra* Sbang *pu* Mañju is listed among the donators of Plaosan Lor (830s - 840s A.D.). A *sang pamgat* Swang is credited with the creation of a *sīma* in the Sang Pamgat Swang inscription, discovered near Mungkid, Magelang (Wisseman Christie 2002-2004: n° 114).

42 *Rakai* Layuwatang *dyah* Mahārṇnawa is referred to in one of the minor inscriptions of Plaosan Lor (830s - 840s A.D.), while *sang* Layuwatang *pu* Mananggung demarcated a *sīma* in 845-846, according to the Layuwatang inscription, found at Kadiluwih (845-846 A.D.), at the foot of the Gunung Wukir. *Sang* Layuwatang *pu* Mananggung would be either the representative or the successor of *rake* Layuwatang *dyah* Mahārṇnawa. Further, a *sang* Wiridih *si* Daṇu, resident of Skar Tān *watĕk* Layuwatang is listed in the inscription of Rukam (907 A.D., from Parakan). See Casparis 1958:25; Wisseman Christie 2002-2004: n° 46, 158.

43 The corresponding *watĕk*, however, are mentioned in (later) inscriptions from the Prambanan area. So, residents of villages belonging to *watĕk* Tiru Raṇu are mentioned as witnesses of *sīma* demarcation ceremonies in the inscriptions of Panggumulan I (902 A.D., from Sleman), Poh (905 A.D., from Klaten) and Tihang (914 A.D., from Prambanan). A *sang* Wiridih *si* Daṇu, resident of Skar Tān *watĕk* Layuwatang is referred to in the inscriptions of Panggumulan (902 A.D., from Sleman) and Poh (905 A.D., from Klaten). See Sarkar 1971-1972: n° 64, 66 and Wisseman Christie 2002-2004: n° 158, 185.

most probably with the capital of Central Java (Boechari 1997:8). They mention that the distance from the capital to the sea is 1 month to the east, 45 days to the west, 5 days to the north and 3 days to the south (Groeneveldt 1877:15).[44] As noted by Boechari, the distance to the eastern sea does not fit with an area located as far eastward as the banks of the Brantas River, while it does fit with Central Java (Boechari 1997:8).[45] Furthermore, the distance given between the capital and the southern sea, three days, is far too long for the Prambanan plain, but fits with the Muntilan area, suggesting that the capital of the ancient kingdom was closer to Borobudur than it was to Sewu or Loro Jonggrang.[46]

Some 20 km to the north of Muntilan, not far from the modern town of Secang (Figures 14 and 15), there is another, though small, concentration of remains, possibly indicative of the existence of a lower order centre. From here, remains are far less numerous. They stretch to the northeast in the direction of Ambarawa, and to the northwest to the modern towns of Parakan and Ngadirejo. Not less than 9 temple remains have been recorded around Ngadirejo and Parakan,[47] two of them, namely *candi* Perot and Gondosuli are directly associated with inscriptions. As it was already the case for the Magelang-Muntilan area, some high-ranking officials were obviously involved in gifts to temples of the area. For instance, a key figure of the construction of the Plaosan temple complex, known under the title of *śrī* Kahulunnan, might have had a stronghold in the area between Magelang and Temanggung. The title comes four times at Plaosan Lor and in one other inscription (Tru i Tĕpussan, 842 A.D.), which is said to come from the district of Magelang.[48]

Similarly, *rake* Wka is linked to the northern part of the Magelang district. An allusion to this title first appears at Plaosan Lor.[49] Nevertheless, the only inscriptions that record grants made by *rake* Wka are a series of copper plates from Ngabean. Two successive *rake* of Wka founded and endowed a religious foundation at Pastika,[50] a

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[44] History of the Sung dynasty, book 489, translated by W.P. Groeneveldt (Groeneveldt 1877:15): "Djava is situated in the southern ocean. Going from the capital to the east, one comes to the sea in a month, and from here it takes a ship half a month to go to Pulo Condore. On the west the sea is at a distance of forty five days. On the south it is three days to the sea and from there five days sailing to the Tazi. On the north the distance from the capital to the sea is five days (…)".

[45] Via Klaten, Ponorogo, Tulungagung, Blitar, Kepanjen, Lumajang and Jember, the road from the Progo valley to Banyuwangi is roughly 650km long. From the Progo River to Serang (west of Jakarta), the distance is 640km, via Purworejo, Kebumen, Banyumas, Ciamis, Bandung, Bogor and Rangkasbitung. However, the latter road passes through more numerous mountain passes than the eastern road. The given travel lengths, respectively 1 month and 45 days, seem reasonable.

[46] The distance from Prambanan to Parangtritis, on the southern coast, is 40km – via a smooth plain – while it is 120 km to Semarang and 100km to Purwodadi. If one takes 3 days to go from Prambanan to Parangtritis, then 5 days are not enough to go all the way to the northern coast, given that the road is more uphill. Muntilan is 65km from Parangtritis, 85km from Semarang and 100km from Godong, between Demak and Purwodadi. From here, 3 days to the southern sea and 5 days to the northern coast seems reasonable. Note that I give the distance to Purwodadi because, according to certain scholars, the main Central Javanese would have been located in that area (Orsoy de Flines 1941-47:66-84).

[47] *Candi* Pringapus, Perot, Gunung Pertapan, Butuh, Bongkol, Bumen, Gunung Kembang, Nglarangan and Gondosuli.

[48] Villages listed in the Tru i Tĕpussan inscription relate, as far as we can trace, to places in the area of Temanggung or Parakan. For example, Kayumwungan is mentioned in the inscriptions of Tulang Air (*candi* Perot) and Muṇḍuan (from Temanggung), while Mantyāsiḥ is listed in the inscriptions of Gaṇḍasuli I (Parakan), Muṇḍuan (Temanggung), Tulang Air (*candi* Perot) and Rukam (Parakan). See Sarkar 1971-1972: n° 16, 107 and Wisseman Christie 2002-2004: n° 158, 48.

[49] In the minor inscriptions of Plaosan Lor appears a *sang ḍa* Wka, probably a representative of the *rake* Wka (Casparis 1958: 29).

[50] *Rake* Wka *pu* Tanggal (inscription of Supit, from Ngabean, 878 A.D.) and *rakarayān* Wka *pu*

place which became the funerary temple of *śrī mahārāja rake* Kayuwangi.[51] *Rake* Wka *pu* Catura was apparently quite favoured by the king, since *śrī mahārāja rake* Kayuwangi made a donation to his religious foundation.[52] Shortly before 882, Catura was endowed with the title of *rakarayān* Halu.[53] *Rake* Wka is further listed as one of the *rakarayān mapatih*, the most important dignitaries after the king, in numerous inscriptions from Central and East Java.[54]

In the case of Patapān, data is even more convincing. Indeed, with the exception of a short inscription of Plaosan Lor,[55] epigraphic records relating donations from *rake* Patapān are found exclusively around Temanggung.[56] Furthermore, mention of *watĕk* Patapān occur also essentially in inscriptions from this area[57] – the inscription of Mantyāsiḥ I even states that *watĕk* Patapān owned land on the slopes of Mount Sumbing and Sundoro.[58] It is interesting to note that after the death of king Pikatan *dyaḥ* Salaḍū, it is *pu* Manukū, former *rake* Patapān, who will receive the title of Pikatan, suggesting this way that *rake* Patapān was important enough to receive a title formerly held by a king.

Distribution patterns in northern Central Java

The distribution of temple remains in the northern part of Central Java testifies to a Hindu-Buddhist presence along the northern coast, from Brebes to Rembang. Given that, as mentioned earlier, the northern coast of Java is a low-energy wave area and offers good anchorage places for ships, it is expected that ports were located along that coast and that, as natural cosmopolitan places, they were in contact with Hindu-Buddhist cultures. Furthermore, one can assume that as the inland road to the west was a rather difficult route, the northern coast was, for the Hindu-Buddhist kingdoms of the Progo valley and the Prambanan area, a window upon the rest of the archipelago and the world beyond.

The hypothesis that the kingdom of Mataram needed an important harbour along the northern coast is nevertheless contradicted by the first impression one gets from the distribution map. At first sight, indeed, Hindu-Buddhist remains appear scarce in the coastal regions – in comparison with the density of remains attained in the Progo valley and the Prambanan plain. A second look, however, quickly reveals that temple density increases significantly in the area of Semarang (Figures 7 and 8) and that remains of this area were in connection with the temples of the Progo valley (*via* the

Catura (Mulak I, 878 A.D.; Kwak I, 879 A.D.; both from Ngabean). See Sarkar 1971-1972: n° 38, 40 and Wisseman Christie 2002-2004: n° 91.

51 Inscription of Munggu Antan (887 A.D.). See Sarkar 1971-1972: n° 53.

52 Inscription of Ra Mwi (882 A.D.). See Sarkar 1971-1972: n° 52.

53 Inscription of Ra Mwi (882 A.D.). See Sarkar 1971-1972: n° 52.

54 For example, the inscriptions of Tulang Air (850 A.D., from *candi* Perot), Ayam Tĕas (901 A.D., from Purworejo), Taji (901 A.D., from Ponorogo, East Java) and Samalagi (902 A.D., from Bantul). See Sarkar 1971-1972: n° 16, 60; Wisseman Christie 2002-2004: n° 140.

55 It reads *anumoda sang patapān pu kutī*. See de Casparis 1958:10.

56 Inscriptions of Kayumwungan (824 A.D.), Muṇḍuan (847 A.D.) and Tulang Air (847 A.D.). See Sarkar 1971-1972: n° 10, 16, 17; Wisseman Christie 2002-2004: n° 48.

57 The only exception is the inscription of Kaṇḍangan (906 A.D.), found in the Gunung Kidul area and mentioning a grant for the benefit of a temple at Prasāja, *watĕk* Patapān. See Sarkar 1971-1972: n° 69.

58 Inscriptions of Ra Kiḍan (9th century), Mantyāsiḥ I-II-III (907 A.D.), Sangsang I (907 A.D.), Rukam (907 A.D.) and Kasugihan (907 A.D.), although the provenance of the latter one is not certain. See Sarkar 1971-1972: n° 102, 70, 71, 110, 72, 74; Wisseman Christie 2002-2004: n° 158.

secondary centre of Secang).

Five sites are located in Semarang and its direct surroundings: Candi, Duduhan, Kangkung, Ngresep and Tugurejo. At Candi, Duduhan and Ngresep only loose temple stones or bricks have been found.[59] At Tugurejo and Kangkung, however, parts of structures were discovered in place. Remains of a brick temple, including antefixes, pinnacles, one Durgā and one Gaṇeśa were once visible at Kangkung (Sujatmi Satari 1978:2). At Tugurejo, a square foundation and a 2.30m high stone pillar were brought to light (Stutterheim 1936:9; Verbeek 1891:88).

Further inland, a series of temple remains dot the landscape between Semarang and the modern town of Ambarawa, in the neighborhood of Gedong Songo: Arca Ganesa Besar,[60] Ganawerti Wetan,[61] Jumbleng,[62] Ngempon,[63] Nglimut,[64] Pengilon,[65] Sidomukti,[66] Siroto,[67] and Wujil,[68] are probably all former temple sites.

The number of Hindu-Buddhist remains in and around the modern town of Semarang might indicate the presence at this very place of an ancient port, that was incorporated into the Hindu-Buddhist sphere of influence and that was directly in relation with the inland kingdoms.

But was Semarang the main harbour of Central Java, or was there another important port around Purwodadi? R. Soekmono, and more recently C. Voûte, have elsewhere suggested that the main centre of activity of the northern coast was located around the latter city – Soekmono even states that the capital of Central Java was located near the modern town of Grobogan (Voûte 1999:10; Soekmono 1967).

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[59] Only temple stones were discovered at Candi (*Daftar inventaris Semarang* 1976: 2; ROD, 1914:531), but, in Ngresep, not only were the stone blocks numerous, but they were accompanied by a sculpture of Durgā (Krom 1914a:168). In Duduhan, along with the stones were found several sculptures, including a Gaṇeśa, a bull, 5 *lingga*-shaped boundary stones and a Durgā head (*Daftar inventaris Semarang* 1976: 1-2).

[60] A 2m high Gaṇeśa sculpture. Temple stones were once visible around the statue (Krom 1914a:177).

[61] According to Krom, there were remains of a small temple and a statue of Gaṇeśa (Krom 1914a:189)

[62] Numerous temple stones as well as fragments of a staircase, a *yoni* and part of a female figure (probably Durgā) were found in the village (*Daftar inventaris Semarang* 1976:1).

[63] A well-preserved temple complex, composed of at least 8 buildings and an enclosure wall.

[64] Around the villages of Gono and Nglimut numerous temple stones and antefixes, a *yoni* (1m x 1m x 1.15m), a *peripih* and a *lingga semu* – a *lingga*-shaped boundary stone (Tjahjono 1998:10; 2000:35-36; *Daftar inventaris Semarang* 1976: 1) were found. The place seems to have been known earlier as "Argakusuma" (Verbeek 1891:88). According to earlier scholars, the site was composed of 7 temples: two near a hot spring and five further up on two different terraces (Verbeek 1891:88; Friederich 1870:512; Krom 1914a:189). According to N.J. Krom, several sculptures were found among the remains of *candi* Argakusuma: one lion, one bull, two Gaṇeśa, one Kālī, one *ṛṣi*, one *rākṣasa* (Krom 1914a:189).

[65] Old inventories record temple remains near a spring (Verbeek 1891:89; Krom 1914a:189). According to N.J. Krom, there were remains of two buildings. A staircase led from the temple ground to a lower bathing place where a *nāga* was found. Around the temples were discovered a Gaṇeśa, a lion and an elephant (Krom 1914a:189).

[66] There once were a bathing place and a hilltop temple (Friederich 1870:505; 1876:75; Verbeek 1891:90; Krom 1914a:173).

[67] A 73cm high *yoni* was found in the village (Tjahjono 1998:9; 2000:35). This site is probably the one called "Tjandi" by N.J. Krom, as a village named "Candi" lies a few hundred meters away from Siroto (Krom 1914a:190). The Dutch archaeologist mentions, together with a *yoni*, a bull and temple stones.

[68] A Hindu temple atop a hill and an ancient bathing place (?) (Verbeek 1891:89; Friederich 1870:506-507; 1876:73; Krom 1914a:177; Krom 1923, I:222). Remains of the temples are still visible.

The theory derives from a hypothesis of W.F. Stutterheim. The Dutch scholar was convinced that Javanese temples were tombs and that southern Central Java was a sort of realm of the dead (Stutterheim 1932). To him, this was buttressed by the fact that sites of the Prambanan area had yielded very few ceramics – and, according to him, none of those that were found was for household purpose. Therefore, W.F. Stutterheim suggested that one should give serious credit to folk traditions referring to the existence of an important kingdom named Medang Kemulan, and supposedly located in the Grobogan district.[69]

Then, in the early 1940s, E.W. van Orsoy de Flines undertook an archaeological survey of northern Central Java, focusing on ceramics from the districts of Blora, Japara, Kudus, Pati, Grobogan and Rembang. Van Orsoy de Flines found out that ceramics from the 8th through 10th centuries were mainly discovered in hilly regions, while more recent ones were found in river alleys and alluvial plains as well. South of Pati and Jumono, as well as around Pecangaan (between Kudus and Jepara), no ceramics pre-dated 1700 A.D. (Orsoy de Flines 1941-1947). Van Orsoy de Flines came to the conclusion that these blank areas had remained uninhabited before the 18th century.

In 1967, R. Soekmono used geological data from a study published in 1949 by R.W. van Bemmelen to confirm the conclusion of E.W. van Orsoy de Flines – and to explain it. R.W. van Bemmelen had indeed pointed out that the alluvial plain between Semarang and Rembang had most probably been transformed into a strait by the rise of sea level in the later Quaternary (Bemmelen 1949:592-593). R. Soekmono saw a confirmation of this hypothesis in a mention of sea vessels navigating from Demak to Rembang *via* Kudus and Pati (Niermeyer 1911: 41), and this led the Indonesian scholar to conclude that

> Whatever the process of sedimentation in the Semarang-Rembang area and its effect on the development of historical centers during the second millennium, we may assume that the period prior to the 10th century saw the Muriah as an island separated from Java by a strait stretching from Semarang eastward to Rembang. (Soekmono 1967:5)

R. Soekmono went on to state that locations of ceramic finds in the areas between Semarang and Rembang which are now lower than 25m above sea level were underwater during the Hindu-Buddhist period (Soekmono 1967:5).

One should, however, handle R. Soekmono's conclusion with caution. First, it is now known that, after a period of fluctuation during the late glacial and post-glacial period, sea levels returned approximately to their present value by around 8000-6000 BP (Bellwood 1997:33; Woodroffe, Horton 2004). Limited variation may have occurred during the historical period, but within an amplitude of 2-3m (Woodroffe, Horton 2004: fig.6-7). This latter reconstruction of recent sea-level changes seems confirmed by results from excavations carried out in the 1970s in the Rembang district. One of the sites excavated by T. Asmar and B. Bronson, Patok 129, which was apparently occupied well before 900 A.D., was barely 4m above sea level and

[69] The name of Mḍang is known through several inscriptions, though none of them refers to a Medang Kemulan. The palace of Mḍang in Mamrati is mentioned in the Śiwagṛha inscription (Casparis 1956: 280-330; Sarkar 1971-1972: n° 19; Wisseman Christie 2002-2004: n° 53) , Mḍang in Poh Pitu in the Mantyāsiḥ I inscription (Sarkar 1971-1972: n° 70) and Mḍang in *bhūmi* Matarām in the Sangguran (Sarkar 1971-1972: n° 96) and Kampak inscriptions (Wisseman Christie 2002-2004: n° 211). The holy ancestor of Mḍang is listed in the Wanua Tĕngah III inscription (Kusen 1988-1989; Wisseman Christie 2001; 2002-2004: n° 161) and the holy spirits of Mḍang are called upon in the inscription of Kuṭi (Sarkar 1971-1972: n° 12).

25m away from the coastline. It is thus impossible that, during the period of occupation of the site, the sea level was more than 3m higher than it is today, otherwise it would have been underwater. T. Asmar and B. Bronson naturally came to the conclusion that the sea level cannot have been much higher during the 10th century than it is today.

Then, contrary to R. Soekmono's opinion, the understanding of the silting process of the strait becomes significant. If change in the sea level cannot explain the existence and disappearance of a Demak-Rembang strait, then the whole theory relies on the dating of the alluvial deposits. Unfortunately no scientific analysis has yet been made in order to date these sediments, and although there is no doubt that there are quaternary deposits (Bemmelen 1949:592-593), they do not necessarily date from historical times.

Besides, R. Soekmono's reconstruction of the coastline is misleading, since the 25m contour line is not correct[70] and does not correspond with the finding spot of the 8th-10th century ceramics.[71] Further, one should underline that E.W. van Orsoy de Flines did not survey the district of Demak, an area which is crucial in understand the stilting process of the supposed strait.[72]

The absence of ceramics earlier than the 18th century in some parts of the northern coastal plain might also be explained by the presence of marsh lands. Nowadays, large marshy areas are still found to the southeast of Kudus, between the Serang and Juwono rivers. I would therefore be tempted to think, together with T. Asmar and B. Bronson, that the silting process was a long one and that it was already well on its way during historical times.

Much work still needs to be done before we can get a clear idea of the physical geography of the northern coast of Central Java – and before we can safely determine the position of the coastline during the early Hindu-Buddhist period. Nevertheless, for the time being and on the basis of temple distribution, I suggest one should look for the main harbour of Hindu-Buddhist Central Java in the Semarang area.

In any case, the northern coast of Central Java was not abandoned after 928 A.D., when the centre of power was transferred to the east. A significant number of finds testifies indeed to an occupation of the area during the East Javanese period. One may mention the *lingga-yoni* of Tlagapakis (Petungkriyono, Kendal), with its typically East Javanese *nāga* with horns and open jaw, a *mahākāla* with bulky head and goggle eyes from Boja (Kendal), a so-called polynesian statue, also from Kendal (Sujatmi Satari 1977: Figures 8, 28 and 33; 1978:4-5) and East Javanese terracottas from the Kudus area (Sujatmi Satari 1981). According to Krom, the temple remains of Ngresep were of Majapahit style as well (Krom 1914a:168).

Furthermore, East Javanese period inscriptions found in the districts of Semarang and Rembang prove that the region was still an area of Hindu-Buddhist culture during the 14th and 15th centuries.[73] Unfortunately, inscriptions and sculptures alone cannot

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[70] Both Blora and Purwodadi are located below the 25m contour line on R. Soekmono's map, while the elevation of Blora is around 140m and that of Purwodadi around 40m above sea level.

[71] E.W. van Orsoy de Flines reported finds of 8th -10th century ceramics south of Kudus.

[72] Demak was already on firm ground in the early 16th century, since it developed then as an important sultanate.

[73] Several short inscriptions dating from the early 14th to the mid 15th centuries were discovered in *kabupaten* Rembang and Semarang. In Semarang, these are the inscriptions of Adoman I (1338 A.D.), Adoman III (1340 A.D.), Gedong Songo (1382 A.D.), Tajuk I and II (1447 A.D.) and Palmaran/Andoman II (1449 A.D.). In Rembang, inscriptions of Bitingan (1308 A.D.), Daramukti (1311 A.D.), Bandung (1356 A.D.), Ngluyu (1391 A.D.), Ngesa (1418 A.D.) and Getas (1452 A.D.).

tell us if the occupancy had been a continuous one or if the region was re-occupied in the 14th century, after a gap of several centuries.[74] Only a large-scale archaeological exploration of the area around Semarang, Demak and Kudus could help us to clarify the question of the location of the coastline and the patterns of occupancy of the coastal region during the classical period.

What kind of relationship did the northern coast entertain with the rest of Central Java? Was it included in the kingdom of Mataram or did it form an independent sea-seafaring polity, similar to the cities of Śrīwijaya or the *pasisir* states of the Muslim period? In the opinion of J. Wisseman Christie, the area between Semarang and Pekalongan was the centre of a Malay/Sundanese maritime state as early as the 7th century (Wisseman Christie 1994:28).

The earliest inscription in a local language found in the region (inscription of Sojomerto, 800-825 A.D.)[75] is indeed written in a dialect related to Old Malay (Wisseman Christie 2002-2004: n° 13). Nevertheless, the situation is not as simple as it sounds. First, the most ancient epigraphic records of northern Central Java are in Sanskrit and do not tell much about ethnic identity or state organization.[76] Secondly the use of Old Malay is not limited to the coastal area: two inscriptions in that language have also been discovered in the Prambanan plain.[77]

It is nevertheless true that the majority of the Old Malay inscriptions have been found in the northern part of the island (but not specifically along the coast).[78] Besides, inscriptions from northern Central Java (Dieng, Temanggung and the coastal region) do not often make reference to known officials and kings. In the inscriptions originating from the north, the earliest mention of a king ruling also in south Central Java is, to my knowledge, to be found in the inscription of Kayumwungan (824 A.D.), where there is a reference to the Śailendra.[79] There is apparently no evidence from the inscriptions that the districts to the north of Temanggung were part of the kingdom of Mataram previous to 824 A.D. Unfortunately, there are not enough grounds to state that northern Central Java formed an independent Malay seafaring state until 824 A.D. nor that it was, at that date, incorporated into the Javanese kingdom of Mataram.

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[74] The last inscription dating from the Central Javanese period and found along the northern coast of Central Java is the inscription of Wutit. It seems to belong to the late 9th - early 10th century (Wisseman Christie, 2002-2004: n°174). The earliest dated inscription from the East Javanese period is the inscription of Bitingan (1308 A.D.), discovered in *kabupaten* Rembang. There is thus a gap of nearly four centuries. Nevertheless, two inscriptions may fill this gap. An illegible inscription from Mount Murya (but, according to its script, maybe from the 11th century), and the inscription of Pupus, which is a 1100 A.D. copy of an earlier text, most probably from the early 10th century (Wisseman Christie 2002-2004, n° 180 and n° 180, remark 2).

[75] The Sojomerto inscription was first dated to the 7th century by Boechari, but it was later reconsidered by L.C. Damais who, on palaeographical grounds, re-ascribed it to the early 9th century (Boechari 1966; Damais 1970:44).

[76] Inscriptions of Tuk Mas (mid 7th century, from north Magelang), Hampran (750 A.D., from Salatiga), Blado (mid 8th century, from Batang) (Sarkar 1971-1972: n° 2; Wisseman Christie 2002-2004: n° 3 and 4).

[77] Inscriptions in "a coastal dialect similar to Old Malay" found in the Prambanan area are Mañjuśrīgṛha (792 A.D.) and Payangan (early 9th century) (Wisseman Christie 2002-2004: n° 9 and 17).

[78] They were actually found in the district of Temanggung and on the Dieng plateau: inscriptions of Gaṇḍasuli II (810 A.D.), Gaṇḍasuli I (827 A.D.), Dang Manangan (early 9th century) and "temple inventory" (815-845 A.D.) (Wisseman Christie 2002-2004: n° 15, 18, 31 and 38).

[79] Unfortunately, the find spot is uncertain. It was reported to have been found in Karangtengah, north of Parakan (Verbeek 1891:138), but J.G. de Casparis was of the opinion that it came probably from the Magelang area (Casparis 1950:24-25).

We should nevertheless keep these hypotheses in mind when considering the material culture of the northern regions. It is indeed possible that the stylistic peculiarities of Gedong Songo and Sanjaya cannot be understood as products of a peripheral society, but as expressions of a different cultural sphere.

Conclusion

In the course of this chapter, we have started to understand how the Central Javanese territory was structured. Its a core area occupied the Progo valley and the south-western slope of Mount Merapi. Its political centre was probably first located in the Muntilan area, while its main religious centre was at the eastern periphery (Prambanan). The main access to the sea was in the region of the modern town of Semarang. Further, two zones of relatively high temple density – Secang and Ngadirejo – could indicate the existence of secondary centres further north[80]. Before the mid 9th century this polity appears to have extended little beyond Prambanan. The development of this area seems to go together with a shift of the political/economic centre from the Borobudur area to the Yogyakarta plain, a shift that would foreshadow the transfer of the political centre from Central to East Java.

Besides, we have raised the delicate problem of the relationship between temple and settlement patterns, showing with the case of Prambanan that a high site density is not always indicative of high population density. Before going on, I shall here remind that the reverse is also not true: the absence of temple remains does not mean that the area was uninhabited. First, it is not known whether the entire population adopted Hinduism and Buddhism. It is not impossible that villages preserving traditional beliefs co-existed with communities converted to the imported religions – and local cults might leave very few monumental traces. Secondly, it is said nowhere that every village had to have its own stone or brick temple. On the other hand, wooden shelters or sculptures were very likely considered proper places of worship, as it is nowadays the case in Hindu and Buddhist countries. Furthermore, numerous inscriptions mention that one temple could collect income from several village authorities[81] – in which case different hamlets shared a place of worship. Thirdly and finally, there were many kinds of temples, belonging to different religious communities, some of which probably established themselves on purpose away from populations centres. Hermitages (*kabikuan*) are mentioned, for example, in the inscriptions of Jurungan (876 A.D.) and Haliwangbang (877 A.D.)[82], both found in the Prambanan area. Similarly, a meditation monastery occupies a large part of the Ratu Boko hill, just south of Prambanan. It is therefore obvious that several temple remains of the area were certainly not built within villages.

In this chapter, I have attracted much the attention on the clustered distribution of certain remains, principally around Prambanan. Nevertheless, we have noticed that distribution of temple remains could follow three spatial patterns: not only clustered, but also dispersed and linear. In the following chapter, I will try to correlate these

[80] Since there are few remains between Ngadirejo and Secang, one could wonder if Ngadirejo did not evolved from an originally independent polity.

[81] Numerous inscriptions mention that a single temple could have received income from pieces of land located in several villages (see for example the inscriptions of Kamalagi and Muṇḍuan; Christie 2002-2004: n° 33, 48; Sarkar 1971-1972: n° 9). This suggests that if those villages were endowed with their own local shrine, it was most probably not a costly structure. It also leads to the hypothesis that several villages could share a temple.

[82] See respectively Christie 1996:275-278 and Sarkar 1971-1972: n°36.

distribution patterns with features of the natural environment and show how it can give more insight into the function of certain remains and the mechanisms that lead to the formation of the Central Javanese religious landscape as we know it.

CHAPTER 5

Temple remains and natural environment: some aspects of a complex relationship

In the first part of the present chapter, I will present statistical data on temple location according to regional environmental features – in this case altitude, regional topography, water availability and soil geology –, discuss the possible correlation between environmental zones and the distribution patterns observed in the preceding chapter and specify the nature of the relationship between temples, wet-rice cultivation and settlement. In the second part, I will discuss the temples that do not seem to have been primarily associated with wet-rice cultivation and explore possible correlations with ancient routes of communication. Finally, in the third part, I will consider temple remains in the light of local landscape markers (hills and rivers) and try to understand how shrines insert themselves into local topographies.

Distribution patterns of Central Javanese temple remains and regional environmental features.

Temple remains per altitude range

In the area of interest to us, the ground altitude increases as one moves away from the Indian Ocean to the upper Progo valley, and the localization of archaeological sites reflects this geographical reality: temples are located at higher altitudes in Temanggung than in Yogyakarta. It must nevertheless be emphasised that, apart from a few exceptions, temples are usually located below 1000m (Figure 16, tables 8, 9, 10 and 11). Given the variety of the landscape, these absolute numbers do not have the same implications across the whole region.

Among the 110 temple sites of the DIY and *kabupaten* Klaten, 78 are located in lowlands (0-199m), 31 in lower mid-altitude lands (200-499) and one in upper mid-altitude land (500-1499m). The highest remains are to be found in *dusun* Candi (*desa* Purwobinangun, *kecamatan* Pakem, *kabupaten* Sleman, DIY), at an altitude of 565m.

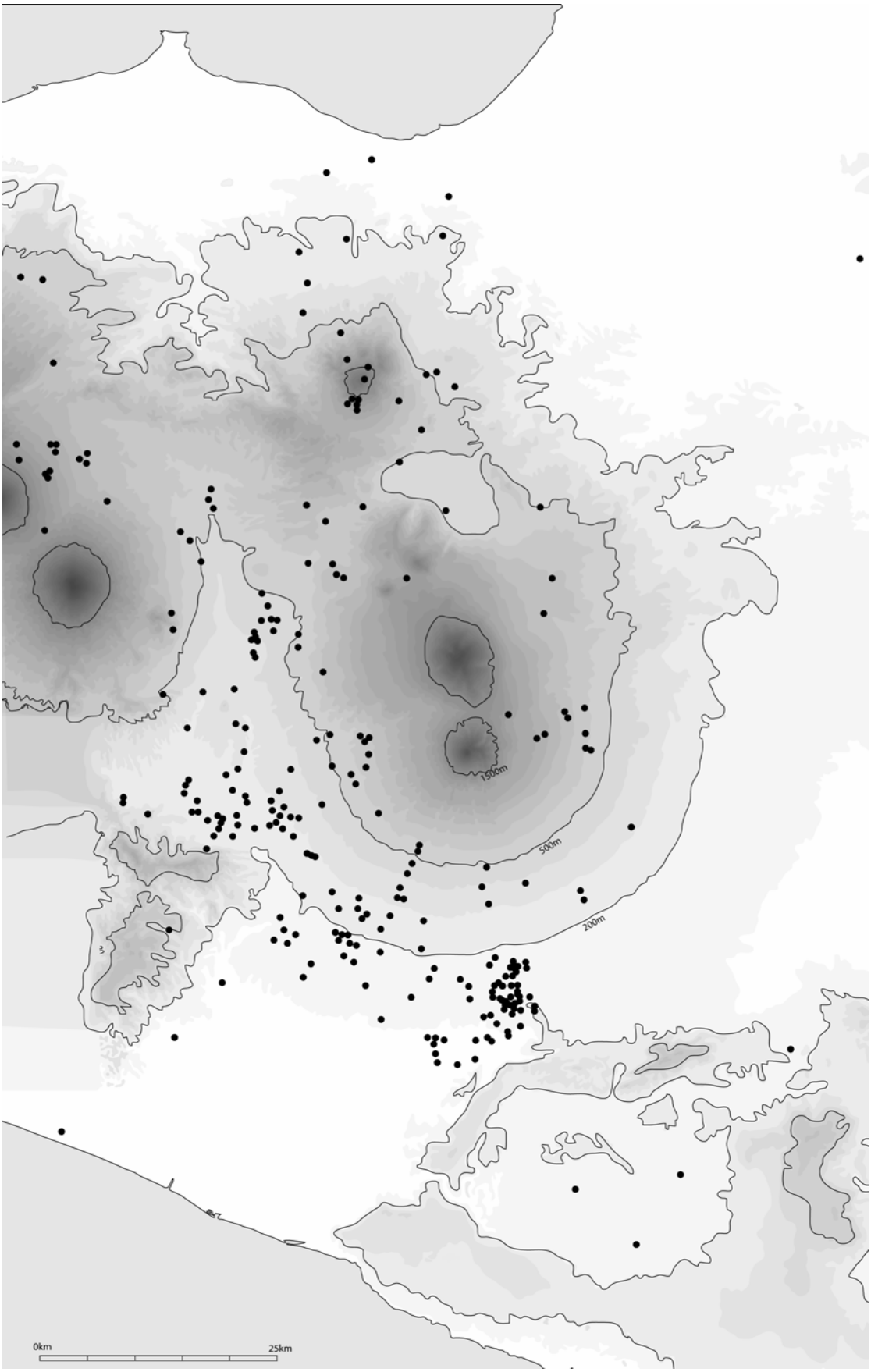
Although it might appear from the above numbers that lowlands and lower mid-altitude lands are equally favoured as temple locations[1], a detailed examination of the distribution leads us to a different conclusion. Mundarjito has already noted that, in the DIY, archaeological remains were mainly located below 200m (Mundarjito 2002:368). As far as temple remains are concerned, we may specify his observation: the majority are situated between 75m and 200m above sea level (Table 8). Actually 64 sites out of the 110, i.e. 58%, are located in that zone.[2] Only one site, namely Glagah (*desa* Sidorejo, *kecamatan* Temon, *kabupaten* Kulon Progo), lies under 50m.

In the middle Progo valley, where the average altitude is higher – around 200m, all the sites but one[3] are located in mid-altitude lands (59 sites in lower middle land, 42 in upper middle land) (Table 9). In the upper Progo valley, sites are located still

[1] Low lands represent roughly 60 % of the territory and 70 % of the temple remains, lower middle lands 30% and 29% of the remains, upper middle land and highlands the remaining 10% of the territory and 1% of the remains (these numbers do not include *kabupaten* Gunung Kidul).

[2] Whereas it corresponds to less than one-third of the territory.

[3] Namely Blaburan, which is located at the border between *kabupaten* Magelang and the DIY.



higher: **Figure 16: Temple remains per altitude range**

Table 8: Altitude of the temple remains in the Yogyakarta-Prambanan plain

	Altitude	*Sites*	*Names*
Lowland	0-49m	1	Glagah.
	50-74m	2	Sambiroto, Tangkisan.
	75-99m	11	Candirejo, Condrowangsan, Gampingan, Jatiwangi, Klodangan, Krapyak, Mantup, Payak, Sampangan, Tegalsari, Watugilang.
	100-199m	64	Abang, Balangan, Banyunibo, Blaburan, Bogem, Bubrah, Bugisan, Burikan, Candi (Mlati), Cebongan, Cupuwatu, Dawangsari, Dengok, Gajah, Gana, Gatak, Gebang, Grembyangan, Grogol, Gunung Mijil, Jetis (Nglempak), Jumeneng, Kadisoka, Kalasan, Kalongan, Karang Tengah, Keblak, Kedulan, Klaci, Konteng, Kulon, Lor, Loro Jonggrang, Lumbung, Mulungan Wetan, Ngaglik, Nogosari, Pendem, Planggak, Plaosan (Mlati), Plaosan Kidul, Plaosan Lor, Plembutan, Polangan, Polengan, Pondok, Puren, Ratu Boko, Sambisari, Sanan, Sari, Sawo, Semarangan, Sentono, Sewu, Singo, Sojiwan, Sosrokusuman, Susukan, Tanjungtirto, Warak, Watugudig, Wiladeg.
Lower Middle Land	200-299m	20	Arca Ganeca, Barong, Candi (Ngaglik), Gupolo, Jetis (Pendowoharjo), Karangnongko, Karangtanjung, Kepitu, Lengkong, Malang, Merak, Miri, Miring, Palgading, Panggeran, Plumbon, Risan, Sumberwatu, Tinjon, Wadas.
	300-399m	7	Candirejo, Ijo, Jetis (Cangkringan), Kaliworo, Maron, Morangan, Ngepos, Sumur Bandung.
	400-499m	5	Besalen, Cepet, Pringtali, Wringinrejo.
Upper Middle Land and Highland	500-3000m	1	Candi (Pakem).

all temples are situated in the upper middle land and 8 are higher than 1000m above sea level (Table 9). Although the average altitudes in *kabupaten* Boyolali (Table 11) and Semarang (Table 10) are slightly lower, most of the sites are also located in the upper mid-altitude lands, with the exceptions of Dukuh (496m), Ngempon (405m) and Candirejo (310m).

The general picture that emerges is that, on the western flank of Mount Merapi, temples are rarely located above 600m. This state of affairs most likely has a very pragmatic origin. Although their soil is rich, high areas have indeed serious disadvantages, such as the scarcity of watercourses and the danger implied by the proximity of Mount Merapi.[4] On the south-western and southern flanks of Mount Merapi, the area above 550m is classified as 'Hazard Zone II' by the Merapi Volcano Observatory and risks of *lahar* and pyroclastic flows are serious.[5] By contrast, the eastern flank of Mount Merapi, as well as the slopes of Mounts Sumbing, Sundoro, Telomoyo and Ungaran are slightly safer;[6] villagers could settle higher and still be reasonably protected from volcanic hazards. Remains seem to follow this pattern: on

[4] See below, p.52.

[5] http://merapi.vsi.esdm.go.id/?static/volcano/merapi/bahaya.html, access date: 24/05/2008. The summit is classified as 'Hazard Zone III' or 'Forbidden Zone'. The Hazard zone II is the area most frequently touched by *lahar*, especially along rivers, while pyroclastic flows sometimes reach down to the area around 900m. In November 1994, the village of Turgo (950m), near Kaliurang, was burned down by such a hot cloud.

[6] The eastern flank of Mount Merapi is protected by the remains of the Batu Lawang volcano, which form a rim on the eastern site of the summit and divert possible lava flow; Mounts Sumbing, Sundoro, Telomoyo and Ungaran are less active than Mt Merapi, see p.51 and 61.

Table 9: Altitude of the temple remains in the Progo valley[7]

	Altitude	*Sites*	*Names*
Lowland	100-199m	1	Blaburan.
LowerMiddle Land	200-299m	29	Banon, Barepan, Bobosan, Borobudur, Bowongan, Brangkal, Dimajar, Dipan, Gedongan, Gejagan, Jomboran, Jowahan, Karangrejo, Kendal, Mendut, Nganten Kidul, Ngawen, Ngrajek, Pawon, Plandi, Progowati, Rambeanak, Salakan, Samberan, Semawe, Sidikan, Sigentan, Tempurrejo, Tiban; /.
	300-399m	15	Dampit, Gombong, Gunung, Gunung Pring, Gunung Sari, Gunung Wukir, Jlegong, Kalimalang, Kanggan, Ketoran, Mantingan, Mulosari, Nambangan, Pringapus, Wurung; /.
	400-499m	15	Bengkung, Bringin, Candi (Secang), Cetokan, Gunung Lemah, Jeronboto, Mungkidan, Pakem, Pirikan, Pucanggunung, Retno, Setan, Singabarong, Tidaran, Tumbu; /.
Upper Middle Land and Highland	500-599m	14	Batu Rong, Gunung Gono, Krincing, Ngampel, Seketi, Sorobojo, Umbul, Wates; Brongkol, Kedunglo, Ngabean, Plikon, Pikatan, Wonokerso.
	600-799m	15	Asu, Batur, Gedungan, Giombon, Kalangan, Kaponan, Kemiren, Lumbung, Pendem, Plumbon, Selogriyo, Sumber; Karangbendo, Ngepoh, Piatak.
	800-999m	6	/ ; Argapura, Gondosuli, Gunung Pertapan, Perot, Pringapus, Traji.
	>1000m	8	/ ; Bongkol, Bumen, Butuh, Candi (Parakan), Gunung Kembang, Jamus, Nglarangan, Tlahab.

Table 10: Altitude of the temple remains in the area of Semarang and Ambarawa

	Altitude	*Sites*	*Names*
Lowland	0-199m	3	Candi, Kangkung, Tugurejo.
LowerMiddle Land	200-399m	6	Arca Ganeca Besar, Duduhan, Dukuh, Ngampin, Ngempon, Ngresep.
Upper Middle Land and Highland	500-999m	6	Bedono, Kaliklotok, Plimpungan, Sanjaya, Sidomukti, Wujil.
	>1000m	4	Butak Wetan, Gedong Songo, Gentong, Renteng.

Table 11: Altitude of the temple remains in Boyolali district

	Altitude	*Sites*	*Names*
Lowland	0-199m	0	
LowerMiddle Land	200-399m	0	
Upper Middle Land and Highland	500-999m	7	Cabean Kunti, Kuwarigan, Lawang, Manggis, Pahingan, Sumur Songo, Tampir.
	>1000m	2	Candipetak, Sari.

[7] Sites listed before the semicolon are located in the district of Magelang. Those listed after are in *kabupaten* Temanggung. The sign / signifies that there are no remains within this altitude range for the district.

Table 12: Temple remains and regional topography in southern Central Java

Local topography	*Sites*	*Names*	%
Slopes of Mount Merapi	9	Besalen, Candi (Pakem), Cepet, Jetis (Cangkringan), Kaliworo, Maron, Morangan, Ngepos, Wringinrejo.	8.2
Area of (steep) hills	13	Arca Ganeca, Barong, Dawangsari, Gupolo, Ijo, Miri, Pringtali, Ratu Boko, Risan, Sambiroto, Sumberwatu, Sumur Bandung, Tinjon.	12.7
Plain	88	Abang,[8] Balangan, Banyunibo, Blaburan, Bogem, Bubrah, Bugisan, Burikan, Candi (Mlati), Candi (Nglaglik), Candirejo, Cebongan, Condrowangsan, Cupuwatu, Dengok, Gajah, Gampingan, Gana, Gatak, Gebang, Glagah, Grembyangan, Grogol, Gunung Mijil,[9] Jatiwangi, Jetis (Nglempak), Jetis (Sleman), Jumeneng, Kadisoka, Kalasan, Kalongan, Karangnongko, Karangtanjung, Karang Tengah, Keblak, Kedulan, Kepitu, Klaci, Klodangan, Konteng, Krapyak, Kulon, Lengkong, Lor, Loro Jonggrang, Lumbung, Malang, Mantup, Merak, Miring, Mulungan Wetan, Ngaglik (Mlati), Ngaglik (Prambanan), Nogosari, Palgading, Panggeran, Payak, Pendem, Planggak, Plaosan, Plaosan Kidul, Plaosan Lor, Plembutan, Plumbon, Polangan, Polengan, Pondok, Puren, Sambisari, Sampangan, Sanan,[10] Sari, Sawo, Semarangan, Sentono, Sewu, Singo, Sojiwan, Sosrokusuman, Susukan, Tangkisan, Tanjungtirto, Tegalsari, Wadas, Warak, Watugilang, Watugudig, Wiladeg.	79.1

the southern and western flanks of Mount Merapi the highest temple ever reported, *candi* Pendem, is located at an altitude of 675m a.s.l., while on the eastern flank of Mount Merapi and on the slopes of Mounts Sundoro, Merbabu and Ungaran, some remains are situated above 1000m.[11]

Temple remains and regional topography

To be meaningful, these observations must further be analysed in the light of local topography (Table 12). In south Central Java (DIY and Klaten), most of the temples are located on the plain at the foot of Mount Merapi, between 75m and 300m (where the slope is roughly between 1% and 3.5%). The number of sites decreases as one climbs up Mount Merapi.[12] The regions of Gunung Kidul and the Menoreh hills have however yielded remains as well, though in smaller number: 11 sites are located in the Gunung Kidul – mostly around Ratu Boko – and 3 sites in the Menoreh hills – namely Pringtali, Sambiroto and Tangkisan.

In the middle Progo valley (*kabupaten* Magelang), temple remains are concentrated in the Kedu plain and the lower slopes of the volcanoes[13] (67 sites out of 80 are located below 600m above sea level) (Tables 9 and 13). Remains are also present in the more hilly area around Secang (to the northeast), but almost absent from

8 Atop on an 50m high, isolated hill rising above the Sorogeduk plain.

9 Atop of a low hill raising above the Prambanan plain.

10 On slightly elevated ground.

11 It is however not easy to determine whether no temple was ever built high on the southern or western slope of Mount Merapi or if remains were destroyed or buried by the volcano.

12 The slope is already of 4% at Morangan and 6% at Candi (*desa* Purwobinangun, *kecamatan* Pakem, *kabupaten* Sleman).

13 Essentially Mount Merapi and, to a lesser degree, Mount Sumbing.

Table 13: Temple remains and local topography in the middle Progo Valley

Local topography	*Sites*	*Names*	%
Volcano slopes			
Mount Merapi-Merbabu	11	Asu, Gedongan, Giombon, Gunung Gono,[14] Gunung Lemah,[15] Lumbung, Pendem, Seketi, Sumber, Wates.	14
Mount Sumbing	3	Batur, Batu Rong, Selogriyo.	3.75
Hilly area	18	Bengkung, Candi, Cetokan, Jeronboto, Kalangan, Kaponan, Krincing, Nambangan, Pakem, Pirikan, Plumbon, Pucanggung, Retno, Setan, Soborojo, Tidaran, Tumbu, Umbul.	21.25
Plain	49	Banon, Barepan, Blaburan, Bobosan,[16] Borobudur,[17] Bowongan, Brangkal, Bringin, Dampit, Dimajar, Dipan, Gedongan, Gejagan, Gombong, Gunung, Gunung Pring,[18] Gunung Sari,[19] Gunung Wukir,[20] Jlegong, Jomboran, Jowahan, Kalimalang, Kanggan, Karangrejo, Kemiren, Kendal, Ketoran, Mantingan, Mendut, Mulosari, Mungkidan, Ngampel, Nganten Kidul, Ngawen, Ngrajek, Pawon, Plandi, Pringapus, Progowati, Rambeanak, Salakan, Samberan, Semawe, Sidikan, Sigentan, Singabarong,[21] Tempurrejo, Tiban, Wurung.	60

Table 14: Temple remains and local topography in Semarang and Boyolali

Local topography	*Sites*	*Names*	%
Volcano slopes	15		65
Mt Merapi-Merbabu	10	Cabean Kunti, Candipetak, Candirejo, Kuwarigan, Lawang, Mangis, Pahingan, Sari,[22] Sumur Songo, Tampir.	
Mt Ungaran	5	Butak Wetan, Gedong Songo, Gentong, Gunung Wujil,[23] Sidomukti.	
Hilly area	7	Arca Ganesa, Bedono, Ngampin, Ngempon, Ngentak, Plimpungan, Sanjaya.	30.5
Plain	1	Dukuh.[24]	4.5

the Menoreh hills and the south-eastern slope of Mt Sumbing – which is area of step hills as well.

In Boyolali the remains are all located on the flank of Mount Merapi-Merbabu, while in the northernmost part of Central Java, they are divided mainly between the slope of Mount Ungaran, the hilly at its foot and, from there, stretch to the Java Sea (Table 14).

To summarize, temple remains are mainly found on gently sloping grounds, i.e. on the plains (of Borobudur and Prambanan principally) and on the lower slopes of Mount Merapi. A series of remains, however, distance themselves from this schema: 1) remains located in the Menoreh and Gunung Kidul hills, 2) temples situated on

14 Atop a small, isolated hill.
15 Atop a small, isolated hill.
16 Atop a small isolated hill rising above the surrounding plain.
17 Atop a 15m high, isolated hill rising above the surrounding plain.
18 Atop a small hill.
19 Atop Gunung Sari, near the Gendong hills.
20 Atop Gunung Wukir, near the Gendong hills.
21 Atop a low hill.
22 Atop a low, isolated hill.
23 Atop a small, isolated hill.
24 Atop a small hill overlooking the Lake Rawa Pening.

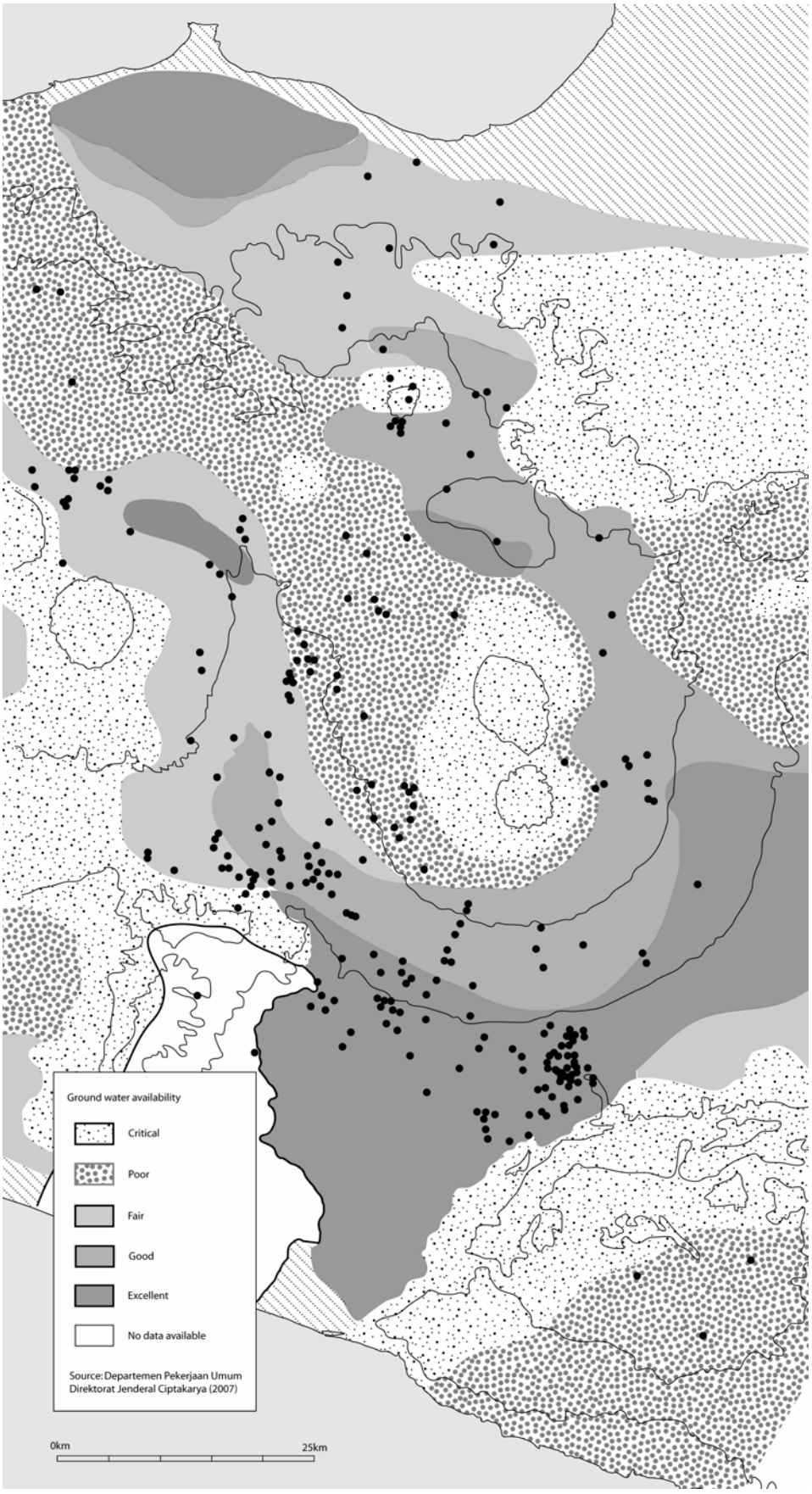


Figure 17: Temple remains and groundwater

undulating terrain around Secang and higher in the Progo valley, 3) remains located in the hilly area between the modern towns of Secang and Ambarawa, 4) temple remains situated on high, sloping ground around Mount Ungaran and on the eastern flank of Mount Merapi.

Temple remains, ground water availability and soil geology

An important element to characterize a natural environment is water availability. A map showing ground water capability and temples quickly reveals that the large majority of remains (203 out of the 246 for which the information is known) are located in areas with a good to high potential of ground water (Figure 17). Few are situated in zones poor in ground water (36 sites) and even fewer in areas which are extremely poor in ground water (7 remains out of 246). Whereas it seems from the above that there is a link between temple location and ground water potential, no temple remains have been reported in the plains of Bantul (between Yogyakarta and the Ocean) and Solo, where ground water is yet abundant.

As ground water availability is dependent – though not exclusively – of the type of soil, the preference for water-rich areas accompanies a preference for volcanoes and volcanic terraces, to the detriment of other soil types – alluvium (essentially in the north) and sediments (tuff and limestone) (Figure 18).

Correlations between temple remains, environmental zones and wet-rice cultivation

On the base of altitude, regional topography, water availability and geology, we may divide central Java in several environmental zones (Figure 19, table 15). Let us now compare these zones with temple distribution.

Generally speaking sediment zones, volcano peaks and upper slopes are dry (scarce ground water and limited amount of rivers), unfertile, unsuitable for wet-rice cultivation, and have yielded extremely few remains (Table 15: IVa-c, IIa-b). Hilly areas have scarcely yielded more remains (Table 15: III). We shall go back to temple remains of these regions later, but, for now, I would like to focus on the location of the large majority of the temples. Actually, most of the remains are concentrated in 4 zones, all of them volcanic terrains relatively rich in water, gently sloping or undulating, crossed by numerous small rivers and perfectly suited for wet-rice cultivation (Table 15: Ib, Ic, IIc, Id). Remains are more numerous and more evenly dispersed over larger areas at low altitudes, whereas they tend to decrease in number and to cluster on higher grounds.

On ground of these observations, we may formulate the hypothesis that a vast majority of Central Javanese shrines were somehow related to wet-rice cultivation and, thus, to settlements. The main sign in favour of this hypothesis is that there is a direct relation between temple remains density and suitability for wet-rice cultivation, even though it might not immediately jump out at the reader (Table 15). Nine environmental zones are described as suitable for wet-rice cultivation (Table 15: Ia-e, IIc-d, Va-b). Nevertheless, wet-rice cultivation cannot be implemented in all these areas with the same ease. Two important elements in this implementation are indeed the slope of the terrain and the presence of rivers.

Where rivers are numerous and the slope gentle, *sawah*-fields are easy to create: irrigation works are barely required and can be handled by local communities, even families. Irrigation can be planned without significant problems, diverting water from the numerous small rivers without the need for large irrigation canals or equipment for lifting water. North of Magelang, where the natural environment becomes hilly and

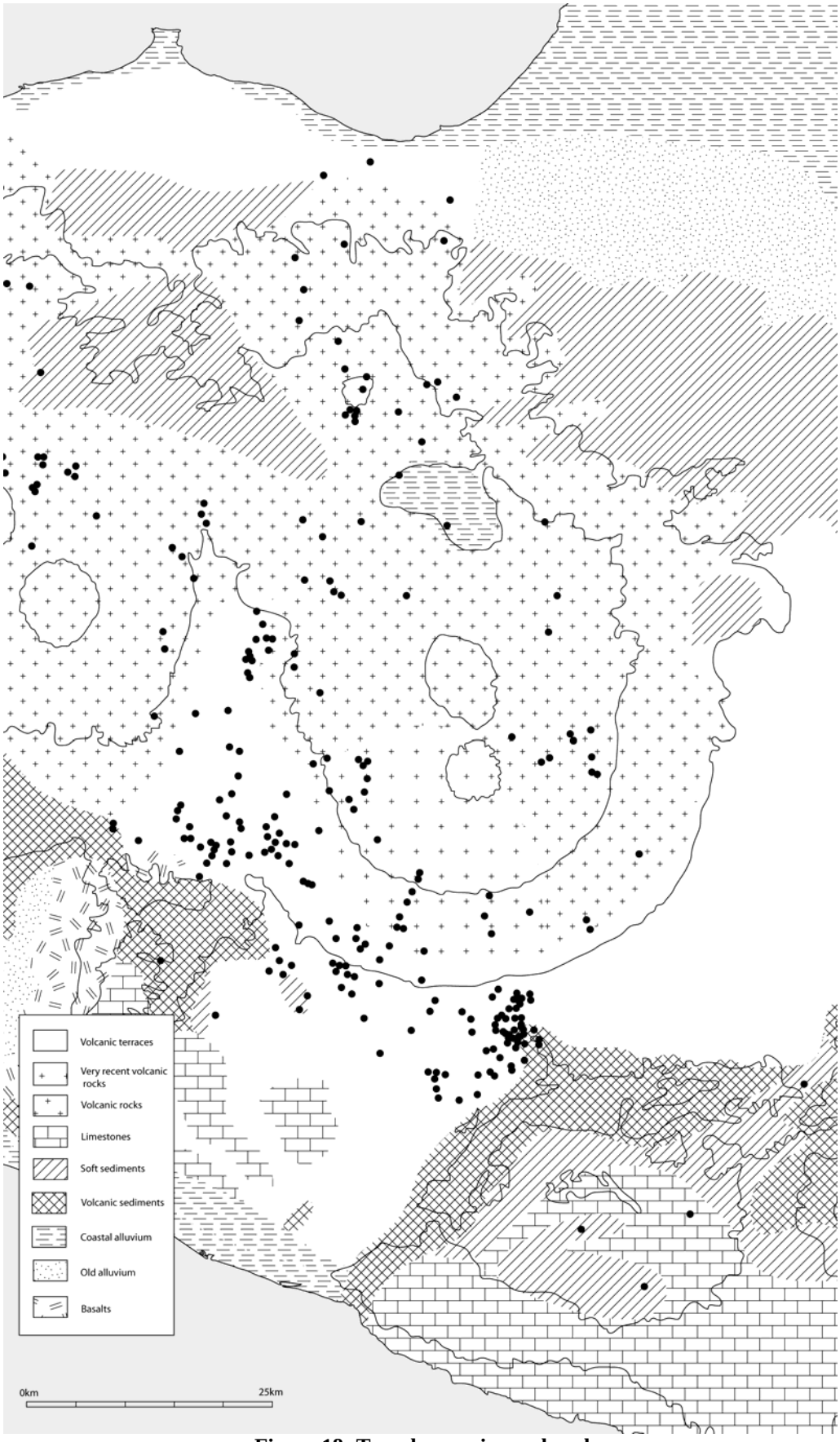


Figure 18: Temple remains and geology

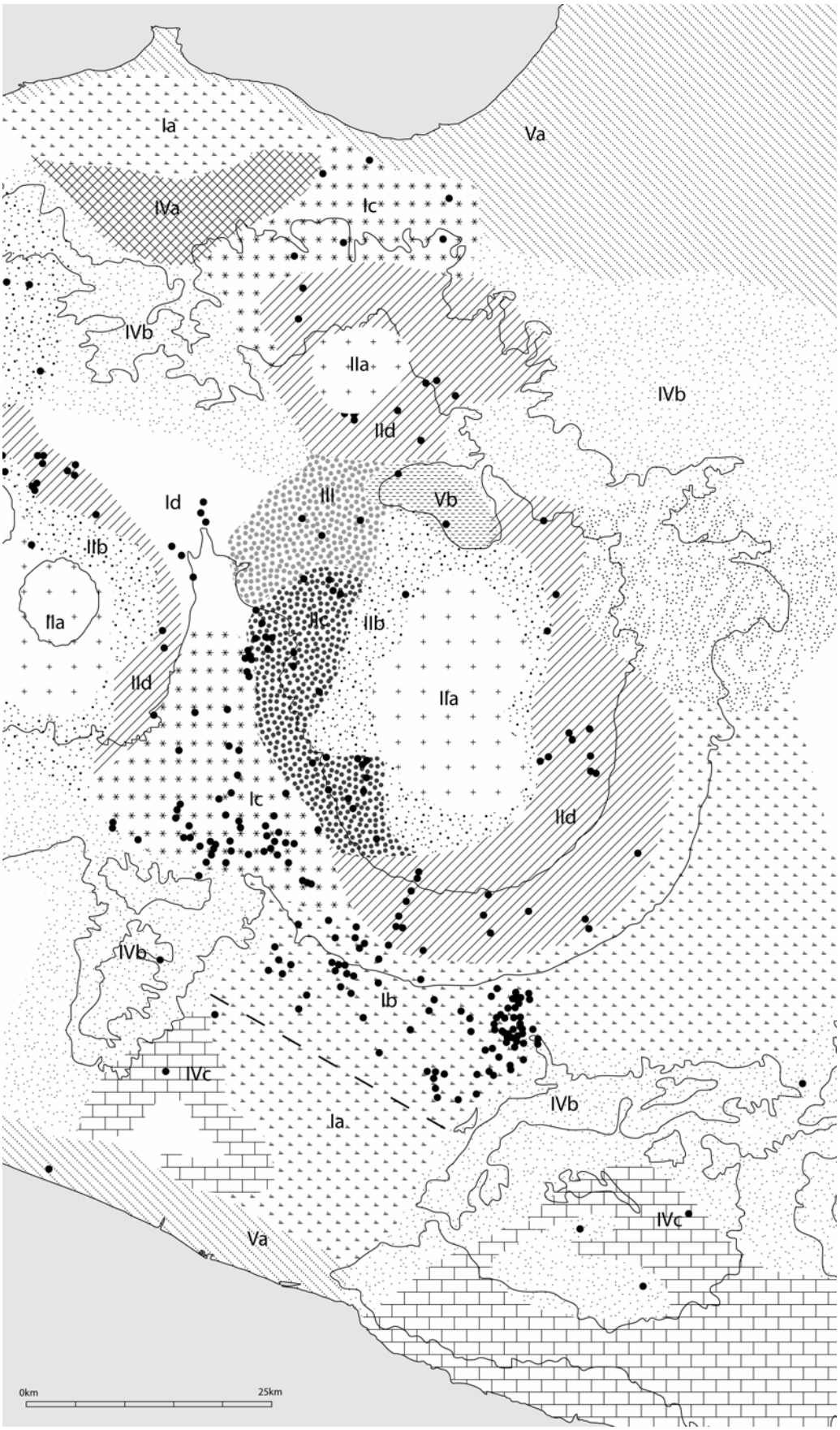


Figure 19: Temple remains and ecological zones

Table 15: Central Javanese temple remains and environmental zones.

		Suitable for wet-rice?	Sites	Distribution Pattern
Volcanic formations				
Plains and terraces				
Ia	Flat volcanic plain with high ground water potential, crossed by a few, large rivers.	Yes	0	/
Ib	Volcanic plain, sloping gradually to flat plain, with high ground water potential and numerous – though mainly small – rivers.	Yes	85	Dispersed (regular)
Ic	Gently undulating volcanic terrace, gradually flattening, with good ground water potential and numerous rivers.	Yes	57	Dispersed (random)
Id	Undulating volcanic terrace, dotted with hills, with good ground water potential and numerous rivers.	Yes	6	/
Ie	Volcanic terrace interrupted by a sediment formation, gradually sloping down, with limited ground water and numerous, small rivers.	Yes	0	/
Mountainous areas				
IIa	Volcanic peaks, with extremely limited ground water potential and almost no permanent watercourse.	No	0	/
IIb	Steep volcano slopes, with limited ground water and a few, small rivers.	No	8	/
IIc	Volcano slopes of medium steepness, with limited ground water and numerous, small rivers.	Yes	24	Clustered
IId	Volcano slopes of medium steepness, with good ground water potential and numerous, small rivers.	Yes (depending on altitude)	50	Linear/ clustered
Hilly areas				
III	Dissected, hilly area between two volcanic massifs, with limited ground water and few, small rivers.	No	3	/
Sediments				
Hilly areas				
IVa	Undulating terrain made of volcanic sediments	Moderately	0	/
IVb	Steep hills made of volcanic sediments (tuff and other soft rocks), with very limited ground water potential, dissected by small, often intermittent rivers.	No	6	Clustered
IVc	Limestone (rounded) hills and cliffs, with limited ground water and very few, small rivers.	No	3	/
Alluvium				
VIa	Flat coastal alluvial plain with salty ground water.	Yes	2	/
VIb	Inland alluvial area, with good ground water potential	Yes	1	/

more intricate, rivers are often found flowing in small canyons between the hills. Irrigation requires more planning skills and the upper slopes of the hills are often occupied by dry fields. At higher altitudes, on the volcano slopes, even if ground water is still abundant, rivers are smaller, less numerous and the climate may even become cooler, rendering these areas less suitable for wet-rice cultivation. On the upper slopes of Mount Merapi, above 400-500m, watercourses are not plentiful and mainly drain water from the summit, where clouds are caught, provoking frequent rainfalls, even outside the rainy season. At about 400-500m, the cone of Mount Merapi is encircled by a spring belt: it is at that altitude that most rivers of the DIY – Klaten area commence. As they flow down Mount Merapi, rivers gather together and join *kali* Glagah, Progo and Opak.

At first sight, the low plain stretching from the south of Yogyakarta to the Indian Ocean[25] seems to have everything to become a rich agricultural zone: fertile volcanic soil, high ground water potential, large rivers (Progo, Opak) and a uniform, flat topography. Nevertheless, the latter two elements mentioned, when associated with one another, may constitute a handicap rather than a blessing. In the region of Bantul, indeed, the landscape is almost completely flat and rivers, though large, are not numerous actually making wet-rice more complicated than, for example, in the Prambanan plain. The scarcity of watercourses would have necessitated the digging of irrigation canals to bring water to the fields from the farther apart, large rivers – and the flat topography is not helping. If, as stated by J. Wisseman Christie, population was low and farmers were not under pressure to intensify rice production (Wisseman Christie 1992:11), then there was no reason to settle in such an area, especially since land was still available in zones more suitable for rice cultivation. Furthermore, large waterworks would probably have required the court to play a practical role in their construction and upkeep. That sort of royal involvement was apparently lacking in Central Java (Wisseman Christie 1992:17). Furthermore, if we accept that fluvial water flow was more voluminous in early times,[26] then we may conclude that the area south of Yogyakarta, with its wide rivers and slopes of less than 1%, might have known regular floodings, at least in the areas bordering waterways.

If one integrates the easiness of implementation into the equation, then the areas the most suitable for wet-rice cultivation are (in decreasing order): 1) the gently volcanic plains and terraces situated around Mount Merapi (Figure 19; table 15: Ib, Ic); 2) the southern and eastern slopes of Mount Merapi, Mount Ungaran and parts of the eastern slope of the Sundoro-Sumbing massif (Figure 19; table 15: IId); 3) the plain of Bantul; 4) the western slope of Mount Merapi (Figure 19; table 15: IIc) and the undulating terrace forming the upper Progo valley (Figure 19; Table 15: Id). This classification corresponds almost perfectly with a classification of ecological zone according to site density.[27]

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[25] The same remark is valid for the plain to the east of Semarang (between Semarang and Grobongan) and for the plain of Demak.

[26] See above, p.15.

[27] The only exception is the plain of Bantul where one would have expected to find remains at least at medium distance along main rivers. Their absence is thus still puzzling. Nevertheless, after completion of my own fieldwork, it has come to my knowledge that Mundarjito has reported the existence of at least 9 brick structures in the plain around the modern town of Bantul: Bintaran, Cepit, Janggan, Jonggalan, Kauman, Kedaton, Melikan, Tajeman, and Watugedog. He has identified two of them as temples (*candi*), namely Bintaran (Bintaran, Srimulyo, Piyungan) and Kauman (Kauman, Plered, Plered) – the last one is most probably Payak. At Melikan Tajeman and Watugedog, *yoni* were discovered as well. Unfortunately, no further description of the sites is available. Since I have not

We have thus shown that there is a direct correlation between temple density and suitability for wet-rice cultivation. Since it would be a non-sense to maintain that the most fertile terrains of Central Java were free of cultivation, we must conclude that the plains of Prambanan and Muntilan, as well as the lower slopes of Mount Merapi, were actually cultivated and that most of the temples stood in the vicinity of rice fields.

The association between temples and rice is well documented in inscriptions. In early times, *sawah* were probably the most important sources of wealth, and temples were dependent on benefits from wet-rice fields (Wisseman Christie 1992:11). As testified by the inscriptions, temples relied heavily on levies on certain *sawah* for their upkeep and maintenance. In the epigraphical record ample measure is given to the transfer of taxes on *sawah* in favour of a religious foundation.[28]

However, the relation between the temple and the cultivated land seems to have been a complex one. Temples were not always built in the middle of existing *sawah* land; they were apparently also used to stimulate wet-rice cultivation. Several inscriptions clearly mention that tax authority was given to a temple at the condition that the land was transformed into *sawah*. In the inscription of Kwak I, for example, one can read that: "(…) on a palm-leaf was written a confirmation [of the grant status] of the tgal (dry-field) land at Kwak, to be marked out for the creation of wet rice fields to become sīma of the tower-temple of Kwak" (Wisseman Christie 2002: nº 98).[29]

Temple remains and settlement patterns: a possible correlation

The corollary of the close association between temples and rice-fields is the relationship between temples and settlements. Rice-fields require a work force, i.e. village communities. If we accept the hypothesis that the vast majority of the temples located in highly fertile areas were built in the vicinity of rice-fields, then we must admit that these shrines were also built in the vicinity of settlements. This does not however mean, as we have seen in the case of Prambanan, that temple distribution perfectly renders settlement patterns. Temples are a clue to understand settlement, but this clue is not precise enough to allow us to pinpoint ancient villages on a map. Dense, clustered distribution patterns, especially, should raise our suspicion, as they might indicate a religious centre rather than a population centre. It is nevertheless striking that, in the zones that have the highest density of temple remains – the most suited for wet-rice cultivation –, temples, though close to one another, are scattered

visited them yet, I cannot assert that these remains date back to the Central Javanese period: brick structures from the early islamic period and collections of artefacts are known to exist in the area.

[28] *Sīma* (freehold) including *sawah* transfered to a temple are mentioned in the following Central Javanese inscriptions: Kamalagi (821 A.D.), Kayumwungan (824 A.D.), Abhayānanda (826 A.D.), Tru I Tepussan I & II (842 A.D.), Wayuku (854 A.D.), Śiwagṛha (856 A.D.), Lintakan, Talaga Tanjung (862 A.D.), Wanua Tengah I, II and III (863 A.D.), Kurambitan I & II (869 A.D.), Śrī Manggala I & II (874 A.D.), Humaṇḍing (875 A.D.), Laṇḍa A & B (c. 879 A.D.), Kurungan (885 A.D.) and Lintakan (919 A.D.). See Stutterheim 1940b: 29-32; Casparis 1956: 280-330; Boechari 1959; Soekarto 1969:18-21; Sarkar 1971-1972: nº 7, 9, 10, 13, 14, 18, 19, 24, 26, 27, 28, 32, 108, 136; Suhadi, Soekarto 1986: n°2.7.2; Wisseman Christie 2002-2004: nº 53, 71, 72, 100.

[29] Central Javanese inscriptions making reference to *sīma* grants to be transformed into wet rice fields are : Mamali (878 A.D.), Kwak I & II (879 A.D.), Ra Tawun I & II (881 A.D.) and Ra Mwi (882 A.D.). In the inscription of Taragal (881 A.D.), the granted land had to be transformed in house land. See Sarkar 1971-1972: nr 40, 41, 49, 52; Suhadi, Soekarto 1986: n° 2.7.5, 2.7.6; Wisseman Christie 2002-2004: nº 112.

rather than clustered. Such a distribution pattern is precisely what would theoretically be expected for settlements in a highly fertile area: a high population density, but spread all over the area in order to maximize the exploitation of the agricultural resources of the land. We may thus reasonably suggest that distribution patterns of temple remains in the Yogyakarta and Mutilan plains have direct relationship with settlement patterns. Within this context, the slight tendency towards regularity of temple distribution in the Yogyakarta plain could be interpreted as the sign of a particularly high population density and the existence of a competition for land – villages then tend to settle as far as possible from one another, but still on fertile ground, which leads to a regular distribution of settlements.[30] If this is true, it might help to explain the growing interest of Central Javanese rulers for East Java: an increase in population density, the subsequent pressure on cultivable land and the need to find new land equally suitable for wet-rice cultivation.

Besides, temples may also render the existence of a growing manufacturing sector. In order to comply with the needs of the cult, temples certainly required fine products (cloth, jewellery, ceramics, sculptures) and sustained the development of a local industry (within or outside their *sīma*).

The interest of the person – *mahārāja*, *rake* or *samgat* – transferring his tax authority to a temple is difficult to evaluate. No Central Javanese inscription provides us with a definition of the term *sīma*, so that it is impossible to determine the exact tax status of a *sīma*, and the loss it represented for the person previously holding fiscal authority over that piece of land. It is not obvious from epigraphical data that all the taxes were automatically transferred to the religious authorities. Barrett Jones notes that exemption of levies on craftsmanship and other secondary sector activities are specifically mentioned in a number of inscriptions. This would suggest that these exemptions were exceptional – and were not part of the basic privileges of a *sīma* (Barrett Jones 1984:61).[31]

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[30] The relation between increased in population, high site density, greater competition between sites for land, and greater uniformity in spacing has been shown by Hudson (1969). See also Hodder and Orton 1976:73.

[31] Inscriptions do not tell us exactly that the *sīma* was exempted from taxes, but that the *mangilala dṛwya haji* ("those claiming the king's property") were forbidden to enter the *sīma* – and that the religious foundation had the sole authority over the taxes. According to Barrett Jones, those "royal tax collectors" probably bought from the king the right to collect taxes on certain activities, possibly by giving away a fixed amount of money once or twice a year (Barrett Jones 1984:14). When they went to collect the taxes, they certainly pressured the villagers as much as possible in order to increase their own benefits. However, that the *mangilala dṛwya haji* are forbidden from entering a *sīma* does not have to mean that the taxes are not paid, or are paid to the sole benefit of the religious foundation. It could as well signify that the institution having authority over the *sīma* was directly in charge of collecting them, with at least a part of the profits still due to the lay administration.
This was certainly the case with the *sīma* of the inscriptions of Telang II, Sugih Manek, Palebuhan and Sangguran. In these four cases, the *mangilala dṛwya haji* are forbidden from entering the *sīma*, but the surplus of certain trade and craft activities are still paid to them. Furthermore, profits from making black paints, purple-red paints, spinning, making bed-covers and pillows, etc. is to be divided into three parts: one for the religious foundation, one for the protector of the freehold and one for the collectors of royal taxes. In other words, the king or the *rake* still had a share in the most lucrative activities of the *sīma*.
Central Javanese inscriptions mentioning the ban for the tax collectors on entering a *sīma* are those of: Munduan (847 A.D.), Kancana (860 A.D.), Ra Mwi (882 A.D.), Er Hangat A & B (885 A.D.), Telang II (904 AD.), Sangsang (907 A.D.), Taji Gunung (910 A.D), Timbanan Wungkal (913), Sugih Manek (915 A.D.), Palebuhan (927 A.D.) and Sangguran (928 A.D). See Kern 1917: II, 17-53; Sarkar 1971-1972: nº 22, 52, 65, 72, 80, 82, 84, 93, 96, 106; Wisseman Christie, 2002-2004: nº 48, 124.

Although temple building resulted in a loss of revenue in *sawah* taxes (at least when the temple was associated with a *sīma* that already included wet-rice fields), it could also support local economy and help to develop more lucrative activities, activities on which the king or *rake* usually collected taxes.

Outside the fertile plains: temples and ancient routes of communication

The density of temples, as we have seen, is particularly significant in the Prambanan area and, to a lesser degree, in the Borobudur-Muntilan zone, in both zones, temples are directly related to wet-rice cultivation and, most probably, to settlements. Numerous temples, however, exist outside these rich agricultural plains, in areas moderately suited – or not suited at all – for wet-rice field cultivation. Temples located on or in the direct vicinity of mountain peaks clearly form a case apart – on which I will come back in the last part of the chapter – and for the time being, I would like to attract the attention to temples located on the undulating terrains of the upper Progo valley, in the hilly area between Mounts Merbabu and Ungaran, and on the eastern slope of Mount Merapi.

Small aggregates of temple remains occur, as we have seen in the previous chapter, near the modern towns of Secang and Parakan. A smaller cluster of temples is located slightly to the east of Boyolali, on the eastern flank of Mount Merapi. In these three cases, temples are located on relatively fertile land, but not highly suitable for wet-rice cultivation. The area of Secang is made of a multitude of small hills and has a limited ground-water potential, the remains around Parakan are located at the upper limit of modern wet-rice fields, while temples around Boyolali are situated at an altitude which is not favourable for wet-rice cultivation. It is thus very unlikely that this type of cultivation played an important role in the development of those sites.

Secang is relatively close to Muntilan and temples seem to form a string between both areas. In the cases of Parakan and Boyolali, however, the physical link with the plains is quite tight. Seven temples, scattered along the Progo River, link Parakan to Secang (and further to the Muntilan area), while only a couple of remains have been reported between Prambanan and Boyolali.

Are these aggregates of temple remains secondary centres? The location of Secang, at a distance but nevertheless in the direct periphery of the core region would suggest so. Are Boyolali and Parakan remains of originally independent polities relatively lately integrated into the Central Javanese kingdom? It would at least explain why the territory between these centres and the agricultural plains has yielded so few remains. In the present state of our knowledge, it is unfortunately impossible to give a definitive answer to those questions. Rather than focusing on how and when these different centres develop, I will try to understand why these places were important for a Hindu-Buddhist polity centred in the plains of Muntilan and southern Central Java. My own hypothesis – which does not exclude that other factors may have participated in the appearance of these clusters of sites – is that Secang, Parakan and Boyolali are knots along a network of communication routes.

Since Secang, Parakan and Boyolali are not places of interest for wet-rice cultivation, their importance must lie elsewhere – and since this book is dealing with the relationship between temples and their natural environment, I propose to observe more closely the landscape around these three clusters of remains. Secang is located in the Progo valley, but in a transitional zone between the valley itself and the hilly region that separates Mount Ungaran from Mount Merapi. Parakan is the northernmost point of the valley, at the foot of Mount Sundoro and of the hills that

link Mount Ungaran to the Prahu massif and the Dieng Plateau. Boyolali, however, does not seem to be located in a transitional zone.

Let us now consider the distribution of the remains around Secang, Parakan and Boyolali. We can notice that, around Secang, remains are found mainly in three directions: to the south (along the Elo River, in direction of Muntilan), to the northwest (along the Progo River, in the direction of Parakan) and to the northeast (across the hills, towards the modern town of Ambarawa). Around Parakan, most of the remains are to be found to the southeast (along the Progo River), but at least three are located to the north, across the hills. The case of Boyolali is less clear: no remains are found in its direct neighbourhood, but more distant ones are visible to the north and south. Now, it happens that this description fits almost perfectly with a map of the modern road network – and this network has superimposed over a road system already in use for centuries.

That the roads heading east from the Prambanan area and north through the Kedu plain were already well-known before the introduction of modern transportation is demonstrated by sources dating back to the 17th and 18th centuries. This is not the place to analyse in detail the testimonies of Dutch travellers about the road system in the kingdom of Mataram; for such a study, I refer the reader to the work of Schrieke (Schrieke 1957a). I will only mention here those facts that are significant for the Prambanan and Magelang areas and that may throw some light on transport routes of the Hindu-Buddhist period.

In the report of his journey to Mataram (i.e. the Yogyakarta-Prambanan area) in the year 1656, van Goens mentions that there were only three roads leading out of Mataram: 1) a road going north to Semarang *via* Prambanan, 2) a road going west to Tegal *via* Muntilan, 3) a road going east to Blambangan *via* the Solo plain (van Goens 1856:348)[32] (Figure 20).

From additional sources, it can be determined that the first road, the one going from Mataram to the northern coast, passed through Prambanan, Ampel, Tengaran and Tingkir. From there, one route led to Semarang *via* Ungaran, while the other headed directly north to Demak (Goens 1856: 307-312; Jonge 1869, IV:88-95; 1870, V: 40-46; Fruin-Mees 1926:409-413).[33]

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[32] "De groote populeuse hooftplaets Matâram heeft 3 wegen om uit deselve te vertrecken ende anders geen, te weten: de eerste hier vooren beschreeven, als den gemeijnsten, gaet uijt de Matarâm Noordwaerts nae Samârangh, welcken wech als den gemackelijxten ende cortsten door de poort Tadie meest bewandelt ende ordinair bereijst wert; de 2de wegh gaet nae 't Westen, ende compt uijt omtrent Tagal, doch is seer moeijelijck; de principaelste poort is hier genaemt Tourajan; de 3de wegh gaet nae 't Oosten en compt uijt omtrent Balambanghan (…)" (Goens 1856:348).

[33] This road was described in 1618 by van Maseyck (Jonge 1869, IV:88-95), in 1624 by de Vos (Jonge 1870, V:40-54), in 1630 by Franssen (Fruin-Mees 1926) and in 1656 by van Goens (Goens 1856). The most complete account is given by Franssen, who gives the names of the following localities: Samarangh (Semarang), Jaty Diejar (Jatijajar, between Ungaran and Bawen), Tongtang (Tuntang), Sasanga (Kesongo), T'sandy (Candi), Pamelouttas (Puluhan? – the three latter villages are between Tuntang and Salatiga), Sallatyga (Salatiga), Caelytiaetsingh (Kalicacing), Tallaga (Tlogo), Inckir (Tingkir, SSE of Salatiga), Caeli Gandou (Kaliganu, near Klero), Tangaran (Tengaran), Calyloo (?), Ingampel (Ampel), Sallandacka (Selodoko), Pangack ieran (Payungan?), Ingamboir (Ngambuh), Sallamby (Slembi, S of Boyolali), Lomboen (?), Mandalangou (Mondolangu, between Boyolali and Jatinom), Poelou Waetou (Puluh Watu), Lousa (Lusah, WSW of Klaten), Tagkijsan (Tangkisan), Pammaloon (Plembon?) and Taedzy (Taji, just east of Prambanan). We can see here that the route corresponds roughly with the modern Solo-Boyolali highway. South of Boyolali, it is close to the Boyolali-Jatinom-Klaten road, although it did not end in Klaten, but further to the west, closer to Prambanan. Temple remains are found all along the route, from Prambanan to Semarang. It is more than probable, therefore, that the road was already in use in early times.

The road going west *via* Muntilan, considered "very difficult to travel" by Van Goens (van Goens 1856:348), was described by de Haan in 1622 (Jonge 1869, IV:284-300). The route crossed the Kedu plain up to Jumo, then headed north through the mountains and met the coastal road around Subah. From Subah, the road led west to Tegal *via* Batang, Pekalongan and Pemalang.[34] Another road heading west to Tegal

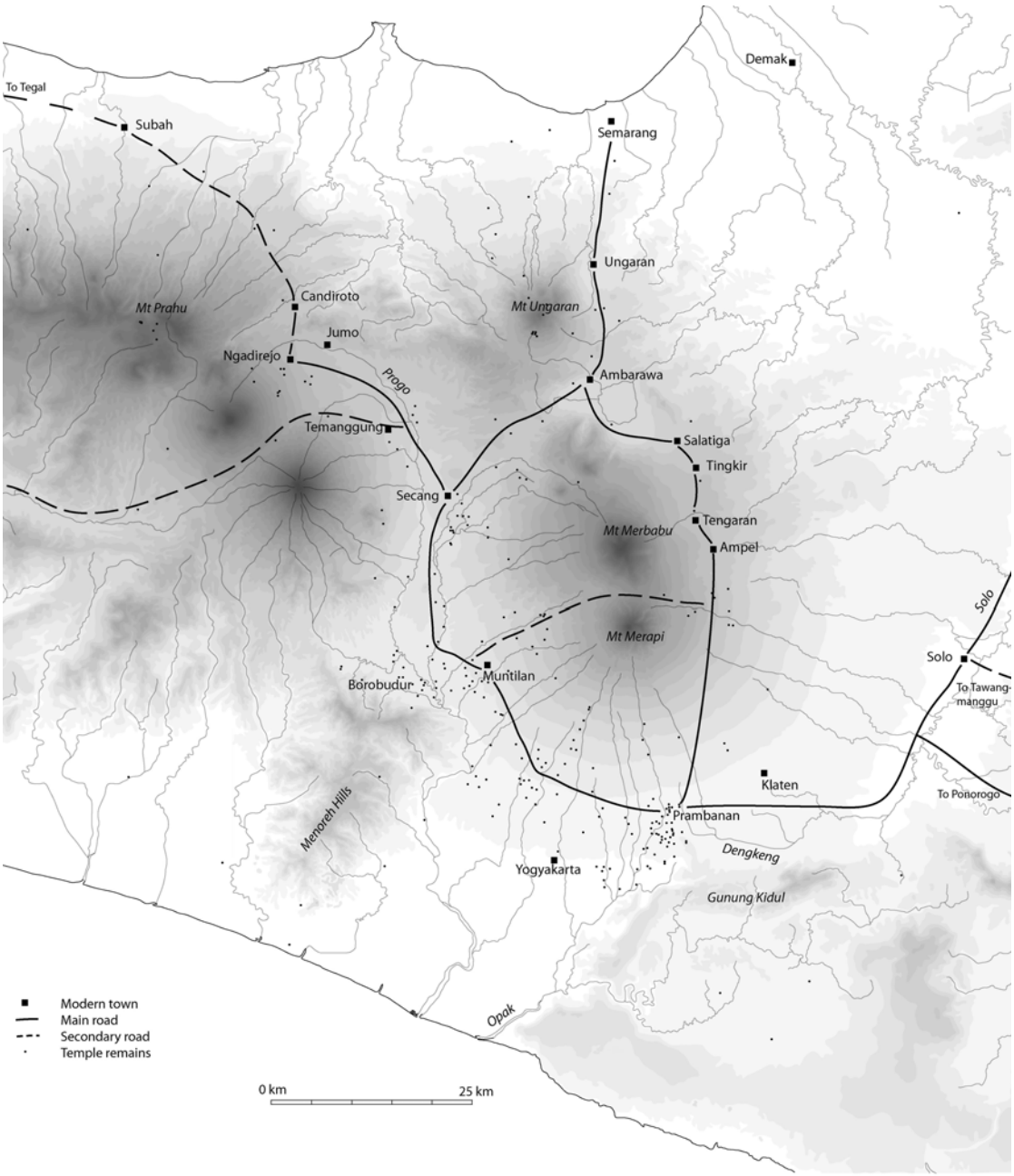

Figure 20: Tentative sketch of Central Javanese routes

[34] De Haan describes the road from Tegal and mentions the following places: Tegal, Somber, Pamalangh (Pemalang), Wiradeça (Wiradesa), Pecalongangh (Pekalongan), Batangh (Batang), Suba (Subah), Pakis (SE of Subah), Tragalangong (?), Tatiam (Tajem, near Ngadirejo), Juma (Jumo), Pakiswieringh (Pakisan, near Temanggung?), Piaman (Payaman, N of Magelang), Tidar (Magelang), Sukerbe (Srikuwe, near Blondo) and Touraian (Trayem, near Muntilan) (Jonge 1869, IV:284-299).

– *via* the southern coast – was mentioned by W. van Imhoff in 1746. It passed through Ambal, Karanganyar, Banyumas and Purwokerto (Imhoff 1853:406-413).

Three roads leading east are mentioned in documents of the 17th and 18th centuries. The most commonly used route from Mataram to the eastern sea headed from Prambanan to Pasuruan *via* the southern foot of Mount Lawu (Schrieke 1957a:109). Two secondary itineraries are possible, one through Solo and Tawangmangu (described by Theling in 1742) (Gijsberti Hodenpijl 1918:601-608; Schrieke 1957:108), the other *via* the northern slope of Mount Lawu (Schrieke 1957:108).

If we base ourselves on these descriptions and on the distribution of both temple remains and inscriptions, it appears that the three major roads leading out of Prambanan were already in use during the Central Javanese period. The road going from Prambanan to the northern coast through the Kedu plain is obvious. Distribution of temple remains suggest that, as nowadays, the road split in two in the area of Secang. The western part headed to Ngadirejo and the eastern one to Ambarawa, from where it headed further to the coast. A couple of remains located in the northern part of the *kabupaten* Temanggung and in the southern part of the Kendal district lead to the hypothesis that the western road also continued to the coast, through the region of the high hills separating Mount Prahu from Mount Ungaran.

The inscription of Mantyāsiḥ I (907 A.D) and the presence of remains in the Serayu valley suggest that there was another branch of the northern road connecting the Progo valley to the Wonosobo area. The copper plates are said to come from the Temanggung area. The text explains that a grant had been conferred upon the *patih*-officials of two local communities, partly because they were in charge of protecting a high road in the region of Mount Sumbing and Sundoro.[35]

Temple remains and inscriptions on the eastern slope of Mount Merapi, from Klaten to Salatiga, suggest that this route too was known during Central Javanese times.[36] As for the road heading east *via* the southern slope of Mount Lawu and Ponorogo, the locations at which the inscriptions of Taji (Ponorogo), Telang I and Telang II (Wonogiri) were found testify to its existence already in the early 10th century.[37] The inscription of Telang II, issued by king Balitung,[38] is a particularly interesting piece of evidence. Given that it commemorates the marking off of a freehold to maintain a free ferry-service on the Begawan Solo, it may be assumed that the traffic on this river was important enough for the king to take care of it. The absence of a tollgate must have greatly facilitated communication and trade between Central and East Java.

Traces of a road heading west *via* the southern coast are not so clear, although several *yoni* discovered in *kabupaten* Kebumen suggest that the Hindu-Buddhist culture also spread in some way along the southern coast.

It is possible that a secondary road linked the Progo valley directly to the Solo

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35 See Sarkar 1971-1972: n° 70.

36 Temple remains found close to this route are: Sanjaya (near Tingkir, south of Salatiga), Ngentak (near Klero and Tengaran), Sumur Songo (between Ampel and Boyolali), Manggis, Tampir and Pahingan (these three sites are west of Boyolali, in the area of Musuk), Candirejo (south of Boyolali, near Mondolangu) and Merak/Karangnongko (northwest of Klaten). Four inscriptions are reported to have been found in the Boyolali area, namely the inscriptions of Boyolali, Garung, Upit and *candi* Lawang (Sarkar 1971-1972: n° 8; Soekarto 1975: 247-253; Nakada 1982: n° 34; Wisseman Christie 2002-2004: n° 6).

37 Taji is dated 901 A.D., Telang I 904 A.D. and Telang II 904-905 A.D. See Sarkar 1971-1972: n°61, 65, 70; Nakada 1982: nº 80, 86, 87.

38 *Śrī mahārāja rakai Watukura dyaḥ Balitung śrī Dharmmodayamahāśambhu*.

plain, passing between the peaks of Mounts Merbabu and Merapi. The positions of *candi* Asu, Pendem and Lumbung, Sari and Lawang show that important religious sites were located high on the slope of the Merapi-Merbabu massif, at each end of the high pass running between the two peaks. Traces of a temple were once visible along this pass, at more than 1300m above sea level, as reported by Van der Vlis (quoted by Krom 1925a:181ff). This Dutchman, who was told the temple had been destroyed by a mud flow, was still able to identify several sculptures and temple stones.

Epigraphic records and comparisons with 17th or 18th century documents show clearly that temples were in close correlation with communication routes. Temples not only benefited from the roads, they also contributed to their maintenance. Roads established connections between the rice-producing areas of the south Kedu plain and the Prambanan area, the harbours of the northern coast and East Java. It is only natural that agricultural estates developed along these routes, taking advantage of the access they offered to developed local economies, thereby taking an active part in regional trade and, finally, increasing the wealth of local communities. On the other hand, temples were not always a side-product of the integration of provincial centres into the larger network. As stated in a couple of inscriptions, religious foundations and freeholds were sometimes created with the purpose of securing roads.[39] This happened especially in more remote areas, like Temanggung, or the southern side of Gunung Lawu, where forest patches probably outnumbered rice fields and settled lands.

To summarize, the clusters of temple remains around Secang, Parakan and Boyolali can thus be, at least partly, explained by their position within a network of communication roads. Secang is at the junction of the route linking the plain of Muntilan to the upper Progo valley and the northern coast (*via* Ambarawa). Parakan/Ngadirejo is at the beginning of two mountain roads, one climbing to the Dieng plateau, the other other crossing the hills to the north to reach the coast. As for Boyolali, it is at mid-way along a route leading from Prambanan to the north coast *via* Salatiga. The fact that remains along this road tend to be more distant and of a later date further suggest that it developed after the other and was maybe not yet entirely secured when the political centre of the kingdom was transferred to East Java.

Temples remains and local landscape markers

Up to now, we have considered the distribution patterns of Hindu-Buddhist temple remains and have confronted them to the general environmental features of Central Java (ecological zones, regional morphology). We have thus shown that zones where temples are dense but scattered corresponds to the agricultural core of the kingdom, that clusters of temples mark important communication crossroads and that temples located in the hilly areas of north Central Java and on the eastern flank of Mount Merapi stretch along the road linking the core region to the northern coast. But we have not yet approach the question of the location of particular temples – or sets of temples. Within a given environmental zone or along a given communication road do local landscape markers influence the choice of a building site? In the following paragraphs, I will focus on the possible role played by relief (hills, mountains) and

[39] The inscription of Canggal (732 A.D.) praises king Sañjaya, underlining that while he was ruling on earth people could sleep on the roadside without being startled by thieves (Sarkar 1971-1972: n° 3). Although this might be a literary *topos*, it might as well reflect a real concern in securing roads since the very birth of the Central Javanese kingdoms.

water (rivers, springs).

Temples on isolated hilltops

Even when they are located within plains and valleys, temples are not always built on flat ground. Actually, there is a whole set of shrines that are clearly associated with topographical markers – namely hills and mountains: temples built on small, isolated hilltops and temples located in high, remote areas.

In the area we focus on (DIY, Klaten, Magelang, Semarang and Boyolali), 16 temples belong to the first group.[40] Built at the top of a hill, they convey a different impression than temples built in the shadow of high volcanoes. They fuse with the hill and form a summit to be reached by visitors. They organize the natural landscape and re-shape the hill, so that it fits with cosmological principles. The presence of a temple at its top transforms the hill into a replica of Mount Meru, the axis of the universe. Although the temple may itself represent Mount Meru, locating it on a hilltop makes the association even more obvious.[41]

In Hindu and Buddhist thought, the symbolism of Mount Meru is inextricably, though not exclusively, linked with royal power. Mount Meru is not only the pivot of the universe, it is the abode of Indra, who presides over the gods and is presented as a model of the Hindu/Buddhist king. The inscription of Canggal, commemorating the erection of a *lingga*, probably at *candi* Gunung Wukir, states that Sañjaya was like Mount Meru and that his head was upraised like a mountain peak.[42] It is thus not surprising that, given their cosmological and royal implications, hilltops were considered appropriate building sites for Hindu-Buddhist shrines.

It must however be noted that hills were not systematically exploited for temple building. In the Sorogeduk/Gawe plain, there is a temple only on the Abang hill, while no traces of archaeological remains have ever been found on the surrounding hills, such as the Bangkel and Curu hills. In *kabupten* Magelang, no remains have been found on the eastern Gendol hills or atop the Tidar hill[43] – although these hills are found in zones that do not otherwise lack remains. This would suggests that other factors, at least as important as local topography, played a role in the choice of the site.

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[40] Namely Abang, Gunung Mijil and Sanan (in southern Central Java), Bobosan, Borobudur, Candi, Gunung Gono, Gunung Lemah, Gunung Pring, Gunung Sari, Gunung Wukir, Singabarong and Soborojo (in *kabupaten* Magelang), Dukuh, Sari and Wujil (in *kabupaten* Semarang and Boyolali). In other areas of Central Java, hilltop temples have been reported at Ganawerti Wetan and Pengilon (Kendal), Candinegara (Banyumas), Wonokerso, Gunung Pertapan and Argapura (Temanggung).

[41] Locating a temple atop a hill is by no means unique to Java. It is also a well-known tradition in the Angkor region, where temples crown almost all the hills. When all the natural hills had already been endowed with temples, Khmer architects started to build temples in the plain, on artificially raised land. A similar process may be observed at Loro Jonggrang and Sambisari, although Javanese temples never reached the heights attained by Khmer temple-mountains. Both Loro Jonggrang and Sambisari are built on raised terraces, so they actually rise above the surrounding plain, as if built on a (small) artificial hill.

[42] Sarkar 1971-1972: nº 3.

[43] The Tidar is a small hill now located in the southern suburb of Magelang. Local belief names it 'the nail of Java', for it is thought that this small hill pins Java to the earth. It is considered as supernatural terrain and is not built on.

Temples in high, remote areas

The second group of temples is clearly related to topographical features consists of shrines built outside the wet-rice cultivation areas, away from communication routes, in (relatively) high and remote areas. This includes the remains at the northernmost tip of the Gunung Kidul hills, Batur, Gedong Songo and Selogriyo.[44]

The buildings erected on the northernmost tip of the Gunung Kidul have been built on dry hills and overlook either the Prambanan or the Yogyakarta plains. These are Arca Ganeça, Barong, Dawangsari, Gupolo, Ijo, Miri, Ratu Boko, Sumberwatu and Tinjon. With the exception of Ratu Boko, they do not compensate for the dryness of their soil with systems of pools and water tanks.

A striking feature of these sites is that, in contrast to Abang and Gunung Mijil, they are not located on hilltops. This characteristic is particularly visible at Miri and Ijo, and, to a lesser degree, at Barong. Miri and Ijo are not built on hilltops, but just below them, so that the summit is clearly visible behind the temple. Therefore, they convey an impression quite distinct from the hilltop temples. *Candi* Ijo is not the summit of Mount Meru, nor does it suggest the pivot of the universe. The real summit of Mount Ijo is a hundred meters behind the temple, and is markedly higher. The temple is no longer the central element. It is only the path that leads to the sacred location, materialised here in the form of the mountain. This impression is strengthened by the distribution of the buildings. The various shrines are spread over a series of terraces clinging to the mountain slope and organized along an east-west axis.[45] Nothing here brings to mind the concentric representations of the Mount Meru found in Hindu-Buddhist cosmology. This form of organization and its implication, i.e. that the mountain is the true object of worship,[46] prefigures what was to happen in East Java. While in Central Java, both systems co-exist, in East Java the mountain is the religious point of focus and one can find there the development of large mountain-oriented complexes, such as Mount Penanggungan or Panataran (Patt 1979; Klokke 1995).

Architectural and epigraphic data suggest that at least some of the sites located on the Pegat-Ijo hills were related to ascetic practices. This is obviously the case with the religious complex of Ratu Boko. The presence of meditation caves in the northern part of the compound already suggested that the place was used by hermits or ascetics. This vision is confirmed by the Abhayagiriwihāra inscription (Sarkar 1971-1972: n° 6a). The inscription, which was found near the *pendopo* terrace, begins with a reference to meditation caves said not to be 'ruffled by the strong winds of popular cults'. It goes on to make references to an important Sri Lankan monastery named Abhayagiri-*vihāra*. This monastery was closely related to the meditation monasteries built in the hills overhanging the Sri Lankan capital of Anurādhapura. In these

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[44] One may add to this list the Dieng temple complex, which is located in *kabupaten* Wonosobo and therefore outside the main research area of the present study, and temples on the northern flank of Mount Ungaran (*kabupaten* Kendal).

[45] About spatial organization of *candi* Ijo, see below, p.132.

[46] The inscription of Blado might be related to mountain worship, according to Wisseman Christie (Wisseman Chrisite 2002-2004: nº 4). The copper plates of Kuṭi are the most explicit, as they invoke "the spirits of Marapvi, Humalung, Karuṇḍungan, the Mount Sumbi, the sacred (spirits of) Susuṇḍara (..)" (Sarkar 1971-1972: n° 12), all of these spirits being mountains of Central Java. However, the inscription is difficult to date with precision: it is a late copy of an inscription dated 840 A.D., but that inscription was apparently revised under the reign of Balitung (898-910 A.D.) (Wisseman Christie 2002-2004: n° 168).

monasteries meditation and ascetism constituted an essential part of religious practices (Wijesurya 1998:22-23). The relationship between Ratu Boko, the Abhayagiriwihāra inscription and the Sri Lankan Abhayagiri-*vihāra* has been underlined by several authors (Casparis 1956; Sundberg2004), but this link is not restricted to a mention in one inscription; it is also architectural (Miksic 1993-1994; Degroot 2006). Actually, the whole southeastern compound of Ratu Boko appears to have been conceived as a replica of Anurādhapura. Furthermore, the meditation platform, the most typical building in the meditation monasteries of Sri Lanka, was used as a model for the third building stage of the *pendopo* (Degroot 2006). There are therefore good reasons to believe that Ratu Boko was the dwelling of Buddhist hermits.

But there are other references to ascetic practices from the *gunung* Pejat-Ijo hills. An inscription found in the village of Dawangsari (due east of Ratu Boko) near a large Gaṇeśa statue deals with the worship of the god by *sādhu*, indicating that the place was also used by Hindu ascetics (Setianingsih 1989: n° BG 355). Similarly, the inscribed golden plate found within the temple pit of *candi* Ijo refers to Jaṭila (Śiwa the Ascetic) (Casparis 1956:174; Wisseman Christie 2002-2004: n° 28).[47]

Although epigraphic records are missing to clarify the cases of Dieng and Gedong Songo, there are nevertheless good reasons to believe that, like the images of Ratu Boko or *candi* Ijo, they also were not standing in the middle of large settlements. First of all, in both cases, these two sites occupy a large area and are composed of numerous buildings. Although the shrines are quite small, their number place Dieng and Gedong Songo among the largest temple complexes of Central Java. Secondly, their natural environments, high and therefore relatively cold, are not suitable for rice cultivation.[48] It is thus not probable that the dimensions of these sites reflect the size and richness of local communities. Thirdly, Dieng and Gedong Songo have both known several building phases, showing early as well as late features.[49] A 14th-century inscription furthermore testifies that Gedong Songo was still in use by that time (Nakada 1982: 154-155). All these indications suggest that the importance of Dieng and Gedong Songo outshone that of the surrounding villages, and that the worship performed on the Dieng plateau or beneath the summit of Mount Ungaran had a wider signification.

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47 Figures of ascetics are also part of the decoration of the lowermost building of the Ijo temple complex.

48 It is not suitable for rice or other cereal cultivation, but it is favourable for market gardenings.

49 Dieng (Dihyang) is also one of the very few archaeological sites the name of which is mentioned in numerous inscriptions. The religious foundation at Dihyang receives gifts in the inscriptions of Gunung Wule (861 A.D.), Bhaṭāra Dihyang (mid-late 9th c. A.D.), Ra Kiḍan (mid-late 9th c. A.D.), Indrokilo (882 A.D.) and Taji Gunung (910 A.D.). The name further appears in the inscriptions of Kapuhunan (878 A.D.), Panggumulan I (902 A.D.), Lintakan (919 A.D.) and Wintang Mas B (919 A.D.). In the inscription of Kuṭi, an East Javanese copy of an original document dated 840 A.D., the holy spirits of Dihyang are called upon in the curse formula to portect the *sīma*. See Sarkar 1971-1972: nº 12, 23, 37, 64, 80, 86, 88, 102; Wisseman Christie 2002-2004: nº 70.

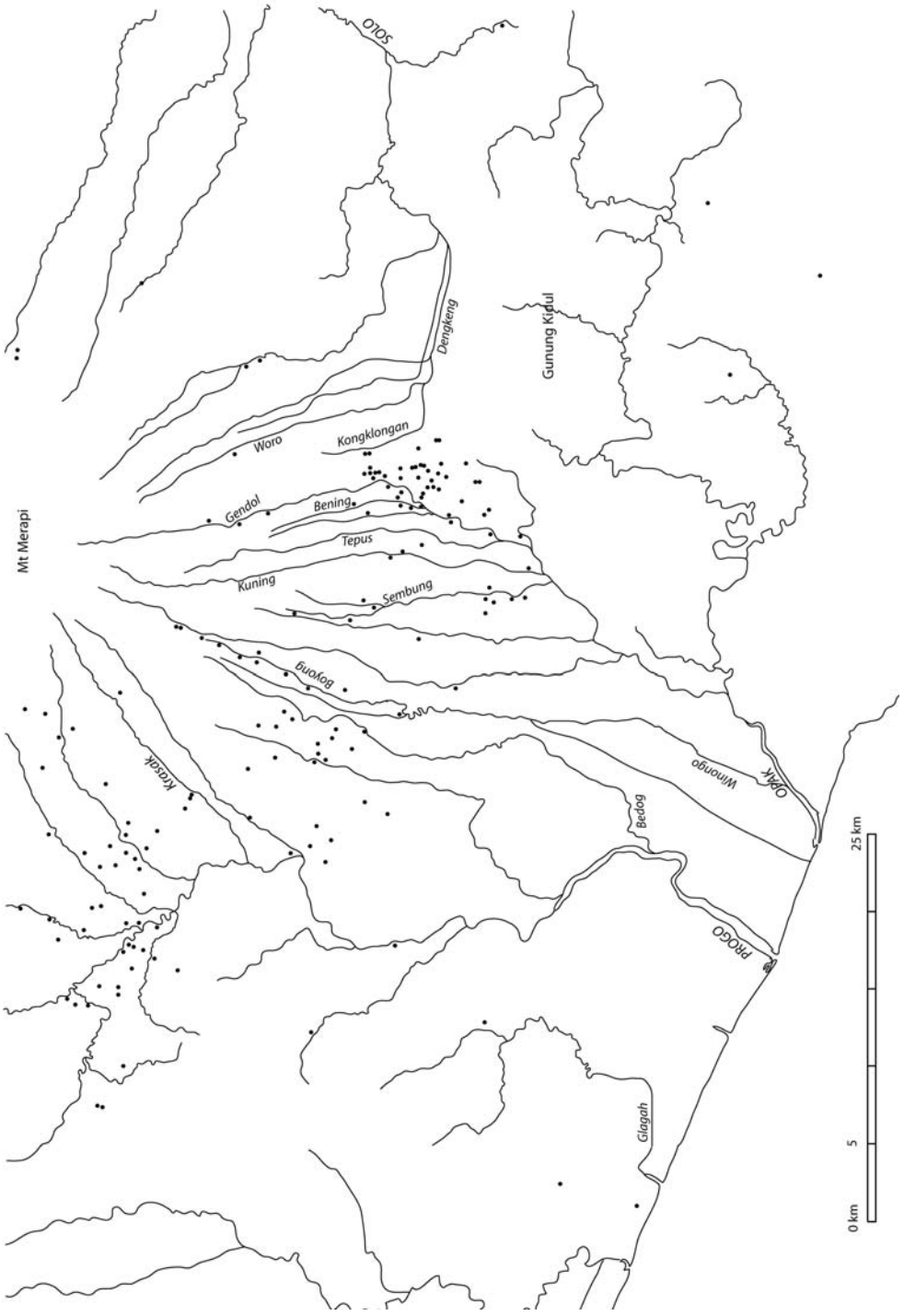

Figure 21: Temples and rivers in southern Central Java

Temples and rivers

Temples are not only found in well-watered areas: they are often built along rivers, wich explains the linear distribution patterns sometimes observed in the preceding chapter. In terms of distance between temple remains and rivers, the present study again confirms for Central Java the findings made by Mundarjito for the district of Sleman (2002:372): ancient religious sites follow rivers closely (Figure 21-23). In southern Central Java (Table 16), as well as in the rest of the area under enquiry (Table 17), the large majority of temple remains is indeed located less than 600m from a river.

There does not seem to have been a preference for the east or west bank,[50] but some rivers were undoubtedly favoured. Numerous rivers are indeed bordered by a couple of sites, but nine waterways link at least 4 temple sites (Table 18). [51] In southern Central Java, those rivers are the Gendol/Opak, Kladuan, Bening and Winongo. In the Progo valley, temples are mainly located along the beds of the two main rivers of the area, the Progo and Elo, and along their more important tributaries (Pabelan, Pucang and Blongkeng) (Table 18). Finally, a series of remains are scattered quite high on the northeastern slope of Mount Sumbing, among the dozens of streamlets from which emerges the Progo River.

Table 16: Distance temple-river in the South Central Java

Distance temple-river	*Number of sites*	*%*
0-599m	80	72.7
600-899m	7	6.4
>900	23	20.9[52]

Table 17: Distance temple-river in Magelang, Temanggung, Semarang and Boyolali

Distance temple-river	*Number of sites*	*%*
0-599m	116[53]	92.8
600-899m	4	3.2
>900	5	5

[50] 39 sites are located along the western bank of a river, 24 along the eastern one, while 9 are roughly at equal distance from two rivers, one is on the northern bank and we have no information for the remaining 5 sites (they are not visible anymore and their exact locations are not known with a sufficient degree of precision).

[51] Data might be biased for *kali* Woro, Kuning and Krasak. The three rivers are indeed subject to frequent *lahar* and it is indeed possible that more archaeological sites in their neighbourhoods are now buried under a thick layer of volcanic mud. Traces of mudflows are visible at quite low altitudes in the three cases. Besides, a few sites have already been discovered in the riverbeds, completely covered by volcanic deposits; namely Lengkong (along *kali* Krasak), Kaliworo (along the Woro River) and Kadisoka and Sambisari (along *kali* Kuning).

[52] These sites correspond to the temple remains located outside the plain, in the Menoreh hills and Gunung Kidul. They are mainly gathered on the northern tip of the Gunung Kidul hill, close to Prambanan. To these "hill temples" must be added temple ruins of the Sorogeduk-Gawe plain, south of Prambanan.

[53] 11 sites are located near seasonal waterways.

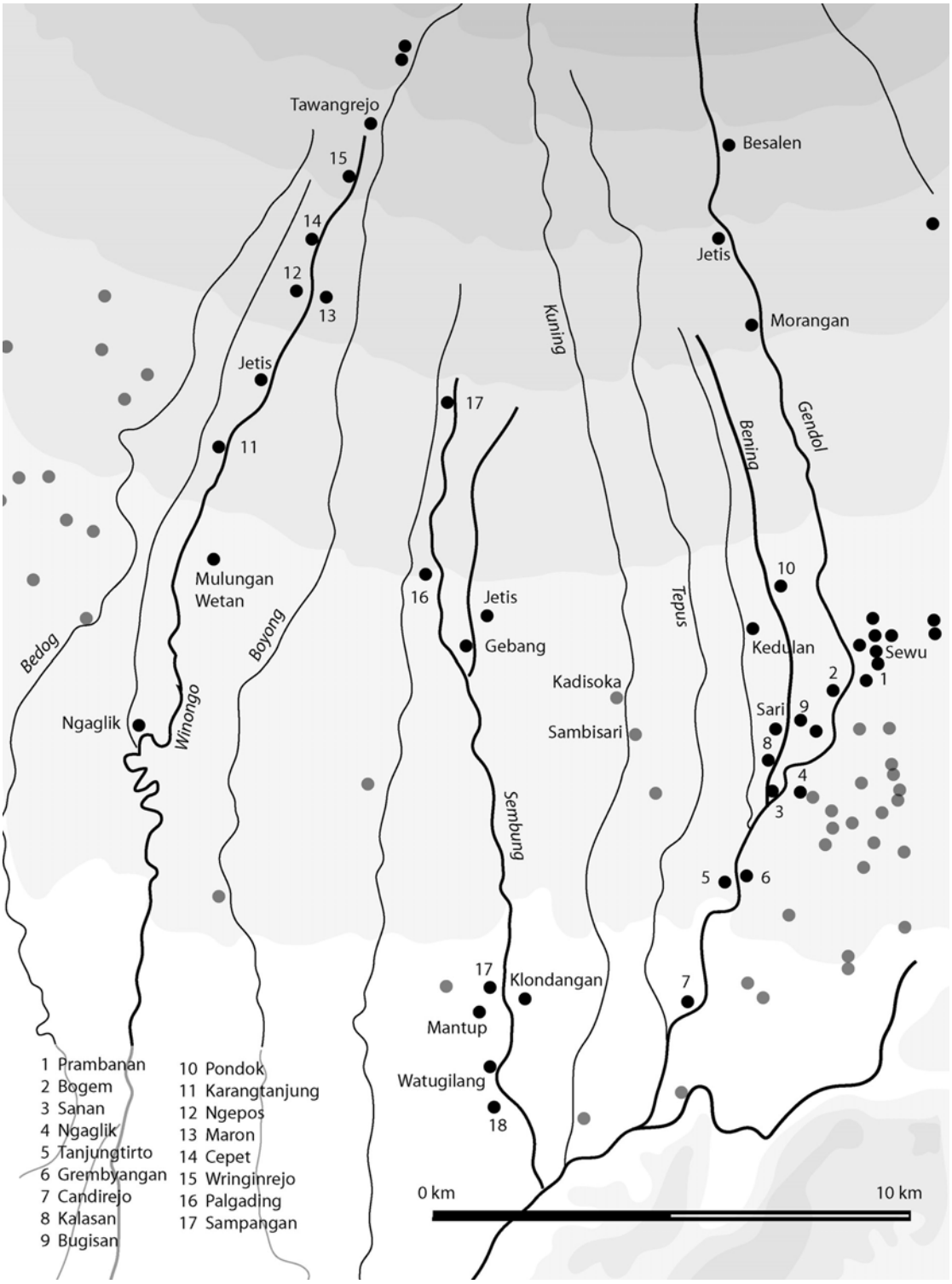

Figure 22: Temples and rivers around Prambanan and Kalasan

Table 18: Main Central Javanese rivers in terms of number of temple remains

River	*Number of sites*	*Site names*
Gendol/ Opak	15	Besalen, Bogem, Bubrah, Candirejo, Gatak, Grembyangan, Jetis (Cangkringan), Kulon, Loro Jonggrang, Lumbung, Morangan, Ngaglik (Prambanan), Sanan,[54] Sewu, Tanjungtirto.
Winongo	9	Cepet, Jetis (Sleman), Karangtanjung, Maron, Mulungan Wetan, Ngaglik (Mlati), Ngepos, Tawangrejo, Wringinrejo.
Kladuan/Blotan	8	Candi (Ngaglik), Condrowangsan, Gebang,[55] Klodangan, Mantup, Palgading, Sampangan, Watugilang.
Bening	6	Bugisan, Kalasan, Kedulan, Pondok, Sanan, Sari.
Elo	11	Bengkung, Candi, Gedongan, Kalimalang, Mendut, Nambangan, Progowati,[56] Rambeanak, Renteng, Tiban, Umbul.
Progo	9	Banon, Brangkal, Dimajar, Gunung, Jamus, Pawon, Plikon, Progowati, Tempurrejo.
Pucang	7	Cetokan, Jeronboto, Pucanggunung, Retno, Setan, Tidaran, Tumbu.
Blongkeng	6	Gejagan, Gunung Sari, Ngampel, Nganten Kidul, Ngawen, Wates.
Pabelan	4	Asu, Gunung Lemah, Ketoran, Lumbung, Pendem.

Besides being situated along a river, 17 sites are located in the direct vicinity of a confluence.[57] A well-known example is that of Mendut and Pawon,[58] located a few hundred meters to the north of the confluence of the Progo and Elo rivers. It is also the case for *candi* Asu, Lumbung and Pendem, standing about 250m from the confluence of the Pabelan and Tlising Rivers. Other sites located near confluences are Ngaglik (Winongo and Degung rivers), Gebang (Sembung and Krandowan), Sanan (Opak and Bening), Candi (Elo and Malang), Samberan (Merawu and Tangsi), Ngabean (Tingal and Kedungsidi), Plikon (Progo and Tingal), Pikatan (Bendoperi and Jambe), Wonokerso (Progo and Jambe), Ngempon (Lulung and Wonoboyo) and Dimajar (Progo and Merawu).

The association temple-river can be explained by two main factors: settlement patterns and religious concepts. After all, it is quite logical for a village to develop near fresh water – and rivers remain the most obvious source of fresh water. In Central Java, we can notice that temples located on the upper slopes of Mount Merapi, where ground water is less readily available, tend to cluster along rivers more closely than remains in the lower plain – where lots of shrines are found in areas between rivers. This clearly reflects expected settlement patterns: where ground water is scarcer, villages tend to turn to rivers – not wells – as their water supply. Nevertheless, the great proximity between certain temples and the neighbouring river makes us suspect that religious factors were also at work. Temples such as Loro Jonggrang, Lumbung (Magelang), Gebang or Mendut are indeed so close to the river that a village could not possibly have been located between the temple and the watercourse. In other words, even though they might have been associated with a settlement, those temples were voluntarily built as close to the river as possible.

To understand the possible religious background of this association, I would like

54 At the confluence of *kali* Progo and *kali* Bening.

55 On the western bank of *kali* Srembung, although close to the confluence with the Blotan River.

56 At the confluence of *kali* Progo and Elo.

57 This occurence is more frequent in the Progo valley than in southern Central Java.

58 Progowati is actually the archaeological site the closest to the confluence, but it has now completely disappeared. According to the Balai Arkeologi, temple stones were still found in the hamlet some years ago (Tjahjono 2002: table 1).

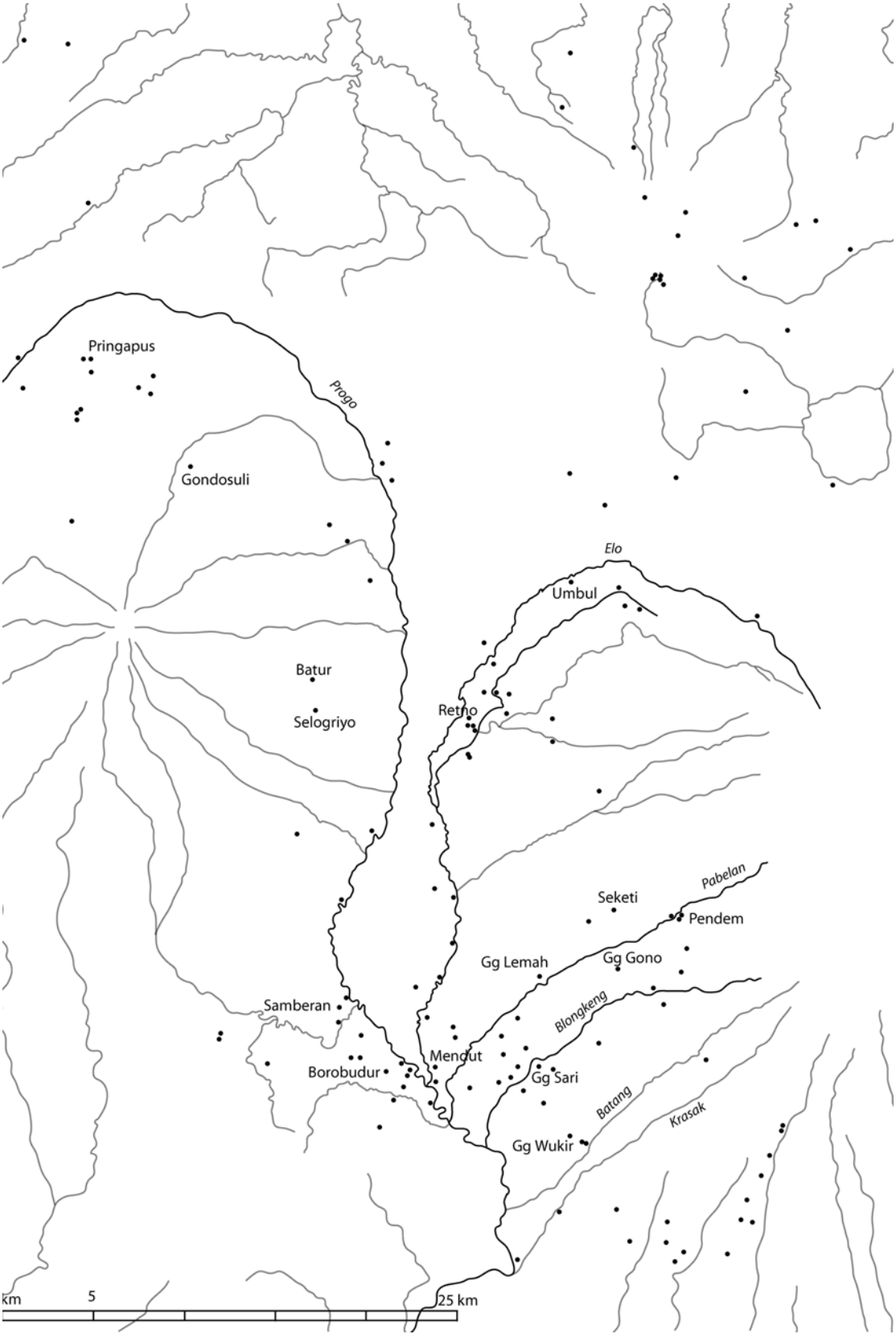

Figure 23: Temples and rivers in the Progo valley

to consider briefly the significance of temple building in Central Java, the ritual importance of water, and the prescriptions made in the Indian treatises on architecture regarding water.

Temple building was certainly a way for kings, *rake* or *pamgat* to add to their status, to increase their political influence and to acquire religious merit (together with confirming their legitimacy). The fact that *sīma* are sometimes offered as a royal favour to *rake* shows that the creation of a *sīma* was considered as highly rewarding (Barrett Jones 1984:67). In Buddhist inscriptions, this reward is explicitly mentioned: temple building is considered an effective way to acquire merit and, finally, reach Buddhahood. The merit is not inevitably limited to the king only, but might be extended to his lineage and his people. The inscription of Kayumwungan gives a fine example:

> (…) With the merit that he (the king) acquired by founding the abode of the Jina which is given the name Illustrious Veṇuvana, may he attain Sugatahood tenfold (?). That stage – invisible, immediate, extremely difficult to attain – is for his sons together with myself (the king's daughter), which I may attain soon. (Wisseman Christie 2002-2004: nº 35)[59]

Hindu inscriptions found in Java do not mention temple building as a source of religious merit. Indian treatises on Hindu architecture are however clear about it and often underline that the doors of Indra's heaven open for the patron of such a construction (*Bṛhatsaṃhitā* LVI; *Bhaviṣya-purāṇa* VIII; *Agni-purāṇa* XXXVIII). According to the *Agni-purāṇa*, building a temple "frees from sins incurred in thousands births (…), destroys sins such as the killing of a brahmin" (*Agni-purāṇa* XXXVIII).

Nevertheless, beyond the religious merit and its implications in the after-life, the building of a temple was also supposed to insure earthly wealth for the king and for the realm. References to prosperity occur in both Hindu and Buddhist inscriptions. The inscription of Kelurak, for example, states: "this Mañjuśrī image is present here to protect his own region and also to preserve carefully the properties of others, thus increasing the welfare and prosperity of both" (Sarkar 1971-1972: nº 46). In the inscription of Lintakan, one can read that "the owner of the *sīma* shall be happy and long living" (Sarkar 1971-1972: nº 162) while the inscription of Sugih Manek starts with the injunction "Let there be welfare for all the worlds!" (Sarkar 1971-1972: nº 145, 150). Being the expression of the economical resources of a king, a *rake* or a *pamgat*, the temple was also the confirmation of political power, the symbol that the king was fulfilling his mission of bringing wealth to his land, as an earthly Indra – and the very fact that the king succeeded in this mission was the sign that he was supported by the gods. In a world greatly dependant on wet-rice cultivation, wealth was indubitably linked to water flow. There is not much difference between saying that and building temples near rivers.

The relationship between temple and water is an intimate one and goes further

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[59] Kandahjaya, in his recent dissertation, gives a different translation of the same passage, in which the links between the merit acquired by the king and that of his daughter is not so obvious:

> Whatever merit has been obtained by building the temple of Jina, which is similar to the famous Veṇuvana, by means of this [merit] may one attain Sugatahood which is tenfold.
> May I quickly obtain the place of the sons of the Buddha (Buddhists), which is extremely difficult to obtain, unsurpassable, and beyond perception (i.e. *nirvāṇa*). (Kandahjaya 2004:127)

than the simple economical dependence on *sawah* land. Water is indeed an essential element of the Hindu cult. Not only is water used for the offerings, but priests and pilgrims also need it to purify themselves before they may worship the divinity and access the divine realm.

The most powerful purifying water is that of the Ganga River. References to the Ganga are found in Central Javanese inscriptions and certain local rivers were clearly considered as the equivalent of the great Indian river. In the Tuk Mas inscription (mid 7th century?), found near a spring northeast of the modern town of Magelang, one can read that the streamlet of Tuk Mas is "as purifying as the Ganges" (Chhabra 1965:44). The inscription of Canggal (732 A.D.), associated with *candi* Gunung Wukir, states that "there is a great island called Yava (…) where there is a wonderful place dedicated to Sambhu, a heaven of heavens, surrounded by the Ganges (…)" (Sarkar 1971-1972: nº 20). Although no similar inscription has survived for the area of DIY – *kabupaten* Klaten, the number of temples located along Opak/Gendol River should make us consider the possibility of its association with the Ganga River.

The relationship temple/river is two-fold. A temple can benefit from the presence of purifying water, but a river can acquire religious effectiveness through the presence of a shrine along its bank. Such a situation is expressed in the short inscription of Pabaikan (early to mid 9th century?), found near Ungaran, *kabupaten* Semarang. The text reads: "the hermitage of Pabaikan shall bubble forth well-being into the rivers" (Wisseman Christie 2002-2004: nº 29). Through this intimate relationship, natural and built landscape mutually strengthen their religious power.

The dichotomy between civilization and wilderness is indeed not really present in epigraphical data. Although temples often have enclosures that firmly separate the inner, sacred space from the outer sphere, it is obvious from the inscriptions that the natural environment remains within the religious realm and follows the rules of the gods. Not only do we find a few traces of worship of natural elements,[60] but nature is called upon to protect the temples – and make sure that the wishes of the founders of the *sīma* are respected. In the curse formula at the end of numerous *sīma* commemorative inscriptions, it is stated that the one who violates the charter undergoes the punishment of wild animals: if he goes into the river he is eaten by crocodiles, and if he goes into the forest he is devoured by tigers or bitten by snakes.[61] It is striking that wild animals are there to assure that human beings obey the deity's will. Natural environment is not a mere setting, but an active supporter of *dharma* – while men themselves are perceived as possible wrong-doers and perturbators of the world order.

Soil fertility and water availability, important for Central Javanese temples, are also two main criteria for the selection of a temple site in Indian manuals. For most early Indian treatises on architecture indeed, the only site suited for a temple is a site where all sorts of cultivated seeds can grow and bear fruits (*Mānasāra* IV; *Bhaviṣya-purāṇa* VIII; *Mayamata* III; *Matsya-purāṇa* CCLIII; *Bṛhat-saṃhitā* LIII). Soil humidity is also given as a prerequisite by the Indian texts (*Mānasāra* IV; *Mayamata*

[60] In the inscription of Mantyasiḥ I (907 A.D.), the allusion to river worship is clear, as its curse formula exhorts "(…) you deities *taṇḍang*-s of the rivers, you deities snakes, you deities (over) the axes!" (Sarkar 1971-1972: II, n° 70). For mountain worship, see above, p. 82 n.25.

[61] Curse formulae including wild animals occur in the inscriptions of: Tru i Tpussan II (842 A.D.), Kañcana (860 A.D.), Wuatan Tija (880 A.D.), Mantyasiḥ I (907 A.D.), Sangsang (907 A.D.) and Sangguran (928 A.D.). See Sarkar 1971-1972: nr 14, 46, 70, 72, 96; Wisseman Christie 2002-2004: nº 64.

III; *Matsya-purāṇa* CCLIII; *Bṛhat-saṃhitā* LIII). According to the *Bṛhat-saṃhitā* (*Bṛhat-saṃhitā* LVI):

> "Gods dwell with pleasure near lakes, where the rays of the sun are warded off by the parasol of lotus (…) Likewise they dwell in places where the rivers have large girdles of curlews (…) They rejoice always in the vicinity of forests, rivers, mountains and waterfalls (…)" (Ramakrishna 1981:537)

However, if there are neither natural rivers nor lakes, artificial pools are sufficient for the gods to be pleased (*Bṛhat-saṃhitā* LVI).

Temples and springs

Along with volcanoes, hills and rivers, springs are a characteristic element of the Central Javanese landscape, especially in the northern regions, where they are more numerous. The Dieng plateau and Mount Ungaran are dotted with sulfurous springs and temples are set in a landscape of both mountain and (hot) water. The relationship between temple remains and sulfurous water is particularly strong at Gedong Songo, where the temple complex is literally cut by a small canyon sheltering a hot spring. On the northern and eastern slopes of *gunung* Ungaran too, small hot springs are numerous and come up in the rice fields, tainting the vegetation with the characteristic yellow colour of sulphur.[62] Cold springs are also found in or near temple grounds, as in Gunung Gono, Kuwarigan, Pengilon, Sanjaya, Seketi, Sidomukti, Umbul and Wujil.[63]

Candi Ngempon, although by no way a grandiose sanctuary, is nevertheless a stunning example of the care given to the choice of a temple site. This small temple complex, composed of 8 shrines and a rough enclosure wall, is located in a small, relatively steep valley. The temples were built on flattened ground, overlooking *kali* Lulung. The choice of the site, however, is not anodyne. It is also only about 150m to the northeast of the confluence of *kali* Lulung and Wonoboyo, and also just in front of a hot spring, exuding from the opposite bank.[64] To the north of the enclosure wall there is a small, square structure, probably the remains of a well.[65]

Most of the time, the temple and the spring or river are simply juxtaposed. The original settings of the spring are barely touched; they are left un-built. Sometimes, however, the natural environment is actively re-shaped. The spring or the river is then built upon and re-organized by architecture. The latter development is well-known in East Java, where bathing pools are numerous, but it must be underlined that bathing places were also part of the architectural landscape of Central Java. Unfortunately, the state of preservation of many of these supposed bathing places is so poor that one

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[62] Reco is such a spring. In the water, one can still see a couple of ornamented pediments, all that is left of the site of Kaliklotok, described by Verbeek and Krom (Verbeek 1891:93; Krom 1914a:173; 1923, I:223). Dutch inventories further mention a temple complex nearby a hot spring on the northern flank of Mount Ungaran, namely *candi* Argakusuma (Friederich 1870:512; Verbeek 1891:88; Krom 1914a:189).

[63] *Candi* Dukuh, Gunung Gono, Sidomukti and Wujil are not only situated near springs; they are also located atop small hills.

[64] The spring has been transformed into a sort of bathtub with the help of river stones. It is used by local villagers who say it cures skin diseases.

[65] It would not be the only case of a well excavated right next to a river. A similar thing is to be seen at Sumur Songo (Boyolali). A series of wells was dug along a river running in a small canyon. Some of the wells are several meters above the level of the watercourse. Under the pressure, water from the river goes up in the well, much higher than the level of the river. Villagers say that these wells never dry. Most of them are made of re-used temple stones, but one is still in its original state.

cannot tell anymore whether it was just a shrine near a spring or whether there used to be a built tank.[66] Only four sites definitely are bathing pools, namely Sidomukti (Semarang), Umbul (Magelang), Cabean Kunti (Boyolali) and Payak (DIY), and only the two latter ones are in a fair state of preservation.

According to ancient inventories, Sidomukti possessed a bathing place at the foot of the hill and a temple on its top (Friederich 1870:505; 1876:75). As for the bathing place itself, it was made out of two pools, water flowing from the smaller one into the larger one (Krom 1923: I, 224). A two-pool bathing place is still visible nowadays at *candi* Umbul. Here, water flows from the large pool into the small one.[67]

Cabean Kunti and Payak, on the other hand, present a different system. Cabean Kunti is a bathing complex composed of five rectangular pools. Each pool is closed on three sides by a wall. One of them also has a niche carved in the middle of the inner face of the rear wall. Architecturally speaking, Payak is quite similar, except that it is a single pool rather than a bathing complex.

The difference between Sidomukti and Umbul, on the one hand, and Cabean Kunti and Payak, on the other, is not limited to architecture. Indeed, while the two first are built on springs, at Cabean Kunti and Payak water comes from a nearby river.[68] That both Sidomukti and Umbul were places of worship is beyond doubt. The sites have yielded enough religious sculptures and ornamented stones to show that a temple once stood in their neighbourhood. For Payak and Cabean Kunti, this is less obvious, although the discovery of a *peripih* casket in Payak and a *lingga* boundary stone in Cabean Kunti seems to suggest a religious function. So far, however, no sign of a shrine has been discovered near Payak or Cabean Kunti.

The close association of a certain number of Central Javanese temples with springs and the existence of built bathing places confirm the hypothesis that water symbolism, so important in East Java (Patt 1979:48), was already an important feature of Javanese religious thought during the Central Javanese period.

As mentioned earlier, a couple of inscriptions clearly associate rivers of Central Java with the Ganga River. It is nevertheless more difficult to assess whether the theme of the *amṛta*, the life-giving elixir, is expressed here as it was commonly the case in East Java. At Belahan and Jolotundo, for example, a richer iconography help to get a more precise understanding of the symbolism attached to bathing places (Patt 1979).

The topmost bathing place of Belahan was referred to in the inscription of Suci as related to Mt Pāwitra (or Penanggungan), which, in later legend, is nothing else than the top of Mt Meru, transported to Java. Within this context, the presence, in the same pool, of a statue of Wiṣṇu on Garuḍa[69] inevitably makes one suspect an allusion to the myth of the churning of *amṛta*, when, under the supervision of Wiṣṇu, the mountain was used as churning stick (Patt 1979:164-165).

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[66] It is the case of several sites associating a temple atop a hill with a spring at its foot, such as Argakusuma (Kendal), Pengilon (Kendal) or Wujil (Semarang). There is no doubt that there was an architectural connection between the two elements (bathing place and shrine), but there are not enough elements to prove the existence of an ancient tank.

[67] The two pools are still in use and are part of a modern bathing place and pleasure ground. They have obviously been partly rebuilt and it is difficult to say how they looked like in their original state. The small pool especially shows signs of recent rebuilding.

[68] Payak is now dry but the nearby *kali* Petir probably functioned as water supply. It is maybe a change in the river course that ceased the water supply.

[69] In a recent communication, P. Lunsingh Scheurleer has cast some doubt on the origin of this Wiṣṇu, suggesting it could actually have come from *candi* Kidal rather than from Belahan.

The Garuḍa and the *nāga* from the side basins of Jolotundo would similarly refer to the theme of *amṛta*. They would allude to a story told in the Ādiparwa, according to which Garuḍa stole the *amṛta* from the gods in order to give it as ransom to the *nāga* who had abducted his mother (Patt 1979: 234-236).

Unfortunately, none of the bathing places of Central Java have such a rich iconography, let alone a panel depicting *amṛta*. Strangely enough, though, small *nāga* are visible in a few places, almost hidden among the usual ornamentation. At Pringapus, a coiled *nāga* lies behind the *makara* of the entrance door, between the latter and the temple wall. At Gedong Songo I, two tiny snakes emerge from the *kāla* head above the northern niche. While at Umbul, the upper border of a *kāla* pediment transforms on one side into a *nāga*.

The *nāga* being often related, in Hindu mythology, with *amṛta*,[70] it is possible that the snakes of Pringapus, Gedong Songo and Umbul are an attempt to equate local springs with the source of *amṛta*. However, they might as well be a more general reference to water or relate to Indonesian myths about magic water sources that are thought to pre-date Indian influence.[71]

Note on the natural environment of Borobudur and Prambanan

Before conlcuding the present chapter, a brief note must be added concerning the natural environment around the most famous sites of Central Java, i.e. Borobudur and Prambanan. The area of Muntilan, where stands Borobudur, forms a transitional zone between the closed geography of the Progo valley and the more open scenery of the Yogyakarta plain. In the Progo valley, in whatever direction one looks, the view is obstructed by a mountain: Merbabu-Merapi to the east, Ungaran to the north, Sundoro-Sumbing to the west and Menoreh to the south. In contrast, in the Yogyakarta area, the plain stretches to the sea without any obstacle. Within this landscape, Borobudur occupies a peculiar position. It is located in the southwestern part of the Progo valley, almost at the foot of the Menoreh hills, not far from the confluence of the two main rivers of Central Java, the Progo and the Elo. To the observer standing at its top, Borobudur appears to be surrounded by mountains. The Menoreh hills run along the southern and western sides of the monument, continuing to the north in the form of the Sumbing-Sundoro massif. The Menoreh hills, with their steep slopes and cliffs, are particularly impressive; they look impregnable, which compensates for their relatively low elevation in comparison to Mount Sumbing and Merapi. Borobudur seems surrounded by the mythical circular mountain ridge which, according to Hindu-Buddhist representations of the universe, encloses the world[72]. The landscape in which Borobudur is located appears to reaffirm the cosmological aspects of Buddhism, placing the Buddha as Mount Meru at the centre of the universe. This aspect of Buddhism is also a major concern of the Gaṇḍavyūha – one of the texts illustrated on the monument – and a key-feature for understanding Borobudur (Klokke 1996:206-207).

The location of Prambanan is probably even more striking. From a topographical point of view, the Prambanan area distinguishes itself by its contrasting landscape. It includes a fertile plain on the one hand, and dry steep hills on the other. It is also the

[70] Apart from the above-mentioned episode including *nāga* and Garuḍa, a snake play also a role in the churning of the Sea of Milk, since a *nāga* was then used as churning rope.

[71] See for example Bosch 1961b.

[72] Ancient river beds possibly contemporaneous with the monument have been identified. They would have almost entirely surrounded the *candi*, reminding the circular seas described in Indian texts.

place where the plain is at its narrowest, delimited by the presence of Mount Merapi to the north and the northern tip of the Gunung Kidul hills to the south. A person passing from the plain of Yogyakarta to the plain of Solo has to pass by Prambanan. But Prambanan is not only a crossroads for the Yogyakarta-Solo route; it is also a gateway to the northern coast, as well as to East Java. Prambanan is above all a significant place in terms of hydrography. Being at the northwest tip of the Gunung Kidul hills, Prambanan lies on the border between the Yogyakarta plain and the Solo plain or, in other words, between the Opak/Progo water system and the basin of the Bengawan Solo. A few hundred meters west of Prambanan, the rivers are tributaries of *kali* Opak and their waters drain into the Indian Ocean. But directly to the east of Prambanan, rivers join up with the Solo River, crossing the eastern part of the island and reaching the Java Sea near Gresik. Prambanan therefore appears to have been a strategic point, and not only from a symbolical point of view. Its proximity to the Solo basin is of the highest commercial importance: the Solo River could easily be used to ship goods from the east to the Prambanan area (and the other way round) and constituted an interesting alternative to road travel. In ancient times, the river seems to have been navigable even for large ships. In the 18th century, the Solo River was indeed the main trade route between Mataram and the coast. It was because of its location at the mouth of that river that Gresik developed into an important trading post (de Jonge 1878: X, 90)

Conclusion

In this chapter, we have shown that there are a certain number of correlations between temple distribution and environmental features, both regional and local. The areas characterized by dense though dispersed distribution patterns correspond to the terrains the most suitable for wet-rice cultivation and render thus more or less directly settlement patterns. We have further come to the conclusion that small clusters of temples located in the vicinity of the modern towns of Secang, Parakan and Boyolali were key-centres within an ancient road network linking the agricultural plains to the northern coast.

We have then abandon the regional approach to zoom in on correlations between individual temples and local landscape markers. By doing so, we have demonstrated that temples tended to be located on isolated hilltops, along rivers, at confluences and close to springs.

In the next chapter, I will go on examining individual features, since I will present data on temple orientation and try to determine if and how orientation create a link between the built landscape and its natural environment.

CHAPTER 6

Temple Orientation

The aim of the present book is to address a theme – that of space – and to use temple remains as a means to determine how the dignitaries and the architects who erected the temples of Central Java structured the space around them, from a practical as well as from a conceptual point of view. In the previous chapters, I have mainly been looking at location of temples. I have, to some extent, managed to link temple distribution patterns with settlements, communication nodes and remote sacred places, drawing conclusions regarding the extent of the territory and its economical structure.

In the present chapter, though correlation with distribution patterns is still a concern, the introduction of data concerning temple orientation will lead us to address more specifically the question of the relationship between temple orientation, landscape markers, religious architectural traditions, and the conceptualized perception of space. So, we will focus on if – and how – orientation is used to strengthen the relation between individual temples and specific landscape markers (rivers, springs, hilltops, mountains), on the canons for temple orientation expressed in Hindu-Buddhist architectural and textual traditions, and on the perception of space at work behind temple orientation.

For the sake of clarity, I will first discuss the general orientation of the temple remains, while the exact deviation from geographical north will be approached at the end of the chapter. I will first present the data, consider possible correlations with distribution patterns and try to determine whether temple orientation was influenced by the relative position of rivers and mountains. Then, I will briefly discuss the Javanese situation in the light of other Hindu-Buddhist traditions and try to understand to what extent the specificities of Central Javanese architecture convey a local perception of space.

General Orientation of Central Javanese temple remains

Data regarding temple orientation

To begin with, I would like to underline the difficulty of carrying out a study on temple orientation. To analyze distribution patterns we can rely on a temple corpus of more than 200 shrines, but information concerning their orientation is far more scarce: given the poor state of preservation of many remains, orientation is known for only 59 sites. The consequence of the limited extent of the data is that drawing definitive conclusions is difficult – and can even be hazardous. A few useful observations and hypotheses may nevertheless be made.

As a general rule, temples are oriented in relation to the cardinal points.[1] Furthermore they are directed either to the east or to the west, and almost never face north or south (Table 19).[2] Contrary to what happens in most other Hindu-Buddhist

[1] The only exceptions are candi Mendut and Pawon, which face northwest.

[2] There is one possible exception, namely candi Argakusuma. This temple complex was located on the northern slope of Mt Ungaran, in the district of Kendal. Verbeek mentions that at least one shrine faced north (Verbeek 1891:88). Unfortunately, there is no information concerning the orientation of the other buildings. As the site was backed by Mount Ungaran, its northern orientation is most probably an adaptation to local topography. It is nevertheless unique in Central Java. At Gedong Songo, although located in a similar location on the southern slopes of Mount Ungaran, none of the shrines faces south.

architectural traditions, Central Javanese temples do not especially favour the east: out of 59 remains of which the orientation is known, 24 face east, while 35 face west. In the Yogyakarta-Klaten region, west-facing temples are almost twice as numerous as east-facing ones.[3]

Table 19: General orientation of Central Javanese temples

Orientation	*Number*	*Names of the sites*
East	24	Argapura, Bima, Borobudur, Bubrah, Bumen, Butak Wetan, Cebongan, Dipan, Dukuh, Gebang, Gunung Wukir, Kalasan, Kedulan, Loro Jonggrang, Lumbung (Prambanan), Merak, Ngawen, Ngempon, Perot, Retno, Samberan, Sari, Selogriyo, Sewu.
West	35	Asu, Banon, Banyunibo, Barong, Dieng,[4] Gajah, Gana, Gampingan, Gedong Songo, [5] Gunung Sari, Ijo, Jetis (Cangkringan), Kadisoka, Kaliworo, Kalongan, Karangnongko, Lawang, Lumbung (Magelang), Mantup, Miri, Morangan, Ngampin, Palgading, Pendem, Plaosan Kidul, Plaosan Lor, Pringapus, Ratu Boko, Risan, Sambisari, Sentono, Singo, Sojiwan, Sumur Songo, Tinjon.

Temple orientation and distribution patterns

Distribution of east- and west-facing temple does not seem to answer to any patterns. Both orientations are found all over Java; west-facing temples predominate in southern Central Java though (Figure 24, Table 20). Nevertheless, there appears to be some – though limited - correlation between orientation and the different clusters of temples identified in the previous chapters. We have seen earlier indeed that, among Central Javanese temples, two main groups emerge: the first one is composed of shrines dispersed through the rich agricultural plains of southern Central Java – and probably directly linked to settlements, while the second group consists of a more limited number of temples, clustered in high, remote places. If we cross these distribution patterns with data on temple orientation, it appears that the first group counts almost as many west-facing temples as east-facing ones, but that in the second group westward orientation clearly prevails. It is noteworthy that, if topography may explain the orientation of temples located on the Pegat-Ijo hills and that of *candi* Asu, Lumbung, Pendem and Selogriyo, it can not account for the westward orientation of Dieng and Gedong Songo. At Gedong Songo, as well as at Dieng, temple orientation is not clearly related to any landscape marker. The Dieng plateau is literaly encircled by mountains and the orientation of the temples only very loosely relates to the position of the volcanoes. At Gedong Songo the location of Mount Ungaran, to the north of the temple group, does not seem to have any influence on the orientation of the various shrines – all the main temples face west and no single mountain is visible to the east. This could suggest that west actually was the favoured orientation for temples located in high or remote areas, the direction of predilection unless topography did not allow it (as in the case of Selogriyo). This adds to the singularity of these shrines which, as we have seen, already distinguish themselves for not being related to settlements.

3 The numbers are 12 and 22 respectively.
4 Arjuna group, Dwarawati and Gatotkaca.
5 Main temples.

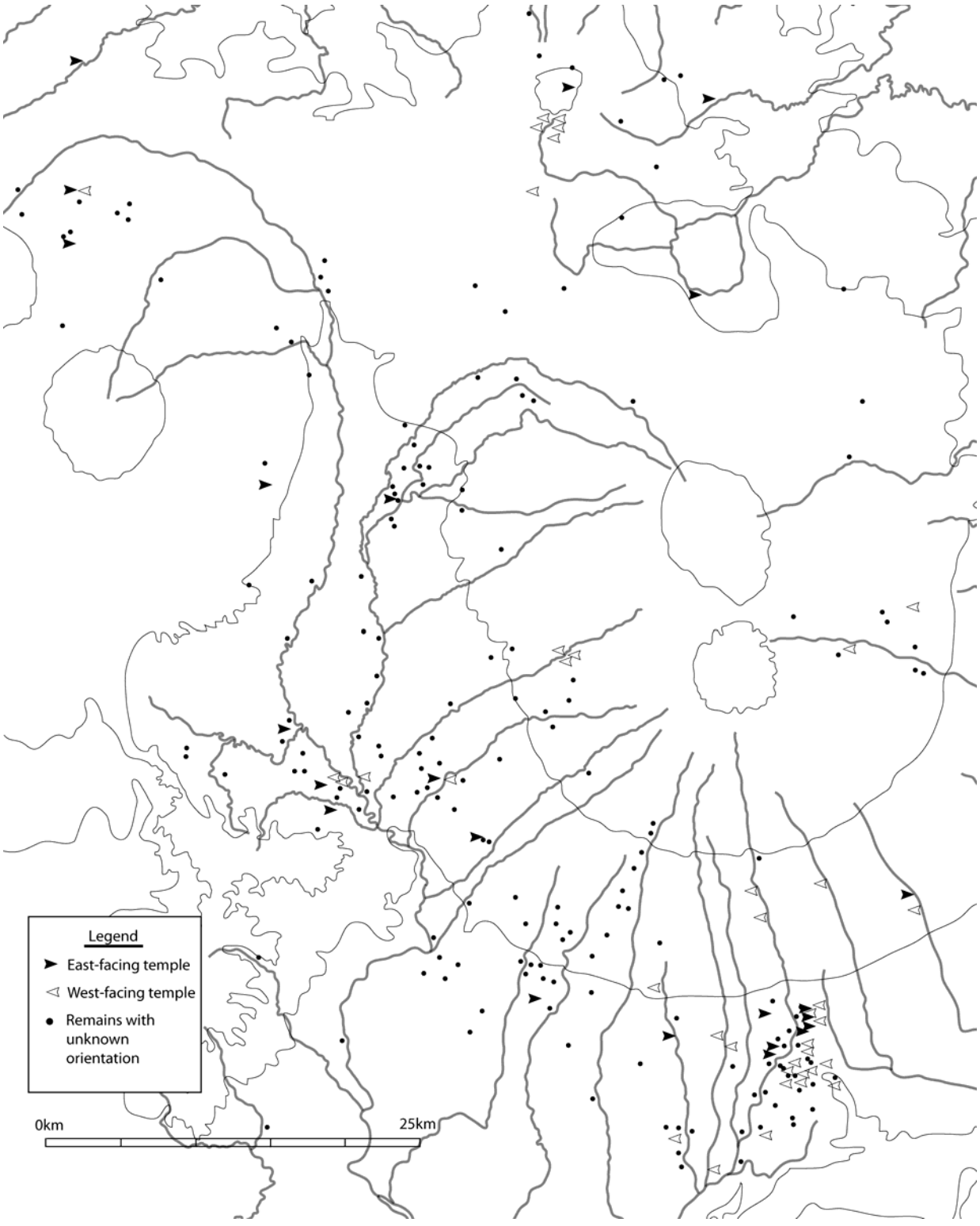

Figure 24: Temple remains, general orientation

Table 20: General orientation and region

Orientation	*Region*	*Number*	*Sites*
East	North	9	Argapura, Batur, Bima, Bumen, Butak Wetan, Dukuh, Ngempon, Perot, Retno.
	Centre	6	Borobudur, Dipan, Gunung Wukir, Ngawen, Samberan, Selogriyo.
	South	11	Bubrah, Cebongan, Gebang, Kalasan, Kedulan, Lumbung, Loro Jonggrang, Merak, Sari, Sewu.
West	North	4	Dieng, Gedong Songo, Ngampin, Pringapus.
	Centre	4	Asu, Banon, Lumbung, Pendem.
	South	23	Banyunibo, Barong, Gajah, Gampingan, Gana, Ijo, Jetis (Cangkringan), Kadisoka, Kaliworo, Kalongan, Karangnongko, Mantup, Miri, Morangan, Palgading, Plaosan Kidul, Plaosan Lor, Ratu Boko, Risan, Sambisari, Sentono, Sojiwan, Tinjon.

The influence of natural environment upon temple orientation

Let us now try to find if there is some correlation between temple orientation and natural surroundings. In East Java and Bali, it has long been acknowledged that many temples were oriented towards a distant mountain peak (Patt 1979:60).[6] So, it is possible that, in Central Java as well, natural features, and especially topography, have played an important role in the choice of orientation.

It is quite obvious, as noted above, that topography influenced the orientation of several temples located in high or remote areas. This is clear in the Prambanan area: almost all the temples located on the northern tip of Gunung Kidul – and a great part of those dotting the Sorogeduk plain – face west.[7] In this area, the hills form a sort of crescent encircling the eastern half of the Sorogeduk plain. Furthermore, the eastern façade of Gunung Kidul appears as a steep cliff that offers no natural passage, while the hills naturally slope down to the west. On the east-west axis, the only access to the hills dominated by Mount Pegat-Ijo is *via* the west, following the natural slope of the hills.[8] For topographical reasons, temple compounds could only be approached from the west and it is no surprise that they face this direction.

Whatever the role of natural elements, this does not mean that such an orientation was without symbolic value. First of all, although knowing that temples built there would have to face west, Javanese architects still considered the site suitable. This can mean that in their perspective east and west were both auspicious. It may also be the case that physical settings had more influence than other prescriptions; temples were deliberately oriented so as to have their backs against the mountain. As a matter of fact, temples are not built on the summit but due west of it, so that the devotee praying in front of the temple is actually facing the mountain. Similarly, Selogriyo, Asu, Lumbung, Pendem and Perot are built quite high and in the vicinity of volcanic peaks,

[6] Unfortunately, she does not list buildings that are mountain-oriented. The only example she gives is *candi* Sanggariti, the main axis of which is more or less in line with the peak of Mount Arjuna (Patt 1979:59).

[7] West-facing temples of the area of Mount Pegat-Ijo and of the Sorogeduk plain are Arca Ganeca, Banyunibo, Barong, Gajah, Ijo, Miri, Ratu Boko, Sentono, Singo and Tinjon. The information is unknown for the following remains: Abang, Grembyangan, Keblak, Krapyak, Ngaglik, Polangan, Polengan, Sawo and Watugudig. No east-facing temple has ever been reported in the area.

[8] Small paths climbing the hills also exist to the north and south of the Ratu Boko plateau, perpendicular to the general slope of the terrain. As a northward or southward orientation was however apparently not considered suitable for temple, the choice was limited to east and west.

opening toward the valley and turning their backs on the mountain – though not exactly on its peak.

Outside the area of the Sorogeduk plain, Mount Pegat-Ijo and the few shrines mentioned above, temple orientation is not as homogeneous and does not show any clear interference of topographical features. Could the orientation of temples situated in plains be influenced by other elements? Although no absolute rule transpires, it appears that rivers could well have influenced temple orientation. If one excludes temples of the Sorogeduk valley and those built on the Mount Pegat-Ijo hills, and compares temple orientation with the relative position of the rivers, it seems that, at least in southern Central Java, temples and rivers entertain some kind of relationship. In this region, whatever the temple orientation (east or west), in 18 out of 23 remains, the river is located at the rear of the building. In only 5 cases, the temple faces the river[9] (Table 21). It is of course quite logical that temples built directly near a river would not face the water, since they are more easily approached through dry lands than *via* a bridge. Nevertheless, one has to wonder whether the location of the river at the rear of the temple did not have another significance, going beyond its pragmatic origin. As a temple backed by a mountain could indicate a certain form of mountain worship, then the placing of a religious building in front of a river could suggest that the river played a more significant role than that of a mere ablution tank. However, we have to note that in areas where rivers do not flow from north to south, temples do not turn their back to rivers.

In other parts of Central Java, data are scarcer and the temple-river relationship appears less obvious. The 17 temple remains for which we know orientation are located near rivers. Among those, 5 are located along rivers running east-west (or reverse) and hence do not face to or away from a waterway. In the remaining 12 sites, the river is located at the rear of the temple in 8 cases and at the front in 5 cases (Table 22).

Table 21: Temple orientation and rivers in southern Central Java

Orientation	*River position*	*Back*	*Sites*	*Amount*
East	East		Gebang, Kalasan, Merak, Sari.	4
East	West	X	Bubrah, Gampingan, Jetis (Cangkringan), Kedulan, Loro Jonggrang, Lumbung, Sewu.	7
West	West		Sambisari.	1
West	East	X	Jetis (Ngemplak), Kadisoka, Kaliworo, Kalongan, Karangnongko, Mantup, Morangan, Palgading, Plaosan Kidul, Plaosan Lor, Sojiwan.	11

Table 22: Temple orientation and rivers in the Progo valley and peripheral areas

Orientation	*River position*	*Back*	*Sites*	*Amount*
East	East		Ngawen, Samberan.	2
East	West	X	Gunung Wukir, Retno.	3
East	Other		Ngempon (S), Selogriyo (NW).	2
West	West		Mendut, Ngampin.	2
West	East	X	Banon, Gunung Sari, Lumbung, Pawon, Sumur Songo.	5
Wesr	Other		Asu (N), Lawang (N), Pendem (N).	3

[9] Among those five temples, Gebang is a peculiar case, given that, although the nearest river is located east of the temple (thus in front of it), the site is close to a confluence, so that there is also a river to the west (back).

We can tentatively conclude from these observations that, although the location of rivers probably played a role in the orientation of certain temples, it was, in general, less essential than the east-west orientation. In that part of the landscape where rivers run east-west, temple orientation was never adapted, so the building would turn its back to the river. Only in areas where waterways follow a north-south course do they influence temple orientation.

The influence of other factors on temple orientation is striking at Gedong Songo. Although the site was obviously chosen for its impressive natural settings, neither the peak of Mount Ungaran to the north nor the sulphurous springs that flow in the small canyon right in the middle of the temple complex seems to have had an impact on temple orientation. The main buildings all face west, that is to say half of them overlook the canyon while the other half turn their backs to the spring.

General temple orientation in Hindu-Buddhist building traditions

Neither regional trends nor landscape features can explain completely satisfactorily the orientation, but what could then be the significance of a west- or eastward orientation; and is the situation in Central Java comparable to what we know from other Hindu-Buddhist countries?

Actually, variance in temple orientation is not unique to Java. In India, although east is predominant, some buildings do face west,[10] and others even north.[11] Early Khmer and Cham buildings do not systematically face east either. The most ancient temple group of My-Son (My-Son E1), for example, faces west. Similarly, several pre-Angkorian buildings face west (such as *prasat* Ta Nien Kang Leach at Phnom Bayang, or *prasat* Punriy in Kompong Chnang) or north (such as Phnom Da and Ashram Maha Rosei). In Khmer architecture, however, it seems that from the Sambor Prei Kuk style onwards, temple orientation was standardized and east became the favoured direction, with almost all the main temples facing the rising sun.[12]

In India, as well as in mainland Southeast Asia, west-facing buildings were thus less numerous than east-facing ones.[13] Central Javanese architectural traditions show on the contrary no singular preference for east over west at any point of its history, since east and west facing temples are found in its early as well as late period.[14] In

[10] West-facing temples are found in both north and south Indian architectural traditions. Here are some examples of west-facing Indian temples from the 5th to the 8th centuries: Pārvatī temple (Nacnā), Śiva temple (Sākōr), Rudra-Narasiṃha temple (Rāṃtēk), Khimēśvara Mahādeva temple (Khimēśvara), Vindhyavāsinī temple (Śrinagar), Indal temple (Kharōd), Pāraśurāmēśvara, Śatrughnēśvara and Uttarēśvara temples (Bhuvanēśvara), Paṣabhadrā and Huccimalli temples (Aihole), Kailāsa temple (Ēllōrā), Pināpāṇi temple (Mahākūṭa), Mahānandīśvara temple (Mahānandi), Draupadī ratha, Arjuna ratha, Dharmarāja ratha and Olakkannēśvara temple (Mahābalipuram), Vālīśvara temple and Vaikuṇṭha-perumāl (Kāñcīpuram) and the Veṭuvaṇkōvil temple (Kaḷugumalai) (See Dhaky, Meister 1983-1998).

[11] The Maniyār Maṭh temple at Rājgir (c.500 A.D.), the temple nº 1 at Mākangañj (625-650 A.D.), the temple nº 6 at Khimēśvara and the Śiva temple at Dhōbinī, for example, all face north (see Dhaky, Meister 1983-1998)

[12] Well-known exceptions are Angkor Wat, facing west, and Phimai, facing south.

[13] There is, to my knowledge, no specific study on the orientation of Indian temples. To arrive at this conclusion, I have compiled data from published plans and temple description, using as a base the Encyclopaedia of Indian Temple Architecture.

[14] For the early period, candi Arjuna, on the Dieng plateau, faces west, while Borobudur is oriented eastward. Among more recent buildings, Loro Jonggrang faces east while Plaosan faces west. As Borobudur and Plaosan are both Buddhist and Dieng and Loro Jonggrang Hindu, it is not very likely that the preference for east or west is also linked to the religious affiliation.

other words, even though west-facing temples occur in other regions of the Hindu-Buddhist world, the high proportion of such buildings is probably typical to Java.

This state of affairs, though, is not in contradiction with the written tradition inherited from India: Indian treatises on architecture do not say that a sanctuary should face east. According to these treatises, numerous factors may influence the orientation of a temple, among others the position of the building within the settlement, or the god to whom the temple is dedicated. The Indian texts offer a large variety of opinions, and no standard orientation emerges from them.

The *Bhaviṣya-purāṇa* (chap. VIII), for example, recommends that the temple face east, but that, if this is not possible, west is also a good choice (Arora 1972:192). The *Bṛhat-saṃhitā* (*Bṛhat-saṃhitā* LVI, 10) states it even more blankly, stating that "the central or main gate would be auspicious if situated in one of the four cardinal directions" (Ramakrishna 1981:538).

According to the *Mānasāra*, the temple of Viṣṇu should face the village, while that of Narasiṃha should have its back to the village. The temple of Śiva should face outward, except if it is built in the east or west, in which case it should face the village. As for the temples of the other gods, they may face any direction (*Mānasāra* IX).

For the *Mayamata*, the temple of Īśa may face either east or west, as long as it is turned outwards. The temple of Viṣṇu may face any direction and that of Śiva must face west (*Mayamata* IX: 84-85a).

In the *Agni-purāṇa* (XLI: 36), one reads that "the door of the temple at the centre of the village or on the eastern part should face west (…). In the southern, northern and western parts (the door) should face the east" (Gangadharan 1984:113).

Indian treatises on architecture, or at least a good number of them, thus give much freedom to the architect in the choice of orientation, but Central Javanese temples face only east or west, never north or south. The reason for this may be sought in the fact that only part of the Indian tradition reached Java: the principles established in the *Agni-purāṇa* would have been known, while the traditions expressed in the *Mānasāra* or in the *Mayamata*, for example, would not. The first text shows indeed a preference for east and west, while the two later ones consider also the possibility of north and south facing buildings. It does not however explain why Central Javanese architects did not interpret the texts as their Indian colleagues, i.e. in giving the preference to the east, direction of the rising sun.

The sun and the axes: space in Central Javanese inscriptions

Whatever tradition was received, Javanese temples most certainly reflect the way Javanese people structured the space around them. In the case of temple orientation, inscriptions may enlighten our understanding of architecture and provide us with a good starting point from which to explore the concept of space in ancient Java. The Indian conception of space relies on a movement, that of the *pradakṣiṇapatha* (clockwise circumambulation), which is an essential element of Hindu-Buddhist worship. In India, devotees have to turn clockwise around temples and idols, leaving them to the right. *Pradakṣiṇapatha* is the path of the sun and, therefore, the movement of life. It is best started in the east, to replicate the course of the sun from sunrise to sunset. Hence the numerous east-facing temples found in India. However, the essence of the *pradakṣiṇapatha* is the movement itself rather than its starting point. The opposite of *pradakṣiṇa* is *prasavya*, the counter clockwise circumambulation, which is associated with destruction and funerary rituals.

Pradakṣiṇapatha was also part of Hindu and Buddhist rituals in Central Java, as testified by reliefs[15] and epigraphic data. The earliest inscription referring to the *pradakṣiṇapatha* is the inscription of Gaṇḍasuli II (810?). It states that "throughout all the kingdom, hither and yon, to the east, south, west and north, all about, everyone praises the good works of the *dang karayan* Partapan" (Wisseman Christie 2002-2004: nº 15). The cardinal points are here enumerated in a clockwise order, suggesting the movement of the *pradakṣiṇapatha*.

From the mid 9th century onwards, numerous inscriptions end with a curse formula, in which gods are invoked to protect the new *sīma*. The directions are mentioned clockwise in the following inscriptions (Table 23): Kañcana (860 A.D.), Poh Dulur (890 A.D.), Kubukubu (905 A.D.), Mantyāsiḥ I (907 A.D.), Wukajana (908-910 A.D.), Kuṭi (898-910 A.D.), Sangguran (928 A.D.), Kampak (928 A.D.) and Air Kali (928-929 A.D.).[16] In all these inscriptions, the enumeration starts from the east, and the terms used for the various directions are of Sanskrit origin (Klokke 1995:82): *pūrwwa* (east), *dakṣiṇa* (south), *paścima* (west) and *uttara* (north). In the inscriptions of Kañcana, Wuatan Tija (880 A.D.), Poh Dulur, Rukam (907 A.D.), Sugih Manek (915 A.D.), Gilikan (923 A.D.), Sangguran and Kampak,[17] the *pradakṣiṇa* is also suggested by the names of the gods of the four directions: *Yama* (south), *Waruṇa* (west), *Kuwera* (north) and *Waśawa* (east).[18]

Furthermore, when the boundaries of the *sīma* are mentioned in inscriptions, they are most of the time described in *pradakṣiṇa* order, from east to north (inscriptions of Waharu I, 873 A.D.; Haliwangbang, 877 A.D.; Taji, 901 A.D.; Kuṭi, 898-910 A.D.; Pupus, 910-915 A.D.), or from northeast to northwest (inscription of Kañcana, 860 A.D.).[19] The circumambulation of the territory transferred was part of the *sīma* ritual, as stated in the inscription of Air Kali: "(…) and they circumambulated the boundary, marking out the sīma" (Wisseman Christie 2002-2004: nº 206).

However, boundaries are not always mentioned in *pradakṣiṇa* order (Table 23). In the inscriptions of Mamali (878 A.D.) and Taragal (881 A.D.),[20] they are even listed in *prasavya* order (from east to south for Mamali and from north to east for Taragal). In the inscriptions of Śrī Manggala II (874 A.D.) and Jurungan (876 A.D.),[21] the lengths of only two boundaries are given, respectively the southern and eastern boundaries for Śrī Manggala II and the eastern and northern ones for Jurungan.

From the last four inscriptions, it can be deduced that, although *pradakṣiṇa* order was a well-known and important order regulating various activities, it was not automatically applied in every circumstance: directions could be listed in other ways, even in *prasavya* order. It is clear that counter clockwise circumambulation was not especially related to funerary rituals, nor to death and destruction, for establishing a *sīma* is not linked to funerals. The inscriptions of Haliwangbang, Mamali and Taragal,[22] for example, belong to the same series of charters. The three inscriptions commemorate *sīma* made for the benefit of the same temple (Gunung Hyang). However, in Haliwangbang, the *sīma* boundaries are given in *pradakṣiṇa*, while in the

15 Narrative reliefs of Borobudur and Prambanan must be read clockwise.
16 See Sarkar 1971-1972: nº 12, 70, 72, 96; Wisseman Christie 2002-2004: nº 64, 126, 147, 206, 211.
17 See Sarkar 1971-1972: nº 46, 84, 96, 104; Wisseman Christie 2002-2004: nº 64, 126, 158, 211.
18 Waśawa is one of Indra's names (Krom 1925b:205).
19 See Sarkar 1971-1972: nº 12, 31, 61; Wisseman Christie 2002-2004: nº 64, 90, 180.
20 See Wisseman Christie 2002-2004: nº 96, 109.
21 See Sarkar 1971-1972: nº 32; Wisseman Christie 2002-2004: nº 89.
22 See Wisseman Christie 2002-2004: nº 90, 96, 109.

Table 23: Lists of cardinal points in Central Javanese inscriptions

List	*Order*	*Inscriptions*
E, S, W, N	Clockwise	Gaṇḍasuli, Kañcana, Waharu, Haliwangbang, Poh Dulur, Taji, Kubukubu, Mantyāsih I, Wukajana, Kuṭi, Pupus, Sangguran, Kampak and Air Kali.
S, W, N, E [23]	Clockwise	Kañcana, Wuatan Tija, Poh Dulur, Rukam, Sugih Manek, Gilikan, Sangguran and Kampak.
E, N, W, S	Counter-clockwise	Mamali.
N, W, S, E	Counter-clockwise	Taragal.
N-S, W-E	In pairs	Wuatan Tija, Wanua Tengah III, Sugih Manek, Lintakan, Gilikan, Sangguran and Kampak.

other inscriptions, they are given in *prasavya* order. It is therefore not possible to consider *pradakṣiṇa* and *prasavya* as two methods of circumambulation relating to different types of temples.

The explanation might be that the Indian idea of *pradakṣiṇapatha* was challenged by a local concept of space and directions. The clockwise circumambulation, though part of numerous rituals, was perhaps not totally integrated into Javanese culture and was therefore somewhat inconsistent (hence the use of *prasavya* order in two inscriptions). Actually, there are already traces, in Central Javanese inscriptions, of the dualistic vision of the world that marks East Javanese art and society. Those traces are visible in the inscriptions of Wuatan Tija, Wanua Tengah III (908 A.D.), Sugih Manek, Lintakan (919 A.D.), Gilikan, Sangguran and Kampak. In the inscription of Wanua Tengah III, one can read that "the extent of the *sawah* was: going eastwards along the north side, 182 *ḍpa*; going eastwards along the south side, 162 *ḍpa*; going northwards along the east side, 160 *ḍpa*; and going southwards along the west side, 162 *ḍpa sihwā*" (Wisseman Christie 2002-2004: nr 161). Boundaries are listed in opposing pairs, north-south on the one hand, east-west on the other hand.

A similar formulation is found in the curse formulae of the other above-mentioned inscriptions, where spirits of the directions are mentioned in pairs: north and south, west and east.[24] The terms used are not of Sanskrit origin, as when the directions are listed in *pradakṣiṇa* order; they clearly are Javanese words: *lor* (north), *kidul* (south), *kuluan* (west), *wetan* (east) (Klokke 1995:82).

Conceptions of space defined in pairs of complementary elements are well known in present day Indonesia, and are found all over the archipelago. They can be composed of separate pairs, or of one main axis crossed by a secondary axis. In East Sumba and among the Ngaju Dayak (Table 24), for example, one pair is composed by "downstream-upstream" while the second axis is defined either according to the sun (sunrise-sunset, in the case of Borneo) or according to the shape of the island (head-tail, in the case of Sumba) (Schärer 1963:66; Forth 1981:52). On the contrary, in Roti and Ende (Flores), the main axis (east-west in Roti, sea-land in Flores) determines the secondary axis, the latter being expressed in terms of left and right (Waterson 1990:93). A system of orientation based on pairs has survived in Bali, showing that it is rooted deeply enough in the Austronesian way of thinking to coexist with Hinduism. Balinese determine the directions in terms of mountain-sea and east-west (Hupré 1993:174-175).

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[23] Yama, Waruṇa, Kuwera, Waśawa.

[24] The inscriptions of Sangguran, Kampak, Sugih Manek, Gilikan and Wuatan Tija give them also (but earlier in the text) in pradakṣiṇa (east, south, west, north and/or Yama, Waruna, Kuwera, Waśawa). See above, p.112.

Table 24: Examples of systems of orientation by pairs in the Indonesian archipelago

	Main axis	Secondary axis
East Sumba	Upstream – Downstream	Head – Tail
Ngaju Dayak	Upstream – Downstream	Sunrise – Sunset
Roti	Sunrise – Sunset	Left – Right
Flores	Sea – Land	Left – Right
Bali	Mountain – Sea	East – West

Linguistic studies have further concluded that the Javanese directional system evolved from a geography-related binary (inland *versus* sea) to a fixed system of cardinal points. Lor, the Javanese for "north", comes indeed from the Proto-Austronesian *laSud, meaning "toward the sea" (Adelaar 1997: 64).

We may conclude that, as early as the second half of the 9th century, two perceptions of space were challenging one another among the elite of Central Javanese society. One was the imported *pradakṣiṇa* concept, which relates space, time and sun. The other was of Javanese origin, probably ancient, and conceived a dualistic world. The reticence about *pradakṣiṇapatha* might come, as suggested elsewhere by Klokke, from the fact that the path of the sun is not as straightforward in Java as it is in India (Klokke 1995:76). Java is located in the southern hemisphere but near the equator. This means that for two thirds of the year the sun is travelling from east to west *via* the north (and not *via* the south as in the *pradakṣiṇapatha*). Hence, the association between the *pradakṣiṇa* movement and the path of the sun loses its foundations and becomes meaningless during most of the year (Klokke 1995:76).

Given its changing character, it is thus probable that the path of the sun did not play such a prominent role in Java as it did in India. Furthermore, as inscriptions suggest the existence of a local concept of space, it is not surprising that Javanese architects interpreted the Hindu-Buddhist tradition differently from their Indian colleagues. As a result, Javanese architects favoured an axis (east-west) rather than a single direction (west).

Besides, the practical implementation of these spatial principles might have been quite different in India and in Java. In Indian texts, temples should face an auspicious direction and, although the treatises on architecture do not agree with one another, in practice, it has often been understood that temples should face east. That the rising sun shines upon the image in the *cella* is thought to benefit the temple (Klokke 1995:75; Kramrisch 1946:235, 304).

However, in traditional Indonesian societies, although east is an auspicious direction, this is not necessarily translated into east-facing buildings. For example, in most Balinese housing compounds, the family temple is located to the northeast (the most auspicious direction in southern Bali). The altar itself faces west or even southwest, but people praying in front of it thereby face the auspicious direction (see Hurpré 1993:179).

The difference between the Indian interpretation – that the temple itself should face east – and that of the Balinese – that it is actually the devotee who should look in an auspicious direction – might partly explain why west-facing temples are so numerous in Java (far more numerous than in India or mainland Southeast Asia). The co-existence of two ways of thinking about space allowed Javanese architects to choose an orientation more freely and to adapt it to topography, hydrography or the position of human settlements.

That a local interpretation may lead to an inversion of Indian principles of spatial organization is illustrated by the repartition of *buddha* sculptures at Borobudur and

candi Sewu. According to the Indian tradition, each *buddha* is associated with a precise direction:

Buddha in bhūmisparśa-mudrā	East
Buddha in *varada-mudrā*	South
Buddha in *dhyāna-mudrā*	West
Buddha in *abhaya-mudrā*	North

The locations of the Buddha sculptures of *candi* Borobudur fit with the above scheme. In *candi* Sewu, however, only the sculptures from the first, second and fourth rows of shrines follow a similar pattern. Sculptures found in the third row (the only row where the shrines are turned inward) show an inverted picture: Buddhas in *bhūmisparśa-mudrā* are to the west, *varada-mudrā* to the north, *dhyāna-mudrā* to the east and *abhaya-mudrā* to the south (IJzerman 1891: fig.153). As regents of the directions, the *jina* rule over the cardinal points, i.e. they face the corresponding direction.

To summarize, the orientation of Central Javanese temples distinguishes itself from the building traditions of India and mainland Souhteast Asia by the absence of preponderance of east over west. This peculiarity – which is not in contradiction with the Indian treatises on architecture – apparently resulted from the coexistence of two different perceptions of space – a dualistic one and a solar based one – and possibly from a different approach to sacred space – according to which both direction and location could be determinant factors in the planning of a temple. Central Javanese architects were therefore more inclined to build west-facing temples than Indian architects and thus to adapt temple orientation in relation to external parameters. Nevertheless, the fact that it was apparently an obligation for a shrine to have its door along the east-west axis shows that adaptation to exterior criteria had its limits and that there was a rather strict concept of space underlying the construction. No parameter was strong enough to make the architect depart from this rule and adopt a northward or southward orientation.

Temple orientation and religious affiliation

In the Javanese perception of space, temples had to be orientated to the east or to the west, both directions being apparently equally acceptable. But what further parameters could have influenced the choice for the one or the other? We have seen that regional trends, topography and rivers had probably an impact – though limited – on temple orientation. Indian treatises on architecture already suggest that two other elements might have influence on orientation: religious affiliation and position in relation with settlement.

The religious history of Central Java is not well-known and, as long as religious affiliation is concerned, we can only distinguish Buddhism from Hinduism. With the exception of a few cases, the exact name of the deity worshipped in the still visible temple remains is unknown – but the vast majority of Hindu temples were obviously dedicated to Śiwa, as suggested by the numerous *lingga*.

In a 1995 article, M.J. Klokke has suggested that temple orientation might be linked to the its affiliation to Buddhism or Hinduism:

> While most Buddhist *caṇḍi* such as Kalasan, Sari, Sewu, Ngawen and Borobudur face east according to the Indian model, most Hindu temples, including the Arjuna group at Dieng, Pringapus, the Gedong Songo group, Ijo, Morangan and Asu, Pendem and Lumbung near Muntilan, are oriented towards the west. […] It is striking, however, that in Central Java the west has been favoured systematically as the side for the entrance of Hindu temples. The only exception is the Loro Jonggrang complex, which faces east. (Klokke 1995:77)

Table 25: Orientation and religious affiliation

Direction	*Religion*	Number	*Names of the sites*
East	Buddhist	8	Borobudur, Bubrah, Gampingan, Kalasan, Lumbung (Prambanan), Ngawen, Sari, Sewu.
	Hindu	15	Argapura, Batur, Bima, Cebongan, Dukuh, Gebang, Gunung Wukir, Kedulan, Loro Jonggrang, Merak, Ngempon, Perot, Retno, Samberan, Selogriyo.
West	Buddhist	10	Banyunibo, Gana, Kalongan, Mendut, Palgading, Pawon, Plaosan Kidul, Plaosan Lor, Risan,[25] Sojiwan.
	Hindu	21	Arca Ganesa, Asu, Banon, Barong, Dieng,[26] Gajah, Gedong Songo,[27] Gunung Sari, Ijo, Jetis (Cangkringan), Kaliworo, Lawang, Lumbung (Magelang), Mantup, Miri, Morangan, Pendem, Pringapus,[28] Sambisari, Sentono, Singo, Sumur Songo.

However, now that we have gathered more data and can take into consideration a larger number of remains, we have to recognize that these observations were based on insufficient data. Orientation is known for 18 Buddhist temples and, out of these, 10 face west. There is thus no specific tendency to orientate Buddhist shrines towards the east. Furthermore, even though it is true that the majority of Hindu remains face west (21 out of 35), Loro Jonggrang is not the only east-facing Hindu sanctuary (Table 25). The choice of orientation must have been based on other criteria than a Hindu or Buddhist affiliation.

It can be argued, as was done in earlier times for Angkor Wat (Cœdès 1933; Przyluski 1933),[29] that west-facing temples had a funerary function, while east-facing shrines were dedicated the gods. It is indeed commonly admitted that west, being the direction of the setting sun, is related to death. Nevertheless, in ancient Indian Hindu-Buddhist thought, it seems that west is not automatically associated with death or funerary rituals. Furthermore, as will be shown later, the epigraphic and archaeological records do not suggest that such an association was common in Central Java.

Nevertheless, it is clear from Indian treatises on architcture that, in India, west-facing temples existed and had no special connections whatsoever with funerary rituals.[30] I do not want to re-open here the old debate regarding the function of the Javanese *candi*. It has been satisfactorily closed by R. Soekmono in his thesis (Soekmono 1995). Central Javanese shrines are not tombs, they are temples: the supposed funerary urns found in the temple pits were not remains of dead kings. They were ritual deposits, as described in Indian treatises on architecture, and were similar to the *peripih*, receptacles for the god's essence, still found buried under Balinese shrines and altars (Soekmono 1995; Ślączka 2007).

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[25] The religious affiliation of candi Risan is uncertain, since its association with Buddhism is based on the discovery of a single statue, identified as the bodhisattwa Awalokiteśwara (Verbeek 1891:168; Hoepermans 1913:218; Bosch 1915:25; *Laporan Peninjauan situs Semin, Playen dan Karangmojo* 1981; *Daftar peninggalan benda DIY* 1985:37-39).

[26] Arjuna group, Gatotkaca and Dwarawati.

[27] Main temples.

[28] Candi Pringapus might actually be the secondary shrine of candi Perot.

[29] The opinion that Angkor Wat had a funerary character was based on three main arguments: 1) reliefs that are not composed around a central motif must be read from left to right, 2) the order of the reliefs seems to follow a apasavya rather than a pradakṣiṇa movement, 3) the temple faces west (Cœdès 1933; Przyluski 1933). Cœdès already objected to the reading of the reliefs in apasavya direction (Cœdès 1933). This was recently contested by E. Mannikka (Mannikka 1996).

[30] See above, p.111.

What is specific about Javanese shrines is that at least some of them were related to the worship of former kings. The practice is well-known in East Java where texts tell us, for example, that king Anūṣapati was enshrined at *candi* Kidal and king Wiṣṇuwardhana at *candi* Jago.[31] After their deaths, East Javanese kings united with their favoured god and, in that case, a statue of the god was placed in a *candi*. The temple would then become a place for the worship of the deceased king. Similarly, some inscriptions[32] suggest that certain Central Javanese *candi* were linked to deceased kings.

Can we then postulate that temples linked to ancestor worship were oriented towards the west and that other kinds were oriented towards the east? Or the other way round? Unfortunately, Central Javanese inscriptions referring to known temples are too scarce to give a definitive answer to that question. Nevertheless, on the one hand, the inscription of Gunung Wukir, associated with *candi* Gunung Wukir (an east-facing temple) does not refers to ancestor worship, but commemorates the erection of *lingga* by (the then living) king Sañjaya in a "wonderful place dedicated to Śambhu" (Śiwa) (Sarkar 1971-1972: I, nº 3). On the other hand, the Śiwagṛha inscription,[33] which is usually linked to the east-facing *candi* Loro Jonggrang (Casparis 1956: 280-330) is said to refer to the memorial temple of *rake* Pikatan.[34] We thus have two temples with the same orientation (east), one of them possibly linked to ancestor worship, the other probably not. It seems therefore unlikely that the dedication of a temple to ancestor worship automatically induced a specific orientation.

Exact orientation: deviation from geographical north

Until now, I have used the terms "east" and "west" without much precision, but a problem arises here: Central Javanese temples rarely face due east or due west. Most of the time, their axes deviate from geographical north. This observation raises a question: is this a mistake resulting from the technique of orientation used or was it done on purpose?

Data accuracy

First of all, a word must be said about data accuracy. Exact orientation is not easy to measure and, most often, mistakes cannot be avoided; the very nature of

[31] According to the Pararaton and the Nāgarakṛtāgama. See Brandes 1897:16, 18; Robson 1995: 54. For the association between names mentioned in the texts and the actual *candi* Kidal and Jago, see for example Krom 1923, II:55, 95.

[32] The inscription of Laṇḍa (879 A.D.), for example, mentions a sang dewata ing pacaṇḍdyan i Kwak, which Wisseman Christie translates as a "deified ancestor buried in the candi at Kwak. Similarly, she reads, in the inscription of Tĕlang I (904 A.D.), haji dewata lumāh ing śataśṛngga as "the deified ruler who is buried at Śataśṛngga". In the inscription of Poh (905 A.D.), sang hyang caitya mahaywa silunglung sang dewata sang lumāh i pastika is "the holy funerary monument of the ancestor-spirit who is buried at Pastika" (Wisseman Christie 2002-2004: nº 100, 141 and 146). Many of these translations are tentative. It is nevertheless clear that some sort of ancestor worship occurred: it is indeed the only way to understand the inscription of Mantyāsiḥ I (907 A.D.), which, after invoking all kinds of spirits, invokes the "holy spirits who have gone before" followed by the names of 8 kings of Matarām (Wisseman Christie 2002-2004: nº 152).

[33] For a transcription and translation of the Śiwagṛha inscription, see Casparis 1956:280-330 and Wisseman Christie 2002-2004: nº 53.

[34] The inscription describes the funerary temple of the previous king. The title of the reigning king is dyaḥ Lokapāla, who, given the date of the inscription (856 A.D.), is without much doubt rake Kayuwangi dyaḥ Lokapāla. His predecessor on the throne was rake Pikatan dyaḥ Salaḍū, as we know from the Wanua Tengah III inscription (Wisseman Christie 2001:) .

archaeological sites lowers the accuracy. Most temples were discovered in a poor state of preservation; the area being subject to earthquakes, landslides and floods. Ancient stonewalls are often found in a toppled state at a slight remove moved from their original locations. This process is amplified by the lack of deep foundations that characterizes ancient Javanese architecture. Foundations are indeed rarely more than two or three stone layers deep, so they can also be disturbed by natural events.

The situation is not always better when temples are found still partly standing. Movements of stones from their primary positions are frequently noted, so that it is very difficult to determine which stone is the least disturbed. Therefore, depending on the stones chosen as points of reference, results may vary and mistakes thereby occur in the measurement of orientation.

Another problem comes from the fact that numerous structures underwent thorough restoration. They were often dismantled to the ground before being completely rebuilt. This is the case, i.a., with *candi* Banyunibo, Barong, Borobudur, Gebang, Ijo, Pawon, Plaosan, Pringapus, Ratu Boko, Sewu and Sojiwan. In such circumstances, there is no guarantee that the rebuilding preserved the exact orientation of the original structure (especially when this original orientation was already difficult to estimate).

The conclusion from all this is that we should keep in mind that the numbers, although given with apparent precision, cannot be regarded as an exact picture of the past reality and that any study requiring a too high measurement of orientation should be treated with caution and suspicion.

To illustrate the problem posed by data accuracy, I would like to compare the orientation of two important temples, namely *candi* Mendut and *candi* Gunung Wukir, as measured by E.L. Hapsoro and B. Siswoyo (Hapsoro 1986:60-61; Siswoyo 1996:5):[35]

Mendut:	Hapsoro:	303º 06'22.51"
	Siswoyo:	287º 59'
Gunung Wukir:	Hapsoro:	109º 24'03.77"
	Siswoyo:	101º 25'

We can see here that differences may be considerable. Although I would have liked to do so, I have not had the occasion to make my own measurements.[36] Nevertheless, it is probable that in many cases they would have given a third result, not necessarily more faithful to the original orientation than those of E.L. Hapsoro and B. Siswoyo.

If one accepts an error margin of more or less 5º, it is still possible to roughly divide temples into three groups, according to the importance of their deviation from geographical north.[37] 15 temples have an orientation very close to the cardinal points (Table 25, Group Ia), 4 are clearly far away from the main points of the compass

[35] Although both archaeologists were working with a theodolite, their methods differed. E.L. Hapsoro based himself on the measurement of the position of two corners of the same wall (Hapsoro 1986:49), while B. Siswoyo used an average taking into account the position of two parallel walls (Siswoyo 1996:3).

[36] I used a simple water compass to determine whether temples face due east/west or not, but the method is not precise enough to determine exact orientation. The use of a theodolite would have required me to hire instruments and topographers from the Suaka Purbakala, which was not possible given my budget.

[37] Mendut and Pawon are actually the only temples for which my compass-made estimates differed strikingly from the measurements of B. Siswoyo.

Table 26: Temple orientation, deviation from true north

	Deviation[38]	*Sites*	*Number*
Group Ia	0º - 3º	Asu, Banyunibo, Barong, Borobudur, Bubrah, Gedong Songo I, Ijo, Loro Jonggrang, Lumbung (Magelang), Ngempon, Plaosan Kidul, Sambisari, Sari, Sewu, Sojiwan.	15
Group Ib	4º - 8º	Arjuna, Dwarawati, Gatotkaca, Gedong Songo II, Kalasan, Lumbung, Plaosan Lor, Selogriyo.	8
Group II	11º - 16º	Bima, Gebang, Gedong Songo III, Gedong Songo IV, Gedong Songo VI, Gunung Wukir, Merak, Retno.[39]	8
Group III	17º - 30º	Mendut,[40] Ngawen, Pawon,[41] Pendem.	4

(Table 26, Group III), and the rest, i.e. 16 sanctuaries, are in between (Table 26, Group Ib and II).

These variations of orientation raise many questions: are they related to religious affiliation, regional traditions or chronology? Do they have a meaning or are they the results of imperfect orientation methods? Unfortunately, the scope of this study has not allowed me to resolve these variations, and I hope that high quality astronomical methods will in the future be applied to the resolution of this question.

It is nevertheless possible to shatter one pre-conceived idea: that Central Javanese temples would be perfectly oriented around the cardinal points (contrary to East Javanese temples). In her thesis, J. Patt has argued that the orientation of Sanggariti (45º to the NE) is "strikingly in contrast to the exact east-west, north-south compass alignments of closely contemporary Central Javanese monuments of the eighth and ninth centuries" (Patt 1979:60). This argument has also been put forward by Klokke in a more recent article, where she emphasises that Central Javanese temples are oriented to the four cardinal points, whereas in East Java, "the principle of a holy centre accurately oriented to the cardinal points is lost", for East Javanese temples face west-north-west rather than true west (Klokke 1995:76-77). Even though it is true that no Central Javanese temple faces NE like Sanggariti, and that both Borobudur and Loro Jonggrang (almost) face due east, one can hardly say that Central Javanese temples are always accurately aligned with the cardinal points: the deviation from true north oscillates between 0º 09' (Sari) and 30º (Mendut) (Siswoyo 1996).

We can add that deviation from true north shows no correlation with religious affiliation or regional trends. Buddhist shrines are not more accurately oriented than Hindu ones (Table 27) and the deviation is not smaller in southern Central Java than in northern Central Java (Table 28).[42] Furthermore, the temples that deviate the most from due north do not seem to be in a line with any mountain peak, close or distant, as appears to have often been the case for East Javanese shrines (Patt 1979:60).

So far, we can only formulate negative conclusions. However, a better understanding of the relative chronology of Central Javanese monuments might lead to a different result. A list of the temples facing (almost) due east or west appears to include a majority of late sanctuaries (such as Loro Jonggrang or Ijo), with the

38 On the basis of the measurements of B. Siswoyo, except stated otherwise (Siswoyo 1996).

39 Nitihaminoto 1977: fig.14.

40 My own estimates, taken with a water compass, using the western and eastern walls as references. These estimates (300º) correspond roughly with the measurements of E.L. Hapsoro (303º 06' 22.51") and D. Chihara (301º) , but not with those of B. Siswoyo (287º 59') (Hapsoro 1986; Siswoyo 1996).

41 My own estimates.

42 The four temples of group III, however, are found in the same region (Muntilan).

noticeable exception of Borobudur.[43] In contrast, among the four temples that deviate most from the cardinal points, at least two (Mendut and Pawon)[44] are usually ascribed to an early date.[45]

Table 27: Deviation from true north and religious affiliation

	Hindu	*Sites*	*Buddhist*	*Sites*
Group Ia	8	Asu, Barong, Gedong Songo I, Ijo, Loro Jonggrang, Lumbung, Ngempon, Sambisari.	7	Banyunibo, Borobudur, Bubrah, Plaosan Kidul, Sari, Sewu, Sojiwan.
Group Ib	5	Arjuna, Dwarawati, Gatotkaca, Gedong Songo II, Selogriyo.	3	Kalasan, Lumbung, Plaosan Lor.
Group II	8	Bima, Gebang, Gedong Songo III, IV, VI, Gunung Wukir, Merak, Retno.	0	
Group III	1	Pendem	3	Mendut, Ngawen, Pawon.

Table 28: Deviation from true north and region

	N	Sites	C	Sites	S	Sites
Group Ia	2	Gedong Songo I, Ngempon.	3	Asu, Borobudur, Lumbung.	8	Banyunibo, Barong, Bubrah, Ijo, Loro Jonggrang, Plaosan Kidul, Sambisari, Sari, Sewu, Sojiwan.
Group Ib	4	Arjuna, Dwarawati, Gatotkaca, Gedong Songo II.	1	Selogriyo.	3	Kalasan, Lumbung, Plaosan Lor.
Group II	4	Bima, Gedong Songo III, IV and VI, Retno.	1	Gunung Wukir.	2	Gebang, Merak.
Group III	0		3	Mendut, Ngawen, Pawon, Pendem.	0	

N: northern zone; C: central zone; S: southern zone

Determining east and west: the Indian method

Even if it is true that over time there was an increasing general tendency to orientate buildings more and more accurately towards the cardinal points, we still do not know what this means. Is it due to improvements in orientation techniques? We should further ask ourselves specifically which techniques were used by Javanese architects, and what methods of orientation were known at what time. Unfortunately, Central Javanese inscriptions do not seem to contain any details referring to practical orientation matters.

[43] Asu, Barong, Loro Jonggrang, Lumbung (Muntilan) and Plaosan Kidul are dated after 830 A.D. Borobudur, Bubrah and Sewu are usually ascribed to a period before 830 (Vogler 1949; Soekmono 1979; Williams 1981; Dumarçay 1993; Chihara 1996). The construction dates of *candi* Banyunibo, Gedong Songo I, Ngempon, Sambisari and Sari are subject to controversy. As far as I am concerned, I consider Gedong Songo I to belong to the late period of Central Javanese architecture.

[44] One can probably add Pendem, which is most probably closer in date to Borobudur than to Loro Jonggrang (Klokke, Degroot 2006).

[45] Mendut and Pawon are dated before 830 A.D., and often even before 800 A.D. (Vogler 1949; Williams 1981; Dumarçay 1993; Chihara 1996). The same scholars do not agree concerning the dating of Ngawen, with dates varying between 770 and 850. Although Dumarçay suggests a date around 850 A.D. for candi Pendem (Dumarçay 1993), I follow M.J. Klokke and ascribe it to an early period (i.e. before 830 A.D.) (Klokke, Degroot 2006).

We do have, however, a rather complete description of the method possibly used by Indian architects.[46] The method is described in the *Mānasāra* and the *Mayamata* (Chap. VI). First of all, the ground should be levelled. Then a stick should be planted in its centre. With a cord, a circle should be drawn around the stick, its diameter measuring twice (Dagens 1970:68) or four times the length (Acharya 1934:24) of the stick. Then the architect should mark the points where the shadow of the gnomon touches the circle, in the morning and in the afternoon. Those points give the east-west direction. After that, the east-west axis should be reported to the centre.

From an astronomical point of view, this method is quite precise and the expected error in determining east and west should be around one degree (Cuypers 2002). However, another source of error is the fact that the text, as interpreted by Dagens, would suggest that the east-west line should be reported to the centre of the circle (Dagens, 1970:70), i.e. that it is not the original east-west axis that is used to draw the temple plan, but a line parallel to it and passing through the centre. Although reporting the line to the centre is source of error, it is not probable that this method would have introduced a global mistake of more than 10º. Therefore, it must be concluded that the temples of groups II and III, at least, were not built using this method.

Sunrise orientation

It is indeed possible that Central Javanese architects used another method to determine the orientation of their temples, based on the sun or on specific stars, even though this method is not described in Indian texts.

Using sunrise as reference for east is quite common, and simple. It can be done using either a pair of crossed-sticks or the early shadow of a gnomon. Because it is based on the position of the rising sun, the accuracy of this method in determining cardinal points varies all over the year, according to the sun declination. In Java, the sun apparent azimuth at sunrise is roughly estimated at lying between 66º (at the summer solstice) and 114º (at the winter solstice). This means that in June, the sun rises 24º north of true east, while in December, it rises 24º south of it. It is only around the equinoxes, in September and March, that the sun rises due east. With the exception of *candi* Mendut and Pawon, the orientation of all Central Javanese temples fall within this range. This means that, theoretically, they could have been oriented according to the sunrise position on a specific day.

It is tempting to follow B. Hapsoro and attempt to date a temple on the base of its orientation only (Hapsoro 1986). However, there is no such easy solution. Apart from the above-mentioned problem of estimating the original orientation of a temple, there are many unknown variables. We do not know for sure which method was used. If crossed-sticks can be used at sunrise, to the extent that the local landscape allows it, the shadow method needs the sun to be a bit higher in the sky; and the sun declination is not the same at sunrise or at 10 o'clock. Precision of sunrise orientation depends also on the elevation of the horizon, and the mountainous landscape of the Progo Valley would inevitably lead to additional errors, probably in the order of seconds (Gomperts 2004).

As the sun reaches a given azimuth two times a year (with the exception of the extreme azimuths, which are reached at solstices only), it would eventually be

[46] Although the method is described in Indian treatises on architecture – and therefore was certainly known in India – there is no evidence that may show that its use was widespread in India.

possible to determine roughly two possible building periods (of a few days) within one year. Nevertheless, as the sun follows the same path every year, it is impossible to determine the year without additional information.

It is expected that Javanese architects would have planned the building on an auspicious day. If we did possess a list of the auspicious days of the Javanese calendar and cross referenced this information with temple orientation, we would most probably be able to ascribe a temple to a specific day of a specific year.

Unfortunately, we do not know much about Central Javanese astrology. No specific month of the year or day of the week seems to have been considered auspicious on its own: inscriptions were indeed written at any time of the year and on any day.[47] It seems probable that the system was a complex one and that it actually was a conjunction of several factors that made a day auspicious.

In his study, Hapsoro suggests that the full moon was the determinant factor and that it was on full-moon days that the orientations of the temples were determined (Hapsoro 1986:64). Although I do not deny the importance of the moon in Hindu-Buddhist thought, as well as its impact on the Javanese calendar, I think Hapsoro's statement cannot be accepted without qualifications: there is no clear mention of the full moon as an overly auspicious phenomenon in any Central Javanese source. Actually, only a handful of inscriptions were written on a full-moon day,[48] which tends to show that other days could be considered auspicious as well. Nobody, I think, would build a temple or inaugurate a *sīma* on an inauspicious day. The conjunction of a full-moon day, a given sun declination and a temple azimuth cannot be held as valid criteria to date a temple, at least as long as a deeper study of the Central Javanese astrological system has not been carried out.

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[47] There are about a hundred inscriptions from the Central Javanese period that contain complete information of the date on which they were written. All the months of the year are represented, even though less inscriptions were made during the months of Āsāḍha, Caitra and Māgha than during the other months. Similarly, all the days of the three weeks are present in a large variety of combinations. In the 6-day week , the days most frequently found in the inscriptions are Mawulu, Tunglai and Wurukung; in the 5-day week, they are Pahing and Wagai; in the 7-day week Soma/Candra. See below for the details.

Months in Central Javanese inscriptions:

Month	(a)	Month	(a)	Month	(a)
Caitra	2	Śrāwaṇa	12	Mārgaśira	10
Waiśākha	9	Bhadrawāda	7	Poṣya	11
Jyeṣṭha	6	Asuji	8	Māgha	4
Āsāḍha	2	Kārttika	15	Phālguṇa	9

(a) Number of dated inscriptions written during that month

Days in Central Javanese inscriptions:

6-day week	(b)	5-day week	(b)	7-day week	(b)
Tunglai	23	Pahing	22	Āditya	8
Hariyang	12	Pon	17	Soma	28
Wurukung	21	Wagai	26	Anggāra	10
Paniruan	12	Kaliwuan	18	Budha	14
Was	11	Umanis	17	Wṛhaspati	18
Mawulu	21			Śukra	19
				Śanaiścara	4

(b) Number of dated inscriptions written on that day of the week

[48] Only the inscriptions of Mandang (843 A.D.), Pendem (881 A.D.), Watukura (902 A.D.), Wintang Mas B (919 A.D.) and Harinjing B (921 A.D.) mention in their date of writing "the 15th day of the waxing moon", which should correspond to the full moon. The inscription of Upit (866 A.D.) was written on the "15th day of the waning moon". Inscriptions were written on any day of the waning or waxing moon.

I would like to add that comparison of the orientations of Gunung Wukir, Sewu and Loro Jonggrang with the sun declination on the dates given in the corresponding inscriptions of Canggal,[49] Kĕlurak[50] and Śiwagṛha have not given positive results. These three sanctuaries are the only ones associated with precisely dated inscriptions (i.e. inscriptions mentioning a year, a month and a day). I introduced the longitude and latitude of the temples together with the data from the inscriptions in the online sunset/sunrise calculation software of the American National Oceanic and Atmospheric Administration,[51] but the calculations were not in line with the orientation of the temples (Table 29). These variations may have multiple causes: inaccuracy of the archaeological data, mistaken association between a temple and an inscription, misinterpretation of an inscription[52] and so on. Furthermore, three sets of data are far from sufficient to determine whether or not the buildings were not oriented towards the rising sun.

Orientation towards the sunrise is far from being the sole possible option. Ancient societies have used many other points of reference to orientate themselves and their buildings. As suggested to me by Amrit Gomperts, heliacal rising of important stars, such as Canopus (Agastya), may have served as reference to determine the orientation of Central Javanese temples (Gomperts 2004). The above mentioned accuracy problems with data, uncertainties concerning associations between temples and inscriptions (which would provide a good verifying tool) and my own limited knowledge of astronomy (in particular Indian astronomy) have prevented me from exploring these possibilities further. So, I leave the question open.

Although rivers and hilltops played a role in the general orientation of temple remains, the meaning of their exact orientation is still unknown. Perhaps the Central Javanese architects oriented their buildings toward the rising sun at a time considered auspicious, or perhaps temples were directed towards certain stars. But it might also be that they did not give great importance to the temples' precise orientations and that, in early times at least, precise methods of orientation were used only in the larger constructions, such as Borobudur. In present-day Yogyakarta, it is not unusual to hear people speak about Malioboro Street as a south-north axis linking the sultan's palace to the summit of Mount Merapi. However, although Malioboro Street does indeed head north from the palace, it never reaches Mount Merapi, as the volcano lies not to

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[49] Although the location at which the inscription was found leaves few doubts about its association with Gunung Wukir (Soekmono 1979:462), the temple most probably underwent a thorough rebuilding at a later period (Dumarçay 1993:80). Whether the restoration was made while preserving the original plan and orientation is unknown.

[50] The association between the Kĕlurak inscription and candi Sewu has been questioned by M. J. Klokke (Klokke 2006:57). The inscription, which was actually found close to candi Lumbung and Bubrah, has been associated with Sewu because the Kĕlurak inscription refers to Mañjuśrī and Sewu was thought to be dedicated to Mañjuśrī. Nevertheless, the only evidence for a cult of Mañjuśrī at Sewu, the Mañjuśrīgṛha inscription, was found near a secondary building, not in the direct neighbourhood of the main temple. Furthermore, the throne within the main cella suggests the presence of a sitting buddha rather than a Mañjuśrī (Klokke 2006:57). The whole association of Sewu with Mañjuśrī might not be right. As far as solar declination and orientation are concerned, however, an association with Lumbung or Bubrah does not give more convincing results. The orientation of the two latter temples deviates respectively by 5.58º and 2.1º from due east.

[51] www.srrb.noaa.gov/highlights/sunrise/sunrise.html

[52] None of the inscriptions relates directly to the laying of the ground plan. The inscription of Gunung Wukir commemorates the erection of a lingga and Kĕlurak the installation of a statue of Mañjuśrī. The Śiwagṛha inscription mentions the inauguration of a Śiwa image/lingga and the construction of a large temple complex.

the north, but rather to the north-northeast of the town. When one is aspiring for divine order, however, the crudities of everyday realities may have to be excluded from consideration.

Table 29: Temple orientation and solar declination

Temple	Coordinates	Date	Solar declination[53]	Temple deviation[54]
Gunung Wukir	07º 38' 03.5" 110º 17' 48.7"	6.10.732[55]	-4.77º	-11.42º
Sewu	07º 44' 38.1" 110º 29' 35.1"	26.09.782[56]	-0.7 º	1.58º
Loro Jonggrang	07º 45' 07.4" 110º 29' 29.2"	12.11.856[57]	-17.9 º	1.15 º

Conclusion

While correlations between distribution patterns and natural environment have helped us to gain more insight into the physical structure of Central Javanese territory and the complex relationship between temples, mountains and rivers, this chapter has extended the discussion to conceptualized space. We have noticed that Javanese temples are always built around an east-west axis, but that, contrary to what happens in other Hindu-Buddhist traditions, there is no specific preference for the east. We have further shown that there are good reasons to believe that this state of affairs results from the existence of two conceptions of space: one miming the path of the sun, the other built around the existence of two axes. In such a context, west was apparently as auspicious as east.

The choice between one direction or the other was influenced, at least in the rich agricultural plains, by the relative location of temples and rivers, temples having a tendency to face away from rivers (and, possibly, to face settlements). Although there is, in the lower areas, no evidence that temple orientation was determined by religious affiliation (Buddhism or Hinduism) or by reference to ancestor worship, temples built in high, remote places (and not directly linked to settlement and economic activities) tend to favour west. It is thus possible, that, in these cases, temple orientation reflects a difference in religious practice and/or purpose, since some of these sites at least (Dieng, Ratu Boko) seems to have been related to ascetic practices.

In the following chapters, we will explore further the use of space at the temple level and show that there is indeed a link between the space implemented via the ground plan of a temple and its religious background.

[53] Calculated with the online software of the American NOAA. Positive values denote a northern declination, negative numbers a southern one. (www.srrb.noaa.gov/highlights/sunrise/sunrise.html)
[54] Based on the measurements of Siswoyo (1996).
[55] Inscription of Canggal. See Sarkar 1971-1972: nr 3.
[56] Inscription of Kĕlurak. See Sarkar 1971-1972: nr 6.
[57] Inscription of Śiwagṛha. See Casparis 1956: 280-330.

CHAPTER 7

The religious compound: spatial arrangement of Central Javanese religious complexes

In the previous chapters, we have discussed two aspects of Central Javanese architectural space, i.e. temple location and orientation. In the coming chapters, we will pursue our exploration of the structure of space during the Central Javanese period by focusing on architectural space. In chapter 7, we will assess the question of how buildings are actually arranged within temple compounds. After presenting the different existing types of spatial arrangements found in Central Java, I will discuss their distribution, possible correlations with the results of our study of location and orientation, and underline some factors that might account for the existence of these various types. Finally, on the basis of a detailed observation of some complexes, I will show how certain elements of the architectural space might relate to conceptual space, embodying different spatial concepts – some of them already discussed in the previous chapter: the centre, the axis, the rear, the boundaries of the sacred ground.

Typology of Central Javanese temple compounds according to their spatial arrangement

The majority of Central Javanese religious sites count only one building. It is nevertheless usual to see Hindu-Buddhist shrines combined with one another to form religious compounds. In Central Java, 49 such complexes have been identified, ranging in size from 2 (e.g. Cebongan) to 249 buildings (*candi* Plaosan Lor). Nevertheless, due to the poor state of preservation of most temple remains, the total number of buildings on a given site is frequently impossible to determine. It is therefore likely that some of the shrines that are nowadays standing alone were once part of a larger temple group and that some religious complexes included more buildings than we think. Furthermore, it is sometimes difficult to determine which structures belong to a single group and which do not. As I shall show below, Central Javanese religious complexes are not always exemplars of formal organization and symmetry, as Loro Jonggrang and Plaosan Lor might lead us to suppose. Moreover, some temples, although located only a few hundred meters from one another, may not show any physical resemblance that would allow archaeologists to be certain that they originally belonged to a single religious site.

Central Javanese religious compounds are usually organized around one or two main temple(s).[1] Beside the main shrine(s), temple complexes may include various secondary structures: secondary shrines, *stūpa*, *pendopo* terraces or enclosure walls. None of these structures are mandatory: their number and arrangement vary considerably, creating both large-scale concentric compounds, and small-scale sanctuaries comprising only a couple of buildings.

Small scale sanctuaries: alignment and opposition

Small-scale religious complexes are organised along the principles of alignment and opposition, i.e. that structures are built in a row and/or facing one another.

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[1] The "main shrine" is here either the shrine at the centre of the compound – in the case of concentric temple complexes – or, more simply, the largest building of a given group.

In some religious complexes the buildings form a single a row. Their number may vary from 2 (e.g. Dawangsari) to 7 (Setan). Sometimes the buildings are (roughly) of the same size (Dawangsari, Gedong Songo V, Gedong Songo VII, Jetis, Mantup, Ngaglik, Risan, and probably Banon), but a sense of hierarchy may also be introduced (Figures 25 and 26). In the latter case, the group is built around one (Cebongan,

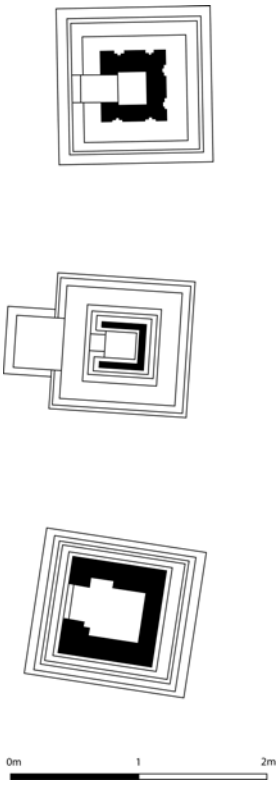

Figure 25: Mantup

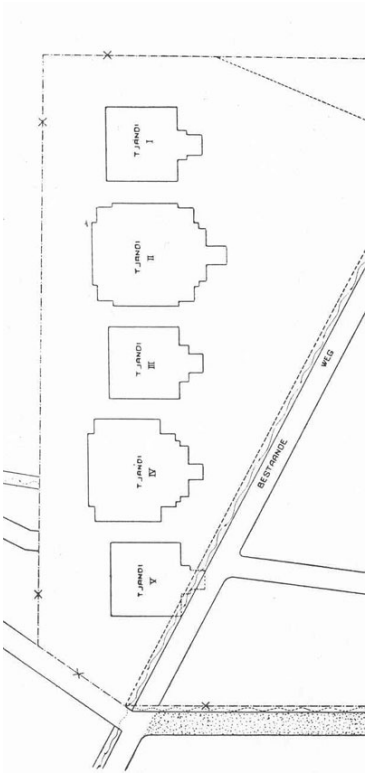

Figure 26: Ngawen

(Perquin 1927: pl. I)

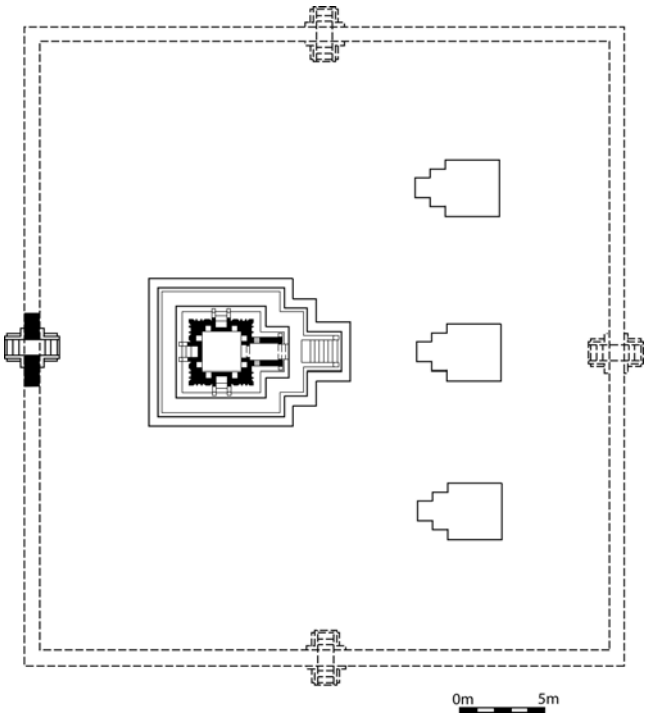

Figure 27: Merak

Gampingan, Gedong Songo VI, Palgading, Setan,) or two main structures (Ngawen Mendut).[2]

In other small-scale religious complexes the accent is on the notion of opposition, their main temple(s) facing secondary shrine(s). At Arjuna, Gedong Songo II, Jetis, Puntadewa and Srikandi,[3] each temple faces a smaller, oblong shrine. At *candi* Gunung Wukir, Ijo, Merak, Morangan[4] and Sambisari, the main temple faces a row of three secondary shrines (Figure 27).[5]

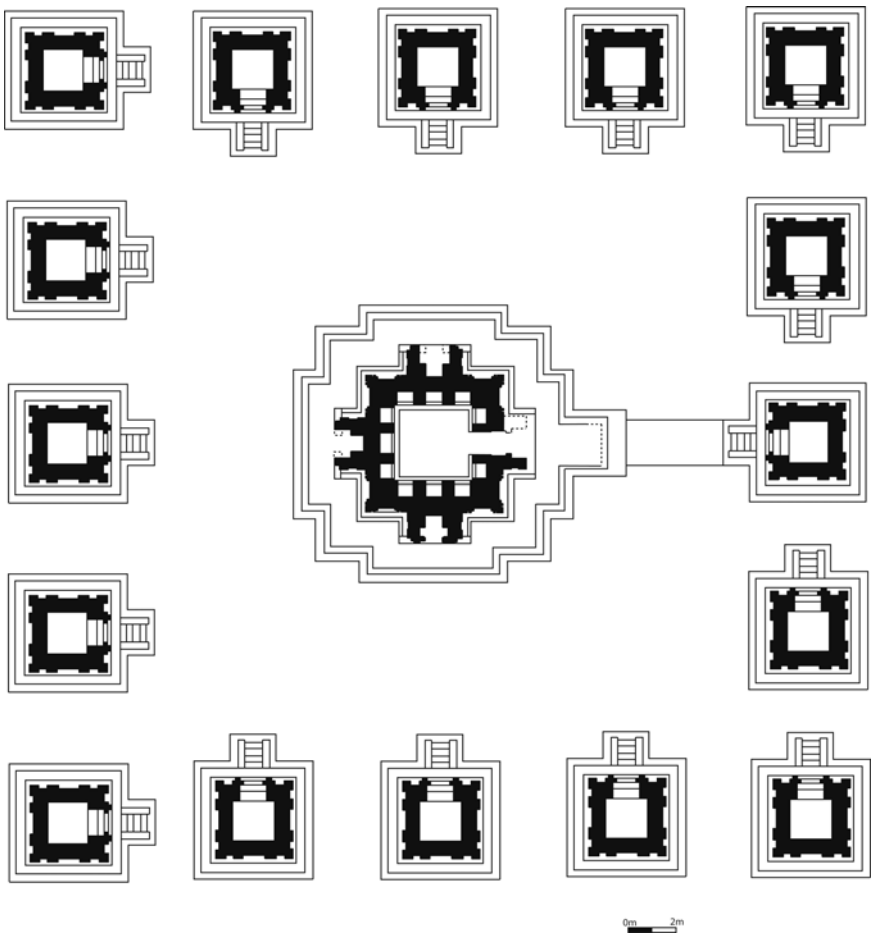

Figure 28: Lumbung

[2] This is a reference to the original state of *candi* Mendut, at a time when the complex was made up of two brick buildings of similar dimensions: the temple discovered within the present *candi* Mendut, and a temple located in the northern part of the compound, the remains of which were identified at the beginning of the 20th century (Brandes 1903c:76-77).

[3] To this group must be added Gedong Songo III, which is also composed of one main temple facing an oblong shrine – but in this case a secondary shrine has been added to the north of the main temple.

[4] Only two structures are visible today at candi Morangan: the main temple, facing west, and one secondary shrine, located northwest of the main structure and facing east. Due to the position of the remaining secondary shrine, however, it is highly probable that the compound was once composed of four structures (a main temple facing three secondary buildings). Unfortunately, it has not been possible to carry out further excavations to the south and east, due to the presence of modern roads and houses.

[5] The central shrine is oblong at Sambisari and Ijo.

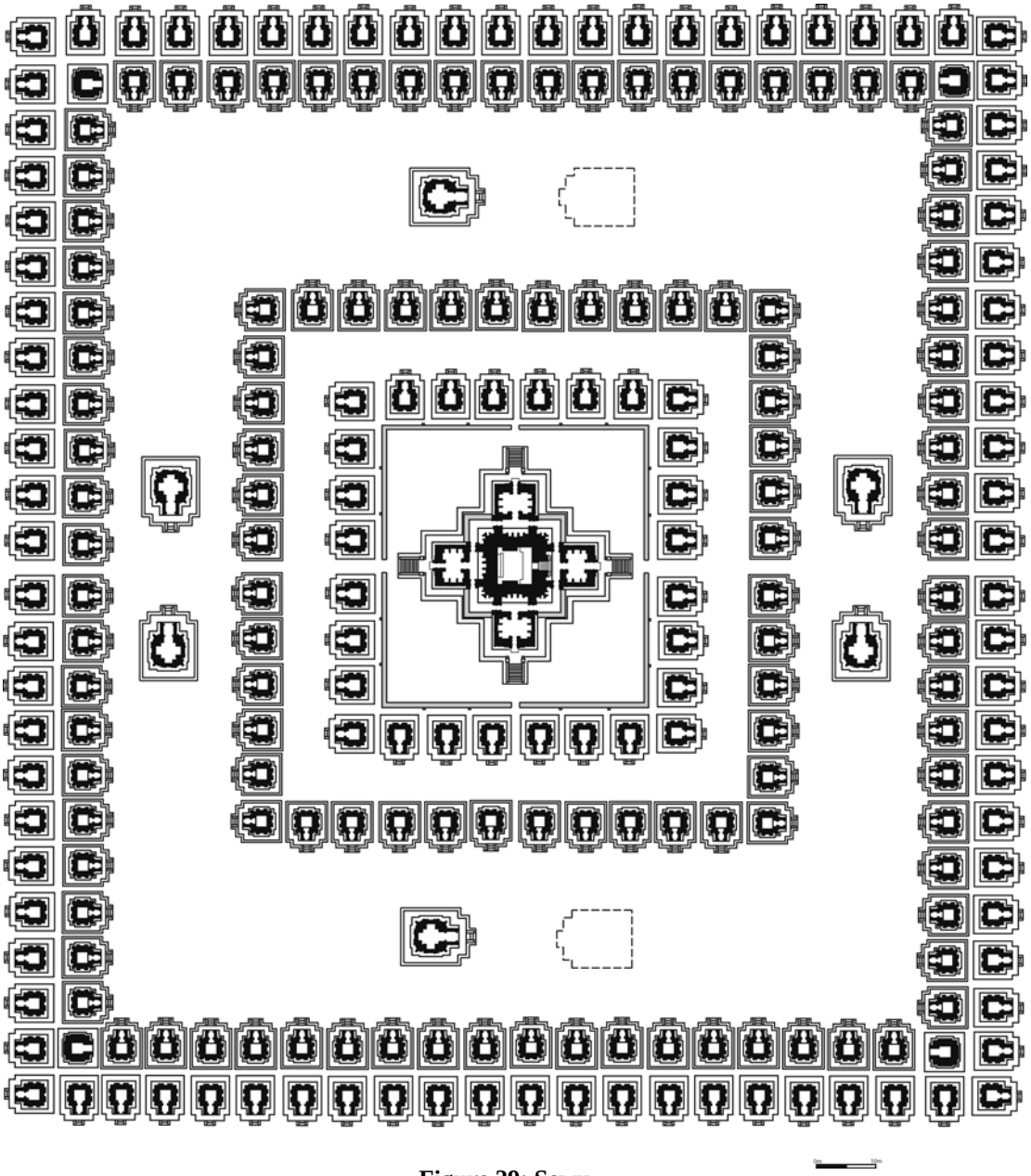

Figure 29: Sewu

Large-scale complexes: centrality, axiality and organic growth

Besides small-scale sanctuaries, Central Java also has some fine large architectural compounds. Their organization may 1) focus on a centre, 2) follow an axis, 3) seem to have evolved at random. To the first type of large-scale compound belong *candi* Kalasan, Kalongan, Loro Jonggrang Lumbung, Plaosan Kidul, Plaosan Lor and Sewu. All these temple complexes are organized along a concentric pattern: the main temple(s) are surrounded by (a) row(s) of secondary structures. Kalasan is the simplest version of this type of spatial arrangement: the main temple is surrounded by a single row of 52 *stūpa*.[6] The complex was once surrounded by an enclosure wall, the remains of which have been found to the northwest, east and west; although its

[6] Although ashes and fragments of clothes were found within some of these *stūpa* (Bernet Kempers 1954:29), they should not be compared to *stūpa* housing the ashes of deceased monks and kings as

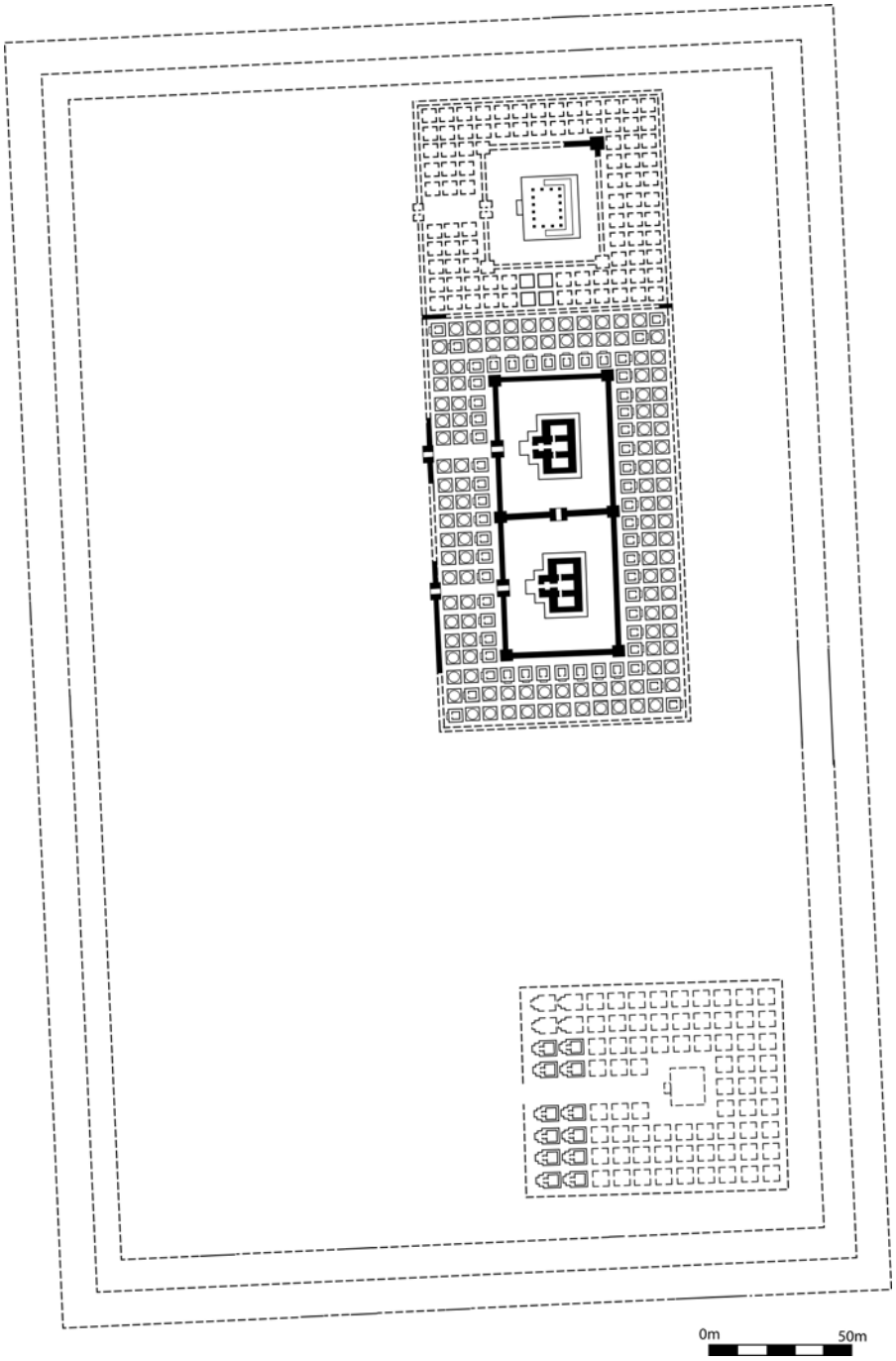

Figure 30: Plaosan Lor and Plaosan Kidul

commonly found in mainland Southeast Asia. The *stūpa* of *candi* Kalasan were all conceived at the same time. The 52 structures were planned together and do not correspond to a progressive addition of reliquaries for the ashes of the dead. If they once contained human remains, this is probably a secondary use and not an essential part of their initial symbolism. In my opinion, stone caskets and other remains found within the *stūpa* should more correctly be compared to *peripih*. On *peripih*, see Ślączka: 2007.

entrance has not been identified (Stein Callenfels 1929b: 8,137-138). According to Van Stein Callenfels, the wall was probably similar to the low fence around the main temple of *candi* Sewu.

Candi Lumbung, though modest in dimensions, is a slightly more complicated compound. It consists of a central temple surrounded by 16 secondary shrines (Figure 28). In most concentric compounds there is a balance between east, south, west and north facing shrines, but this is not the case at *candi* Lumbung where only one structure faces west.

Candi Sewu (Figure 29), like Kalasan and Lumbung, also makes use of concentric rows of buildings, but on a very extensive scale. The compound includes a main temple surrounded by a first enclosure, four rows of secondary shrines and one or two further enclosure walls. The inner enclosure is a low fence with four entrances, the

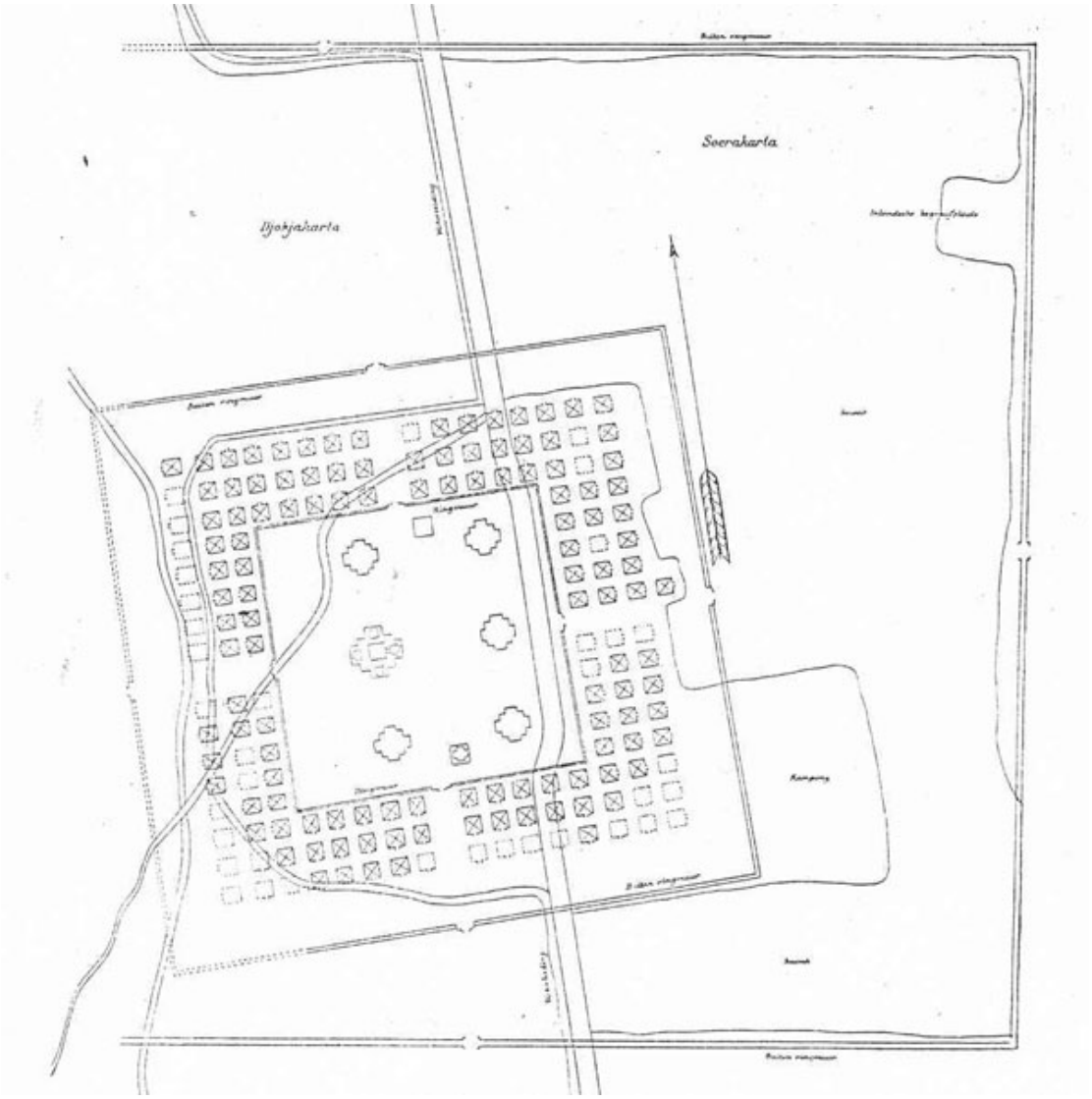

Figure 31: Loro Jonggrang

largest being on the eastern and western sides. The first, the second and the fourth rows of secondary shrines respectively count 28, 44 and 88 outward looking structures (8, 12 and 22 on each side). The third row is composed of 80 inward looking shrines. The main temple and the four rows of secondary structures were once surrounded by an enclosure wall. In the space between the second and third rows of secondary shrines, along the axis of the compound, four pairs of shrines have been built, facing each other two by two.[7] In 1983, remains of another wall, perhaps part of a third enclosure, were discovered 103m to the east (Anon, Hatmadi 1992:61).

Candi Plaosan Kidul, Plaosan Lor and Loro Jonggrang are built around the same principle (a centre surrounded by several rows of secondary buildings), with a few differences. At Plaosan Lor (Figure 30), the concentric rows have been adapted to a rectangular plan. At Loro Jonggrang (Figure 31) they surround a groups of main shrines, the organization of which is similar to small-scale sanctuaries.

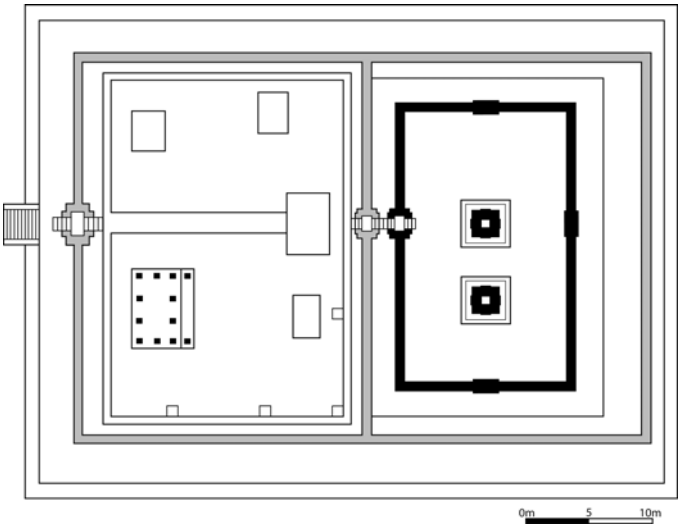

Figure 32: Barong

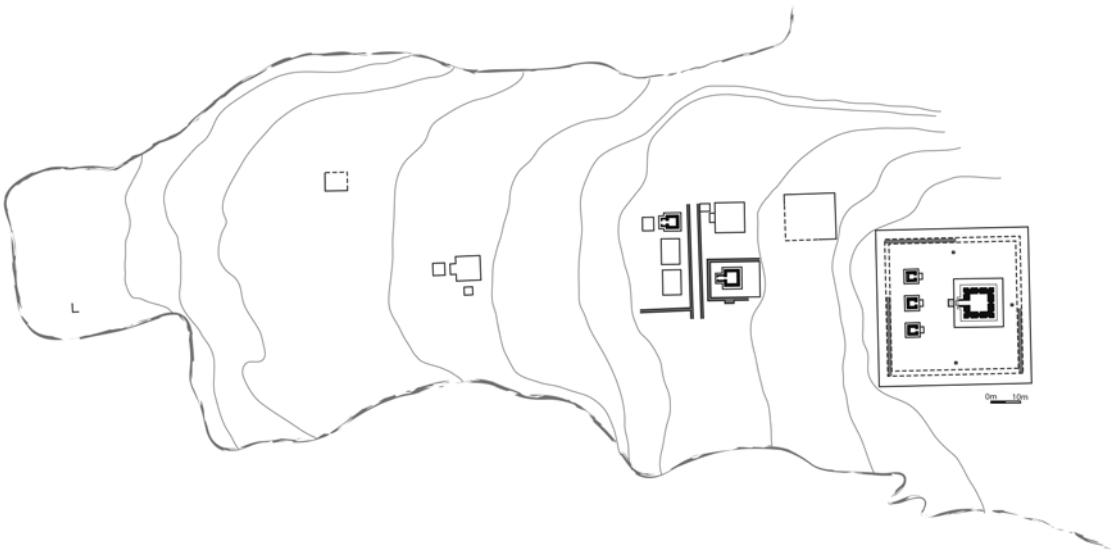

Figure 33: Ijo

[7] In fact, to the south and to the north, no remains of the eastern shrines were found. This absence of any remains is hardly imputable to the state of preservation, and it is more probable that these shrines were never built.

The second type of temple compounds, which includes only *candi* Barong and Ijo,[8] present a completely different spatial arrangement. There is absolutely no trace of a centred organization; rather, they are stretched along an east-west axis. This is not the only characteristic that these temples share: both are built in the same area (on the dry hills of Mount Pegat-Ijo), on a hill slope, and are terraced sanctuaries.

Candi Barong (Figure 32) stands on a high terrace, topped by an enclosure wall and divided into two courtyards. The only access to the compound is a *gopura* pierced in the western wall. The western courtyard is occupied by the foundations of various buildings, the organization of which does not follow any geometrical pattern. Directly in front of the *gopura*, a paved path leads to the remains of a stone terrace, situated at the rear of the western courtyard. The visitor would have had to go across this terrace before entering the second, eastern courtyard.

The eastern courtyard is almost entirely occupied by a high, rectangular terrace, edged by an enclosure wall and accessed *via* a double *gopura*. On the northern, eastern and southern sides of the enclosure, there are false doors instead of true gates. These suggest that, even though it actually faces west, the sanctuary was symbolically opened towards the four directions. Within the enclosure stand two small square structures without any entrance.[9]

Like *candi* Barong, *candi* Ijo is organized along an east-west axis (Figure 33). It is composed of a series of terraces set onto the hill slope and housing several secondary shrines and *pendopo* terraces. The main temple is located on the topmost terrace. The spatial organization of the lower terraces does not seem to follow a pre-established pattern. Buildings are neither evenly distributed nor in line with the main sanctuary. The lowermost part of the compound preserved is organized like a small-scale Hindu sanctuary, with a larger building facing a smaller one. The uppermost terrace shelters four structures: a main temple turned to the west, and a row of three secondary shrines facing it.[10]

Finally, the third type of large-scale temple compound is represented by Ratu Boko, Dieng (Figure 34) and Gedong Songo. All formal organisation appears to be absent. It is certain that taken separately, all the smaller units comprising these religious complexes are organized (following the usual pattern for small-scale sanctuaries at Dieng and Gedong Songo), but the relationships between the different units seem loose or, at best, unplanned. At these three sites, one searches in vain for the perfect centred plan of Sewu or the succession of terraces and courtyards that gives Barong and Ijo a framework in which to develop.

The site of Ratu Boko (Figure 35) consists of three compounds: the western, the eastern and the southeastern. The western compound is composed of three terraces sustained by a huge retaining wall and accessed *via* a monumental gate located on the western façade. On these terraces are scattered various remains, mostly stone bases for open pavilions. In contrast, the eastern compound consists of two man-made caves

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8 See also above, p.142.

9 *Candi* Barong shows obvious signs of later transformation. The terrace was originally smaller: remains of an older sustaining wall are visible a couple of meters north of the present edge of the terrace, partly buried under the stones. Modifications most probably altered the whole compound. It is indeed likely that the *gopura* of the lower enclosures, which are today to the north of the axis, were originally at the centre of the western façades. It is however impossible to determine whether these changes are due to rebuilding or to changes of plan during construction.

10 As noted earlier, the central secondary shrine is elongated, while the others are square.

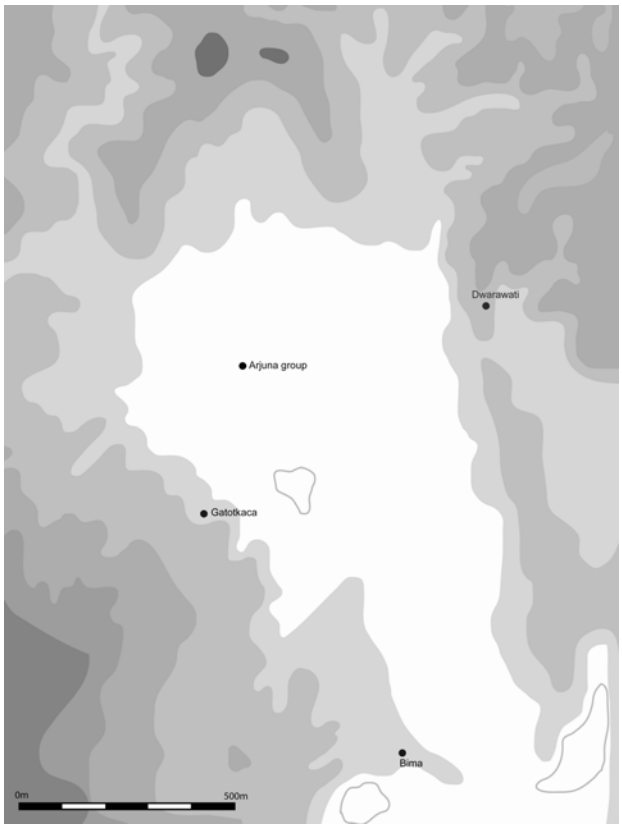

Figure 34: Dieng

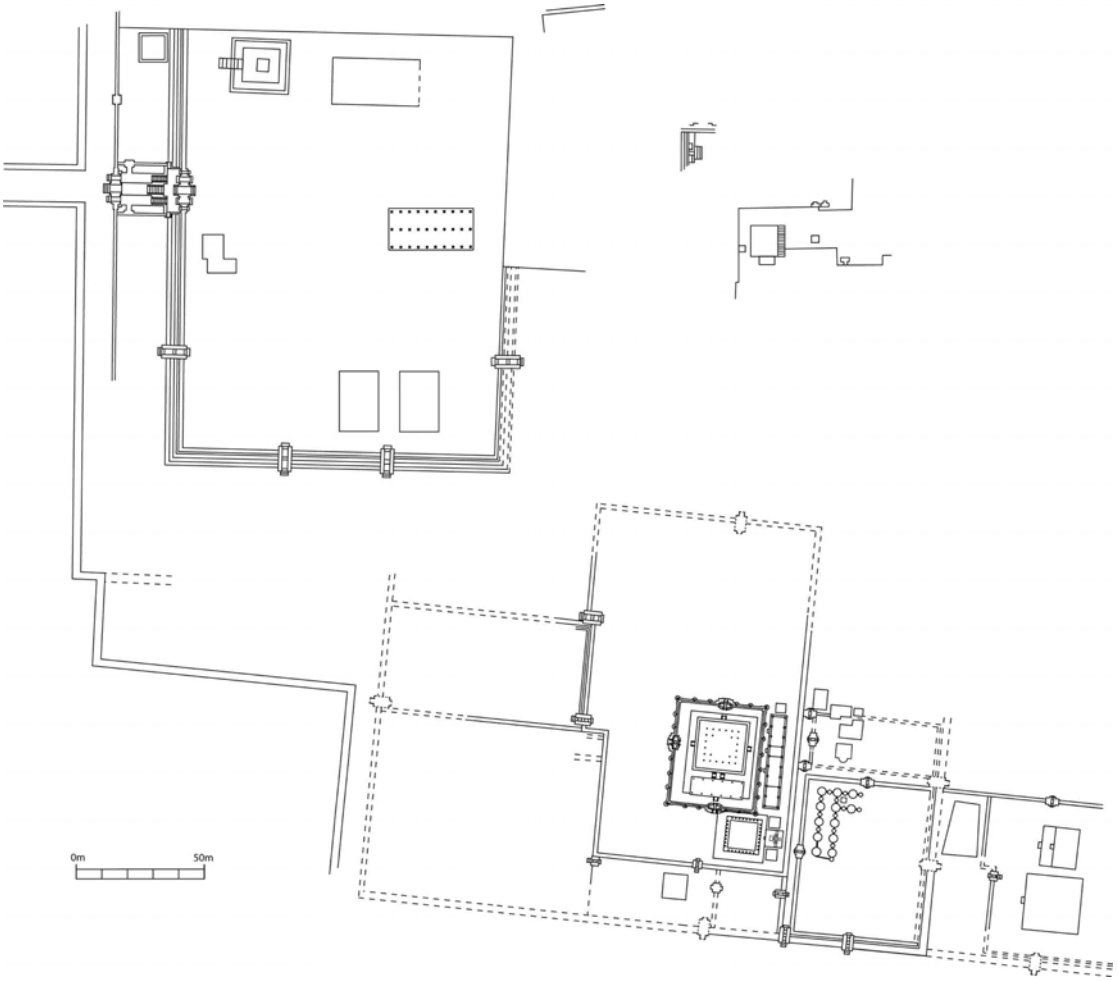

Figure 35: Ratu Boko

– probably meditation caves – and a few unidentified walls. The southeastern compound is certainly the widest and the most complex. It is composed of at least nine courtyards, scattered on various levels and housing numerous remains of *pendopo*, enclosure walls, gates, pools, bases and water tanks.

It is obvious that the present state of Ratu Boko is the result of the long architectural history of the site. The site was already in use during the second half of the 8th century[11] and continued to be inhabited up to the 14th-15th century A.D. (Asmar, Bronson 1973; Miksic 1993-1994; Degroot 2006). An inscription testifies the originally Buddhist character of the compound,[12] but another inscription – dated on palaeographic grounds to the mid 9th century – [13] tells us that (part of) the site was later devoted to the cult of Śiwa. Furthermore, traces of modification of the terrace south of the *pendopo* and the moving of the miniature *candi* give us evidence that the site underwent further transformation during the 9th century (Asmar, Bronson 1973). It is therefore beyond doubt that Ratu Boko was of particular importance and that, whatever its role was, it was crucial enough for both Hindu and Buddhist dignitaries to want to establish themselves on this dry plateau. In fact, since it is the only site in this area that shows such a continuity of occupation and to have clearly been a place of worship for both Buddhists and Hindus, it might have been around this site that the settlement of the whole area developed. The attraction of a place of particular religious importance would have brought other religious communities into the district, their needs stimulating trade and lay settlements in the surrounding fertile plains.

A rather disorganised spatial arrangement, probably resulting from a similarly long occupation, is visible at Dieng (Figure 34). This high plateau, located at 2000m above sea level and surrounded by impressive volcanoes, is dotted with remains of terraces and temples. Many more ruins were once visible, but today only 8 temples and half a dozen foundations remain. At the centre of the plateau stands the Arjuna-group, while at the foot of the mountains can be found *candi* Dwarawati (to the east-northeast of Arjuna), *candi* Gatotkaca (to the south-southwest) and candi Bima (to the south-southeast). The shrines gathered around *candi* Arjuna form a heterogeneous group. Not only are they different in plan, but also in orientation; Arjuna and Srikandi being turned slightly to the northwest, while the axis of Sembadra and Puntadewa deviate a little to the southwest. Moreover, the latter shrine is certainly not in line with the others. In the case of Dieng, inscriptions,[14] archaeology[15] and stylistic analysis of the ornamentation of the various shrines[16] suggest that the irregular organisation of the site is linked with a long period of occupation.

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11 Abhayagiriwihāra inscription (792-793 A.D.). See Sarkar 1971-1972: n° 6a.

12 Abhayagiriwihāra inscription. See Sarkar 1971-1972: n° 6a.

13 The Rudra inscription. See Wisseman Christie 2002-2004: no 54; Setianingsih 2002:nr BG1410a)

14 An inscription (Dieng IV) dated 1210, is reported to have been found on the Dieng plateau. See Nakada 1982: 116-117, n° 194.

15 Remains of an earlier building have been found under the pavement of *candi* Puntadewa and traces of rebuilding have been noticed during excavations at *candi* Arjuna and Puntadewa. See Dumarçay 1993:59.

16 E.B. Vogler (1949, 1952, 1953) and R. Soekmono (1979), among others, have proposed the existence of several successive phases in the architectural history of Dieng. For Vogler, there was a first building phase, comprising the old Dieng style (*c.* 650-760 A.D.), of which no structures remain. It was succeeded by a new Dieng style (*c.* 760-812 A.D.), represented by *candi* Arjuna, Semar and Gatotkaca. *Candi* Puntadewa would therefore belong to the period *c.*838-*c.*898 A.D, while Sembadra and Srikandi would have been built after 928 A.D. Soekmono offers a different chronology. He also differentiates between an Old Dieng style (*c.* 650-730 A.D.) and a new Dieng style (*c.* 730-800 A.D.).

A similar hypothesis is valid for Gedong Songo, where – as shown above – the orientation, plan and dimensions of the shrines lead us to suppose that the main temples of Gedong Songo III, IV and VI are the earliest, while Gedong Songo I is a later structure.[17]

Distribution of types of temple complexes: chronology, region, function and religious affiliation.

We have shown that, on the basis of spatial arrangement, one can classify Central Javanese temple compounds into five types. Why such a variance? In the following paragraphs, we will examine a series of factors that may have had a decisive influence on the choice of a spatial arrangement, namely chronology, possible regional trends, differences in function and religious affiliation. I will show that the chronological and regional factors played a minor role, while function and religious affiliation were probably what led the architect to opt for one or the other type of spatial arrangement.

Although the chronological framework for Central Javanese architecture is limited, there is nothing to sustain the hypothesis of an evolution going from the simple, single temple to the concentric complex: *candi* Lumbung and Sewu, both concentric compounds, are also considered as early temples (Table 30). The only possible correlation between spatial arrangement and chronology would associate sanctuaries built along an axis (Barong, Ijo), with a later date – but two temples are of course not sufficient for satisfactory correlation statistics.

Table 30: Complex types and chronology

Spatial arrangement	*Early period (up to c. 830 A.D.)*	*Late period (after c. 830 A.D.)*
Small-scale complexes		
In a row	Mendut	Ngawen
Facing one another	Dieng*, Gedong Songo*, Merak.	Ijo*, Kedulan, Morangan, Sambisari
Large-scale complexes		
Concentric	Kalasan, Lumbung, Sewu.	Loro Jonggrang, Plaosan Lor, Plaosan Kidul
Along an axis	-	Barong, Ijo
Organic	Dieng, Gedong Songo II-VI, Ratu Boko (early phase)	Gedong Songo I, Ratu Boko (late phase)

\- no temple in this category * parts of a large-scale complex

If the different types of spatial arrangement were a matter of regional trends, we would have more or less clear geographical clusters. Is it the case? Small-scale temple compounds are found in the north as well as in the south. Their greater number in the south simply reflects the general distribution patterns observed in chapter 4: the south is also the richest in number of remains. Organic compounds are found only in three places, two in the north (Dieng and Gedong Songo), one in the south (Ratu Boko). Concentric compounds and complexes organized along an axis are however found exclusively in the south.

To the Old Dieng style, he attributes *candi* Arjuna, Semar, Srikandi and Gatotkaca, while *candi* Puntadewa, Sembadra and Bima would date from the second building phase.

[17] The place of Gedong Songo II within this schema is uncertain. It is clearly different in plan and dimensions from Gedong Songo I, but is not similar to Gedong Songo III, IV and VI.

If we compare this with our conclusions about general distribution, natural environment and orientation, we can indeed notice that large-scale temple compounds are not found merely in the south or in the north, but in zones that have already been pointed out as demarcating themselves from the others. Gedong Songo, Ratu Boko and Dieng share a mountainous location, not really suitable for wet-rice cultivation and a westward orientation. The three sites also have a particularly long period of occupation and have known several building phases, which certainly explain the lack of a clear pattern in their planning. It is highly probable that these places developed more or less organically from an original (small) core of buildings, contrary to concentric sanctuaries, which were obviously entirely planned from the beginning. Similar features are shared by Barong and Ijo, the only two terraced sanctuaries of Central Java. As for concentric complexes, they are not found all over southern Central Java: they are clustered in the Prambanan area, an area which was most probably an important religious centre at the eastern border of the Central Javanese kingdom. The correlation between specific types of temple complexes and specific places – rather than a whole region – would back the hypothesis that variation in spatial arrangement matches a religious function, not a regional architectural school. The natural environment around Ratu Boko, Dieng and Gedong Songo could designate them as meditation places for ascetics and/or pilgrimage places.[18] This hypothesis is actually confirmed in the case of Ratu Boko, given the existence of meditation caves on the plateau and the association of the *pendopo* terrace with the meditation monasteries of Sri Lanka.[19] Unfortunately the data is too limited to speculate further about the relation between spatial arrangement and function.

The fact that the religious background influenced spatial arrangement is confirmed by a comparison between types of temple complexes and religious affiliation. Sanctuaries where one main building faces one or several secondary buildings is apparently exclusive to Hindu architecture (Table 31). Besides, even though both Hindu and Buddhist religious compounds make use of alignment, Buddhist buildings are slightly over-represented in the survey: among the 16 compounds with such an arrangement, 7 are Buddhist. Given that, in Central Java, there are far more Hindu remains than Buddhist ones, we may conclude that the organization of temples in a single row was more common in the case of Buddhist sites than in Hindu compounds. As for the large-scale complexes, the organic ones[20] or those organized along an axis are Hindu; concentric compounds being largely Buddhist.

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[18] The possibility that the Dieng plateau acted as an important pilgrimage place could explain the existence of the numerous *pendopo* built in the neighbourhood of the temples of the Arjuna group. Given that this plateau is not suitable for rice cultivation and could not support a large permanent population, the *pendopo* could have been built to accommodate pilgrims visiting the site on a short-term basis. Besides, a long building history, with numerous additions and transformations, is quite a common feature of pilgrimage places. Unlike village shrines, which are usually of small dimensions and are used almost exclusively by local villagers, pilgrimage sites have a significance that goes beyond the strictly local scope and they tend to attract more devotees, coming from more distant places, the wealthiest visitors financing renovation and new constructions, others making smaller donations and leaving *ex-voto*.

[19] See Miksic 1993-1994.

[20] At the exception of Ratu Boko, but we have already mentioned that this site shows both Buddhist and Hindu elements.

Table 31: Complex types and religious affiliation

Spatial arrangement	*Buddhist compounds*	*Hindu compounds*
Small-scale complexes		
In a row	Dawangsari, Gampingan, Mendut, Ngaglik, Ngawen, Palgading, Risan.	Banon, Barong*, Cebongan, Gedong Songo V-VII*, Jetis (Cangkringan), Mantup, Setan,
Facing one another	-	Arjuna*, Gedong Songo II-IV*, Gunung Sari, Gunung Wukir, Ijo*, Jetis (Ngemplak), Kedulan, Lawang, Merak, Morangan, Ngempon, Puntadewa*, Sambisari, Singo, Srikandi*
Large-scale complexes		
Concentric	Kalasan, Lumbung, Plaosan Lor, Plaosan Kidul, Sewu.	Loro Jonggrang
Along an axis	-	Barong, Ijo
Organic	Ratu Boko[21]	Dieng, Gedong Songo, Ratu Boko

- no temple in this category * parts of a large-scale complex

Architectural space and conceptual space

Another way to address the issue of the meaning of the various types of temple complexes is to question the perceptions of space they convey. Concentric compounds, shrines facing one another and terraced sanctuaries particularly show contrasting spatial arrangements, which induce a different perception of the architectural space and a different approach to the temple compound.

The centre and the axis in concentric temple complexes

It is redundant to say that concentric compounds put the emphasis on the centre. The conception of a space centred around a focal point and extending outwards is in line with Indian cosmogony, as expressed through the image of Mount Meru standing as an *axis mundi* and through the numerous Buddhist *maṇḍala*. Numerous publications have already explored this symbolism, in Javanese and Southeast Asian temple architecture.[22] I would like to take a another approach and try to understand how the spatial organization of the temple compounds may have guided the sight and the movement of a devotee entering the sacred ground.

When the shrines stand alone or in a single row, the devotee is free to approach them from the front, and the temples are visible from far away. This is also true of most of the large Buddhist concentric sanctuaries: the access to the main temple is direct, *via* east or west, which is the favoured axis. So, even the centred compounds present elements of axiality. At Sewu (Figure 29), the preference for the east-west axis is transcribed into the architecture through the slight asymmetry of the temple plan. The northern and southern entrances to the inner courtyard are indeed narrower than their eastern and western counterparts. Besides, between the first and the second enclosure, only the eastern and western pathways are clearly identifiable. The

[21] Buddhist and Hindu structures are found on this site. It seems that the site was originally Buddhist; Hindu elements were introduced later on.

[22] See, for example, Filliozat 1954; Chihara 1996: 25-47.

ambiguity of the (almost) centred plan of *candi* Sewu is apparent in the number of E/W facing shrines in relation to the number of N/S facing structures. In the outer row, there are 24 shrines turned to the east and west, while only 20 face north or south. This difference cannot only be explained by the fact that the corner shrines are east and west facing, but also because the complex is actually not square. It is strictly a rectangle, the long sides of which face east and west. The passage from the square plan of the main *cella* to the rectangular plan of the second courtyard is gradual, each element of the ground plan (the inner courtyard and the four rows of shrines) being slightly more elongated as one goes from centre to periphery.

At Plaosan Lor, the rectangular plan dominates the whole compound (Figure 33). The spatial impulse is given by the main temples themselves – two rectangular structures built on a north-south axis. The general organization of the temple complex is similar to that of *candi* Sewu, although adapted to an obviously rectangular plan, but without the presence of a true courtyard between the rows formed by the secondary structures. The twin temples are surrounded by an enclosure wall. Outside this first enclosure there are rows of secondary structures (outward looking shrines, and *stūpa*). The corner shrines open to the east and west, and not to the south or north. The rectangular shape of the compound emphasizes a north-south axis, while its entrance, on the west, underlines the importance of the east-west axis. While Sewu's plan is obviously centred, Plaosan's is not. Although the rows of secondary structures bring an element of centrality, the inner courtyard – and the twin temples themselves, with their entrances only on the west – provides clear evidence of axiality. Furthermore, Plaosan Lor is located, together with Plaosan Kidul, in the rear section of a wider enclosure.

Approach to Hindu temple complexes

In Buddhist compounds, the approach to the *cella* is always straightforward. In concentric temple complexes, the apparent centrality of the ground-plan is counter-balanced by a slight emphasis on the east-west axis. In most Hindu complexes, however, the devotee cannot approach the central shrines directly from the east or the west: the secondary shrine facing the main temple obstructs the passage. This arrangement is of course reminiscent of the bull shrines of Indian temples.[23] However, the impression one gets is quite different. In the Hindu temples of India, Śiva's bull is housed in an open *maṇḍapa*. The presence of this open pavilion supported by pillars does not totally obstruct the view of the main temple, but it forces the visitor to turn away from the *cella*, and initiates the movement of *pradakṣiṇa* around the shrine. In Central Java, the visitor coming from the front entrance does not face an open pavilion. He is literally stopped by a wall: he must turn away from the east-west axis to be able to get even a glimpse of the central shrine. At Loro Jonggrang (Figure 31), for example, the blind rear wall of *candi* Nandi prevents the visitor from even having a glimpse of *candi* Siwa.

This particular spatial arrangement could be seen as a Central Javanese variation on a Hindu tradition. I would nevertheless like to express two possible other explananations that do not necessarily exclude one another – nor the Indian influence.

[23] This arrangement could also be compared to the dance hall found in front of certain Hindu temples, such as the Sun temple at Konarak. However, in the latter case, the pavilion is open in the four directions and there is thus a possible passage along the main axis, leading through the hall to the main temple.

Firstly, the fact that the visitor is impeded by a blind wall makes one think of the architecture of Balinese houses. Immediately behind the entrance to the courtyard containing the pavilions of a traditional Balinese house, there stands a high, blind wall. Its function is said to prevent evil spirits from entering the family compound – as evil spirits are reputed to be unable to turn.[24]

Two temple compounds suggest another possibility; namely that the east-west axis was not always the main access to the temple compound. In Central Java, very few enclosure walls are preserved, and even fewer gates. Although traces of such walls have been discovered at many sites, they are rarely sufficient to determine the position of the original entrances.[25] Furthermore, very few have been found in association with temple compounds presenting the arrangement described above (shrines facing one another). We are left with just four workable examples, namely *candi* Ngempon, Sambisari, Loro Jonggrang and Arjuna. Ngempon does not tell us much about the use of the temple ground, since the poor state of preservation of the enclosure does not allow us to see whether one gate was favoured above the others. At *candi* Sambisari, although the four gates were originally similar, it appears that the northern gate of the inner courtyard was closed at some point (*Mengenal candi Sambisari*: 8).[26]

At Loro Jonggrang (Figure 31), excavations carried out in 1926 brought to light two walls running north from the second to the third enclosure, which were thought to be the remains of a pathway. Similar traces were also found to the south of the second enclosure, while nothing was reported to the east and west. Even though it is true that the western part of the original enclosure was probably destroyed by a change in the course of the Opak river, a north-south pathway nevertheless tallies very well with the organization of other Hindu-Buddhist remains in the neighbourhood. Temple remains are indeed visible to the north[27] and south[28] of Loro Jonggrang, but not to the east.[29] The presence of the pathway suggests that the main access to Loro Jonggrang was probably along its north-south axis rather than through the eastern gate. If this is true, then visitors to the temple compound would have entered not *via* the back of *candi* Nandi, but *via* the northern or southern gate, so that their view could embrace *candi* Siwa and (almost) all the other structures within the central courtyard.[30]

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[24] A more pragmatic interpretation would be that it prevents anyone from peeping inside the inner courtyard, which is the explanation sometimes given for a similar system found behind the gates of modern Javanese *kraton* (B. Arps, personal communication: 2007).

[25] Traces of enclosure walls have been discovered at 27 sites: Arjuna (Dieng), Banyunibo, Barong, Dukuh, Gunung Sari, Gunung Wukir, Ijo, Kalasan, Loro Jonggrang, Lumbung (Klaten), Mendut, Merak, Ngempon, Pawon, Plaosan Kidul, Plaosan Lor, Puntadewa (Dieng), Ratu Boko, Sambisari, Sampangan, Sari, Selogriyo, Sewu, Sojiwan, Srikandi (Dieng), Tinjon and Wadas. All the entrance gates are preserved at Arjuna, Loro Jonggrang, Ngempon, Sambisari and Sewu. The latter is Buddhist and has a completely different spatial arrangement. See above, p. 137.

[26] At candi Sambisari, although the four gates were originally similar, it appears that the northern gate of the inner courtyard was closed at some point (*Mengenal candi Sambisari*: 8). One can further note that the gates are not precisely at the centre of the enclosure wall. The western gate is slightly shifted to the south, the northern gate to the west, the eastern gate to the north and the southern gate to the east.

[27] *Candi* Bubrah, Lumbung and Sewu.

[28] Gatak, Kalongan and Sojiwan.

[29] The Opak River has damaged the western part of the compound, so that it is impossible to know whether there were once structures in that area.

[30] The two small *candi* Apit, located near the southern and northern gates, do not close the access to the inner courtyard, since they are built slightly to the east of the entrances – however they do obstruct some of the view. They may perhaps be understood as protecting the north-south axis – and the main entrances – from evil spirits. These structures are unique to Loro Jonggrang.

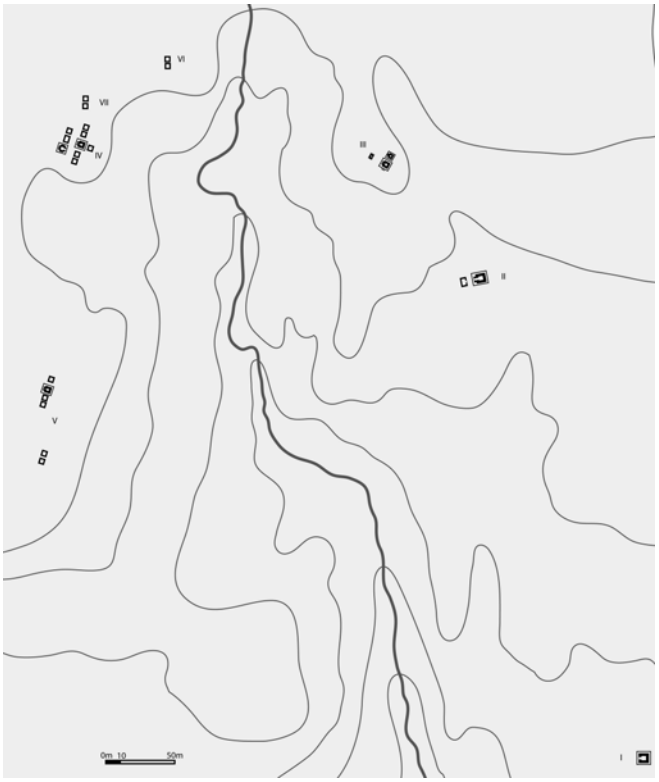

Figure 37: Gedong Songo

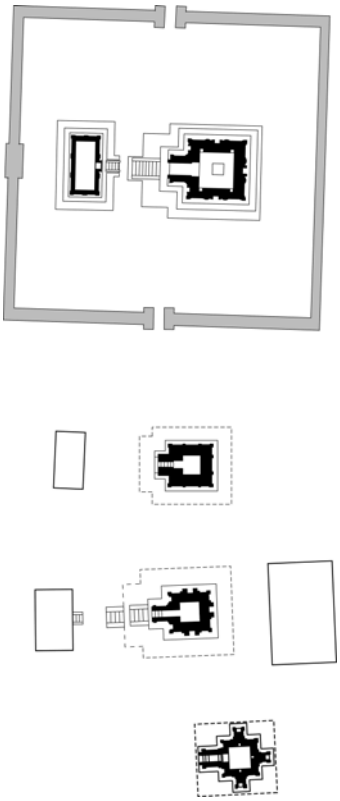

Figure 36: Arjuna group (Dieng)

The only place where the preference for a north-south access to the temple compound is beyond doubt is *candi* Arjuna (Figure 36). Its enclosure wall is in fact interrupted by two entrance gates and one false gate. The false gate is located to the west (that is to say in front of the main temple and at the rear of the smaller *candi* Semar), while the entrance gates are placed along the north-south axis.

At Gedong Songo, although no enclosure wall is preserved, the natural approach to the temple group is also *via* the south, as the temples are scattered on the southern slope of Mount Ungaran (Figure 37).[31]

Anthropology may help us to widen our frame of analysis and interpretation. In east Sumba, where the main axis of orientation is upstream-downstream and the secondary one is head to tail (of the island, as seen by its inhabitants), villages usually have four gates – the main ones being located on the north-south (upstream-downstream) axis. Houses, however, face either east or west (head or tail). Indeed, even though benevolent powers are said to enter (and leave) the village through the main gates, harmful forces are also thought to use them as entry points as well. Hence, altars are found near the village gates, and houses face the rising or setting sun rather than the upstream direction (Forth 1981:52).

This paradox between the orientation of individual buildings and that of the settlement as a whole transpires in many Central Javanese temple compounds. Dieng, Gedong Songo and, to a lesser degree, Loro Jonggrang, are for example composed of

[31] Entrance to the individual temple groups is *via* north or south.

east/west facing buildings arranged along a north-south axis, so that the compound as a whole appears as a rectangle, the short sides of which face north and south.

These examples demonstrate that one should not be too quick in transposing Indian approaches of ritual space to Java and that, in this domain at least, small details can mean a world of difference. In the lack of local textual sources on the subject and further comparative material, it is however impossible to determine whether one of our tentative explanations – simple variation around an Indian tradition, will prevent evil spirit from entering or importance of the north-south axis – is at the origin of the presence of a closed pavilion in front of most Hindu temple complexes.

A peculiar case: candi Lumbung

One Buddhist temple compound appears to share a feature with Hindu sanctuaries: *candi* Lumbung. This temple complex, though modest in dimensions, is a slightly complicated compound, the tendency to centrality of which is toned down by the arrangement of the secondary shrines. The complex consists of a central temple surrounded by 16 secondary shrines (Figure 28). In most concentric compounds there is a balance between east, south, west and north facing shrines, but this is not the case at *candi* Lumbung where only one structure faces west.

The consequence of this organization is a unique dynamic in which the apparent unity inherent to concentric organization gives place to a multiplicity of spatial concepts. The importance of the 'rear' is stressed – through the presence of five rear shrines. So is the concept of centrality – 14 out of the 16 subsidiary shrines are turned toward the main temple. The orientation of these secondary shrines is quite peculiar. One would expect that they would all be turned inward (or outward), but the architect chose a different option. Whereas 14 shrines are turned inward, two shrines of the eastern row face the central secondary shrine of the same row, rather than the main temple. Furthermore, the importance of the central shrine of the eastern row is underlined by the existence of a small stone pathway linking it directly to the main temple. Nevertheless, the opposition between the main temple and the central shrine of the eastern row reminds one of the spatial arrangement of certain Hindu temples. Due to this organization, it is unlikely that *candi* Lumbung housed an iconography similar to that of *candi* Sewu: the *buddha* would have required an equal treatment – as it is the case at Sewu. At Lumbung, only one shrine faces west and it seems very unlikely that a pantheon would have comprised 5 *buddha* in *varada-mudrā*, 5 in *bhūmisparśa-mudrā*, 5 in *abhaya-mudrā* but only one in *dhyāna-mudrā*.[32] Rather, the architectural composition suggests that the pantheon of Lumbung involved a relation between one main principle (expressed through the main temple) and an inferior but complementary principle (expressed physically through the shrine facing the main temple).[33] The whole compound was surrounded by an enclosure wall (or fence), the remains of which were found in 1920 (Bosch 1920: 79).

[32] I pre-suppose here an organization similar to that of the inward facing shrines of *candi* Sewu. In the Indian context, the *buddha* in *dhyāna-mudrā* would of course be located in the west.

[33] Not being an expert of Buddhism, I don't have any precise proposition of identification for these complementary principles. For the divinities housed in the other subsidiary shrines neither.

The sacred and the rear

We have so far examined concentric compounds and sanctuaries composed of a main temple facing one/three secondary shrine(s). Let us now focus on *candi* Barong and Ijo (Figures 32 and 33). As we have seen earlier, these temple compounds present a completely different spatial arrangement.[34] In both cases, there is absolutely no trace of a centred organization; rather, they are stretched along an east-west axis. This is not the only characteristic that these temples share: both are built in the same area (on the dry hills of Mount Pegat-Ijo), on a hill slope, and are terraced sanctuaries.

What is especially interesting in the spatial arrangement of both Barong and Ijo, in comparison with what we have seen at Sewu and Loro Jonggrang, is the shift of focus from the centre to the rear. The most sacred part of the temple compound is no longer its geometrical centre, but the rear – and uppermost – section. Barong and Ijo are not geometrical representations of the universe like Loro Jonggrang or Sewu. They do not correspond to the Hindu-Buddhist conception of a central mountain – Mount Meru – surrounded by concentric seas and mountain ridges. From an architectural point of view, the buildings are stretched along an east-west axis. From the point of view of the visitor, it seems that the stress is here laid on the path to be travelled and the goal to be reached.

This type of organization bears similarities with the terraced sanctuaries of the Austronesian megalithic traditions found in West Java, such as Gunung Padang and Pangguyungan (Bintarti 1981), as well as with East Javanese sanctuaries, such as *candi* Sukuh, the temples on Mount Penanggunggan and, to a lesser extent, Panataran.[35] It is difficult to tell whether this type of plan is indicative of the date or the function of the temples in question. Does the plan of *candi* Ijo and Barong resemble the spatial organization of certain megalithic complexes and of East Javanese sanctuaries because the temples date from the same period, because they share a similar function or because they represent an older system of orientation? At Ijo, the absence of any geometrical organization of the lower terraces, as well as the variety of buildings, may suggest that the temple was in use for a long time and that its present form is the result of decades of construction. Its location, away from the fertile plain, in an area of little suitability for housing farming villages, distinguishes *candi* Ijo from many other Central Javanese temple remains. It is possible that – in common with Ratu Boko, Dieng or Gedong Songo, with which it shares many features – it might have been a pilgrimage place or a site devoted to ascetic practices.

Delimiting the sacred ground: boundary and central stones

In Central Java, the architectural space was structured by the relative position of main shrines and secondary shrines, enclosure walls and *gopura*, but not only: in six cases, the most sacred part of the temple compound was also marked out by boundary stones. These small, *lingga*-shaped stones have been found *in situ* at *candi* Gebang, Gunung Sari, Gunung Wukir,[36] Ijo, Loro Jonggrang, Sambisari and Selogriyo.[37] In all

[34] See also above, p.132.

[35] Panataran is also extended along an axis, even though it is not on a slope and is thus not a terraced sanctuary. Nevertheless, there is at Panataran a similar association of sacred/rear (Klokke 1995)

[36] I do not know the original position of the sole boundary stone found at Gunung Wukir, as it is not mentioned in the excavation report (Bernet Kempers 1938: fig. 26). However, according to the photograph, it was located in a corner, probably the northeast or northwest, as only these were still visible in 1938.

cases, they were placed within the innermost enclosure – if any. It is remarkable that this rule is valid for Loro Jonggrang as well and that the rows of subsidiary shrines are thus out of the sacred ground delimited by the boundary stones.

The pattern that emerges from the remaining boundary markers is that they were usually 9 in number (Table 32). They were located on the cardinal points and intermediary points of the temple ground. Thus, they marked the centre, the corners and the middle of the sides of the inner courtyard, corresponding to the zenith, northeast, east, southeast, south, southwest, west, northwest and north. They divided the sacred space into 4 squares of identical dimensions.

Table 32: Position of the preserved boundary stones

Site	*Centre*	*NE*	*E*	*SE*	*S*	*SW*	*W*	*NW*	*N*
Gebang		x		x		x		x	
Gunung Sari	x	x	x	-	-	-	-	-	-
Ijo	x	-	x	-	x	-	x	-	x
Loro Jonggrang	x	x	x	x	x	x	x	x	x
Sambisari	x	x	x	x	x	x	x	x	x
Selogriyo	-	-	-	-	-	x	-	x	-

x preserved - not preserved

The case of *candi* Gebang is somewhat different (Figure 38). Four boundary stones have been found here, respectively in the northwest, northeast, southeast and southwest. In contrast to other temples, the area within the boundary stones is not square but rectangular. It is puzzling that although the temple was protected by a thick layer of earth and mud, only four boundary stones were discovered. It is possible, however, that these relatively small and light stones may have been washed away by a flood or *lahar*. More puzzling is the rectangular shape and the fact that the distance between the northwestern and northeastern stones is roughly half the distance between the northwestern and the southwestern ones – a similar observation is valid for the southwestern-southeastern stones and the northeastern-southeastern ones. This leads us to a natural hypothesis: we might be dealing with only half a compound rather than with a complete sanctuary. The second shrine would have had to be located to the east of the actual *candi* Gebang and would have faced west. There is however not the slightest trace of such a building. Loose stones found in front of Gebang and down to the river might belong to another building, but equally to an enclosure wall. I do not have any explanation for this, but it is also possible that a second shrine was intended but never built.

In the other cases, the boundary stones appear to trace a large square on the ground, stressing its most significant points (the centre, the corners and the centre of each side) and obviously conveying the concept of a space revolving around or radiating from a central point. One would expect, that the central stone corresponds with the main shrine, just as, in Buddhist compounds, the geometrical centre of the inner enclosure fits with the main *cella*. It is however not the case. The most striking element in the position of these boundary stones is indeed, as underlined by previous research (Dumarçay 1986), that the geometric centre of the sacred ground, as materialised by the central stone, does not correspond with the position of the main shrine (Figure 39). It is systematically located immediately south of the entrance staircase of the main temple, which is thus shifted to the northwest or to the northeast

[37] Loose boundary stones have also been discovered at Duduhan, Gunung Pring, Mulungan Wetan, Nglimut, Pucanggunung and Tampir.

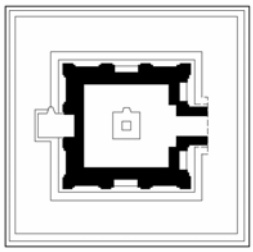

Figure 38: *Candi* Gebang

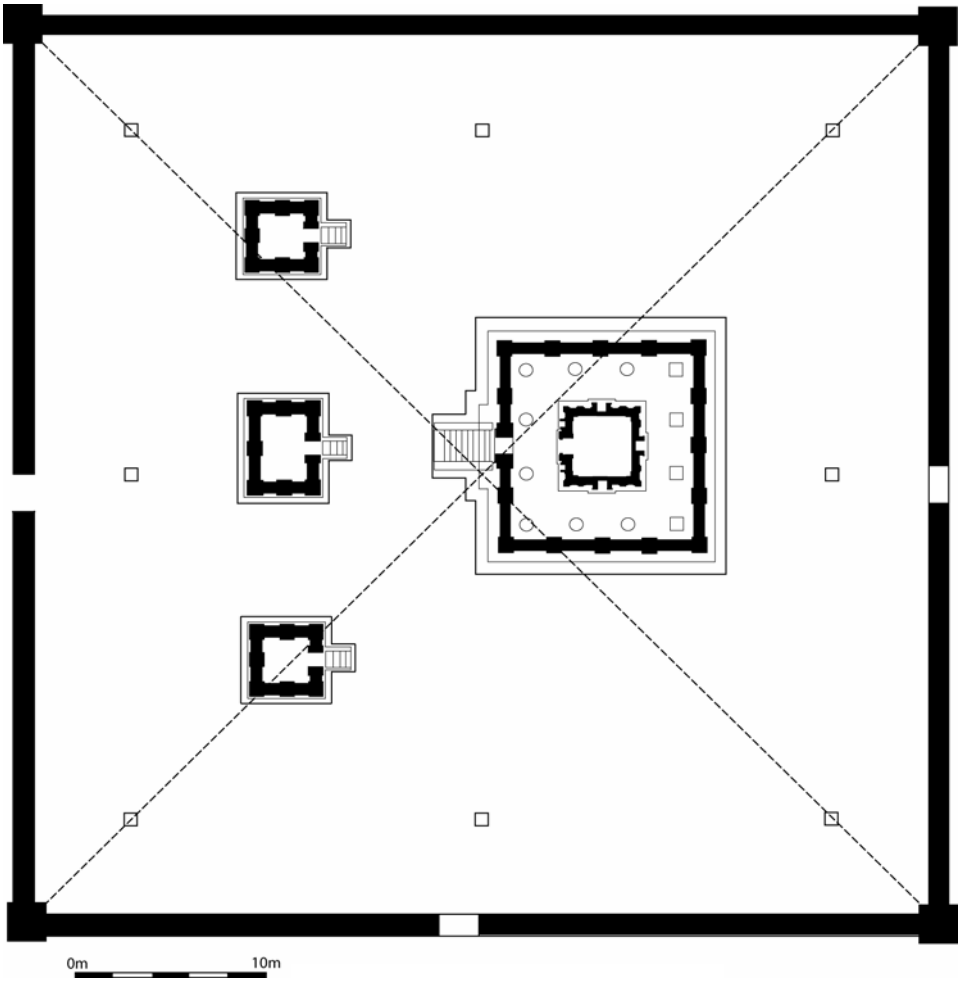

Figure 39: *Candi* Sambisari

of the courtyard (depending on the direction, east or west, that it faces).

For Dumarçay, this displacement was necessary for practical considerations: the architects needed the central stone to remain free of construction so that it could serve as a reference point during the building process (Dumarçay 1993:52-53). In my opinion, this explanation is quite unlikely: once the peripheral boundary stones were in place, there was no particular technical reason to keep a central marker. Any two boundary stones could serve for triangulation.

I would like to emphasize that the relative position of the main *cella* and the central boundary stone results in part from the spatial arrangement specific to Hindu temples in Central Java. The Hindu religious compounds where such boundary stones have been discovered are composed of two rows of buildings facing one another. In order to create a balanced ensemble, it is logical that the north-south axis of the compound runs through the central space, in between the two rows of buildings. This avoids the need for shrines to be cramped in the eastern or western part of the courtyard. Nevertheless, as we can see at Loro Jonggrang, it was important that the central temple was located nearer to the centre, so that the north-south axis is actually closer to the shrines of the western row than to the buildings of the eastern row. However, the central boundary stone, which marks the intersection of the north-south and east-west axis, remains outside the main shrine.

The shift of the main temple to the north is more difficult to explain using aesthetic principles or practical motivations. Further, I personally do not know of any Indian temple where the main *cella* is not on the central axis of the temple ground. Although a shift to the rear is common in India,[38] the main axis of the temple, as far as I know, usually corresponds to the axis of the surrounding courtyard. This shift of the *cella* to the rear, however, is also known from Khmer architecture of the Angkorean period.[39] So, the main *cella* of the Preah Khan of Angkor (late 12th century) is clearly located to the northwest of the geometric centre of the religious compound. This type of spatial arrangement is thus not specific to Java. Further research in comparative architecture would be required in order to determine if it originally came from India or if it is a purely Southeast Asian tradition – and whether it might be a Javanese influence on Khmer architecture. It is possible that – rather than deriving from Indian temples themselves – the use of placing the main shrine to the north of the east-west axis may derive from a similar interpretation of Indian textual tradition.

In the absence of any reference to this problem in Javanese inscriptions or (later) texts, it is impossible to know why the centre of the temple ground has been so carefully avoided and why the main temple is always in the northern half of the sacred enclosure. As this tradition does not seem to result from any technical requirement, its origin may perhaps be derived from religious belief.

As noted above, it might, for example, originate from a specific interpretation of Indian texts. When referring to the *vāstupuruṣa*, Indian treatises on architecture

[38] The Hindu temples of India usually have an extra room in front of the *cella*, called a *maṇḍapa* in South India, or *mukhaśālā* in North India. The result is that their ground plan is elongated rather than square. To create space to house this additional room, the *cella* is shifted to the rear.

[39] Unfortunately, information about the spatial arrangement of pre-Angkorian temple compounds is scarce, as are accurate plans. Therefore, I do not know if the shift of the main *cella* to the north was already a trend of pre-Angkorian ensembles such as Sambor Prei Kuk. It is thus difficult to interpret the phenomenon. Was it a typical Javanese custom that was passed on to later Khmer architects? Or was it from the start a common feature of both Javanese and Khmer building traditions?

usually describe the position of its head, limbs, trunk, heart, veins etc. The Spirit of the site is considered responsible for good and bad fortune and one must avoid tormenting it during construction (*Mayamata* 7:50-56). In the description of settlements, the *Mayamata* states that there are 6 places where there should be no temples or buildings, namely the heart of the Spirit of the site, its bones, the stakes, the lines (of the diagram), their intersections and the empty spaces at the corners (*Mayamata* 9:86). It was perhaps the desire of Central Javanese priests and architects not to torment the Spirit of the building that made them choose this peculiar spatial organization. It does not, however, explain why temples were systematically shifted to the north but never to the south.

Given that temple plans are all intended as an image of the *vāstupuruṣa* and as a geometrical diagram of the universe, it might be that Indian and/or local conceptions of the world also played a role in the conception and planning of religious compounds. Mount Meru is certainly the centre of the universe according to the Indian Hindu-Buddhist cosmology. However, if one considers this cosmology from a human perspective, it should be located to the north, because the island on which human beings are believed to live (*jambudvīpa*) is indeed often depicted as lying to the south of the mountain of the gods.

The shift of the central building of Central Javanese temple compounds to the northwest (or northeast) could refer to both beliefs, unless further studies in Indian art or Balinese architecture open the way to new interpretations of Central Javanese architecture.

Conclusion

With this chapter, we have started to address the structure of the architectural space, leaving behind questions related to the occupation of the territory and the relationship between temple and natural environment, which was the focus of the previous chapters.

Our aim was to describe the different types of spatial arrangements of buildings within temple complexes and to try to understand the factors at work behind their variance. We have identified two types of small-scale temple compounds (buildings in a row and buildings facing each other) and three type of large-scale ones (concentric, organized along an axis and organic). A study of the relative distribution of these types according to their chronology, location and religion has shown that the choice for one spatial arrangement or the other was in great part influenced by function and religious affiliation. So, organic compounds could be associated with meditation/pilgrimage places away from village settlements. Similarly, complexes composed of one main shrine facing one (or three) secondary shrine(s) seem typical of the Hindu architectural tradition (whatever the date and the location). In this type of spatial arrangement, the approach to the main temple is indirect, since one has either to turn around the secondary shrine to see the façade of the main shrine, or to enter the compound via the north-south axis. As for concentric arrangements, they seem to have originally been linked to the Buddhist architecture of the Prambanan area –with the exception of the Loro Jonggrang complex. In the latter case, the concentric rows of subsidiary shrines do however not surround a central, main shrine, but a group of buildings arranged in a typically Hindu manner, the main shrine facing a row of three secondary buildings.

Difference in spatial arrangement of the buildings is not the only thing that distinguishes Buddhist from Hindu architecture, as we will see in the following chapter, dealing with the ground-plans of the shrines.

CHAPTER 8

Ground plan of Central Javanese shrines: shape and significance of an architectural space

In the preceding chapter, our exploration of the structure of the built space has lead us to consider the lay-out of the various temple complexes of Central Java. I will now focus on an even more specific space: the building. Faithful to my aim, I will not consider all the aspects of temple architecture, but I will concentrate on the most important structuring element of the architectural space, namely the ground plan and its shape. I will propose a typology based on the form of the temple plan and show how types fit with two distinct building traditions, reflecting the complexity of the cultural history of the region.

The form of the temple

Out of the hundreds of ancient religious sites that dot the landscape of Central Java, only a small number of shrines are preserved up to the foot of the temple body, the condition *sine qua non* for recovering their plans. Actually, 33 temples or temple groups fulfil this requirement. Fortunately, the preserved shrines are scattered all over Central Java (Table 33) and are thus more or less able to give a fair idea of regional similarities and differences.[1]

If we gather spatial information of the surviving temples, it quickly appears that the square is the dominant figure of almost all the ground plans. Ellipses, which are sometimes used in early Indian temple architecture, such as the Durgā temple of Aihole (late 7th or early 8th century), are unknown in Java. Besides this, elongated

Table 33: Sites with temples preserved up to the foot of the temple body

Region	*Amount*	*Sites*
South Central Java	20	Banyunibo, Barong, Bubrah, Gebang, Ijo, Kalasan, Kedulan,[2] Loro Jonggrang, Lumbung, Mantup, Merak, Morangan, Plaosan Kidul,[3] Plaosan Lor, Pringtali, Risan, Sambisari, Sari, Sewu, Sojiwan
Progo valley	9	Asu, Borobudur, Lumbung, Mendut, Ngawen, Pawon, Pendem, Pringapus,[4] Selogriyo[5]
Peripheral areas	4	Dieng,[6] Gedong Songo, Lawang, Ngempon

[1] This is not entirely true since, in the area of Temanggung, only Pringapus is well preserved. This area, however, was originally out of the scope of my study.

[2] This temple was under process of restoration during both periods of fieldwork carried out for the present study. Although the main lines of its plan were visible, the details were not known yet.

[3] Only the temple plan of the secondary shrines is known; the main building has completely vanished.

[4] The temple was originally out of the scope of the research. I do not have its precise ground plan.

[5] The base is vanished, but, according to Krom, it was a staggered square (Krom 1923, I: 407).

[6] Only a few stones remain for the bases of Bima, Gatotkaca, Puntadewa, Sembadra and Srikandi. The bases of Puntadewa, Sembadra and Srikandi appear to have been a square with projection on the front side. As for Gatotkaca, it originally stood on a large rectangular base together with a now vanished temple (OD photograph, DigiBeeld nr 30965 - http://beeldbank.wsd.leidenuniv.nl/Login.asp).

For the moment, one must keep in mind that the elongated aspect of some of the Dieng temples is partly due to the disappearance of their bases.

plans resulting from the addition of a *maṇḍapa* to the *cella*, a very common feature in Indian architecture, are also lacking. However, in spite of the simplicity of their plans and looking beyond their apparent homogeneity, Central Javanese temples do vary a lot in their details.

I have come up with a classification of the ground plans of the Hindu-Buddhist shrines of Central Java into three main groups, according to the shape of their temple body:[7] 1) shrines with a square ground plan, 2) temples with a staggered square ground plan, 3) buildings with a rectangular ground plan (Table 34).

Table 34: Shape of the temple body of Central Javanese shrines.

Square body		*Staggered square body*		*Rectangular body*
Arjuna	Merak	Bima	Morangan	Banyunibo
Asu	Ngawen*	Borobudur	Ngawen	Gedong Songo II*
Barong	Ngempon	Bubrah	Pawon	Gedong Songo III*[9]
Gebang	Plaosan Kidul*	Dwarawati	Pendem	Loro Jonggrang*[10]
Gedong Songo	Plaosan Lor*	Gatotkaca	Risan	Plaosan Lor
Ijo	Pringtali	Gedong Songo IV*	Selogriyo	Pringapus
Kedulan	Puntadewa	Kalasan	Sembodro	Puntadewa*
Lawang	Sambisari	Loro Jonggrang	Sewu[8]	Sari
Lumbung	Sewu*	Loro Jonggrang*	Sojiwan	Semar*[11]
(Muntilan)	Srikandi	Lumbung		Srikandi*
Lumbung*		Mendut		
Mantup				

* Secondary shrines

Square temples

In Central Java, temples with a square body can be identified at 22 locations (Table 34). Besides the symmetry inherent to the square shape, these temples do not present four identical sides: since the square temples of Central Java have a single entrance door, one side inevitably receives more emphasis than the others (Figure 40). Niches, usually present on the blind faces of Hindu temples, give some balance to the whole, occupying the centre of the side wall, just as the entrance door occupies the centre of the façade. Their decoration, often a *kāla-makara*, replicates the ornamentation of the entrance door. Nevertheless, the latter generally protrudes further than the niches, leaving no doubt as to its superior status.[12]

The presence of an entrance door, on a single face, introduces an element of axiality into the square plan. It also confronts the architect with a problem: how to put an emphasis on the entrance side while respecting the general square lay out? And, if the entrance is protruding, what shape should the base adopt?

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7 I follow the divisions of the *candi* into three components (base-body-superstructure), as described by R. Soekmono (Soekmono 1995:105).

8 Main temple and big subsidiary shrines.

9 Secondary shrine in front of the main temple.

10 Secondary shrine (Nandi temple) in front of the Śiwa temple.

11 Semar is the secondary shrine of *candi* Arjuna.

12 It should be noted that, in Central Java, niches never developed into false doors, so frequent in Khmer architecture. Physically as well as symbolically, the two elements are very different. A niche houses the sculpture of a god – even if it may be conceived as an aspect of the main deity. A false door represents the two closed panels of a door, giving to the *cella* the possibility to symbolically open towards the four directions. I therefore oppose the idea of J. Dumarçay, according to whom Khmer false doors would find their origins in the architecture of Central Java (Dumarçay, Royère 2001:45)

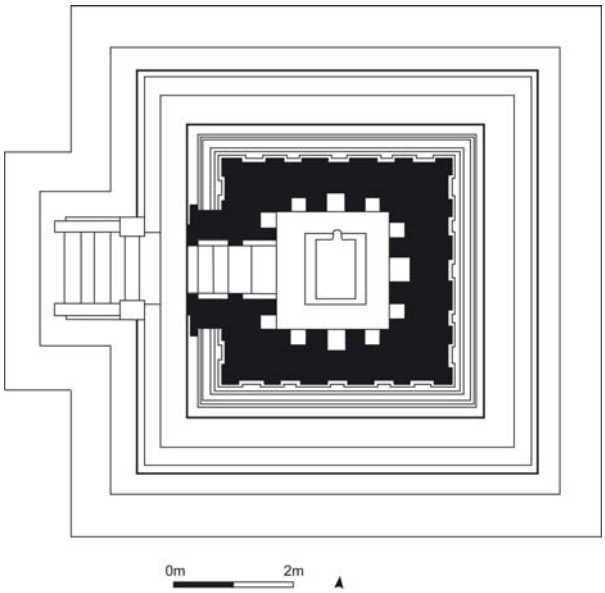


Figure 40: *Candi* Gedong Songo I, square temple body with very shallow porch, square base

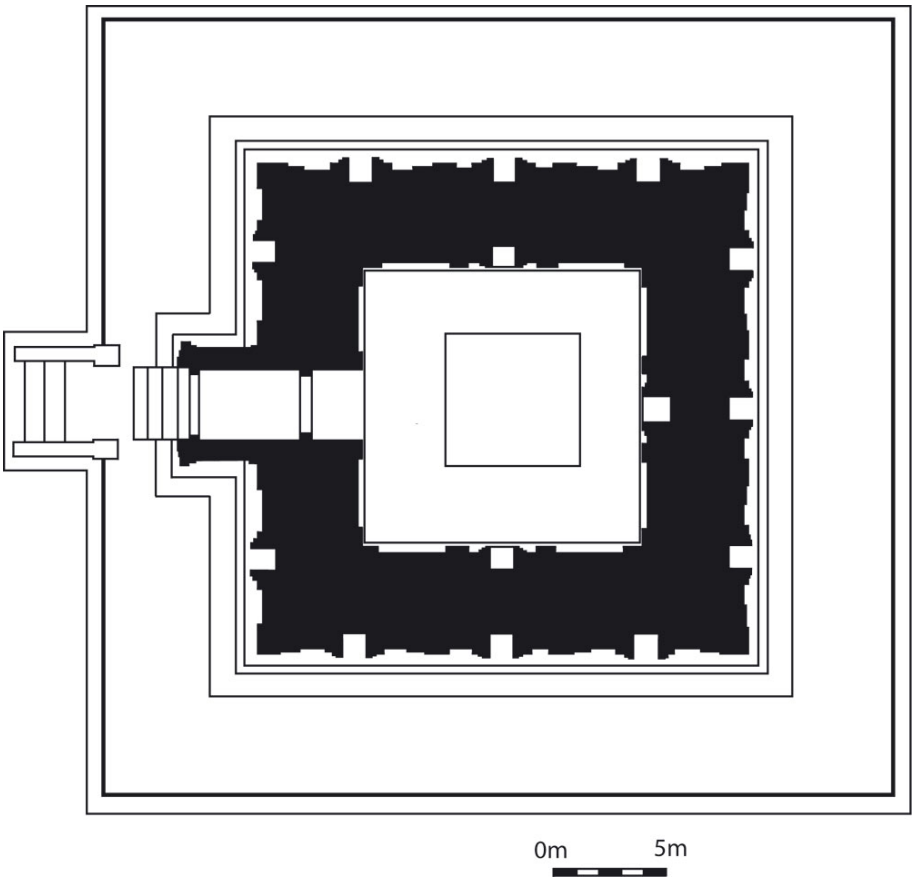


Figure 41: *Candi* Ijo: square temple body with porch, square base

Central Javanese architects have opted for four different solutions (Table 35): 1) the door is (almost) in line with the temple wall, both the temple body and the base remain square (Figure 40), 2) the entrance door protrudes from the temple body, but the base retains a square plan (Figure 41), 3) the entrance door projects out beyond the wall structure and the base too has a projection on the front side (Figure 42), 4) the entrance door protrudes and the base is lightly rectangular (Figure 43).

1) At the main shrine of *candi* Ngempon and Gedong Songo I (Figure 40), as well as at the secondary shrines of Lumbung and the small temples directly facing the main building of *candi* Ijo,[13] the entrance protrudes slightly, and does not go beyond the mouldings of the temple body. The emphasis on the entrance is then almost invisible in the ground plan; both the temple body and the base remain square. The main shrines of *candi* Barong have also a square body and a square base, but they have the further peculiarity of not having an entrance door.[14]

2) At the main shrine of *candi* Ijo and at *candi* Gebang (Figure 41), although the porch is protruding, the base retains its square shape. On the entrance side, the space between the foot of the temple body and the outer edge of the platform surrounding it is narrowed.

3) *Candi* Arjuna and Puntadewa (Dieng plateau), *candi* Asu, Lawang, Lumbung (Muntilan), Merak, Morangan[15] and the small subsidiary shrines of Sewu follow yet another tradition (Figure 42). The temple body has a porch,[16] the contours of which are imitated by the base. A protruding porch corresponds to the projection of the base; the distance between the wall of the temple body and the edge of the base is the same all around the temple.

4) At Gedong Songo, the solution adopted to combine a square temple body with a protruding entrance is unique. Gedong Songo II,[17] III, IV and VI have a square temple body with a projecting porch, but the base is neither a plain square nor a square with a front projection: it is a rectangle (Figure 43). The base has been lengthened on one side, so as to leave space for the porch. The symmetry induced by the square shapes loses ground to the benefit of the façade. Here, more than in other places, the unity of the temple structure is challenged: the temple body and base do not have the same plan anymore and the pilasters that divide the walls of the body and the base are not above each other. As a result, the relationship between body and base becomes looser. An attempt to restore this relationship is found in the small, northern temple of Gedong Songo III. In this case, the niches created within the base are not placed in the middle of the wall, but roughly at the point of 2/5, so that they are located right below the niches of the temple body (Figure 44).

Finally, one should add to the list of square temples, the secondary shrines of

[13] It is probably also valid for *candi* Kedulan.

[14] They do have an inner space though.

[15] Morangan differs slightly from the other temples with a square body: its side niches are protruding out from the wall. However, contrary to the staggered square temples, the wall structure remains flat: the part of the wall between the top of the niche and the cornice is in line with the rest of the temple body.

[16] In *candi* Merak and Arjuna, as well as in the small secondary shrines of Sewu, the width of the projection of the temple body corresponds to the inner width of the *cella*.

[17] At Gedong II, as at Morangan and Sambisari, the side niches are lightly projecting out from the wall of the temple body.

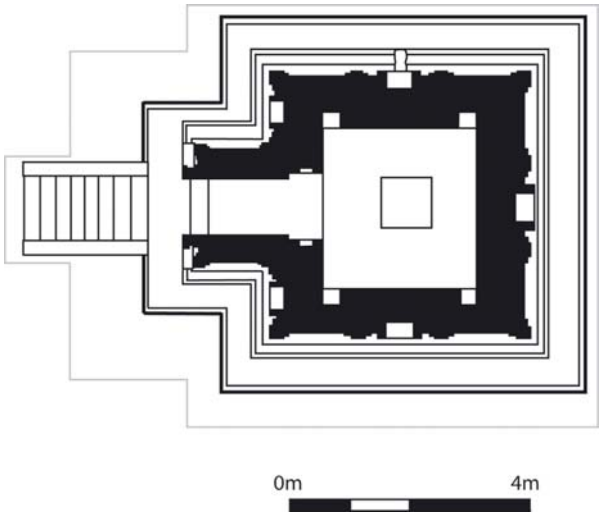


Figure 42: *Candi* Arjuna (Dieng) : square temple body with porch

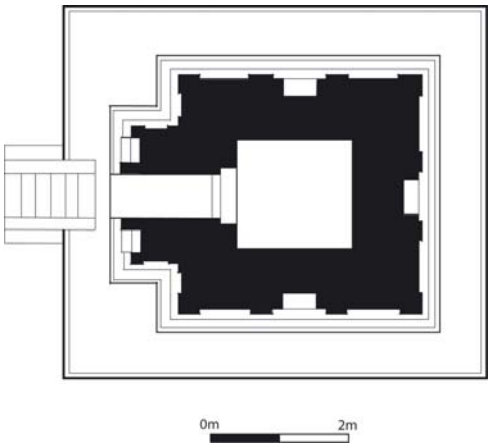
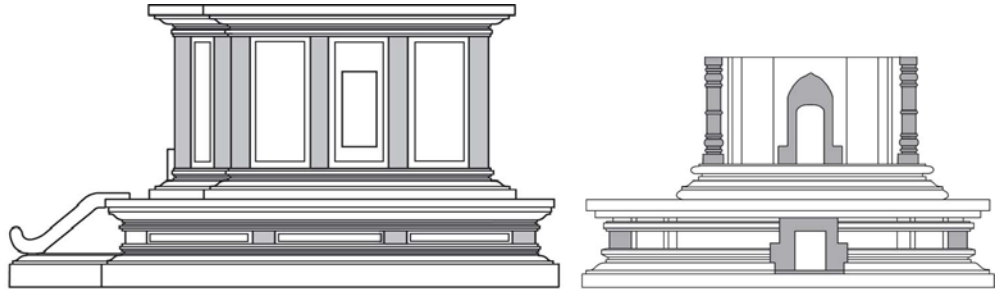


Figure 43: *Candi* Gedong Songo IV: square temple body with porch, rectangular base



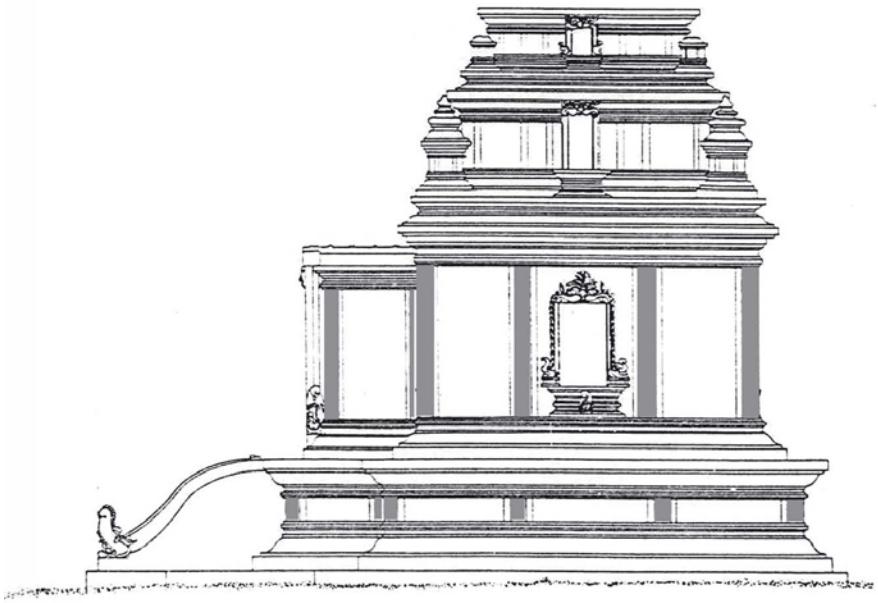


Figure 44: Relationship between the temple body and the base: usually, the link is established through corresponding pilasters (bottom, *candi* Arjuna), through a niche at Gedong Songo IIIb (top, right), but is lacking in other shrines of Gedong Songo (top left)

Plaosan Kidul.[18] In this case, the temple body and the base are perfectly square, but a proportionally large vestibule has been added to the plan. These shrines distinguish themselves from the others through the fact that the floor of the vestibule is almost at ground level. The two rooms - vestibule and *cella* - occupy different storeys and the separation between the base and the temple body is abolished.

Table 35: Central Javanese temples with a square temple body

	Simple square temple body	Square temple body, with front projection	
Simple square base	Ijo*[19] Gedong Songo I Lumbung* Ngempon	Gebang Ijo	
Square base with front projection	Ngawen* Sambisari[20]	Asu Arjuna Lawang Lumbung (Muntilan) Merak Morangan	Plaosan Kidul* Puntadewa Sambisari Sewu*[21] Srikandi
Rectangular base		Gedong Songo II, III, IV, VI.	

* Secondary shrines

Staggered square temples

19 sites have yielded examples of staggered square temples (Table 34). The ground plan of these temples is based on a square shape, but the central section of the wall is projecting out from the temple body (Figure 45). It should be underlined that it is not a mere projection of the niches: the protruding part is larger than the niche (if present) and includes the whole height of the temple body, from foot to cornice.

In some cases, the entrance is protruding more than the side projections (Mendut, Pawon, Sembodro, Sewu)[22] and the base may either be square or staggered square, with or without front projection.

Candi Bubrah, Gatotkaca, Pendem and Sojiwan, as well as the shrines facing the Wisnu and Brahma temple of Loro Jonggrang[23] have a staggered square temple body and a square base (Figures 45, 46). At Bubrah, Sojiwan, and the secondary shrines of Loro Jonggrang, the link between the staggered square and the square is made through the intermediary of a low square podium on which rises the temple foot (Figure 46).

Although at the level of the temple body all the sides are treated identically, an element of axiality is introduced at the level of the base, since there is a small projection on the entrance side (Figures 45, 46).

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[18] A similar organization is visible at *candi* K (secondary shrine of *candi* Ijo), adapted to a general rectangular shape.

[19] *Candi* K, on terrace VIII-b.

[20] Actually, the side niches and the entrance door are slightly protruding, but the latter does not project further out than the niches. The base, however, has a front projection, which sustains a small *gopura*. A similar feature is to be found at Ngawen and Sojiwan.

[21] Small secondary shrines.

[22] Large secondary shrines.

[23] The Nandi temple, located in front of the Siva temple, has a slightly rectangular plan and should therefore be compared with rectangular structures of Gedong Songo II and III, as well as with *candi* Semar and other similar buildings of the Arjuna group on the Dieng plateau.

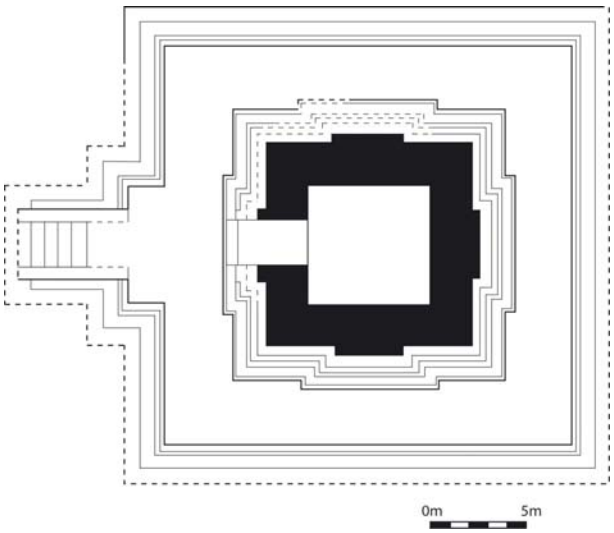

Figure 45: *Candi* Pendem: staggered square temple body, square base with small projection on the façade

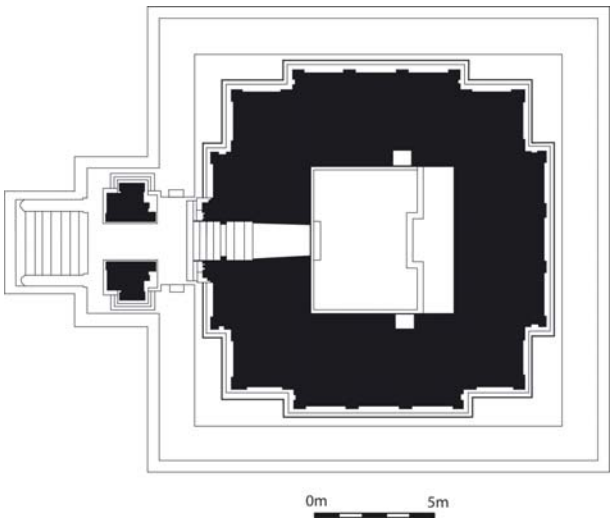

Figure 46: *Candi* Sojiwan: staggered square temple body, square base with projection

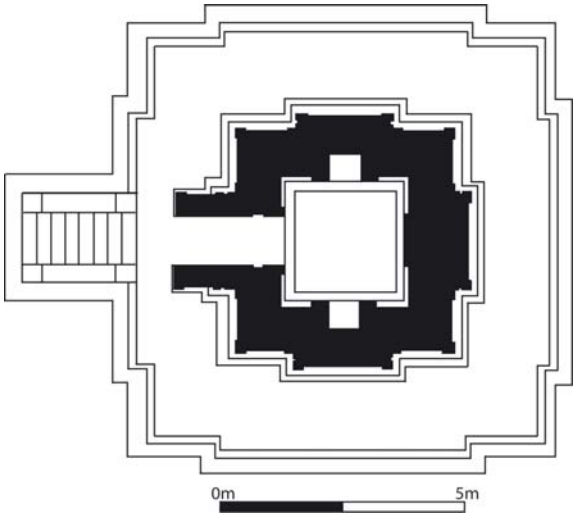

Figure 47: *Candi* Pawon: staggered square temple body with porch, staggered square base

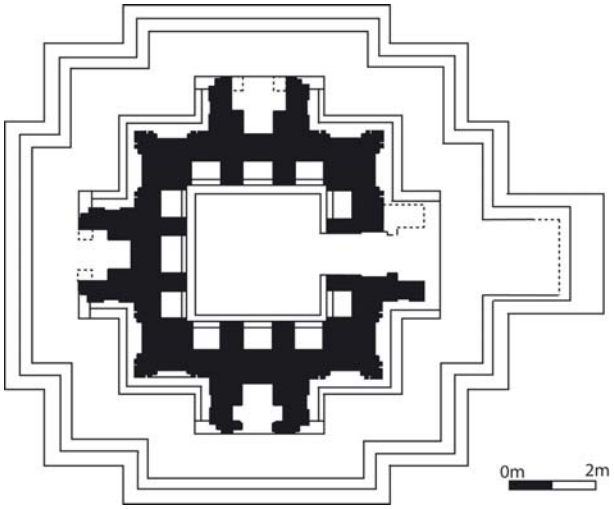

Figure 48: *Candi* Lumbung

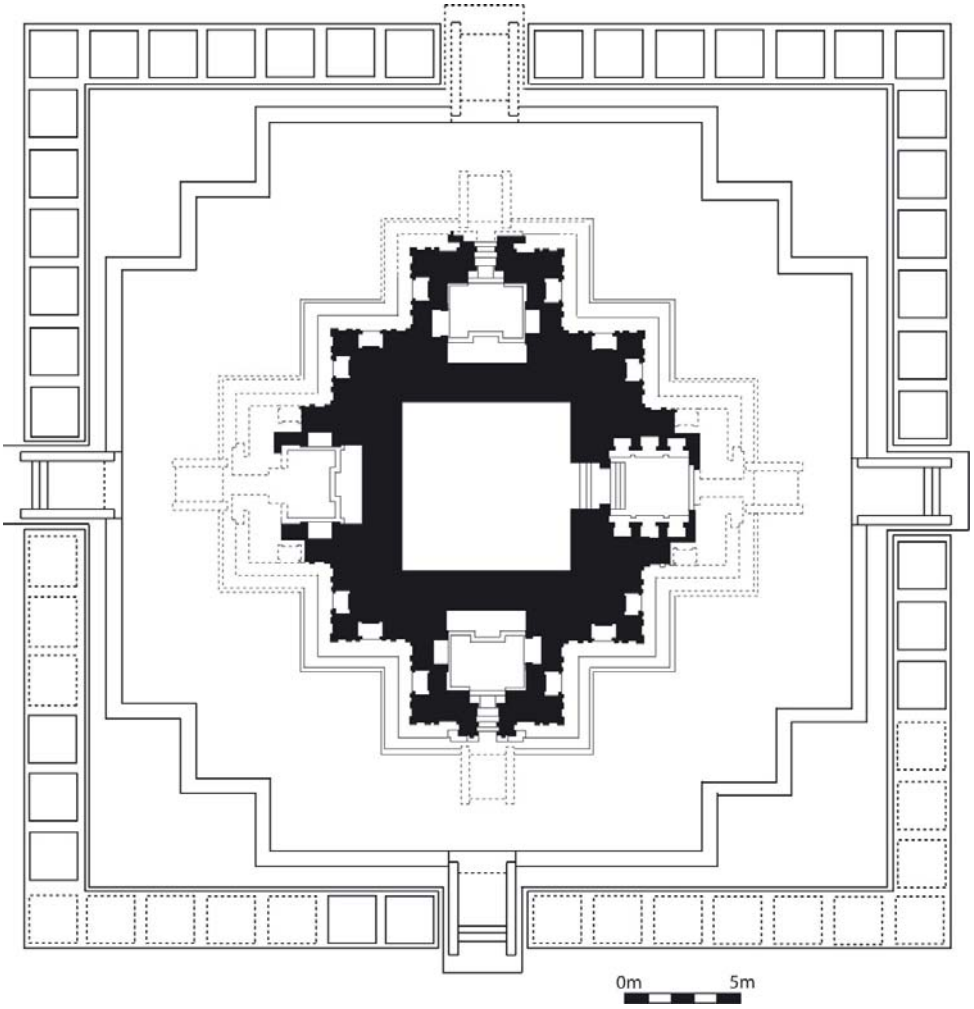

Figure 49: *Candi* Kalasan: staggered square temple body with four *cella*, staggered square base

At Bima, Dwarawati, Mendut, Ngawen, Pawon, and Selogriyo, both the temple body and the base are a staggered square (Figure 47). Bima, Dwarawati, Mendut and Pawon[24] have a vestibule, while at *candi* Ngawen the emphasis on the entrance side is materialised by an independent *gopura* that rises at the eastern edge of the terrace, a feature that was also seen at Sojiwan. As for *candi* Selogriyo, it has indeed a narrow projection at the middle of each wall, as well as a very short porch on the entrance side. The temple base is not visible anymore, but was probably a staggered square too (Krom 1923, I:407).

Among the temples with a staggered square body, *candi* Kalasan, Loro Jonggrang, Lumbung, Sembodro and Sewu stand out (Figures 48, 49). In these five temples, the projections are indeed so deep that they give to the whole a cruciform aspect.[25] At Sembodro and Lumbung, the arms of the cross house the usual niches. At Kalasan, Loro Jonggrang and Sewu, the three niches are replaced by subsidiary *cella* (Figure 49).

[24] The only other temples with a vestibule are *candi* K at Ijo and the secondary temples of Plaosan Kidul.

[25] It is not exactly a cross, given that the corners of the central square are still clearly visible.

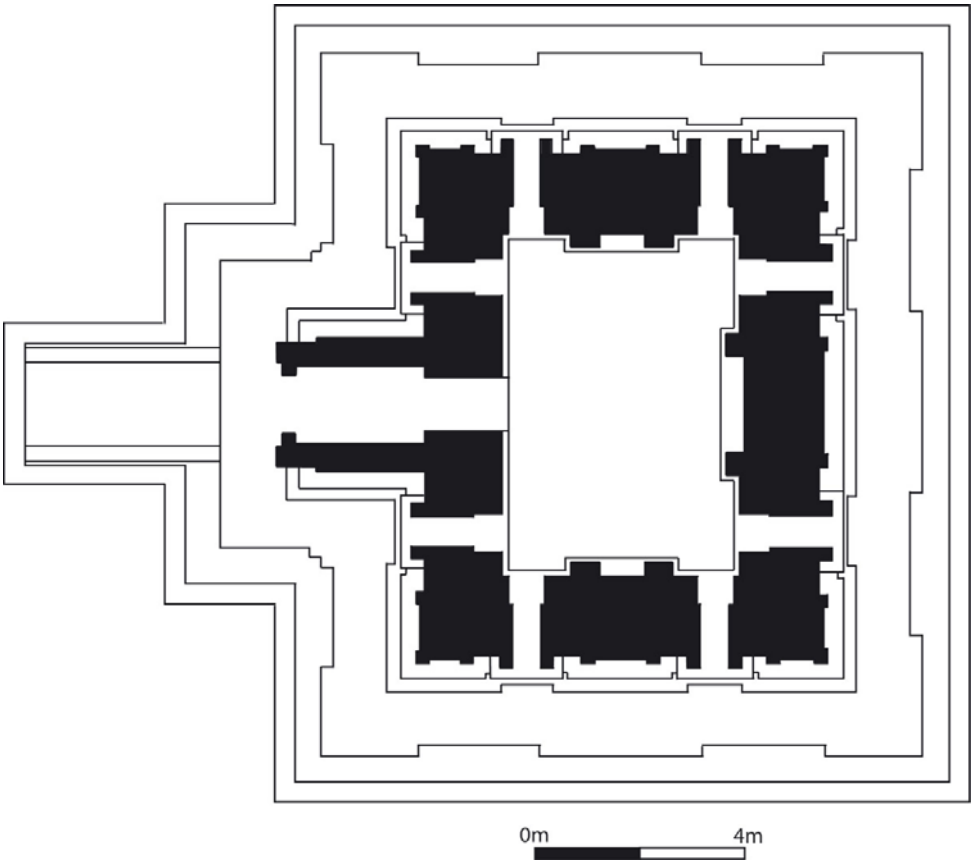

Figure 50: *Candi* Banyunibo: rectangular ground plan with single cella

Rectangular plans

At least 10 Central Javanese buildings have a rectangular ground plan, but most of them are small, secondary constructions (Table 34). Main temples with a rectangular body are only found at Banyunibo, Plaosan Lor and Sari. The entrance of these buildings is located on the long side. It seems that the rectangular shape was applied to main buildings exclusively in a Buddhist context.

The four temples – Banyunibo, Sari and the two main temples of Plaosan Lor - have a porch. Their base possesses a projection on the entrance side and follows the shape of the temple body, which also has a projection. While Sari and Plaosan Lor have three inner *cella* - and two storeys, Banyunibo has only one (Figure 50).

Given the unusually large dimensions of the inner rooms and the windows that let the light enter, it is probable that those buildings were conceived to receive a larger audience than the relatively small *cella* of other temples – and had therefore a somewhat different purpose. N.J. Krom was of the opinion that, even though they belonged to Buddhist compounds, rectangular structures could not have been living quarters for monks, such as their then modern local appellation of *wihāra* would suggest (Krom 1923, I:268-269). On the one hand, as the remaining images and thrones at Plaosan Lor and Banyunibo suggest, the rooms must have served a ritual purpose. On the other hand, N.J. Krom underlined that - in the case of Sari and Plaosan Lor where the rectangular structures have two floors - it would be unthinkable for Javanese people to live above the gods they served. The suggestion of the Dutch

scholar was that the upper storeys of Plaosan Lor and Sari served as treasure room for cult objects (Krom 1923, I:269).[26]

The meaning of the ground plan: concepts and traditions in Central Javanese architecture

Symmetry and asymmetry of the temple plan

Beyond knowing that Central Javanese shrines are either square, staggered square or rectangular, it is important to try to know why it is so, what conceptions guided architects and commissioners of these temples. In India, the Hindu temple is commonly associated with Mount Meru - the axis of the world - and, more widely, with the universe itself. As the universe is coiled around the cosmic mountain, so the temple must have a centre. As the universe is four-pointed (*caturbhṛṣti*), the temple too is first defined as a square (Kramrisch 1946:161-162; Michell 1988:69-72). This perception of the temple as a Mount Meru most probably prevailed in Southeast Asia as well.[27]

All Central Javanese temples, either squares or staggered squares, are variations on the square form, at the centre of which resides a square *cella*. As Mount Meru stands in the middle of the universe, the centre of the Central Javanese temple is both its most sacred and its highest part.[28] However, in Central Java as anywhere else, the vision of the temple as a replica of Mount Meru – and hence perfectly symmetric and identical from all sides – enters in competition with a more mundane preoccupation: the need of an entrance door. In order to respect the analogy with Mount Meru, Javanese architects could opt to place a door on each side. Yet, they rarely did. On the contrary, most Central Javanese buildings have a single entrance – and this door is often emphasized by the presence of a porch or a vestibule, which breaks the double symmetry of the square plan. There seems to be, in the plan of many Central Javanese temples, a contradiction between two principles, the symmetry of the square plan on the one hand, the emphasis on the façade on the other hand - between a concentric view of the cosmos, as expressed in Indian traditions, and an axial approach of the material space.[29]

The structural consequence of the highlighting of the entrance door is that the *cella* is often somewhat shifted to the rear, being slightly closer to the back wall of the base than to the entrance staircase (Figure 51). In most Central Javanese temples, however, this movement is played down by the treatment of the ground plan.

As stated above, in some buildings, the porch is non-existent. In a couple of other cases its presence does not have any impact on the ground plan of the base, which

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[26] A similar hypothesis has been formulated for the two-storey chapter houses of old Sri Lankan monasteries. Those buildings are also rectangular, with the entrance on the long side, and are usually supported by a forest of pillars. It is thought that the ground floor was used for chapter recitation while the first floor houses a storage room (Silva 1988:184-203).

[27] See for example Chihara 1996:30-46.

[28] In Central Java, the *cella* is crowned by a tiered tower. When they exist, *gopura* are always lower than this central tower.

[29] The latter point is of course not peculiar to Java: Indian temples as well are far more developed on the entrance side. But while this led in India to the general adoption of the *maṇḍapa*, there was in Java a willingness to be as respectful as possible to the square plan, even in the largest and most complex buildings.

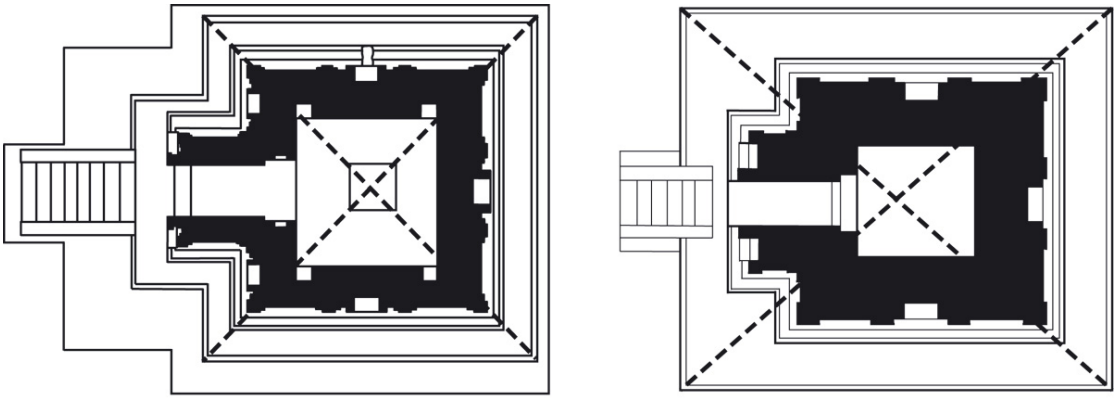

Figure 51: Schema showing the geometrical centre of the base. To the left, *candi* Arjuna (Dieng), to the right Gedong Songo IV

remains square (Figure 35 and 36). In all these examples, the square, symmetric shape, prevails above all.

In still other temples, the system for creating a balance between centrality and axiality is somewhat different: the porch is conceived as a simple addition to the square plan, and the base imitates the shape of the temple body (Figure 44). The ground plan is hence based on the square shape and the projection of the entrance is of secondary importance.[30] The geometric centre of the main part of the base still corresponds with the centre of the *cella* (Figure 51).

The only place where the geometrical centre of the base does not correspond with the centre of the *cella* is Gedong Songo. With the exception of Gedong Songo I, all the temples of the site possess a rectangular base (Figures 43, 51). The temple body is not at the centre of the base. It is however impossible to establish whether or not this special arrangement altered the perception of the temple as a Mount Meru rising in the middle of the universe.

Hindu and Buddhist building traditions

As we have seen, the square shape constitutes the backbone of almost all the religious buildings of Central Java. Nevertheless, the temples are rarely square strictly speaking. We must thus question the reasons behind the choice of a square, a staggered square or a rectangle as basis for the plan of a given temple. The drawing of a ground plan being an essential step within the building process, it is unlikely that it was done randomly. The initial form, the form that determines the primary shape of a building, is inevitably the materialisation of a mental construct: consciously or not, it conveys the ideas of its architects and commissioners. Which ideas, which cultural references played the most determinant role in the choice of a ground plan is difficult to establish, especially since we have so few textual data directly linked to specific temples. Given the nature and limitations of the available data, we will only try to determine whether the ideas materialised through the ground plan were linked to building traditions limited in space, time or religious background.

Let us consider first the possibility that square, staggered square and rectangular buildings are the expression of different, regional traditions. A quick look at the map

[30] At *candi* Ngawen, this lower importance of the projection is underlined in the profile of the building: the main, square part of the base has a different moulding system than the protruding part.

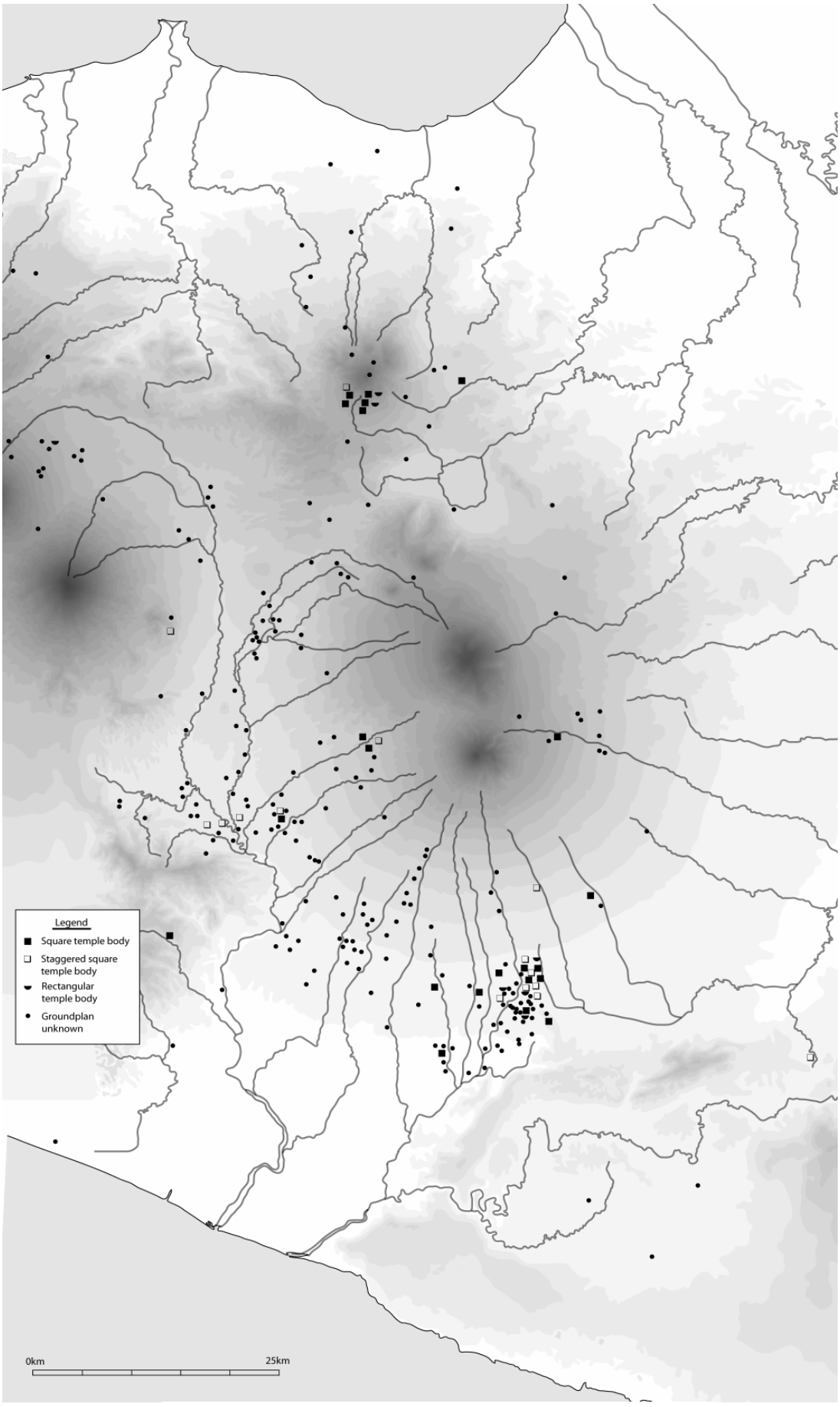

Figure 52: Distribution of temple groundplans

(Figure 52) is sufficient to realize that the three shapes are found all over Central Java. Examples of square temples exist in the northern as well as in the southern region – and the same observation is valid for the staggered square and rectangular plans. We should thus dismiss the hypothesis that variations in plan represent differentiated, localized traditions.

Another possibility that our data allow us to consider – though in a somewhat limited way[31] – is the relation between plan and chronology (Table 36). I do not mean that I assume that ground plan of Central Javanese shrines evolved over time; the word seems rather inadequate to explain variations of such simple forms as the square and the staggered square. It is not really probable that there ever was something like an Aristotelian evolution of the temple plan. Central Javanese architecture did probably not start with a simple square to end up with complex plans, as a too rapid juxtaposition of *candi* Arjuna and *candi* Loro Jonggrang could suggest. Firstly, Lawang - a temple that is usually considered as a late one,[32] has a square ground plan, testifying that the square shape cannot be exclusively associated with early architecture. Secondly, Borobudur, which no scholar considers a late monument, is a

Table 36: Ground plan and chronology

Shape	*Early period*			*Late period*		
Square	18	Arjuna Gedong Songo I-VI Lumbung (Pr.)* Merak	Puntadewa Sewu * Srikandi	5	Asu Barong Gedong Songo I Ijo Kedulan Lawang Lumbung	Ngawen* Ngempon Plaosan Kidul* Plaosan Lor* Sambisari
Staggered square	9	Bima Borobudur Bubrah Dwarawati Gatotkaca Gedong Songo IV* Kalasan Lumbung (Pr.)	Mendut Pawon Pendem Selogriyo Sembodro Sewu	9	Loro Jonggrang Morangan Ngawen Sojiwan	
Rectangular	6	Banyunibo Gedong Songo II* Gedong Songo III* Puntadewa*	Sari Semar*[33] Srikandi*	3	Loro Jonggrang*[34] Plaosan Lor Pringapus*[35]	

* Secondary shrines
Pr. = Prambanan

[31] On the probably of the chronology of Central Javanese shrines, see above p.15.

[32] The temple is dated 861 A.D., on the basis of an inscription carved on its doorjamb (Krom 1923, I:412).

[33] Secondary shrine in front of *candi* Arjuna.

[34] Secondary shrine in front of the Siwa temple.

[35] Although it is not absolutely certain, I consider *candi* Pringapus as a secondary shrine to *candi* Perot. I do so for three reasons: 1) it houses a sculpture of a reclining bull, an element normally found in front of *śaiwa* temples (alone, under a canopy or in a small shrine), 2) it faces *candi* Perot, the side walls of which, to the contrary of those of Pringapus, were adorned with the standard Javanese *śaiwa* triad Gaṇeśa-Durgā-Agastya, 3) it has the rectangular plan of *śaiwa* subsidiary shrines when placed in front of the main temple.

perfect, ample staggered square. Thirdly, both squares and staggered squares are simple geometric figures. Building a staggered square temple does not require more skills and experience than the construction of a square shrine.

Furthermore, both the square and the staggered square are part of the iconography of Buddhism as well as Hinduism; their use is not limited to ground plans of temples and their symbolism is wide. Squares and staggered squares, for example, often form the structure of *maṇḍala* and *yantra*. Given their importance and popularity within Buddhism and Hinduism, such sacred diagrams were most probably known in Java from a very early time,[36] so that the architects who built the Central Javanese monuments could, from the start, rely on a large repertoire of geometric figures with symbolical associations. It is therefore impossible to imagine a purely local evolution that would have led from the simple square (Arjuna) to the staggered square (Mendut) or cruciform temple (Kalasan).

Although we should dismiss the concept of evolution when referring to the variations in the form of the ground plans, it is still possible that, for a reason or another, certain shapes were more popular at certain periods. I have thus classified remaining temples according to their shape and to the period they belong – early or late – in the hope of being able to trace a relationship between form and time (Table 36). No clear scheme has come out of this classification; the only noticeable tendency is a decrease in the amount of rectangular and staggered square plans in the late period.

The confrontation between the shape of the ground plan on the one hand and the religious affiliation on the other gives more satisfying results. If one is content with looking quickly at Table 37, one could conclude that the various ground plans are similarly popular within Hinduism and Buddhism. However, although the various shapes of ground plans (square, staggered square, rectangular) are found in both religions, their distribution and importance are not identical among Buddhist and Hindu remains. Main temples with a rectangular ground plan are found only in Buddhism. In Hindu sites indeed, this shape is reserved for secondary buildings facing the main temple. More surprising is the fact that square plans are mostly a Hindu phenomenon. It is indeed quite common for the central building of a Hindu compound to have a square plan. Among Buddhist remains, on the contrary, square plans are limited to secondary structures of the Yogyakarta area (subsidiary shrines of Sewu, Lumbung, Plaosan Kidul and Plaosan Lor). At first sight, staggered square plans seem more shared out between Buddhism and Hinduism. It is nevertheless striking that in all the Buddhist temples the central shrine is either rectangular or staggered square.[37]

If one now tries to combine shape, religious affiliation and chronology and to approach the data in terms of building traditions, one can suggest two main hypotheses. According to the first hypothesis, temples would belong to two different traditions that, as far as the shape of the ground plan is concerned, did not undergo drastic changes in the course of Central Javanese history. On the one hand, we find Buddhist buildings, from the early and the late periods, characterized by a staggered plan. On the other hand, Hindu shrines present less uniform traits, since they may

[36] Two inscribed stones bearing diagrams similar to *yantra* have been found in the Progo River, near Bogem, leaving few doubts that such drawings were known and used in Central Java (Setianingsih 1998).

[37] Unfortunately, it does not work the other way round: all staggered square buildings are not Buddhist; some staggered square temples are Hindu.

Table 37: Ground plan and religion

Shape	*Hindu*			*Buddhist*	
Square	18	Arjuna Asu[38] Gebang Gedong Songo I-VI Ijo Kedulan Lawang	Lumbung (Muntilan) Merak Morangan Ngempon Puntadewa Sambisari Srikandi	5	Lumbung* Ngawen* Plaosan Kidul* Plaosan Lor* Sewu*[39]
Staggered square	9	Bima[40] Dwarawati Gatotkaca Gedong Songo IV* Loro Jonggrang	Morangan Pendem Selogriyo Sembodro	9	Borobudur Bubrah Kalasan Lumbung Mendut Ngawen Pawon Sewu Sojiwan
Rectangular	6	Gedong Songo II* Gedong Songo III*[41] Loro Jonggrang*[42] Pringapus*[43]	Puntadewa* Semar*[44] Srikandi*	3	Banyunibo Plaosan Lor Sari

* Secondary shrines

follow either a square or a staggered plan. According to this hypothesis, there is no obvious influence, from one tradition on the other.

One may however formulate a second hypothesis, which would include some form of exchange between the two traditions. Although both the square and the staggered square were known from the earliest period (*candi* Arjuna and Borobudur), the Hindu tradition[45] would have shown a preference for the square (*candi* Arjuna, Gedong Songo II-VI). The staggered square, on the other hand, would have been the plan *par*

[38] Its religious affiliation is actually not known with certainty. The three temples of Candi Pos, Asu, Lumbung and Pendem, are usually associated to the Hindu inscription of Śrī Manggala (874 A.D.), which was found about 250m north of *candi* Pendem. No further element brings evidence of their Hindu character.

[39] Small secondary shrines.

[40] The Dieng plateau is usually considered as a Hindu place of worship. Nevertheless, there is no clear evidence of the religious affiliation of *candi* Bima, Dwarawati, Sembodro and Gatotkaca.

[41] Secondary shrine in front of the main temple.

[42] Secondary shrine in front of the Siwa temple.

[43] Although it is not absolutely certain, I consider *candi* Pringapus as a secondary shrine to *candi* Perot. I do so for three reasons: 1) it houses a sculpture of a reclining bull, an element normally found in front of *śaiwa* temples (alone, under a canopy or in a small shrine), 2) it faces *candi* Perot, the side walls of which, to the contrary of those of Pringapus, were adorned with the standard Javanese *śaiwa* triad Gaṇeśa-Durgā-Agastya, 3) it has the rectangular plan of *śaiwa* subsidiary shrines when placed in front of the main temple.

[44] Secondary shrine in front of *candi* Arjuna.

[45] By the terms "Hindu tradition" and "Buddhist tradition" I do not mean that the architectural differences between these two traditions have a religious signification, that the staggered plan has a Buddhist meaning and that its possible introduction into Hindu architecture implies an influence in doctrine or symbolic. The raison d'être of the variations in plan can of course come from non-religious factors. It is not unthinkable, for example, that the Buddhist tradition of Central Java was born from renewed contacts with a different part of the Indian subcontinent, or from the impetus given by the arrival of a new reigning dynasty – I think here of course of the Śailendra's. It is nevertheless still true that the vast majority of Buddhist temples seem to adhere to a single building tradition, and most Hindu shrines do not seem to follow it.

excellence for Buddhist temples (*candi* Borobudur, Kalasan, Mendut). Buddhist building tradition would then have influenced later Hindu architecture, which adopted the staggered square for certain temples (*candi* Loro Jonggrang), but kept the square for others (*candi* Sambisari).[46] The main drawback of this second hypothesis, however, is that it fails to explain the presence of both square and staggered square temples on the Dieng plateau. One may either suppose that the crystallization into two different traditions happened after the construction of the Dieng temples, or suggest that the early dating of the Dieng should be questioned. On the basis of temple ground plan alone, it is unfortunately impossible to decide which hypothesis is the most likely.

Profiles of Central Javanese temples: exploring the Hindu and Buddhist architectural traditions

Hoping that a closer look at other architectural elements would confirm and refine the results of the analysis of ground plans, I have undertaken a closer study of temple profiles. Being are at the junction between architecture and sculpture, moulding systems of Central Javanese temples have failed to attract much scholarly attention on behalf of architects and art historians alike. Three scholars, R. Soekmono (1979), D. Chihara (1996) and J. Williams (1981), have tried to retrace the stylistic evolution of the profiles of Central Javanese temples. Their theories, though convincing on certain points, have a couple of shortcomings. The number of sites taken into account is limited,[47] mouldings from the temple foot at the base are sometimes mixed up and wrongly compared,[48] the dating of the temples serving as basis for the study is not looked at critically.[49] In short, these chronologies cannot be considered as facts.

They nevertheless come up with an interesting observation: there are, in Central Javanese architecture, two sets of mouldings, one with a torus and one without. However, instead of including them in a strict chronological sequence, as did my predecessors, I would like to classify them in terms of traditions and try to determine whether they can be divided into a Buddhist and a Hindu tradition - as in the case of temple plans. I will further look for traces of mutual influences between those two traditions in order to verify or dismiss my hypotheses concerning temple plans. For

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[46] Another influence of Buddhist architecture on later Hindu buildings might be the use of the parapet, an element which is found at most large Buddhist temples (Asu, Borobudur, Kalasan, Mendut, Sewu), but is not so frequent in Hindu architecture (it is to be seen as Kedulan, Loro Jonggrang, Sambisari and, at a small scale, at Gedong Songo I).

[47] Chihara, for example describes only the mouldings of 10 temples, Williams 21, while there are about 40 Central Javanese shrines with decently preserved mouldings.

[48] Williams, for example, gives a sketch of Ngawen where only the mouldings of the base appear. She uses this as a criterion to classify Ngawen in the group without torus. In fact, with the complete profile of *candi* Ngawen, one can clearly see that there is a torus at the level of the temple foot. Similarly, when discussing *candi* Pringapus, she seems to omit its base, constituted of a series of superimposed plinths.

[49] Chihara does not question much the date attributed to the Dieng temples and he ascribed them to an early date (*c.*680-*c.*730 for Arjuna, Semar and Srikandi, *c.*730-*c.*780 for the other ones). He underestimates the possibility that some of the Dieng temples can be of a much later date, even though the earliest dated inscription found on the plateau is from 809 A.D. and uses the same script as the one used on a golden leaf from a temple deposit (Krom 1923, I: 171-172). As for Williams, she takes for granted the association between the Canggal inscription and the temple still visible nowadays at the top of Gunung Wukir, whereas Dumarçay has convincingly showed, based on building techniques, that the temple had been thoroughly rebuilt in the 9th century (Dumarçay 1993:57).

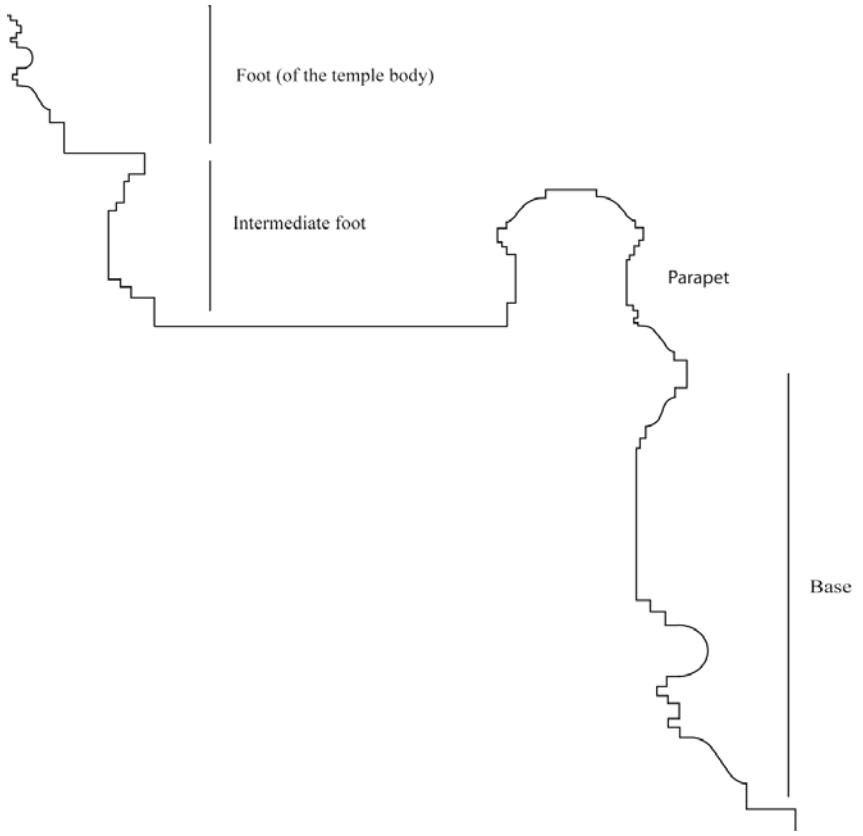

Figure 53: *Candi* Mendut, mouldings

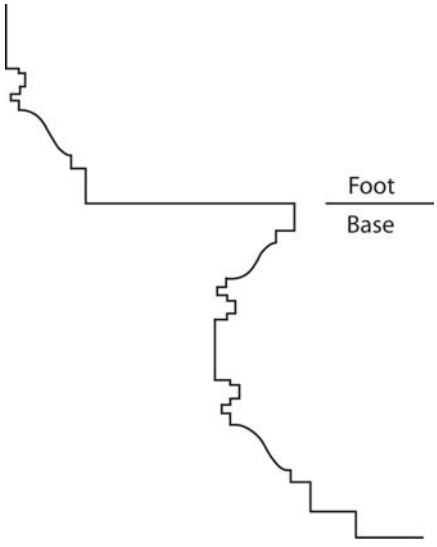

Figure 54: Gedong Songo II, mouldings

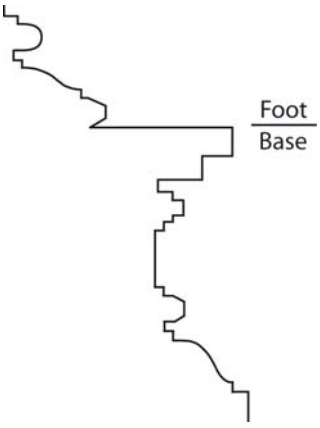

Figure 55: *Candi* Gedong Songo IIIb, mouldings

the sake of clarity, I will divide mouldings into two parts and describe them first separately: mouldings of the foot of the temple body, and of the base (Figure 50).[50]

Profile of the foot of the temple body: variations and interpretations

As suggested by previous studies (Soekmono 1979; Williams 1981; Chihara 1996), mouldings of the temple foot may be divided, into two categories, according to the absence or presence of a torus.[51] The usual composition of mouldings without torus is (from top to bottom): thread, cyma, plinth (Figure 54). Mouldings with torus are composed of (from top to bottom): thread, torus, cyma, plinth[52] (Figure 53). This general structure knows of course many variations, and elements may be transformed or added. At Asu (Magelang), Gedong Songo II, III, IV, Loro Jonggrang, Lumbung (Magelang) and Puntadewa,, the cyma is slightly turned upward at the four corners of the foot.[53] An additional plinth is visible at Gedong Songo I, Ijo, Ngawen II and Sojiwan (Figure 56). An unusual moulding is found at Morangan, where the plinth is transformed into a torus. Surprisingly, this characteristic feature is also found at the northern shrine of Gedong Songo III (Figure 55) and may be compared to the base of the projection of *candi* Ngawen II. Was there a link between the three structures? Were they built at the same time? It is also possible that, for an unknown reason, Morangan or Ngawen were used as models to construct Gedong Songo III.[54]

As I did for the temple plan, I have tried to match the absence and the presence of the torus with three criteria: location, date and religious affiliation of the temple. Mouldings without torus are not rare and occur in the north as well as in the south (Table 38). Although temples with torus at the foot are essentially found in the middle Progo valley and in the Prambanan area, they reached the upper Progo valley (Pringapus) and northern Central Java too (Gedong Songo III). Similarly, we find roughly mouldings with and without a torus on early as well as on late temples. If we compare these two sets of data we can nevertheless observe that mouldings without a torus are the only type of profile found in the early architecture of the northern regions[55] (Table 38). On this basis, one could assume that mouldings without a torus are part of a regional (northern) tradition – that extended southwards in later times –

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[50] There is in some temples a kind of intermediate foot between these two sets of moulding. It appears in the illustrations. Nevertheless, since I have been unable to come up with a typology of these intermediate feet – they appear to vary far too much, still less to make sense of it, I have not included them in the following paragraphs.

[51] Plain mouldings are only present at base level. As far as the temple foot is concerned, there are therefore only two moulding types.

[52] The fact that the torus is merely added to the moulding might suggest that it is a later development. However, as both mouldings are found in early Indian buildings, it is more probable that they were imported in Java together with the Indian tradition and may not, therefore, be systematically dated from two different periods.

[53] This is also true, though less marked, at Gampingan, Semar and Selogriyo; upward corners may also be observed on the base of *candi* Lawang.

[54] The small niches carved at the centre of each side of the base are reminiscent of the panels that are found in a similar position at Ngawen I. The feature is rare in Central Javanese architecture and, to my knowledge, it is further only found at Loro Jonggrang, where they house lions. Nevertheless, in the latter case, they do not occupy a central position.

[55] North of Magelang, tori are exclusively found on the temple foot of *candi* Pringapus and the northern shrine of Gedong Songo II. One should note that, in latter case, the profile of the torus is hexagonal rather than semi-circular. It is nevertheless difficult to know whether it was done on purpose or if it is an unfinished half-round.

Table 38: Mouldings of the foot according to region and dating

Moulding type	*Dating*	*Area*	*Sites*
Without torus	Early	N[56]	Arjuna, Bima, Dwarawati, Gatotkaca, Gedong Songo II-VI, Puntadewa, Semar*, Sembodro, Srikandi
		C	Selogriyo
		S	Gebang, Sewu*
	Late	N	Gedong Songo I, Ngempon
		C	-
		S	Barong, Ijo*, Kedulan, Sambisari.
With torus	Early	N	-
		C	Mendut, Pawon
		S	Banyunibo, Bubrah, Kalasan, Lumbung, Merak, Sewu
	Late	N	Pringapus, Gedong Songo III*[57]
		C	Asu, Lumbung, Ngawen
		S	Ijo, Loro Jonggrang, Morangan, Plaosan Lor, Sojiwan

* Subsidiary building

Table 39: Mouldings of the foot according to religion and region

Moulding type	*Area*	*Religion*	*Sites*
Without torus	N[58]	Hindu	Arjuna, Bima, Dwarawati, Gatotkaca, Gedong Songo I-VI, Ngempon, Puntadewa, Semar*, Sembodro, Srikandi
	C	Hindu	Selogriyo
	S	Hindu	Barong, Gebang, Ijo*, Kedulan, Sambisari.
	S	Buddhist	Sewu*
With torus	N	Hindu	Pringapus, Gedong Songo III*[59]
	C	Hindu	Asu, Lumbung
	S	Hindu	Ijo, Ijo*, Loro Jonggrang, Loro Jonggrang*, Merak, Morangan, Morangan*
	C	Buddhist	Mendut, Ngawen, Ngawen*, Pawon
	S	Buddhist	Banyunibo, Bubrah, Kalasan, Lumbung, Lumbung*, Plaosan Kidul*, Plaosan Lor, Plaosan Lor*, Sewu, Sojiwan

* Subsidiary building

[56] N: northern Central Java (*kabupaten* Wonosobo, Temanggung, Semarang); C: centre, middle Progo valley (*kabupaten* Magelang); S: southern Central Java (D.I. Yogyakarta, *kabupaten* Klaten)

[57] Northern shrine; uncertain dating.

[58] N: northern Central Java (*kabupaten* Wonosobo, Temanggung, Semarang); C: centre, middle Progo valley (*kabupaten* Magelang); S: southern Central Java (D.I. Yogyakarta, *kabupaten* Klaten)

[59] Northern shrine

and that mouldings with a torus represents on the contrary a southern tradition that progressively extent to the north. Such a hypothesis does however not explain the absence of a torus at *candi* Gebang, an early shrine built on the southern slope of Mount Merapi.

The most striking fact of my study of mouldings actually lies elsewhere: almost all the temples showing a profile without a torus are Hindu (Table 39). The only case where such a moulding has been used on a Buddhist shrine is *candi* Sewu, but it is limited to the secondary shrines, while the main building keeps its torus. Therefore, I think that rather the composition of the profile does not betray regional tendencies; it is rather linked to the religious affiliation of the various temples.

If the use of a torus was limited to Buddhist buildings, my hypothesis would have been easily confirmed, but it is obviously not the case. All the Buddhist temples, with the exception of the secondary shrines of candi Sewu, belong to the group with a torus, but the group also includes Hindu temples. The comparison between profiles, religious affiliation and chronology does, however, show that the vast majority of early Hindu temples – i.e. all of them with the exception of candi Merak – have no torus. This observation could well give us the clue to our problem. It indeed suggests that, originally, the torus was indeed associated with Buddhist buildings, while the profile without torus was characteristic of Hindu architecture. However, at a certain point, both building traditions merged or, more exactly, Hindu buildings started to incorporate Buddhist features, especially in areas where Buddhism was well rooted (Borobudur and Prambanan areas).[60] The new style profile was nevertheless not adopted in all Hindu temples; the ancient Hindu moulding, without torus, was still in use.[61]

Profile of the base in Central Javanese religious architecture

The mouldings of the base, as suggested by D. Chihara (1996) and J.Williams (1981), fall into three types: without torus, with torus and with plain plinths (Table 40). Variations within each type are numerous and more difficult to interpret than in the case of the temple foot (Table 40). They may, for example, present either a cyma (Figures 53, 54) or a frieze under the cornice (Figures 55, 58, 59).

When mouldings include a torus, the latter may be used in two different ways: it may either take the place of the thread (Asu-Muntilan, Banyunibo, Bubrah, Merak, Plaosan Lor, Sojiwan) (Figures 57) or it may simply be added under/above the thread (Gana, Loro Jonggrang, Mendut, Pawon) (Figures 53 and 61).

Given that the first stage of *candi* Mendut shows a moulding with a torus added above the usual thread, one might come to the hypothesis that the torus was first simply added, and that it is only later that it started to replace the thread. Temples where the (lower) thread is lacking would then be of a late date (Asu-Magelang, Banyunibo, Bubrah, Merak, Ngawen II, Plaosan Lor, Sojiwan). However, it is possible that the older tradition continued to be in use in certain later buildings, as it is

[60] It maybe started in the south at a very early period, with *candi* Merak.

[61] Torus are not only characteristic of Buddhist and late Hindu architecture. In some religious complexes, the torus is indeed used to emphasize a hierarchy between buildings. Among the four buildings of the upper terrace of *candi* Ijo, for example, only the main temple has a torus, while the three secondary shrines facing it have just a thread and a cyma. A similar situation is found at *candi* Sewu.

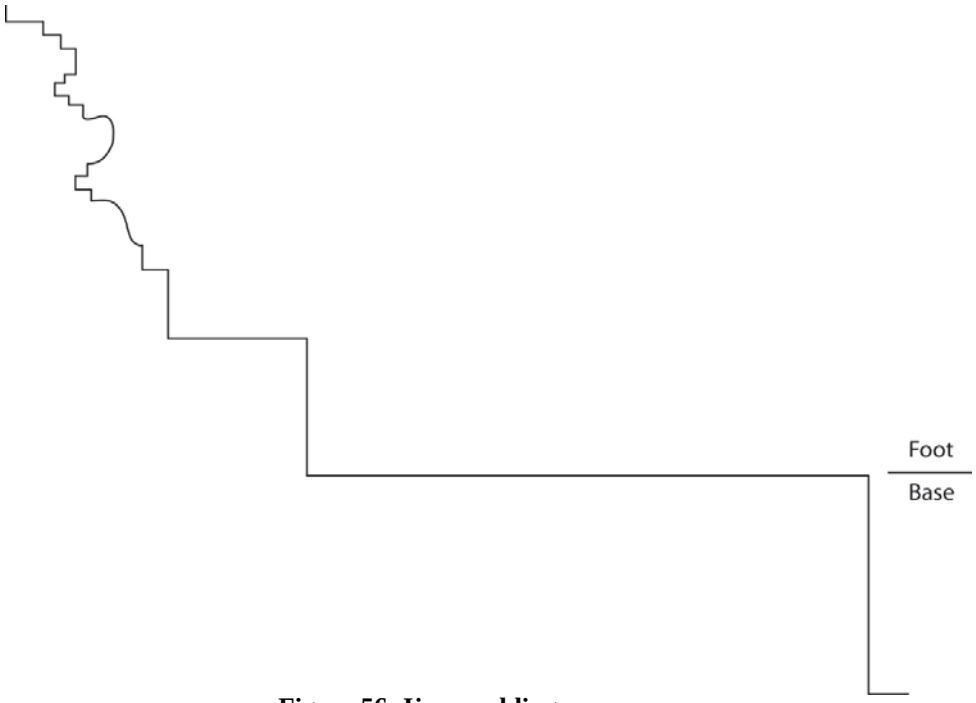

Figure 56: Ijo, mouldings

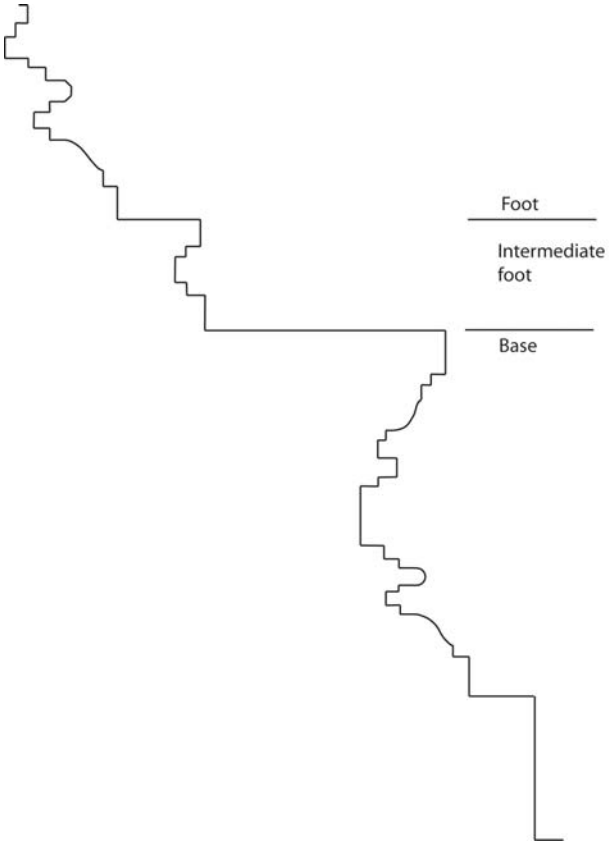

Figure 57: *Candi* Merak, mouldings

was the case for temple planning, which might explain why, at Loro Jonggrang, the base has both a thread and a torus.

The distribution of temples with mouldings including a torus at the base does not follow any clear geographical or religious schema. In the middle Progo valley, as well as in the Prambanan area, it is rather common to see Buddhist structures the base of which does not bear a torus. Similarly, some Hindu buildings do have a torus. However, it should be noted that the majority of the bases with torus (8 out of 11) belongs to Buddhist temples and that Hindu shrines with torus are found only in the middle Progo valley (*candi* Asu) or in the Prambanan area (*candi* Loro Jonggrang and Merak).[62]

Therefore, I would tend to think that the two main types (with or without torus) are (almost) contemporaneous and correspond to two different traditions. Hindu temples were possibly first built using no torus, while some Buddhist shrines added the torus to the usual thread, repeating at the base level the moulding they already had adopted for the temple foot. In a later change of tradition, the torus came to replace the original thread. Some Hindu buildings started to adopt the torus too. It is possible that the northern part of Central Java,[63] where Buddhism was apparently not so strongly rooted, was more inclined to keep the characteristics of the early Hindu tradition, without much influence from the Buddhist style.

I have not talked about the last type of moulding yet. While the two first types show a somewhat complicated assemblage of cyma, panels, threads and plinths, the last type consists in a series of plinths. Such plain bases are visible at Gunung Wukir, Ijo, Lawang, Pringapus, Plaosan Kidul and Sambisari. According to photographs and a report of the *Oudheidkundige Dienst* (Stutterheim 1940: pl.6), it was also the case of the base of Kalasan I. *Pace* J. Williams, the evidence suggests that such a plain base is not synonymous with an early date. I would even be tempted to think that plain plinths became more common in later times. On the one hand, as the association between the Canggal inscription and the nowadays visible temple of Gunung Wukir cannot be firmly established,[64] the only trace of an early use of a plain base is the first stage of *candi* Kalasan. On the other hand, there is not much doubt that at least Sambisari and Lawang are later structures: the building techniques used at Sambisari are probably posterior to 830 A.D. and *candi* Lawang includes a secondary building which bears similarities with structures found in East Java.

Coherence between the base and the temple foot

Until now, we have looked at the various parts constituting a temple profile, but we should also consider the profile in its entirety and say a word concerning the relation between mouldings of the base and mouldings of the temple body (Table 41).

Twenty temples have similar mouldings at the base and at the temple foot (Table 41, Figure 56). Mouldings of the temples of Gedong Songo clearly stand out: not only do the mouldings of the lower part of the base repeat those of the temple foot, but the base shows a symmetrical composition (from top to bottom: cornice, cyma reversa, thread, panel, thread, cyma, plinth).

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62 Merak is considered to be an early temple, but both Asu and Loro Jonggrang are later structures.

63 This is essentially valid for Gedong Songo and, as far as we may still determine it, *candi* Arjuna, Dukuh, Puntadewa, and Retno. Unfortunately, most of the temples of the Dieng plateau have lost their base, and what is visible today is actually not the base, but the foundation of the temple body.

64 See p.162, footnote 50.

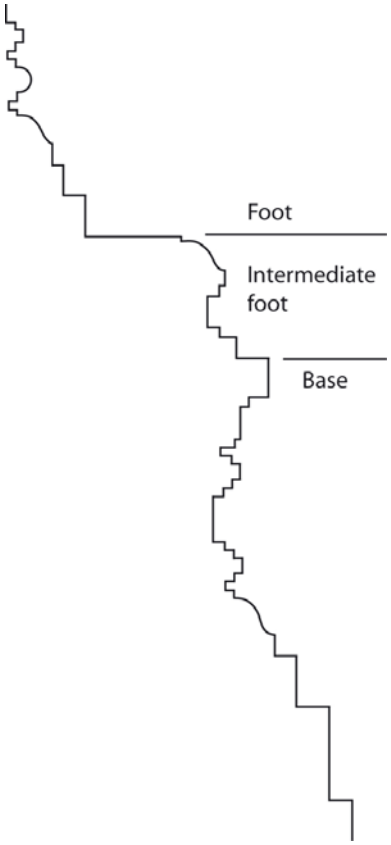

Figure 58: *Candi* Lumbung (Muntilan)

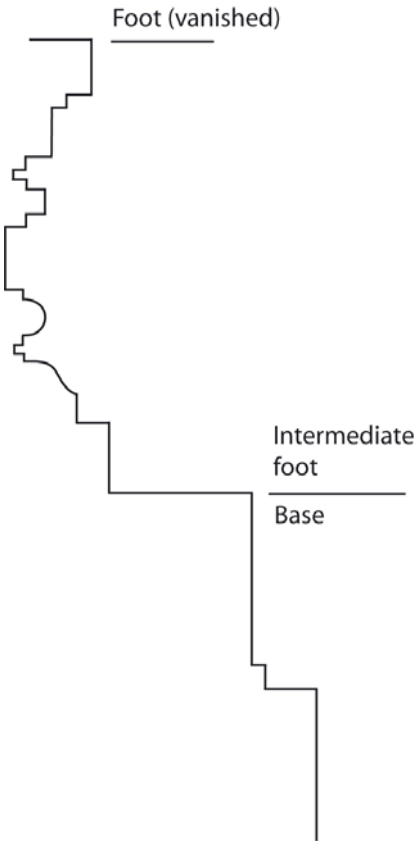

Figure 59: *Candi* Lawang

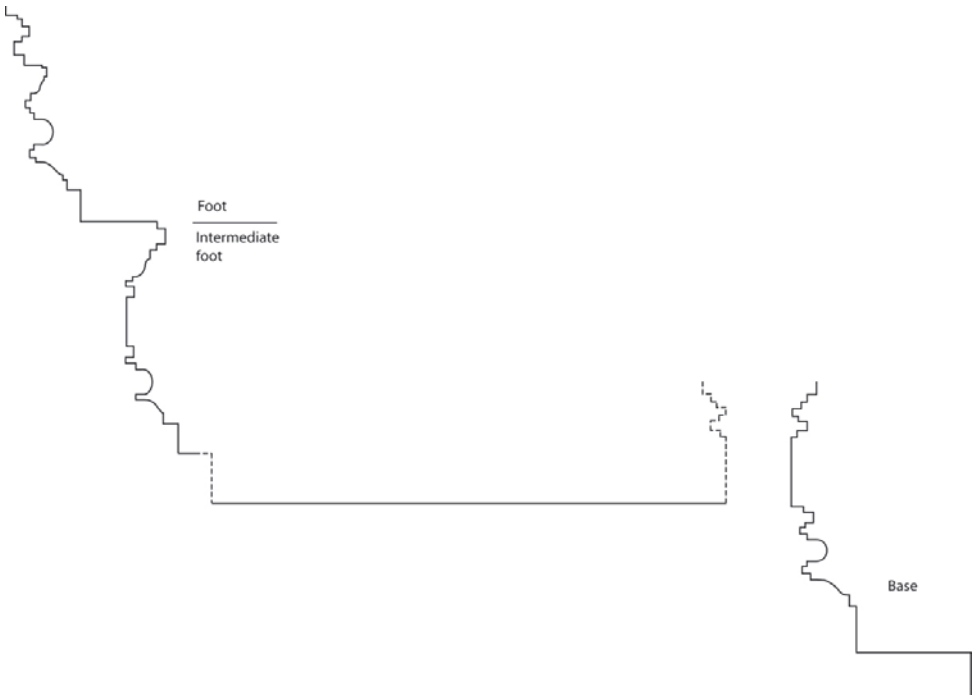

Figure 60: *Candi* Kalasan

Table 40: Mouldings of the base according to region and religion

Type		*Area*	*Religion*	*Site*
Without torus	With cyma reversa	N	Hindu	Arjuna, Gedong Songo I-VI, Ngempon.
		C	Hindu	Pendem.
		S	Hindu	Gebang.
		C	Buddhist	Ngawen II.
	With frieze	N	Hindu	Semar*.
		C	Hindu	Lumbung (Magelang).
		S	Hindu	Barong, Kedulan.
		C	Buddhist	Ngawen I*.
		S	Buddhist	Gampingan, Lumbung, Lumbung*, Sewu, Sewu*.
	Unknown	N	Hindu	Dukuh, Gedong Songo IV*, Retno.
With torus	With cyma reversa and torus[65]	S	Hindu	Merak.
		S	Buddhist	Banyunibo, Gana.
		C	Buddhist	Ngawen II[66]
	With cyma reversa, thread and torus[67]	C	Buddhist	Mendut
	With frieze and torus[68]	S	Buddhist	Bubrah, Plaosan Lor, Plaosan Lor*, Sojiwan.
		N	Hindu	Gedong Songo III*[69]
	With frieze, thread and torus[70]	C	Hindu	Asu
		S	Hindu	Loro Jonggrang
		C	Buddhist	Pawon
Plain plinths		N	Hindu	Pringapus
		C	Hindu	Gunung Wukir
		S	Hindu	Ijo, Ijo*, Lawang, Sambisari.
		S	Buddhist	Kalasan I, Plaosan Kidul*.

* Subsidiary building

However, coherence is not a general phenomenon and the two series of mouldings may be quite different. That mouldings of the base and the temple body may be at variance is well exemplified at *candi* Lumbung (Magelang), Lumbung (Prambanan), Ngawen I, Ngawen II and Sewu, where a torus is visible on the temple foot but not on the base. Due to the absence of systematic coherence in the mouldings, one should be careful in drawing conclusions from incomplete data. It also makes architectural

[65] The usual composition of this moulding type is, from top to bottom: cornice, cyma reversa, thread, panel, torus, cyma, plinth.

[66] The temple base has two mouldings, one, without torus for the main part, the other, with a torus, for the projection sustaining the *gopura*.

[67] The composition of this moulding type is, from top to bottom: cornice, cyma reversa, panel, torus, thread, cyma, plinth.

[68] The usual composition of this moulding type is, from top to bottom: cornice, frieze, thread, panel, torus, cyma, plinth.

[69] Northern shrine.

[70] The usual composition of this moulding type is, from top to bottom: cornice, frieze, thread, panel, thread, torus, cyma, plinth.

Table 41: Mouldings of the temple foot and base, summary chart.

Foot	*Base*	*Religion*	*Temples*	
-	-	Hindu	Arjuna	Kedulan
			Barong	Ngempon
			Gebang	Semar
			Gedong Songo I-V	Sewu*
With torus	-	Buddhist	Lumbung	
			Lumbung*	
			Ngawen	
			Ngawen*	
			Sewu	
		Hindu	Lumbung (Magelang)	
With torus	With torus	Buddhist	Banyunibo	Pawon
			Bubrah	Plaosan Lor
			Kalasan	Plaosan Lor*
			Mendut	Sojiwan
			Ngawen II (gopura)	
		Hindu	Asu	
			Gedong Songo III*	
			Loro Jonggrang	
			Merak	
With torus	Plain plinths	Hindu	Ijo	
			Ijo*	
			Lawang	
			Pringapus	
		Buddhist	Plaosan Kidul	
			Plaosan Kidul*	
-	Plain plinths	Hindu	Sambisari	
			Ijo*	
Unknown	Plain plinths	Hindu	Gunung Wukir	
		Buddhist	Kalasan[71]	

* Secondary building

reconstitution a delicate task, as one may not project mouldings of the base onto the temple.[72]

Conclusion

The study of the ground plans has shown us that Central Javanese shrines fall into three categories – as far as their shape is concerned: square, staggered square and rectangular buildings. We have further established that the form of the ground plan seems to be linked to the religious affiliation – Buddhist or Hindu – rather than to regional styles or dating of the monuments. This hypothesis seems to be confirmed by an analysis of the profiles, especially the moulding of the foot of the temple body. The

[71] First stage.

[72] The only exception is the case of bases with torus, as they seem to go pretty automatically with a temple foot with torus.

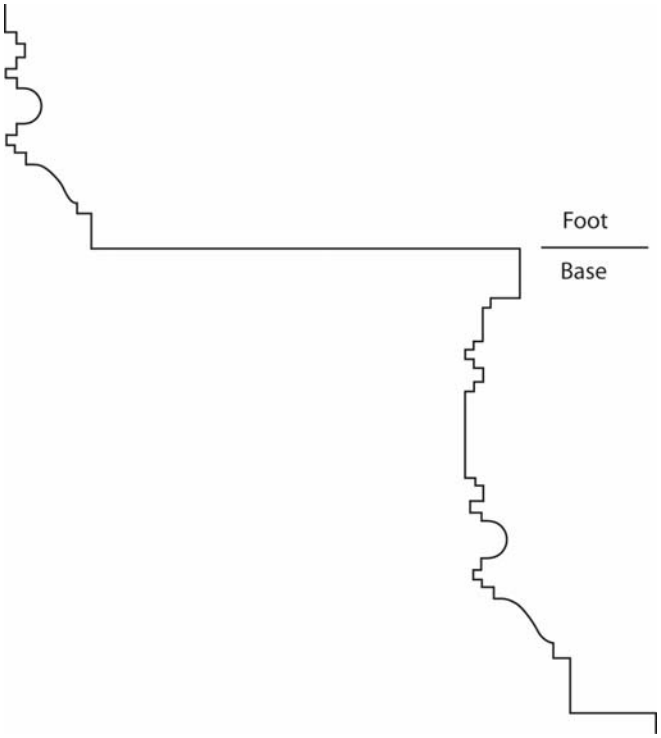

Figure 61: Pawon

facts suggest that two distinct building traditions originally existed. One was characterized by the use of a staggered square ground plan and a profile with torus, and seems typical of the Buddhist monuments of the middle Progo valley and the Prambanan area.[73] The second building tradition distinguished itself by the choice of a square plan and a profile without torus. Although this second tradition is, during the early period, particularly well established in the northern part of the region, around Dieng and Gedong Songo, it also extended down to the Prambanan plain (*candi* Gebang and Merak).[74] The first tradition, which we call "Buddhist", seems to have retained the same standards until the end of the Central Javanese period. The second tradition, on the contrary, apparently integrated traits from the Buddhist tradition, since a series of late Hindu temples make use of either the staggered square ground plan or the torus moulding – or both, as at Loro Jonggrang. This merger of styles was nevertheless not used in all the more recent constructions, since some temples continued to be built according to the original Hindu tradition, with a square plan and no torus (for example *candi* Sambisari).

This reconstruction of the architectural traditions of Central Java, though it would require to be tested in the light of further art historical studies, brings an interesting lighting on the socio-cultural history during the Central Javanese period. Architectural influences seem to have indeed followed a one-way path, from Buddhism to Hinduism, and no *vice-versa*. It is the art of Buddhism, although scarcer, that influenced Hindu shrines – and this says long on the fame early Buddhist monuments such as Borobudur and Sewu enjoyed. It also appears that Hindu architecture of the

[73] There are no Buddhist temples in northern Central Java.

[74] At *candi* Merak, the ground plan is square, but the profile presents a torus. It does thus not entirely follow the Hindu tradition.

late period, using square and staggered square plans, profiles with and without torus, is quite heterogeneous. It would be here highly interesting to know if the homogeneous Buddhist tradition of Central Java is a purely Javanese phenomenon or reflected international tendencies.

CONCLUSION

By way of conclusion, I would like to draw on the preceding chapters and summarize my main results and hypotheses. Through this thesis, I hope to have demonstrated that the architectural landscape of Central Java is the result of a complex socio-cultural process. The distribution, orientation and design of Central Javanese temples were determined – at various levels – by economic, political and religious factors, revealing the manifold nature of the relationship between shrines, land occupancy, natural environment, conceptualized space and building traditions.

Temple distribution and land occupancy

The creation of a new inventory of temple remains – both preserved and vanished – including their geographical coordinates has allowed us to go one step further than the ancient inventories available (Verbeek 1891; Krom 1914a; Bosch 1915) and to draw a precise archaeological map of ancient Central Java (see appendices and in-text illustrations in chapters 4-5). These geographical data have been used to initiate our reflections over the physical structure of the Central Javanese territory (chapters 4-5), and to assess the extent of the Hindu-Buddhist sphere of influence over the neighbouring regions of Java (chapter 4). Religious buildings are today the only extant *in situ* remains of the ancient Central Javanese polity and are found across the whole region studied, from Semarang to the Indian Ocean. Their density, however, varies considerably: vestiges are far more numerous in the southern part of the Progo valley and on the south-western slope of Mount Merapi than anywhere else, reaching a peak around Prambanan.

My analysis of the correlations between temple distribution patterns, ecological zones and topography, enriched by data from secondary sources, has allowed me to reconstruct the main traits of land occupancy. The territory of ancient Central Java was structured around a core agricultural region, a series of secondary centres and several religious centres – sometimes relatively isolated (chapters 4-5).

Temple distribution patterns and ecological data show that the economic heart of the polity was the region extending from Prambanan and Muntilan. In this area, correlations between temple distribution, water accessibility, soil fertility and gentle topography suggest a direct relationship between shrines, settlements and agricultural activities (chapter 5). The large majority of the remains are indeed found on gently sloping plains covered by a dense network of streams. High, dry land, as well as marsh and flood areas are avoided. These observations confirm those made by Mundarjito for the districts of Sleman and Bantul (Mundarjito 2002), as well as earlier research on ancient Central Javanese society, strengthening the hypothesis that the economy of Central Java was essentially agriculture-based (Krom 1931; Wisseman Christie 1992; 2004). The relationship between temples and cultivation is made more explicit in inscriptions, which show that temples drew a large part of their income from taxes on agriculture. It was thus in the interest of religious foundations to change dry fields into *sawah* and so to intensify rice production (Wisseman Chrisite 1992; 2004; and chapter 4). Geographical information derived from the Chinese annals have further revealed that the Central Javanese *kraton* – the ruler's residence and political centre of the polity – was most probably originally located in the northern part of this rich agricultural zone, around the town of Muntilan (chapter 4). This conclusion is in contrast to a previous study made by Soekmono, who suggested that the palace was actually located near Grobongan, in the northeastern part of Central Java (Soekmono 1967); an hypothesis that neither temple distribution patterns nor ecological data seem to sustain (chapter 4).

Outside this central, agricultural area, I have identified three clusters of temple remains, located respectively near the modern towns of Secang, Ngadirejo and Boyolali (chapter 4). These clusters are situated in areas of medium to low agricultural value, but at important points in the landscape, and most probably represented key centres within an ancient route network (chapter 5). Temple distribution patterns show that this network linked the rich agricultural plains of the south to the northern coast *via* two main itineraries: one goes all the way north through the Progo valley, the other follows the eastern foot of the Merapi-Merbabu massif (chapter 5). The existence of such routes confirms that the economy of Central Java was not a closed economy based on isolated communities, but quite the contrary; it relied on an extensive trade network, as already underlined by Jan Wisseman Christie on the basis of inscriptions (Wisseman Christie 2004). This network not only linked Central Javanese villages with one another, but also linked the economic centre of the polity to the outside world *via* a harbour situated on the northern coast. The exact location of this port is still to be determined, but the evidence points towards the area of Semarang (chapter 4): this is where the communication routes apparently ended and it also corresponds with a slight increase in the density of temple remains. This conclusion is in obvious contradiction to the opinion of Soekmono, who placed the harbour of Central Java in he area of Grobongan – close to the place where he located the *kraton* (Soekmono 1967). Not only does this identification of Grobongan as the main harbour of Central Java not fit with temple distribution patterns, but the hypothetical reconstruction of the ancient coastline on which his argumentation is heavily reliant is at best erroneous (chapter 4).

Besides temples related to places of economic interest, Central Java possessed a series of religious centres linked neither to roads nor settlement (chapter 4). We have demonstrated that the densely clustered remains around Prambanan could not be interpreted as a large-scale settlement: the sharp decrease in temple density to the east of Prambanan is indeed better explained by the existence of an important religious centre, located on the eastern periphery of the Central Javanese polity and does not fit with the hypothesis of a bustling economical centre. The development, in later times, of a road linking Prambanan directly to the northern coast – without passing through the Progo valley – seems nevertheless to suggest that the area acquired a new status of economic interest during the 9th century and might well have been the Medang in Mamrati where the *kraton* was transferred around 855 A.D. (Casparis 1956). If this proves to be true, it puts in perspective the shift of power from Central to East Java, presenting it as a slow process that started in the mid-9th century (Barrett Jones 1984), rather than as an abrupt change (Krom 1931).

Unlike Prambanan, which is located in the plain, a series of other important religious sites are located on dry, high and relatively isolated grounds (chapter 5). These are the temples situated in the Pegat-Ijo hills (including - among others - Ratu Boko, *candi* Barong and *candi* Ijo), together with Dieng and Gedong Songo further to the north. Although they were built in areas unsuitable for wet-rice cultivation and could not sustain large settlements, these sites show a very long period of occupation and a rich construction activity, all elements that point towards a significant ritual role apart from any obvious economic interest.

Outside the area constituted by the Progo valley, the Yogyakarta plain and the eastern slope of the Merbabu-Merapi massif, Hindu-Buddhist sites are scarce (chapter 4). To the west of the Progo valley, Hindu-Buddhist remains are often restricted to *yoni* and stone terraces and are often found in combination with small menhir and a sort of mortar stone; thus showing simultaneously the geographical limits of the Hindu-Buddhist polities and their influence on neighbouring cultures.

Interaction between architecture and natural environment

Irrespective of whether temples were built in fertile plains or on high ground, the choice of the site was guided by a series of factors determined by the natural environment (chapter 5). Religious buildings were most often associated with specific landscape markers such as rivers, water confluences or sources, isolated hilltops, sulphur springs, transitional zones, etc. Whenever possible, building sites combined several of these elements. *Candi* Ngempon, near Ambarawa, is a good example of this phenomenon, being located on a riverbank near a confluence, and close to hot and cold springs. Similarly, *candi* Gunung Wukir stands not only on an isolated hilltop, but is also surrounded on three sides by rivers and is located in a transitional zone marking the junction between the Progo valley and the more open landscape of the Yogyakarta plain.

Sometimes, landscape markers played a role in the choice of the site but had no further influence on construction. In other cases, however, architecture was influenced by and made use of the natural environment. Although the vast majority of the temples were oriented more or less towards the cardinal points and faced either east or west, the relative position of rivers and mountains played a role in the location of the entrance. This is especially true in south Central Java, where most of the temples are oriented with their back to a river or hilltop. Thus, while making offerings to the deity housed in the main shrine, the devotee was also facing a river or mountain, introducing the natural environment into ritual practice. In a few cases, the mountain or hilltop rising behind the temple appears to have been the main focus of the site. *Candi* Miri, for example, is not built atop Gunung Pegat, but immediately below its summit, so that the devotee paying homage to the deity would clearly see the peak behind the building.

Even when temples are located on isolated hilltops, such as *candi* Abang or Gunung Wukir, the natural features of the site do not appear to have been altered or subordinated to the architectural program. With the notable exception of Borobudur, hills were not artificially re-shaped by means of concentric terraces and axial staircases, as was sometimes the case for the mountain-temples of Cambodia.

It should be emphasized that the association of temples with rivers was not based exclusively on economic interests (chapter 5). The inscriptions leave no doubt about the ritual importance of rivers. On the one hand, temples benefited from the sacred presence of purifying water, while, on the other hand, rivers gained religious significance and potency through the presence of temples along their banks. The physical relationship between temples, inscriptions, and landscape clearly shows that the natural and the built environment were mutually strengthened by religious association and were perceived by early Javanese society as an undivided and inseparable whole.

Built space and conceptualized space in Central Javanese architecture

Beyond the questions of territory and landscape, the present work also offers reflections on the structure of the built space and its possible relations with conceptualized space. On this subject, architectural and epigraphic data have both shown the influence of imported Indian concepts – as well as their limits. While Central Javanese temples are oriented around the cardinal points – as expected from the Indian textual sources – they show no marked preference for an eastward orientation (chapter 5). The fact that a slight majority of Central Javanese temples face west rather than east (whereas east-facing temples are the *de facto* norm in Indian architecture) and that the position of rivers and mountains also played an important role in the placement and orientation of temples, shows that the art of Central Java was not exclusively based on the Indian building tradition. We have furthermore come to the conclusion that temple orientation, as suggested in inscriptions, was influenced by two

distinct conceptions of space: one of Indian origin, based on the movement of the sun around a unique centre; and another one probably local, that structures space around two axes – something that had already be noted for East Java and Bali (Klokke 1995).

In fact, the Indian concept of space appears to have been more directly implemented into Buddhist architecture than in Hindu shrines. The layout of the large Buddhist temples of Central Java indeed depicts a rather concentric view of the cosmos, compatible in most respects with Indian descriptions of the universe. The Hindu religious compounds, on the contrary, emphasize a different approach in which the idea of progression is reinforced, as well as the association of sanctity with the rear of the temple compound, as so frequently found in East Java.

The westward orientation of many temples, the role sometimes played by landscape markers in this orientation, the concept of a space structured around two axes and the sanctity of the rear are all elements showing that the art of Central Java can no longer be merely described as "connected with facts known elsewhere" (i.e. from India; Bernet Kempers 1959). Indeed, since the same characteristics have been recognized in East Java as well (Patt 1979; Klokke 1995), our observations bring Central Javanese and East Javanese architecture closer together, proving that the concept of localization – which is often associated with East Java (Bernet Kempers 1959; Soekmono 1990) – is essential to our understanding of ancient Central Java as well.

Hindu and Buddhist building traditions

The analysis of temple plans and spatial arrangement has further shown that there was a distinct Buddhist architectural tradition in Central Java. This tradition was characterized by the systematic use of staggered square or rectangular plans, and an inclination for concentric arrangement – at least in the larger temple complexes. The study of architectural mouldings has confirmed this hypothesis, showing that the presence of a torus was not related to stylistic evolution – as previously thought by Soekmono (1979) and Williams (1981) – but was linked to the existence of a distinct tradition: the torus being associated with Buddist architecture, as forseen by Dumarçay (1981).

Despite the many uncertainties concerning the relative chronology of Central Javanese temples it is probable that a separate Hindu tradition existed alongside Buddhist architecture. This Hindu building tradition distinguished itself from the Buddhist tradition by making use of square plans and flat mouldings, and by a tendency towards linear arrangement. In later periods, however, a series of Hindu structures incorporated elements from the Buddhist tradition. The most magnificent example of this Buddhist-influenced Hindu architecture is of course *candi* Loro Jonggrang, the layout of which is reminiscent both of small-scale Hindu sanctuaries (for the inner courtyard) and of the larger Buddhist compounds of the Prambanan plain (for the concentric rows of buildings, its staggered square plan and its use of mouldings including a torus). Such similarities may not be limited to architecture and probably explain why the famous Hindu compound was first described as a Buddhist temple (Jordaan 1996).

Further research

Although this book has – I hope – achieved its goal in showing the complex relationship between temple, space and landscape, it has also raised many further questions that are left open. The hypothesis concerning the existence of a ritual network - through which the king of Mataram could both acknowledge local ritual practices and strengthen his power over distant territories - requires further analysis and, in particular, a re-examination of the epigraphic data. Similarly, future archaeological research along the northern coast could shed new light not only on the location of the main harbour of Central Java, but also on the relations between

the coastal region and the hinterland, and the modes of interaction between Central Java and its Southeast Asian neighbours.

Furthermore, one of the most intriguing features I have come across during my research is the presence, at several Hindu-Buddhist sites, of *batu lumpang*; a sort of mortar stone also commonly found in west Central Java, in areas where megalithic cultures predominated. The question that inevitably comes to mind is: are these the *batu kulumpang* so frequently mentioned in Old Javanese inscriptions and to which offerings were made during *sīma* demarcation? Additional research on the distribution of these artefacts and on the rituals described in the inscriptions would certainly reveal more information on this subject.

Finally, I hope that my conclusions, hypotheses and observations will raise the interest of many others and invite further reflections on the nature and history of early Central Javanese society.

APPENDIX 1

Organization of the inventory

In the following inventory, temple remains are gathered by province (Daerah Istimewa Yogyakarta and Jawa Tengah), then by district, subdistrict, village and hamlet, according to the alphabetical order.

For each entry a single lay out is used:

Site name (other names)
Administrative localization
Latitude
Longitude
Precision of the previous measurements
Altitude
Surroundings
Religion
Main features
Description
Sculptures
Inscriptions

Site name

The first name mentioned is the modern official site name according to the Suaka Peninggalan Sejarah dan Purbakala. Between brackets, one will find eventual other names. Those are essentially ancient names dating back to the colonial era.[1]

Localization

Administrative localization

The administrative localization is given according to modern Indonesian districts (i.e. administrative divisions in use when fieldwork was carried on).[2] Names are given from the smallest to the widest administrative entity (hamlet to province): *dusun*, *desa*, *kecamatan*, *kabupaten*, and province.[3]

DIY stands for Daerah Istimewa Yogyakarta

JT stands for Jawa Tengah.

Geographical location

When field checking was possible, the administrative localization is followed by coordinates of latitude and longitude. Coordinates have been determined using a portable GPS device (Geographical Positioning System).[4] Measurements have been

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1 Only one spelling has been retained here. It is necessary to keep in mind that *u* may be spelled *oe* and that *a* and *o* are often used for one another.

2 Those administrative divisions have changed several times since the end of the 19th century. It is frequent that districts mentioned in the ancient literature are not those mentioned in the present inventory.

3 As the *dusun* is a very small entity, administrative localization is sufficient to find one's way to the site. Therefore I choose not to mention any itinerary.

4 This explains some differences between coordinates mentioned here and those given by Mundarjito. In his study, Mundarjito determined latitude and longitude according to the position of the village name on topographical maps (Mundarjito, 1993).

taken as close as possible from the centre of each site, that is to say in front of the door for temples that still have their roof.

Although GPS gives useful information, it should be noted that measurements are not as precise as they could be using traditional techniques. However, accuracy is most of the time sufficient to plot sites on a 1:50 000 or 1:25 000 map. The accuracy of any GPS device relies on the number of satellites available at the time of measurement, their position and the intensity of their signal. GPS accuracy varies according to place and time. Therefore the estimated precision of the coordinates is mentioned for each site.

When it was not possible to take the coordinates on the field, either because the remains were no longer visible or because they were outside the area of study, indicative coordinates are given. They correspond roughly to the centre of the *dusun* were the remains have been reported. In the field "data accuracy" one will then find "map".

The altitude is indicative. It is a rough measure taken from topographical maps.

Surroundings

After the localisation, a brief survey of the surroundings is given. It includes an overview of the local topography, hydrology and closest archaeological sites. Within this context, lowland is used to designate land located between 0 and 199m above sea level, lower middle land is between 200 and 499m, upper middle land is between 500m and 1499m and, finally, highland means 1500m and above.

Religion

When it was possible to identify it, religious membership is mentioned. Religion is determined according to the presence of meaningful reliefs or free-standing sculptures (a *lingga*, a *yoni* or any clearly identifiable deity).[5]

Main features

The field "main features" has been conceived as a summary of the field "description". It gives the type of remains, general orientation, plan of the main structure and possible presence of enclosure walls (see table below).

Description

This field resumes data from the preceding field, giving further details (see fig.3 and fig.4 for terms used). One should note that emphasis is put on spatial organisation, i.e. on plan rather than elevation. Each building of the site is described, from base to temple body. When information is available, orientation of the main temple is clarified. Possible finds of deposit boxes are also mentioned.

Sculptures

This field is indicative. It mentions only the most important free-standing sculptures found on the site.[6] When known, their official inventory number is given.

Inscriptions

Inscriptions found on the site.

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[5] In practice, it means that this information is not always definitive: new finds may come and disturb ancient evidences.

[6] Mainly sculptures identifiable as Buddhist or Hindu.

Type of remains	
Mound	Shapeless heap of earth, stones and/or bricks.
Scattered stones	Cut stones scattered over a limited area, sometimes including identifiable architectonic elements and reliefs.
Stūpa	Buddhist monument usually made out of a square base and a bell-shaped body.
Miniature temple	Temple unusually small-scale, with an inner space that is not wide enough to be entered by a human being.
Single temple	
Pendopo	Open pavilion, usually in wood, rising upon a rectangular stone terrace.
Sanctuary	Group made out of a small number of temples and secondary shrines built on a line or facing each other (fig.1): - Type 1: one temple facing a secondary building - Type 2: one temple facing 3 secondary buildings - Type 3: one temple flanked by 2 smaller shrines and facing 3 secondary buildings - Type 4: one temple flanked by 2 smaller shrines - Type 5 temples and/or shrines in a row
Compound	Group of more than 6 buildings that can be either (fig.2): - concentric (around a single temple or a sanctuary) - organic (without symmetrical organisation) - axial/terraced (the prevailing element is a succession of terraces and when the rear, uppermost terrace bears the main temple)
General orientation	
General orientation of the main structure, without taking into account possible deviation from the cardinal points.	
Plan of the main structure	
General layout of the temple body of the main temple: square, staggered square or rectangular, with or without a porch	
Enclosure walls	
When traces of at least one enclosure wall have been found.	

Small letters indicate that the information does not come from direct fieldwork observation but from secondary sources.

APPENDIX 2

Inventory of the temple remains of south Central Java: Daerah Istimewa Yogyakakarta and *kabupaten* Klaten

WATUGILANG (Batu Gilang)

Administrative localization: Gilang, Baturetno, Banguntapan, Bantul, DIY.

Geographical localization: 07° 49' 36.7" S
110° 25' 13.3" E
Precision: 9m
Alt.: 81m

Surroundings: In lowland, on flat ground, 100m to the west of the Blotan/Mruwe River, on the western bank of a small watercourse. No other remains are visible in the immediate vicinity. *Candi* Mantup, Sampangan and Tegalsari are located 1km to the north, while Condrowangsan is 800m to the south.

***Religion*:** Unknown.

Main features: Monolith.

State of preservation: Intact.

Description: This monolith measuring 1m high, 2.40m long and 2.30 large, is carved on the four lateral sides.
Between floral patterns, can be seen: a fish and a *makara*; an elephant and a winged horse; a winged lion (?) and a goose; a goat and a bull.
The upper face of the block is plain, without traces of any kind. Its lower side lies on the ground and is therefore not visible.

MANTUP

Administrative localization: Mantup, Sampangan, Mantup, Bantul, DIY.

Geographical localization: 07° 48' 56.4" S
110° 25' 03.4" E
Precision: 12m
Alt.: 88m

Surroundings: In lowland, on flat ground, some 450m to the east of *kali* Semarangan and 400m to the west of *kali* Blotan/Mruwe. *Candi* Mantup is located close to the sites of Tegalsari and Ampangan, while it is only one kilometre to the north of Watugilang and one kilometre to the southwest of Klodangan.

Religion: Hindu.[1]

Main features: Sanctuary type 5; facing west.

State of preservation: Only bases and lower parts of temple bodies remain.

[1] According to Wulanningsih (1995: 31), based on the sculptures (see below).

Description: The site is composed of three miniature *candi* lying in a row from north to south.
The structures, however, do not seem to belong to a coherent group: building materials and orientation are not identical.
Although the three miniature temples open to the west, the exact position of the building axis in relation with magnetic north is different for each structure: 270° for the northern shrine, 275° for the central one, and 279° for the southern building.
The northernmost *candi* is built of brick and is 1.25cm square (at the base). The door opens the structure almost to ground level, piercing both the temple body and the base.
The central miniature temple is slightly smaller (1.10m square) and is made of stone. Its entrance follows the usual pattern and starts above base level. Surprisingly, even if the door is clearly visible, there is no trace of staircase.
The southernmost structure is 1.25m square and is built of stone too. Only its base and the foot the temple body are still visible.

Sculptures:

Nearby or within the central structure was found the sculpture of a couple holding hands. In their free hand, the man and the woman were holding an egg-shaped object (Wulanningsih 1995: 31).

SAMPANGAN

Administrative localization: Sampangan, Sampangan, Mantup, Bantul, DIY.

Geographical localization: 07º 48' 40" S
110º 25' 10.3" E
Precision: Map.[2]
Alt.: 90m

Surroundings: In lowland, on flat ground, some 300m east of *kali* Semarangan and along the western bank of *kali* Blotan/Mruwe. *Dusun* Sampangan is 550m to the north northeast of *candi* Mantup, 750m to the west northwest of Klodangan and 900m to the east of Tegalsari.

Religion: Hindu

Main features: Organic compound; enclosure.

State of preservation: No visible remains.

Description:

Remains of at least two shrines and an enclosure wall were discovered here (Bernet Kempers 1948: 37-38).
In the eastern part of the site was a square base, probably turned to the east. It was made out of brick and stone. A pedestal was found among the remains. It seems that mouldings of the temple body continued on the pedestal, so that it is probable that it belonged to the temple body, as it is the case at *candi* Gebang[3].
North of these remains was an enclosure wall running north-south. Unfortunately it was too disturbed for its ends to be identified. Perpendicular to this wall, there was a second wall running east-west. The latter showed traces of a gate. Excavations

[2] The village of Sampangan is mentioned on the 1:25 000 map issued by the Topografische Dienst (nº XLII-47 m). It does not figure on the Bakosurtanal maps. Therefore, coordinates have been calculated according to the early 20th century document.
[3] The pedestal found here was identified as the pedestal of a Gaṇeśa also discovered on the site. In Gebang also the pedestal is bearing a Gaṇeśa.

revealed that under the gate was a stone box containing a golden plate, stones and pearls (both in stone and glass).

The right angle formed by the two main walls was closed by two other walls, so to determine a square courtyard. At the centre of the latter courtyard, were remains of a stone base.

Sculptures:

A *yoni*, Gaṇeśa and a Durgā were discovered within the remains of the eastern temple (Bernet Kempers 1948: 37).
Two small *yoni* (60cm x 60cm x 60cm and 24cm x 19cm x 20cm) were discovered more recently in the nearby village of Sampangan (*Daftar peninggalan benda DIY* 1985: 8-9).

Miscellaneous archaeological finds:

At the bottom of the pit of the eastern temple, a deposit box was found. The square casket had 17 holes (16 small holes around a bigger, central hole) (Bernet Kempers 1948: 37-38).

TEGALSARI

Administrative localization: Tegalsari, Sampangan, Mantup, Bantul, DIY.

Geographical localization: 07º 48' 39.5" S
110º 24' 40" E
Precision: Map.[4]
Alt.: 90m

Surroundings: In lowland, on flat ground, between *kali* Semarangan and *kali* Blotan/Mruwe. *Dusun* Tegalsari is located 900m west of Sampangan and 900 northeast of Mantup.

Religion: Hindu (*Wiṣṇu?*).

Main features: Single temple.

State of preservation: No visible traces.

Description/sculptures:

In the fields, one hundred meter from Sampangan were once visible remains of a temple base. Several sculptures were discovered within the remains, a.o. a seated Wiṣṇu and a goddess Śrī. Their style is said to have been close to that of Loro Jonggrang (Bernet Kempers 1948:38).

CONDROWANGSAN

Administrative localization: Condrowangsan, Potorono, Mantup, Bantul, DIY.

Geographical localization: 07º 50'02" S
110º 25'12" E
Precision: Map.
Alt.: 75m

Surroundings: In lowland, on flat ground, on the banks of *kali* Blotan, 800m south of Watugilang.

[4] The village of Tegalsari is mentioned on the 1:25 000 map issued by the Topografische Dienst (nº XLII-47 m). It does not figure on the Bakosurtanal maps. Therefore, coordinates have been calculated according to the early 20th century document.

Religion: Unknown.

Main features: Scattered stones.

State of preservation: No visible remains.

Description:

> According to the SPSP DIY, were found here one doorjamb, a few temple stones, an antefix and other fragments (*Daftar peninggalan benda DIY* 1985: 10-12).

These elements (and especially the large doorjamb) might lead to the hypothesis that a temple once stood in the area.

GAMPINGAN

Administrative localization: Gampingan, Srimulyo, Piyungan, Bantul, DIY.

Geographical localization:

Main compound	Secondary compound
07° 50' 08.6" S	07° 50' 06.8" S
110° 26' 13.9" E	110° 26' 14.2" E

Precision: 20m

Alt.: 75m

Surroundings: In lowland, on flat ground, some 250m east of *kali* Kuning. The site is located 1km southeast of Watugilang and 1250m west southwest of Payak.

Religion: Buddhist.[5]

Main features: Sanctuary type 4 facing west.

State of preservation: Only bases remain.

Description: Up to now, four buildings have been excavated[6]. Three of them form the "main compound". The fourth structure, located some 50m away, constitutes the "secondary compound".[7]

The main compound is formed from a central temple and two secondary structures standing in a row.
The base of the main building is 4,50m square, with a projecting staircase to the west. Unfortunately, nothing remains of the temple body, except the 1m square *cella* pit.
The secondary structures are located to the north and south of the central temple. Only 2,40m square foundations remain. Curved stones with *padma*-mouldings found around the compound suggest that these secondary constructions were actually *stūpa*.
Remains of another structure are visible 4m to the south of the southern secondary building. Whether this was a temple, a *stūpa* or part of an enclosure is not known.

The secondary compound is not on a line with the main compound. It houses only one small square base.

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5 Not certain. Based on the presence of probable *stūpa* fragments (see below).

6 Ceramic shreds are found around a large area (roughly 1km square), what might suggest that the site was not limited to the present-day remains.

7 These are useful names rather than a true hierarchy: given the state of preservation and the state of archaeological research on this site, it is impossible to tell which compound was the most important.

Sculptures:

A sculpture of Jambhala, found at the foot of the northern wall of the main temple (Bambang, personal communication, 2002).

Inscriptions:

Two inscribed (but unreadable) copper strips were found during excavation (Setianingsih 2002: BG 1471, BG 1470c).

PAYAK

Administrative localization: Payak, Srimulyo, Piyungan, Bantul, DIY.

Geographical localization: 07° 50' 00.5" S
110° 27' 28.2" E
Precision: 9m
Alt.: 80m

Surroundings: In the lowland, 50 m west from *kali* Petir, a few metres under the present-day ground level. The site is 1250m to the north northeast of Gampingan.

Religion: Unknown.

Main features: Bathing place.

State of preservation: Preserved almost to the top of the surrounding wall.

Description: This ancient bathing place is made of a single pool (3,10m x 3,20m) looking NNE. To the north, the pool is bordered by a 1.70m high wall. In the centre of this wall there is a small niche. Within the pool, the ends of two water ducts are visible.

Miscellaneous finds: A *peripih* found at Payak is now at the Prambanan museum. The square stone, measuring roughly 15cm, has 17 holes (1 at the centre and 16 on its edge).

WILADEG

Administrative localization: Nglampar, Wiladeg, Karangmojo, Gunung Kidul, DIY.

Geographical localization: 7º 56' 45.6" S
110º 39' 00" E
Precision: Map.
Alt.: 175m

Surroundings: In lowland, on flat ground.

Religion: Hindu.

Main features: Scattered stones.

State of preservation: No visible remains.

Description/sculptures: Today, only two or three cut stones are still visible, near a modern bathing place.

However, according to the SPSP DIY, numerous temple stones and a bull were discovered here (*Daftar peninggalan benda DIY* 1985: 42).

PLEMBUTAN (Sari)

Administrative localization: Plembutan Timur, Plembutan, Playen, Gunung Kidul, DIY.

Geographical localization: 07º 57' 30.4" S
110º 33' 02.2" E
Precision: 18m
Alt.: 185m

Surroundings: In lowland, on flat ground.

Religion: Unknown.

Main features: Single temple.

State of preservation: Mound.

Description: Today, the temple is but a low mound. However, the temple pit is still clearly visible and orientated around the cardinal points. The building was built of limestone. Around the mound are scattered stones, some with mouldings. Fragments of crowning pieces are also noticed.

RISAN (Candirejo, Rejo)

Administrative localization: Candi, Candirejo, Semin, Gunung Kidul, DIY.
Geographical localization: 07º 49' 41.0'' S
110º 45' 18.1'' E
Precision: 7m
Alt.: 200m

Surroundings: In lower middle land, atop a hill.

Religion: Buddhist.[8]

Main features: Sanctuary type 5; facing west; staggered square.

State of preservation: The base of the main temple is not clearly visible anymore, but the foot of the temple body is in a satisfactory state of preservation. Only the base of the secondary building remains.

Description: *Candi* Risan is composed of two structures in a row.
The main temple is to the north. It is an impressive building facing west. Its base is roughly 13m square.[9] The temple body is a staggered square of 9.20m x 9.20m. Scattered stones are visible around the main temple. Among those, one can notice a *kāla* with a lower jaw and two *makara*.
The secondary building is located some 25m south of the main temple. It is a plain base measuring 12m square.

Sculptures:

A sculpture, which is probably the *bodhisattwa* Awalokiteśwara, was found near the temple (Verbeek 1891: 168; Hoepermans 1913: 218; Bosch 1915a: 25; *Laporan Peninjauan situs Semin, Playen dan Karangmojo*; *Daftar peninggalan benda DIY* 1985: 37-39).

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[8] On the basis of one Buddhist sculpture found on the site. See below.

[9] Due to its poor state of preservation it is difficult to say if the base was a simple square or a staggered square.

DENGOK

Administrative localization: Dengok Lor, Pacarejo, Semanu, Gunung Kidul.

Geographical localization: 08º 00' 35.7" S
110º 36' 29.4" E
Precision: 13m
Alt.: 150m

Surroundings: In lowland, in a lightly hilly area. The temple itself is on flat ground, some 25m west of the Dengok River.

Religion: Unknown.

Main features: Single temple.

State of preservation: Mound.

Description: *Candi* Dengok is now low mound. Dozens of stone are found around the site, some of them possibly *in situ*. Fragments of mouldings and of crowning pieces are visible. A small trident-shape stone is also found here.

Sculptures: 4 fragments of sculptures are still visible on the site: three lower parts of seated human figure and a female head and torso.[10]

JETIS

Administrative localization: Wonosari, Gunung Kidul, DIY.

Geographical localization: 12km from Wonosari.

Surroundings:

Religion: Unknown.

Main features: Single temple

State of preservation: No visible remains.

Description:

Earlier, there were remains of the base of a temple (Verbeek 1891: 168; Hoepermans 1913: 218).

KARANGNONGKO (Bandung)

Administrative localization: Bandung, Karangnongko, Karangnongko, Klaten, JT.

Geographical localization: 07° 40' 38.5" S
110° 33' 25.5" E
Precision: 8m
Alt.: 240m

Surroundings: In lower middle land, on the southern side of Mount Merapi, in an area where the slope starts being felt. On flat ground, above the small canyon of the *kali* Bagor, that flows 100m east of the remains. The site is 900 south-southeast of Merak.

Religion: Unknown.

[10] According to villagers a bull was found too.

Main features: Single temple; turned west.

State of preservation: Only the western part of the base is visible.

Description: A base from andesite blocks is visible here, although only its western part is preserved. It measures 9,15m from north to south and at least 7,50m from west to east. On the western side, there is a double projection.

MERAK (Batoro Gono)

Administrative localization: Merak, Karangnongko, Karangnongko, Klaten, JT.

Geographical localization: 07° 40' 11.2" S
110° 33' 12.1" E
Precision: 7m
Alt.: 275m

Surroundings: In lower middle land, on the southern side of Mt Merapi, in an area where the slope starts being felt. Some 140m west from the Bagor River. *Candi* Merak is 900m north-northwest of *candi* Kanrangnongko.

Religion: Hindu.

Main features: Sanctuary type 2; facing east; square with porch; enclosure wall.

State of preservation: The main temple is the best preserved and is still standing up to the foot of the temple body. Secondary temples are mere foundations. Traces of the western *gopura* of the enclosure are still visible too.

Description:
The compound is formed from one main temple, three secondary shrines and an enclosure wall.
The main temple faces east.

> Its exact orientation would be 74° 06' (Siswoyo 1996: 9).

Its base is 8.40m square, with a projection on the eastern side. The temple body is 5.90m square, with a porch on the east.

> Its northern, western and southern sides possessed a deep central niche flanked by two smaller and shallow niches (Perquin 1927b: 156).

A 2.40m long vestibule leads to the *cella*, which is 2.50m square.
Three secondary shrines face the main temple. They all follow the same pattern: they face west and are roughly 3.40m square, with a projection on the western side.
More or less 5.5m west from the main temple are visible remains of a *gopura* and an enclosure wall.
Sculptures: On the sides of the staircase leading to the main temple are carved two male figures.
Several free-standing sculptures can still be found on the temple ground: one Durgā (originally found near the northern side of the temple, Bosch 1926:16), one Gaṇeśa, one *yoni*, two bulls, one seated female figure, one male figure seated "à l'européenne",[11] another seated male figure[12] and one unfinished Gaṇeśa.

[11] It was originally flanked by two devotees and found near the southern secondary shrine (Bosch 1926: 16).
[12] This is probably one of the two sculptures mentioned in earlier literature. According to Perquin and Bosch, two male figures adorned with jewels, seated on cushions and resting on the left arm were found in the neighbourhood (Bosch 1925a: 5; 1925b: 74; Perquin 1927b: pl. 26-27).

> Around the temple were also discovered one huge Gaṇeśa (near the main temple), a small high relief representing a seated Brahmā[13] and several heads and fragments (Bosch 1926: 16, pl.30).

A beautiful *yoni* is also found within the sacred area. It is adorned with a *nāga*, a bull and a turtle.

KALIWORO

Administrative localization: Pacitan, Ngemplakseneng, Manisrenggo, Klaten, JT.

Geographical localization: 07° 39' 57.4" S
110° 30' 13.7" E
Precision: 13m
Alt.: 370m

Surroundings: In lower middle land, on the southern slope of *gunung* Merapi, within the extended bed of *kali* Woro.

Religion: Hindu.

Main features: Single temple; turned west.

State of preservation: Only the base remains.

Description: West of *kali* Woro, but within its dikes, one can see a small square base measuring 3.55m x 3.55m. On its western side, a kind of terrace, some 2.20m deep is visible; it might be remains of a porch.

Numerous stones are scattered on and around the structure, as well as in the nearby village of Pacitan. Among those, one can notice non-carved antefixes.

Sculptures: One small *yoni* and a *lingga* are still visible on the site.

GANA (Asu, Wetan, Anjing, Segawon, Timur, Sijwoe 3)

Administrative localization: Bener, Bugisan, Prambanan, Klaten, JT.

Geographical localization: 07° 44' 38.4'' S
110° 29' 46.3'' E
Precision: 9m
Alt.: 163m

Surroundings: In lowland, on flat ground. The temple is 300m east of *candi* Sewu, roughly 950m to the west-southwest of Plaosan Lor between and 900m west of Plaosan Kidul.[14]

Religion: Buddhist.[15]

Main features: Single temple; turned to the West.

State of preservation: Only parts of the base remain.

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[13] Bosch's opinion was that, as the Gaṇeśa is tall and free-standing, whereas the Brahmā is a small high relief the Gaṇeśa belongs to the cella, while the Brahmā was to be put in an outer niche (Bosch 1925b: 74)

[14] Without vegetation, both temples should have been visible.

[15] On the basis of its association with *candi* Sewu.

Description: Although the state of preservation of the temple is very poor, loose stones gathered around the building give an idea of the richness and refinement of the decoration.
The staircase is located to the west. The square base seems to have been topped by a balustrade. The space between this parapet and the temple body was probably sufficient to allow circumambulation.

According to Brumund (quoted by IJzerman 1891: 92), the *cella* had 8 niches, 2 in each wall.
One should note that the temple is not on the east-west axis of *candi* Sewu, but 10m south of it (Stutterheim 1937: 17).

Sculptures:

Five sculptures of Kuwera were found among the remains (Bosch 1915a: 74); IJzerman thought that the whole temple was dedicated to that divinity (IJzerman 1891: 92).

KULON

Administrative localization: Ngablak, Bugisan, Prambanan, Klaten, JT.

Geographical localization: 07º 44' 44.4" S
110º 29' 23.8" E
Precision: Map.[16]
Alt.: 145m

Surroundings: In lowland, on the banks of the Opak River. The remains were supposed to have been located 350m to the southeast of *candi* Sewu (IJzerman 1891: map).

Religion: Unknown.[17]

Main features: Single temple.

State of preservation: No visible remains.

Description:

This temple, thought to be related to Sewu, has long disappeared, but enough stones were left for Brumund to identify a building (Brumund 1854: 23). Remains of *candi* Kulon were not on the east-west axis of *candi* Sewu, but 200m south of it (Stutterheim 1937: 17).

LOR

Administrative localization: Candirejo, Bugisan, Prambanan, Klaten, JT.

Geographical localization: Alt.: 166m

Surroundings: In lowland, some 250m north from *candi* Sewu (IJzerman 1891: Map).

***Religion*:** Unknown.[18]

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[16] The temple does not figure on the Bakosurtanal map. Coordinates were estimated on the basis of IJzerman's map (IJzerman 1891).
[17] No sculpture coming from *candi* Kulon has ever been reported, so it is difficult to ascribe a religion to the temple. However, if one considers that it is related to Sewu, then *candi* Kulon should be classified as Buddhist.
[18] Same remark as for *candi* Kulon.

Main features: Single temple.

State of preservation: No visible remains.

Description:

> In the 19th century, temple remains were still visible here (Munnich 1845: 180; Verbeek 1891: 185). According to Bosch, at the beginning of the 20th century, the temple was already vanished (Bosch 1915a: 74). However, Stutterheim still mentions the remains in a report dated 1937 and underlines the fact that the temple is 3m east of the north-south axis of *candi* Sewu (Stutterheim 1937: 17).

Today, some stones are still visible around the village of Candirejo. However, given the proximity with Sewu, it is impossible to determine if the stones come from *candi* Lor or Sewu.

Sculptures:

> Fragments of *jina* were found here (Munnich 1845: 180; Verbeek 1891: 185)

PLAOSAN LOR

Administrative localization: Plaosan, Bugisan, Prambanan, Klaten, JT.

Geographical localization: 07° 44' 26.3"S[19]
110° 30' 16.0" E
Precision: 9m
Alt.: 165m

Surroundings: In lowland, on flat ground, some 400m west of the Klongkangan River and 150m west of the smaller Borongan/Dengok River.[20] *Candi* Plaosan Lor is located 150m north of Plaosan Kidul, 950 east-northeast of *candi* Gana and 1300m east-northeast of Sewu. From Plaosan Lor, one can see *candi* Ijo and the Gunung Kidul to the South, Mt Merapi to the NNW, *candi* Sewu to the WSW and *candi* Loro Jonggrang to the SW.

Religion: Buddhist.

Main features: Concentric compound; facing west; two rectangular central shrines with porch; enclosure walls.

State of preservation: The main temples have been restored from base to superstructure, as well as a few secondary structures. The first enclosure wall is also rebuilt. Bases of the secondary shrines around structures A1 and A2 are well preserved, but those around structure C are mere piles of stones (when they are not simply missing). A few stones from the second enclosure wall are visible west of structure A1 and A2. The outer enclosure, with its double wall and its moat is still visible in some places to the east and west of Plaosan Lor, as well as to the south of Plaosan Kidul.

Description: This large compound formed from three main structures (C, A1 and A2) built on a north-south line and surrounded by an inner enclosure wall, secondary shrines and an outer enclosure wall. The whole complex of Plaosan Lor is further

[19] Measurements taken in front of the northern temple.

[20] This river is now flowing southwards then southwest and meet with the Opak near Ratu Boko/Bokoharjo. Nevertheless, on IJzerman's map (IJzerman 1891), one can clearly see the Dengok River meeting the Klongkongang just southeast of Plaosan.

included within two other enclosure walls that include *candi* Plaosan Kidul. None of the structures is perfectly turned towards the cardinal points.[21]
At the northernmost end of the *candi* Plaosan Lor compound is the so-called structure C and its secondary shrines.

- *Structure C and its secondary buildings*

Structure C is actually a *pendopo*, that is to say a stone terrace on which stood a wooden pavilion. A staircase located on the western side gives access to the *pendopo*. The base of structure C is 21.7m (N-S) x 18.9m (E-W) at the bottom and 19.2m x 16.3m at the top. A 1m-large stone bench runs from the centre of the northern side of the terrace, goes along its eastern edge and ends in the middle of its southern side. All around the platform, a groove is visible, punctuated by square pillar bases (8 to the east and west, 6 to the north and south). It was probably carved in order to receive the wooden panels that made up the walls of the structure. In addition, there were 16 wooden columns, whose octagonal stone bases are still visible today at the centre of the platform (4 on the small sides, 6 on the large ones).

> Excavations have suggested that the *pendopo* rose within a courtyard limited by an enclosure wall (Miksic, Nayati, Tjahjono 2001: 326).

Traces of this first enclosure are still visible near the northeastern corner of the building.
Outside this first enclosure lie rows of secondary buildings.

> According to IJzerman (1891: 103) and Krom (1923, II: 14), there were three rows of secondary buildings on the western and eastern side of structure C, but only one row on its northern and southern sides. Given their circular shapes, all seem to have been *stūpa*. Recent excavations, however, have put forward that there were at least two rows of secondary buildings to the south of the platform (Miksic, Nayati, Tjahjono 2001: 322).

For the visitors one row (of 12 structures) is still visible to the north and south, while three rows are still to be seen to the east and west (respectively of 9 and 8 buildings).

- *Second enclosure*

The whole ensemble (structure C with its secondary buildings) was included within a larger enclosure wall that also contained the two other main buildings of *candi* Plaosan Lor (structures A1 and A2, respectively to the north and south). Traces of the foundation of the wall and of its two *gopura* are still visible west of structures A1 and A2.

> This second enclosure wall was 225m (N-S) x 87m (E-W). Two of its doors have been identified, respectively in front of structure A1 and A2. A third door might have been located on the axis of structure C (Bernet Kempers 1948: fig. B).
> Ancient sketches of Plaosan Lor show a wall running east west and dividing secondary shrines belonging to structure C and those centred around *candi* A1 and A2 (IJzerman 1891: pl. XXIX). It seems that traces of it were found back in the 1940's (Bernet Kempers 1948: fig. B). However, more recent excavations were unable to confirm the existence of such a wall (Miksic, Nayati, Tjahjono 2001: 327).[22]

- *Structures A1 and A2*

The two other main buildings of Plaosan Lor (A1 and A2) are twin structures. They are not only similar in plan, but also physically linked with one another.

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[21] Its orientation is 265° 40' 08.40'' according to the SPSP JT map or 264° 08' according to Siswoyo (1996).
[22] These excavations were carried out in a limited area south of the *pendopo*.

Both are rectangular, measure 23.3m (N-S) x 15.7m (E-W) and have a projection on the western side, for the staircase (at the base level) and the vestibule (at the temple body level).

> They are turned west, although not exactly: their east-west axis is 264º08' from north (Siswoyo 1996: 7).[23]

Their inner space is divided into a vestibule and three rooms measuring 6m (E-W) x 3.5m (N-S). Rooms communicate with each other via a door located in their western part. An altar for three sculptures occupies the rear of the three rooms.

The northern and southern room of each temple are opened to the outside via two windows. On the walls are reliefs depicting donors.

A wooden ceiling that was used as ground for the second floor covered all the rooms.

> According to Dumarçay (1986: 50) remains of an earlier structure would have been found under the southern temple during restoration work.

Around *candi* A1 and A2 runs an enclosure wall that determines an inner courtyard of 100m (N-S) x 38.70m (E-W). The enclosure wall is flanked at its corner and in the centre of its western and eastern sides by small shrine-like elements with storied roofs. The wall is pierced by two *gopura*, in front of the entrances of buildings A1 and A2. The inner courtyard is further divided into two parts by a wall running east west between the two main buildings. At its centre is another *gopura* that allows the passage between both structures.

- *Secondary shrines around structures A1 and A2*

Outside the enclosure wall are three rows of secondary buildings. The inner row is actually made out of 50 small shrines[24] looking outward. They measure roughly 4.50m x 4.50m[25] and have a square plan.

The central and outer rows of secondary buildings are actually made of both *stūpa* and shrines (at the corners only).[26] Shrines of the NW and SW corners are turned to the west, buildings of the NE and SE corners face east. Six of the eight shrines bear inscriptions, while only 4 of the 116 *stūpa* are inscribed.[27]

As far as secondary buildings are concerned, one has also to note that space between the different rows is narrow. Therefore it is difficult to imagine a large procession tracing its way among the shrines. *Pradakṣina* had to be fulfilled either within the inner courtyard or outside the second enclosure.

- *Outer enclosures*

> Structures C, A1 and A2, as well as *candi* Plaosan Kidul, were farther included within one wider enclosure wall, one moat and a last outer enclosure, measuring respectively 415m (N-S) x 245m (E-W), 435m x 265m and 460m x 290m (SPSP JT 1993: map; Miksic, Nayati, Tjahjono 2001: 319ff).

Parts of these enclosures and moat are visible to the west and east of Plaosan Lor as well as to the south of Plaosan Kidul.

> No remains were found within these outer enclosures, but numerous ceramic shreds were discovered, particularly in the SW corners, suggesting that they might have been used as dwelling places for monks or other officials linked to the temple. In the

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[23] Measurements taken in 1948 gave a different result: 267º (Bernet Kempers 1948: 29)

[24] 17 shrines on the western side, 19 along the eastern wall and 9 to the north and south (corner shrines counted twice).

[25] Measurements taken at the base. The temple body is more or less 3.40m square and the *cella* 1.75m x 1.75m.

[26] There are 54 *stūpa* (17 + 9 + 19 + 9) and 4 shrines in the central row; 62 *stūpa* (19 + 11 + 21 + 11) and 4 shrines in the outer row.

[27] Three of the four inscribed *stūpa* are located near one another, around the NW corner of the inner enclosure.

> same area were excavated remains of two bridges (Miksic, Nayati, Tjahjono, 2001: 320, quoting Kusen, 1986: 402).

Although the enclosure walls run parallel with *candi* C, A1 and A2, the latter buildings are not located at the centre of the demarcated space: they are rejected to the eastern part of it.

Sculptures:

The SPSP JT has recently placed sculptures atop structure C. Those are supposed to be the sculptures mentioned by IJzerman.

> When the latter visited the site, 22 sculptures of *jina Buddha* and *bodhisattwa* (i.e. Akṣobya, Amitābha and Manjuśrī) were indeed standing on the stone bench of structure C. Unfortunately, the Dutchman was unable to determine if they were *in situ* (IJzerman 1891: 103).[28]

Near the gates of the second enclosure wall are two pairs of *dwārapāla*.

Within the various rooms of structures A1 and A2 are couples of *bodhisattwa* (still *in situ*).

> According to IJzerman (1891: 125-127) and Krom (1923, II: 9-10), the following figures were identified:
> A1, northern room: Maitreya.
> A1, central room: Awalokiteśwara and Wajrapāni (?).
> A1, southern room: Manjuśrī and Sarwanīwaranawiśkamthī (?).
> A1, vestibule: Maitreya and Manjuśrī .
> A2, northern room: Maitreya.
> The *bodhisattwa* flanked an empty space, probably reserved for a sculpture of Śākyamuni, as in *candi* Mendut.
> According to IJzerman (1891: 101) a few sculptures were found near structures A1 and A2, among the remains of the shrines of the first row. To the west of the compound were found 4 Amitābha, to the north 1 Amitābha and 2 Amogasiddhi, to the east 6 or 7 Akṣobya and to the south 1 Ratnasambhawa. Furthermore, one sculpture of Akṣobya was discovered in the third row, at the SE corner.

Apart from the freestanding sculptures, structures A1 and A2 also shelter a few reliefs.[29]

Inscriptions:

> One major stone inscription and several smaller inscriptions on the secondary shrines (784-803 A.D.?) (Wisseman Christie 2002-2004: nr 11)
> More than 75 short inscriptions. Almost all the shrines are bearing inscriptions (Casparis 1958).[30]

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[28] I would also draw the attention to the fact that the pavement of structure C is quite unusual. For a rectangular platform, one would expect stone slabs to follow roughly the same pattern and to be laid more or less in lines. The pavement of structure C, however, seems to radiate from a point located slightly east of its geometrical centre. Its general pattern is thus a kind of circle or, rather, an ellipsoid. This suggests the presence of some important element at the centre of the ellipsoid. The nature of this element is unknown, but one may think of a preacher's chair or, rather, a sculpture that would complete the group seated on the wooden bench (possibly a representation of Wairocana).

[29] In the northern room of the northern structure, one can see on the northern and southern wall, near the altar, standing female figures. The southern room of the same building shelters similar reliefs.
In contrast, the southern temple shows only reliefs of male devotees.
The northern room of the southern temple is carved with 4 reliefs:

- Northern wall, eastern part, near the altar: standing male figure (dignitary or king) among 6 secondary figures (one of them is bearing an umbrella)
- Southern wall, eastern part, near the altar: two standing male figures accompanied by two umbrella bearers. One of the main figures wears a monastic dress.
- Western wall, southwestern corner: two seated male figures in praying attitude (joining hands), together with two umbrella bearers.

In the southern room of the southern buildings are two reliefs:

- Northern wall, eastern part, near the altar: two standing male figures and two umbrella bearers.

On one of the stones of the first enclosure of Structure C was found a short inscription reading *"...waneraja*". According to palaeographical analysis, it would date back to the 9th-10th century (*Laporan ekskavasi Plaosan Lor* 1997: 19).

Miscellaneous archaeological finds:

Four deposit boxes have been found under the central room of A1 (Gutomo, Wirasanti 1998: 54; Miksic, Nayati, Tjahjono 2001: 323).[31] They were not at the corner of the room, but along the northern and southern wall, near the door leading to the side *cella* and in front of the podium, so to form a square. One of these stone cassettes was still containing its earthen pot (*Rencana pemugaran Plaosan Lor* 1993: pl.). Near the southeastern *peripih* was discovered a gold leaf bearing an inscription.[32]

PLAOSAN KIDUL

Administrative localization: Plaosan, Bugisan, Prambanan, Klaten, JT.

Geographical localization: 07° 44' 34.2" S[33]
110° 30' 16.2" E
Precision: 9m
Alt.: 163m

Surroundings: In lowland, on flat ground, 150m east of the Borongan River and 250m east of *kali* Klongkongan. Plaosan Kidul is located 150m south of Plaosan Lor, 900m east of *candi* Gana and 1200m east of Sewu.

Religion: Buddhist.

Main features: Concentric compound; facing west; square central platform; enclosure wall.

State of preservation: There are no identifiable traces of the central building. To the west of the compound, heaps of stones indicate the presence of the secondary shrines. In a few cases, their bases are still preserved. Several of those secondary temples have been restored from base to superstructure. *Stūpa* are reduced to lose stones covering almost entirely the eastern part of the site. Neither the secondary shrines nor the *stūpa* can be counted.

Description: The site is nowadays badly damaged, but IJzerman was still able to give a fairly good idea of its general organization (IJzerman 1891: 103-105).

According to him, the complex was centred on a square terrace similar to structure C of Plaosan Lor. This base was surrounded on the northern, eastern and southern sides by three rows circular structures (probably *stūpa*).[34] On its western side there was one row of *stūpa* and, to the outside, two rows of square shrines, facing the west.[35]

- Southern wall, eastern part, near the altar: one standing male figure.

30 42 shrines out of 50 of the first row are inscribed. Inscriptions are to be found on the rear wall of the buildings, that is to say the closest to the main temples. The only exceptions are the shrines bordering pathways, where inscriptions are placed in order to be readable by anyone walking to the temple. Concerning the inscriptions from *candi* Plaosan, see de Casparis 1958.

31 *In situ peripih* have also been found in the SE, SW and NW corners of one of the secondary shrines at the NE of the main temple (Miksic, Nayati, Tjahjono 2001: 324).

32 This inscription is in Sanskrit language and pre-Nāgarī script (Gutomo, Wirasanti 1998: 54).

33 Measurements taken from the staircase of the fourth temple of the first row.

34 Nevertheless when IJzerman visited the place, the northernmost row of secondary structures was already vanished. So, its existence is only a hypothesis. 39 *stūpa* were still visible, together with 14 shrines.

35 According to measurements taken on the restored shrine, their east-west axis would be 267º14' away from magnetic north (Siswoyo 1996).

The shrines near the entrance were bigger than the others (IJzerman 1891: 103-105). IJzerman's information was partly confirmed by Bernet Kempers. Excavations made in the 1940's brought to the light remains of 12 shrines (in 2 rows) and 5 *stūpa*. However, the discovery of a *stūpa* just west of the *pendopo* leaded to the conclusion that there were also 3 rows of *stūpa* on the western side of the compound (Bernet Kempers 1948: 31ff).

Shrines here are quite different from those of Plaosan Lor and their plans show similarities with *candi* Bima, on the Dieng plateau. In place of the usual *cella* with, eventually, a small vestibule, a proportionally large room has been added to the west. The presence of this *maṇḍapa* is translated at base level by a deep projection, breaking from the square plan. The main portion of the base is 5.46m (N-S) x 5.42m (E-W), while the projection is 3.62m x 1.82m. The *cella* is 2.86m x 2.84m, the *mandapa* 1.90m x 1.44m.[36]

The compound of Plaosan Kidul is located in the southeastern corner of the third enclosure wall of *candi* Plaosan Lor.[37]

Sculptures:

According to IJzerman, twelve Buddhist sculptures were found among the remains. Two goddesses and one *bodhisattwa* were on the stone platform, while 5 other *bodhisattwa* (among others Maitreya and Wajrapāni), one Amitābha and 3 goddesses were lying within or around the secondary shrines to the west of the compound (IJzerman 1891: 105 and pl. XXIX).

Inscriptions:

One stone inscription (784-803 A.D.?) (Wisseman Christie 2002-2004: nr 11)

SEWU

Administrative localization: Bener, Bugisan, Prambanan, Klaten, JT.

Geographical localization: 07° 44' 38.1" S
110° 29' 35.1" E
Precision: 6m
Alt.: 161m

Surroundings: In lowland, on flat ground,[38] some 550m to the east of *kali* Opak and 350m to the east of one of its branch called *kali* Ngapan. Sewu is located 300m to the west of Gana, 350m to the northeast of Kulon, 250m to the south of Lor, 1300m to the west southwest of Plaosan Lor, 1200m to the west of Plaosan Kidul and 1000m to the north northeast of Loro Jonggrang.

Religion: Buddhist.

Main features: Concentric compound; facing east; staggered square with 5 chambers; enclosure walls.

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[36] The shrine is conceived so that the *maṇḍapa* is a simple addition: the building would be complete without it. The western door of the *cella* is treated as a normal front door, with a small projection, moulding and pilasters. Therefore, it is possible that Plaosan Kidul shrines were first conceived as simple square structures and that the *maṇḍapa* is a later addition. This would fit with similar observation on *candi* Mendut, Lumbung or Sewu.

[37] As the orientation of this enclosure wall is similar to the general orientation of Plaosan Lor but different from that of Plaosan Kidul, I consider that the wall belongs to the Plaosan Lor Complex. Whether Plaosan Kidul was included after its foundation or built within the already existing enclosure is impossible to determine with architectural data only.

[38] The ground is flat for the eye, although it is actually lightly sloping down westward, towards the Opak River (Dumarçay 1981: 5).

State of preservation: The main temple was restored from base to superstructure. Most of the secondary shrines are relatively well preserved: at least the base and lower parts of the temple body are still visible. A few of them are still entirely standing. Traces of 6 out of the 8 temples flanking the compound axis can be distinguished. The eastern ones were restored almost to the top. Outer enclosures have disappeared.

Description: *Candi* Sewu is a vast compound made of a main temple surrounded by a first enclosure, four rows of secondary shrines and one or two further enclosure walls. It is roughly orientated around the cardinal points.

> The east-west temple axis is 88° 09' 07'' from geogrphical north (Anom, Hatmadi 1992: fig.7).[39]

- *The central temple and its courtyard*

The central sanctuary is a staggered square. Its base is an impressive square platform (roughly 18m square) with important projections at the centre of each side.[40] Access to the platform is possible from the four sides *via* staircases.

The temple body is a square to which were added four projections, one on each side (the square is 12m x 12; the projections are 7.20m large and deep). The building shelters 9 rooms (1 central *cella*, 4 secondary rooms and 4 corridors). The central *cella* faces east and is 5.50m (E-W) x 5.90m (N-S). It is surrounded by a circumambulation path (partly covered, partly open). The four secondary rooms are located on the axis of the building and are 4m x 3.50m. They can be entered either from the circumambulation path or from the courtyard.

The main temple is surrounded by a courtyard measuring 41m (N-S) x 40m (E-W) and bordered by a low stone fence.[41] The fence has four gates, one at the centre of each side (although the northern and southern gateways are smaller than the two others). These gateways actually are simple openings within the wall; they are not buildings.[42]

- *Secondary shrines*

Directly outside the central courtyard and 38 cm below it, are four rows of secondary shrines and four pairs of axial sanctuaries.[43]

The first row counts 28 shrines looking outwards (8 on each).[44] Their back is almost against the first enclosure. They all have a similar plan. Their base and temple body

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39 However, according to Siswoyo, its orientation is 88° 25' (Siswoyo 1996: 8)

40 The projections are 5.80m deep and 11m large.

41 On the contrary of *candi* Plaosan Lor, where the first enclosure is indeed a high wall, the first courtyard of the Sewu compound is only a symbolical border: the eye is not stopped by stone, it can freely discover the whole sanctuary, either from outside or from inside. Nothing is hidden. The people who had access to the second courtyard were allowed to view what was happening in the central courtyard. At Plaosan, the secondary shrines and the two main temples are clearly separated from each other. However, the importance of this architectural system is difficult to evaluate. Were rituals around *candi* Sewu more public than those performed at Plaosan? Were the first and second courtyards of Sewu for the use of the very same social group while Plaosan was for two different kinds of people? If one considers *candi* Plaosan as a monastery (*wihāra*) rather than a temple, the latter hypothesis makes sense: monks inside, high-rank lay officials outside.

42 This is also a difference between Sewu and Plaosan. At Plaosan, gates of the first enclosure wall are true *gopura*. Again, the architecture seems to translate a stronger division between the inner and outer enclosures at Plaosan than what it does at Sewu.

43 The distance between the secondary shrines along the east-west axis is 4m; along the north-south axis, it is 1m.

44 Corner shrines are looking either westwards (when located west) or eastwards (when located east); never south nor north. The same organization is found in the second and fourth row.

are square (respectively 6m and 4.20m square) with a projection for the entrance. Lightly projecting niches are to be seen on rear and sidewalls. The trapezoidal *cella* (1.75m x 1.70m x 1.70m) is preceded by a small vestibule. In the outer niches were carved standing figures.

The second row of secondary shrines is made out of 44 buildings looking outwards (12 on each side). Shrines are different from those of the first row: they are bi*gger* and staggered square. Their base is square (6.30m) with a projection for the entrance. The temple body is a staggered square (4m) with one more important projection on the side of the entrance. Inside, a small vestibule leads to a square *cella* (1.65m). The rear and side walls of the latter are pierced by one niche.

Between the second and third rows of secondary shrines lies a 25m-wide space. This space is empty, at the exception of 4 pairs of temples located along its axis.[45] Each couple is made out of two temples facing each other. Although wider, the plan of those temples bears similarities with that of the shrines of the second and third rows. The base is square (9.30m) with a single projection, on the side of the entrance. On the platform raises a staggered square temple body (5.80m) with a more important projection on the side of the entrance. The temple body houses a central *cella* (2.30m square) with three niches (one on each wall) preceeded by a deep vestibule.

The third row of secondary shrines is made out of 80 buildings (20 on each side). Contrary to other secondary shrines, all the buildings of the third row are looking inwards. They are similar in plan with shrines of the second row.[46]

The fourth row is made out of 88 square buildings (22 on each side). They are all looking outwards and are similar in plan with the shrines of the first row.

- *Outer enclosure walls*

The four rows of secondary shrines were once surrounded by an enclosure wall (not visible anymore).

> According to recent excavations the wall would measure 187m (N-S) x 170m (E-W) (Anom, Hatmadi 1992: 61). Unfortunately the state of preservation of this second enclosure was too poor to allow an exact reconstitution.[47]
>
> In 1983, remains of a wall were discovered 103m to the east of the third enclosure wall of *candi* Sewu (Anom, Hatmadi. 1992: 61).

It is therefore not unthinkable that, originally, the compound was wider and had four enclosures.

> Between those remains and the third enclosure were traces of a stone building (Anom, Hatmadi 1992: 61).

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[45] Actually, out of the supposed 8 temples, only six have been found back: two along the western and eastern axis, one along the northern and southern ones. The remaining two were maybe never planned, or entirely destroyed, or planned but never built. The latter hypothesis is maybe more plausible when one considers that the main path leading to the temple was the east-west axis. It would be logical that the building of the four pairs of secondary temples started along this axis; only afterwards were added the temples along the northern and southern axis.

[46] Shrines located in the corners do not have projection for the entrance, due to lack of space.

[47] It could have been a low fence as in the case of the first enclosure. This hypothesis is strengthened by the localization of the four pairs of *dwārapāla*. The guardians have indeed been discovered at the middle of the fourth sides of the enclosure, but within the courtyard (IJzerman 1891: fig.153). Usually, such sculptures are found in front of a building. The localization of Sewu's *dwārapāla* is less surprising if one considers the possibility of a low fence. The *dwārapāla*, though inside, would then be visible from the outside.

- *Architectural history*

The complex organization of the main temple of *candi* Sewu is thought to be due to modifications undergone by the sanctuary at the end of the 8th century (Dumarçay 1981: 21-23). In its initial state, the central base would have supported not one cruciform temple but 5 square shrines (one main shrine in the centre and four smaller ones on the cardinal points).[48]

Sculptures:

A statue of Akṣobhya was found in the southeastern shrine of the second row (IJzerman 1891: fig.153).

In the space between the second and third row, among the remains of the northern temple of the eastern axis was discovered an image of Wairocana (IJzerman 1891: fig.153).

Numerous sculptures were found among the remains of the third row. In the eastern shrines were discovered one Amogasiddhi[49] and 6 Amitābha; among the northern shrines three Ratnasambhawa; in the western buildings, one Amitābha[50] and two Akṣobhya; and, finally, within the southern shrines, one Amitābha and one Amogasiddhi (IJzerman 1891: fig.153).

Sculptures were also discovered within the fourth row: in the eastern shrines 5 Akṣobhya;[51] to the north 2 Amogasiddhi;[52] in the western shrines 2 Amitābha and one Akṣobhya; [53] in the south 3 Ratnasambhawa (IJzerman 1891: fig.153).

Inscriptions:

An inscription (Mañjusrīgṛha) dated 792 was found next to shrine no 202 (western row, fifth shrine from the south) (Dumarçay 1981: pl. XVI).

Inscription of Kĕlurak dated 782 A.D. (Sarkar 1971: nr 6)

Several short inscriptions above the doors of secondary shrines (early mid 9th century) (Casparis 1950: 113-115).

Three small gold plates (early mid 9th century) (Wisseman Christie 2002-2004: nr 30).

Miscellaneous archaeological finds:

An intriguing feature of the main temple is the structure found underneath the central *cella* (Anom, Hatmadji 1992: 21-22; Dumarçay 1987: 289-291).

It was indeed discovered that the *cella* topped a cubic structure distinct from the stones filling the rest of the base. This structure had almost the same dimensions as the *cella* (5.30m x 5.24m). It was made from 10 layers of adjusted stones and was 1.79m high. Its bottom is at the same level than the floor of the secondary rooms, but instead of being built upon the base, it lies on another independent cubic structure.

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48 This hypothesis is strengthened by the fact that mouldings on the outer wall of the main *cella* are continuous and visible within the covered passage, between the secondary rooms and the central *cella*. Secondly, the walls linking the axial shrines to the main room have no physical bound with those structures; they are simply built against them. Thirdly, entrances of the four shrines bear traces of later modifications.

However, even if one accepts the hypothesis of later modifications, it is still difficult to have a clear idea of the original organization of the building as a whole. It is impossible to determine whether or not the four axial shrines were opened on both sides (as they now are). It is nevertheless probable that the eastern shrine opened to the central *cella* too, but this gives no certainty as far as the other shrines are concerned.

49 According to IJzerman (1891: fig.153), not in its original position.

50 According to IJzerman (1891: fig.153), not in its original position.

51 According to IJzerman (1891: fig.153), one of them was in the alley between the third and fourth row.

52 According to IJzerman (1891: fig.153), one of them was in the alley between the third and fourth row.

53 According to IJzerman (1891: fig.153), not in its original position.

This second element is also 5.30m x 5.24m, but it is not faced. It is also formed from 10 layers. On the upper face of several of the layers, axes and diagonals are carved.
Underneath this second stone cube, there is a third square structure composed of 19 layers of brick. It is 5.30m x 5.24m and 1.11m high. At its four corners are small boundary stones.
Around the brick structure, there is a stone pavement measuring 11.59m (E) x 11.56m (S) x 1.53m (W) x 1.47m (N).
The dismantling of the temple base within the context of restoration work gave interesting data concerning techniques and rituals related to temple building. On the 4th and 14th layer of the base, small crosses have been carved; they were probably reference points for ancient architects and topographers (Dumarçay 1987: 291). Within the foundations, between layers of river stones and sand, were found three artefacts. One Chinese bowl with some coal (in the SW corner of the central *cella*), a terracotta replica of a musical instrument and a small (*in situ*) boundary stone (the two latter pieces were close to each other, in the SE quadrant of the main temple).[54]

SOJIWAN (Sojiwan I, Kalongan, Kebon Dalem)

Administrative localization: Sojiwan, Kebondalem Kidul, Prambanan, Klaten, JT.

Geographical localization: 07° 45' 40.0" S
110° 29' 46.0"E
Precision: 6m
Alt.: 145m

Surroundings: In lowland, on flat ground, 1000m east of *kali* Opak, 400m west of the Dengok/Borongan River and 1700m west of *kali* Klongkangan. The site is close to the northern tip of Gunung Kidul (800m to the south). *Candi* Sojiwan is located 750m to the east of, 1100m to the southeast of Loro Jonggrang, 1000m to the north of Sumberwatu and Arca Ganeca and 1400m to the northeast of Ratu Boko. From the site one can see the Serape to the north and Mount Pegat and Mount Ijo to the southeast.

Religion: Buddhist.[55]

Main features: Organic sanctuary; facing west; staggered square; enclosure wall.

State of preservation: In course of restoration by SPSP Jawa Tengah.

Description: The site of *candi* Sojiwan was made at least of a main temple, a secondary shrine and an enclosure wall.[56]

The main temple faces west, although its exact orientation would be 268° 39' (Siswoyo 1996: 9).
Its base is roughly square (19.60m x 19.32m x 19.28m x 19.42m)[57] with a single projection for the entrance.[58] On the platform one finds a low square terrace on

[54] Dumarçay thinks that these artefacts support the opinion of Bosch, who considered Sewu as a three-dimension *maṇḍala*. Dumarçay proposes to associate the bowl and coal with the "Incense Tārā" from Bosch's *maṇḍala* and the terracotta instrument with the "Playing Tārā". He nevertheless recognizes that the artefacts were not found exactly where they should have been according to the theory proposed by Bosch (Dumarçay 1987: 290). However, in an earlier book, Dumarçay expressed the opinion that it was only in a later stage (i.e. after the transformation of the central sanctuary into a single building) that *candi* Sewu had been adapted to fit the *Wajradhātumaṇḍala* (Dumarçay 1981: 33). In other words, Bosch's hypothesis would correspond to the last phase of the building, but not to its original conception. Then, it is rather surprising to find Bosch's "meditation Tārā" deep in the temple foundation.

[55] Van Blom thought that the temple was dedicated to the cult of Amitābha (Blom 1935: 2).

[56] *Candi* Sojiwan was under restoration when fieldwork was carried on. Actually, it was dismantled to the foundation. Therefore, most of the information is coming from maps.

which raises the temple body and an independent gate.[59] The temple body is a staggered square (13m). It houses a 6m square *cella* and a long vestibule. The northern and southern walls of the *cella* are pierced by a window (at the centre) and a niche (in the eastern half).
According to Dumarçay, the entrance of the temple body would have undergone some transformations after the completion of the building (Dumarçay 1986: 25).[60]
The temple used to be surrounded by an enclosure wall, more or less 40 meters from the building (Mackenzie 1814:18; IJzerman 1891: 108; Bosch 1915a: 81). Traces of it were found during restoration work, in 1934, 40m north from the temple (Blom 1935: 6).
In the northwestern corner of the enclosure stood a small structure (MacKenzie 1812: 18); it was already vanished by the end of the 19th century (IJzerman 1891: 107).

Sculptures:

Two giant *dwārapāla* guarded the western entrance of the enclosure. As in the case of *candi* Sewu, they were located within the enclosure (Baker, referred to by van Blom 1935: 2 and fig.2).
A few Buddhist sculptures were found on the site, among others 1 Amitābha and 2 *bodhisattwa* (Bosch 1915a: 81).

Inscriptions:

An Inscription was also discovered. It reads "Śrī mahārāja" (Bosch 1915a: 81).

KALONGAN (Sojiwan II)

Administrative localization: Kalongan, Kebondalem Kidul, Prambanan, Klaten, JT.

Geographical localization: Alt.: 145m.

Surroundings: In lowland, on flat ground, 1200m east of *kali* Opak, 400m west of the Dengok River and 1700m west of *kali* Klongkangan. In the vicinity of Sojiwan.

Religion: Buddhist.

Main features: Centred compound; facing west; two square central shrines.

State of preservation: No visible remains.[61]

Description: Kalongan was supposed to be some 80m South of Sojiwan (Bosch 1915a: 84; Blom 1935: 1).

IJzerman was still able to see enough to give an idea of the general layout of the compound, which he compares to *candi* Plaosan Lor. According to him, the sacred area measured roughly 80x50m and was scattered with numerous remains of circular structures (probably *stūpa*; diameter: 3.25m), as well as fragments of top parts. He was not able to count them but noticed that they were laid according to the cardinal points. At the centre of the complex were two small square temples (their *cella* were

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[57] Measurements are taken from a plan made by the SPSP JT: *Candi Sojiwan. Gambar Rencana Rekonstruksi. Denah* (1994).

[58] The disposition of the projection is quite peculiar. Usually, such projection follows the shape of the temple body, that is to say that they have exactly the same shape, but have wider dimensions (see Sewu, secondary shrines). Here, the projection is not as wide as the corresponding forepart of the temple body, and it is deeper. This is due to the presence of a gate upon the platform in addition to the temple.

[59] Contrary to Sambisari or Kedulan, this gateway was not linked to a parapet: no traces of such a wall are visible in the case of *candi* Sojiwan. Moreover, there is no space for it on the platform.

[60] Dumarçay does not precise the nature of these transformations. However, it is probable that he thinks about the adjunction of the gate or the vestibule.

[61] South of Sojiwan several houses and fences are built using *candi* stones. However, whether they come from *candi* Sojiwan or Kalongan is not possible to determine yet. Maybe the completion of the restoration of Sojiwan will solve the question.

2.74m square), located 12.28m from each other and looking west (IJzerman 1891: 109).

Sculptures:

A sculpture of Amitābha was found here, between the two main buildings (IJzerman 1891: 109; Bosch 1915a: 84), as well as two *bodhisattwa* (Verbeek 1891: 190; Krom 1923, II: 24)

BUBRAH (Sijwu 1)

Administrative localization: Ngangruk, Tlogo, Prambanan, Klaten, JT.

Geographical localization: 07° 44' 47.7" S
110° 29' 35.0" E
Precision: 7m
Alt.: 156m

Surroundings: In lowland, on flat ground, 700m east of *kali* Opak. Roughly on a line with *candi* Lumbung (150m to the south) and Sewu (300m to the north). From here are visible Mt Merapi, the Gunung Kidul hills as well as Loro Jonggrang Temple (600m to the south southwest).

Religion: Buddhist.

Main features: Single temple; facing east; staggered square.

State of preservation: Only the temple base and the foot of the temple body are still visible.

Description: *Candi* Bubrah is a staggered square rising on a square base.
The base is actually not a perfect square; it is 19m (N) x 19.60 (E) x 19.30 (S) x 19.60 (W). It has a projection for the entrance on the eastern side.

The precise orientation of base and temple body is 87° 54' (Siswoyo 1996: 8).

A balustrade bordered the platform;[62] a *gopura* linked it to the staircase.
On the platform is a square podium (7.50m) on which raises the temple body.
The latter is a staggered square measuring 10m x 10m. It shelters a corridor, a vestibule, a second corridor and a *cella* (3m x 3m).[63]

According to a plan published by Knebel (Knebel 1910a: pl.147), the temple body had numerous niches: 4 on the eastern façade (one on each side on the entrance door on the projection and two on the main square), 4 on the northern and southern sides (all of them within the projections) and 6 on the western side (4 on the projections and 2 on the main square).[64]

Sculptures:

Several sculptures were found within the remains, among others 10 Amitābha, 1 Akṣobhya and 3 Ratnasambhawa (Bosch 1915a: 66).

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[62] Remains are not sufficient to determine whether it was a high wall or a low fence. However, its thickness (more or less 1m) leads to think that it could have been rather high, maybe as the parapet of *candi* Mendut.

[63] The *cella* is not at the geometrical centre of the temple body, but lightly to the southwest of it.

[64] It is interesting to note that, here again, the E-W axis is privileged.

LUMBUNG

Administrative localization: Ngangruk, Tlogo, Prambanan, Klaten, JT.

Geographical localization: 07° 44' 53.2" S
110° 29' 34.9" E
Precision: 9m
Alt.: 156m

Surroundings: In lowland, on flat ground, some 500m east of the Opak River. *Candi* Lumbung is roughly on a line with Bubrah and Sewu (respectively 150m and 450m to the north). From here are visible Mount Merapi, the Gunung Kidul and *candi* Loro Jonggrang (roughly 500m to the south southwest).

Religion: Buddhist.[65]

Main features: Centred compound; facing east; staggered central shrine; enclosure wall.

State of preservation: Several secondary shrines were restored up to the superstructure. The main temple, however, has been badly damaged. Its walls are crumbling away.

Description: *Candi* Lumbung is a compound composed of a main temple and 16 surrounding secondary shrines.
The main temple faces east.
Its exact orientation is 84° 25' (Siswoyo 1996: 8).
Its base is a staggered square (10m) with a supplementary projection on the eastern side, for the staircase. On the platform raises the temple body. It is also a staggered square (6.60m). The projections are narrower and deeper than usual; three of them house a niche. On the eastern side, the projection shelters a corridor that leads to the *cella*. In the *cella* 11 niches are visible: three are pierced in the northern, western and southern walls (the central niches are a wider, especially the one to the west), while two flank the entrance.
Surrounding the central temple are 16 secondary shrines, all similar in plan and dimensions. Base and temple body are both square (respectively 5m x 5m and 3.60m x 3.60m). The *cella* is 1.80m square.
The peculiarity of this compound lies in the layout of the secondary shrines. The five shrines of the western side are facing east. The four shrines of the northern and southern sides are also turned to the main temple. However, within the eastern row, only the central building is looking inward. The remaining two structures are not facing the main temple but turned towards the central shrine of the row. It also seems that a path once linked this shrine with the main temple.[66]

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[65] Because of the organization of the niches within the *cella* (3 on the back and side-wall and two on each side of the entrance), Krom thought that the pantheon of *candi* Lumbung was made out of one Buddha between two *bodhisattwa*, with the other 6 main *bodhisattwa* along the sidewalls. Near the entrance would have been Hārītī and Kuvera (Krom 1923, I: 273).

[66] The organization of the secondary shrines is quiet different from that of the third row of *candi* Sewu. If one wanted to apply Sewu's principle of organization to Lumbung, one would have 5 shrines facing east on the western side, three shrines looking to the main temple on the southern and northern side and, finally, 5 shrines turned to the west on the eastern shrine. It is not the case. If the main temple is still the focus (with 11 to 13 shrines looking to it), the notion of "rear" (the 5 shrines of the western side) and, even more, the relation of opposition between the main temple and the central shrine of the eastern shrine are playing an equally important role. This is underlined by the fact that the latter shrine

The whole compound was surrounded by an enclosure wall or stone fence, whose remains were found in 1920 (Bosch 1920: 79).

TANGKISAN

Administrative localization: Tangkisan, Hargomulyo, Kokap, Kulon Progo, DIY.

Geographical localization: 07º 51' 18.9" S
110º 04' 43.1" E[67]
Precision: Map.
Alt.: 50m

Surroundings: In lowland, in a hilly area.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

Numerous bricks from the classical period were found in the hamlet of Tangkisan, some with a torus. Among the remains were a *lingga* and a *yoni*. (Nurwidayati 1993: 5).

JATIWANGI

Administrative localization: Grubug, Jatisarono, Nanggulan, Kulon Progo, DIY.

Geographical localization: 07º 45' 38.2" S
110º 13' 11.9" E
Precision: Map.[68]
Alt.: 75m

Surroundings: In lowland, on flat ground, a few dozens meters west of *kali* Progo.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

A foundation made out of river stones was discovered here (Abbas 1993:26ff). It was 3.40m square. At its centre was a 1.14m square pit made of bricks.

Sculptures:

A *yoni* and an unfinished Gaṇeśa were found in the surroundings (*Daftar peninggalan benda DIY* 1985: 28; Abbas 1993: 27).

is also a centre of focus for other secondary buildings and that it is physically linked with main *cella*. This type of relation, although usual for Saiva temples, is unique in the case of Buddhist remains.

[67] Due to the lack of precision of literary information, the coordinates have been taken between the hamlets of Tangkisan Satu and Tangkisan Dua.

[68] Jatiwangi is mentioned neither on the Bakosurtanal map nor on the Topografische Dienst map. Coordinates were calculated according to a sketch from Abbas 1993.

GLAGAH

Administrative localization: Glagah, Sidorejo, Temon, Kulon Progo, DIY.

Geographical localization: 07º 53' 59.1" S
110º 03' 58.3" E
Precision: 11m.
Alt.: 2m

Surroundings: In lowland, on flat ground, 1200m to the north of the seashore, 1200m to the west of *kali* Serang and 2500m to the east of the Bogowonto River.

Main features: *Stupa*.

State of preservation: Two fragments of the *stūpa* are still visible.

Description: Nowadays, only a square stone with mouldings on the fourth sides and a top piece are visible. Both pieces fit with one another and can be identified as fragments of a *stūpa*.

> Earlier excavations revealed the presence of at least two distinct structures. One is a square foundation measuring 4m x 4m, orientated around cardinal points and made out of river stones. It was probably the foundation of the *stūpa*. The second structure is further west and consists of a brick wall running SW-NE. Around both structures were found fragments of crowning and bricks, some adorned with garland, others obviously belonging to a *stūpa* (Suryaninsingh 1990: 29ff).

Sculptures:

> A small bronze was found in the same village. It was a standing male figure holding a *wajra* in one hand and a lotus in the other hand. Atop the flower laid a book. (Nitihaminoto 1976b: 2).
> Three *yoni* and two *lingga* were found in the nearby village of Karangwuluh (*Daftar peninggalan benda DIY* 1985: 21; Hartono 1988: 4).

PRINGTALI

Administrative localization: Pringtali, Kebonharjo, Samigalu, Kulon Progo, DIY.

Geographical localization: 07º 42' 46.4" S
110º 09' 52.6" E
Precision: Map.
Alt.: 425m

Surroundings: In lower middle land, in the heart of the Menoreh hills.

Religion: Hindu.

Main features: Single temple (miniature).

State of preservation: Restored.[69]

Description:

> Some scattered stones (Verbeek 1891: 161) and a *yoni* atop of hill testify the ancient presence of a temple. However, Hoepermans was unable to find any temple remains (Hoepermans 1913: 218). According to the SPSP DIY, remains of a miniature *candi* would be visible (SPSP DIY 2000, personal communication).

[69] I have been unable to visit the site. However, according to information from the SPSP DIY and recent photographs of the site kept at the Bogem office, the temple is in good state of preservation.

SAMBIROTO

Administrative localization: Sambiroto, Banyuroto, Nanggulan, Kulon Progo, DIY.

Geographical localization: 07º 48' 43.1" S
110º 10' 21.6" E
Precision: 17m
Alt.: 55m

Surroundings: In lowland, on the slope of a hill, 300m from *kali* Serang.

Religion: Unknown.

Main features: Single temple.

State of preservation: Only a few stones are still *in situ*.

Description: The site is a mere low mound of mixed earth and bricks, overgrown by trees. A line of bricks, to the east of the mound is still *in situ*. According to their orientation the structure must have been positioned around the cardinal points.

ABANG

Administrative localization: Blambangan, Jogotirto, Berbah, Sleman, DIY.

Geographical localization: 07° 48' 37.3" S
110° 28' 07.0" E
Precision: 7m
Alt.: 150m

Surroundings: In lowland, atop of the 150m-high *gunung* Abang, 900m east of the Opak River. The hill rises in the middle of the plain between the Opak and the Gawe/Sorogeduk Rivers. *Candi* Abang is located 400m to the northwest of Sentono, 1250m to the northeast of Candirejo. From the *candi*, one has a magnificent view of the surroundings, including the Yogyakarta plain (west) and Mt Merapi (north). Eastwards and southwards, the eye encounters the impressive rocky barrier of the Gunung Kidul, which seems to form a crescent around Mt Abang.

Religion: Unknown.

Main features: Single temple.

State of preservation: Mound.

Description: *Candi* Abang must have been a huge temple, but it is today reduced to a 6m-high heap of bricks without any shape. Some parts of the structure were apparently in stone, as testified by a stone base still lying a few meters away from the temple remains. Given its very bad state of preservation, it is impossible to draw any plan of the temple. A test pit revealed remains of a pit and a depression is still visible at its centre, suggested the presence of a temple pit or a *stūpa* inner chamber.

> According to archaeological report the building stood in the middle of a courtyard covered with bricks (*Laporan kegiatan Abang, Sentono and Jepang* 2000: 3).

Inscriptions:

> A short inscription has been found on the site and is dated 872 A.D. (*Laporan kegiatan Abang, Sentono and Jepang* 2000: 4).

NGESONG

Administrative localization: Blambangan, Jogotirto, Berbah, Sleman, DIY.

Geographical localization: Unknown.[70]

Surroundings: In the lowland, on the northern slope of *gunung* Abang, a hill that rises 1km east of the Opak River, in the middle of the Sorogedug valley.

Religion: Unknown.

Main features: Caves.

State of preservation: Unknown.

Description:

The site is composed of two caves. The first one opens to the north and is a natural "abri sous-roche". Stone blocks and bricks fragments testify its early occupation. There might be remains of a building that once stood there, under the shelter of the natural rock (*Indentifikasi Situs Gua Ngesong* 1989: 1). The second cave is situated in front of cave I. It is turned towards the south and is more a sort of niche than a true cave. No remains give any clue concerning the religious belonging.

SENTONO

Administrative localization: Blambangan, Jogotirto, Berbah, Sleman, DIY.

Geographical localization: 07° 48' 47.0" S
110° 28' 17.5" E
Precision: 20m
Alt.: 100m

Surroundings: In the lowland, at the southern feet of *gunung* Abang, a hill that raises 1km east of the Opak River. The site is located 400m to the southeast of *candi* Abang, 1500m east of Candirejo.

Religion: Hindu.

Main features: Caves; facing west.

State of preservation: The three caves are still clearly visible, although the sculptures have been badly damaged (particularly those of the two southernmost caves).

Description/Sculptures: Three small shrines are excavated out of the natural rock. At that place, the hill forms a crescent looking south. The caves are pierced so that their entrances are turned to the west.
The southern one is 1.90m deep, 1.73m large and 1.41m high. Its eastern wall was adorned with a relief but it has almost completely disappeared.

It might have been a turtle (*Laporan Abang, Sentono dan Jepang* 2000: 7).

In the middle of this cave there is a small pool (53x50x12cm).
The central shrine is a mere niche, 50cm deep, 1.17m large and 1.25m high. On its wall is carved a relief showing three figures, one seated and two standing by his side. In front of the niche there is a small *yoni* with its *lingga* and a small pool (30x50x13cm). Both are directly carved in the rock.
The third cave is a kind of corridor (2.85m deep, 1.30m large and 1.40m high) with, on each side a relief. On its northern wall, one can see Mahākāla (west) and Durgā (east). On the southern, there are Nandiśwara (west) and Agastya (east).

[70] I have not been able to find the site.

Unfortunately, the rear wall is very badly preserved but, according to the SPSP DIY it was once possible to see a seated figure drawn with black paint (*Laporan Abang, Sentono dan Jepang* 2000: 6).

In the middle of the northern cave a *yoni* and its *lingga* have been carved directly from the natural rock.

TANJUNGTIRTO

Administrative localization: Tanjungtirto, Kalitirto, Berbah, Sleman, DIY.

Geographical localization: 07° 47' 27.7" S
110° 27' 50.1"E
Precision: 16m
Alt.: 110m

Surroundings: In lowland, on flat ground, 200m west of the *kali* Opak.

Religion: Hindu.

Main features: Scattered stones.

State of preservation: Scattered stones.

Description/sculptures: The only visible remains are a *yoni* and a few stones.
The *yoni* (B579) is 1,33m square and about the same height. On its front face is carved a beautiful *nāga*, although the animal head is badly damaged. On the sides run garlands and other flowers. On the topside, at the birth of the draining duct, is carved a *kāla* head.
Some *candi* stones are to be found underneath and nearby this *yoni*.

Another *yoni* was found in the area (B577), together with carved stones and fragments of finial (*Hasil Berbah*).
Villagers mention the earlier presence of sculptures. According to Krom, sculptures were indeed transferred from Tanjungtirto to Yogya (Krom 1923, I: 252).

KLODANGAN

Administrative localization: Klodangan, Sendangtirto, Berbah, Sleman, DIY.

Geographical localization: 07° 48' 45.6" S
110° 25' 34.6" E
Precision: 20m
Alt.: 90m

Surroundings: In the lowland, on flat ground, 500m east of the Blotan River. The site is located 750m to the east-southeast of Sampangan and 1km northeast of Mantup.

Religion: Unknown.

Main features: Organic compound; staggered square.

State of preservation: Only the base of the temple is still standing.

Description: This site, in a poor state of preservation, has partly been excavated. It was made of at least two structures, a temple and a rectangular building (now disappeared).
The temple was composed of a square base (8.75m x 8.75m) and a staggered square body (6.50m x 6.50m). Although its orientation is unknown (east or west), its axis is SE-NW and 6-7° from magnetic north.

The rectangular structure, may be some kind of *pendopo*, was located 25m south of the temple.[71] It was roughly 4m (east-west) x 6m (north-south).[72] As the square temple, the building axis is SE-NW, but it is more than 10° from magnetic north.

CANDIREJO

Administrative localization: Candirejo, Tegaltirto, Berbah, Sleman, DIY.

Geographical localization: 07º 48' 51.3" S
110º 27' 26.3" E
Precision: Map.
Alt.: 92m

Surroundings: In the lowland, on flat ground, a few hundred meters west of the Opak River, not far from the meeting point between the latter and *kali* Tepus. The village of Candirejo is located 1250m to the southwest of *candi* Abang and 1500m to the west of Sentono.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description:

Some temple stones and one *yoni* (B569) have been found in this village (*Hasil Berbah*).

JETIS

Administrative localization: Jetis, Argomulyo, Cangkringan, Sleman, DIY.

Geographical localization: 07º 40' 05.7" S
110º 27' 49.7" E
Precision: Map.
Alt.: 387m

Surroundings: In lower middle land, in an area where the slope of Mount Merapi already marks the landscape. Some 200m west of *kali* Gendol.

Religion: Hindu.

Main features: Sanctuary type 5; facing west.

State of preservation: No visible remains.

Description:

The site is made at least of two small temples in a line[73] (*Laporan singkat ekskavasi Cangkringan III*: 2). The structures are similar in shape and dimensions; they are both perfectly facing west. Their bases are square (roughly 6m). Out of the temple bodies, nothing remains.

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[71] Only the temple and the area directly south of it have been excavated. Other structures might have existed.

[72] According to a map made by the SPSP DIY, a wall measuring 10m x 7m surrounded it. However, it is not clear whether this wall was an enclosure or a part of a first base (SPSP DIY 2000, *Peta Grid Situs Klodangan*).

[73] West of the temple there is a modern house, so that this area has not been excavated. It is possible that other buildings once stood west of the remaining temples.

Sculptures:

A *yoni* was found among the ruins of the southern temple (*Laporan singkat ekskavasi Cangkringan III*: 2).

BESALEN

Administrative localization: Besalen, Glagaharjo, Cangkiran, Sleman, DIY.

Geographical localization: 07º 39' 04.1" S
110º 27' 54.6" E
Precision: Map.
Alt.: 475m

Surroundings: In lower middle land, in an area where the slope of Mount Merapi is already steep, 100m east of the Gendol River.

Religion: Hindu (?).

Main features: Unknown.

State of preservation: No visible remains.

Description:

Within the villages of Besalen and Guling, numerous temple stones were found, together with fragments that could have belonged to *stūpa* or finila pinnacles. Given the amount of loose stones, it is highly probable that a temple once stood here (*Laporan identifikasi Besalen* 1985: 4-15).

Sculptures:

One Durga, one bull, one standing male figure and one *lingga* bearing an inscription were found here (*Laporan identifikasi Besalen* 1985: 4-15).

PUREN

Administrative localization: Pringwuling, Condongcatur, Depok, Sleman, DIY.

Geographical localization: 07º 46' 17.3" S
110º 23' 48.9" E
Precision: Map.
Alt.: 135m

Surroundings: In the lowland, on flat ground, 100m to the west of *kali* Gajahwong and not far from the meeting point between the latter and the Pelang River.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Excavations showed numerous stone blocks testifying the former existence of a structure. Unfortunately nothing was *in situ*. In the village two finials and one pinnacle were found (*Laporan khusus Situs Puren*: 2).

CUPUWATU

Administrative localization: Cupuwatu, Purwomartani, Kalasan, Sleman, DIY.

Geographical localization: 07º 46' 28.3" S
110º 27' 04.9" E
Precision: Map.
Alt.: 130m

Surroundings: In lowland, on flat ground, 1km east of *kali* Kuning and 900m west of *kali* Tepus, 1400m to the south southeast of Sambisari.

Religion: Buddhist.

Main features: Stūpa.

State of preservation: No visible remains.

Description:

A fine *stūpa* was discovered here in the middle of the nineteenth century (Bosch 1915a: 31).

KADISOKA

Administrative localization: Kadisoka, Purwomartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 45' 19.6" S
110° 26' 45.6" E
Precision: 13m
Alt.: 155m

Surroundings: In lowland, 100m west of the Kuning River. The site is located 800m to the north of Sambisari.

Religion: Unknown.[74]

Main feature: Single temple; facing west.

State of preservation: Only the base remains.

Description: This huge temple has not been entirely excavated yet and only part of it is visible. It faces west and was covered by 3m of volcanic mud.
The sanctuary was left unfinished: only five layers of the base were built. It measures 6,90m north south and 6,40m east west. The temple is not perfectly orientated around the cardinal points (the difference is approximately 10°).

Miscellaneous archaeological finds:

The temple pit was excavated in February 2001. At its bottom were found small semi-precious stones, fragments of gold and a square deposit box (*peripih*). The box contained, together with earth, a gold plaque carved with an opened lotus flower (*Laporan pengankatan Kadisoka* 2001).

[74] The association of *candi* Kadisoka with Hinduism is based on the presence of a temple pit at the centre of the *cella*, a feature that seems to be typical of Hindu buildings, according to *Laporan penggalian Kadisoka* 2001.

SAMBISARI

Administrative localization: Sambisari, Purwomartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 45' 44.8" S
110° 26' 49.0" E
Precision: 8m
Alt.: 145m

Surroundings: In lowland, on flat ground, some 300m east of the Kuning River and 800 to the south of Kedulan.

Religion: Hindu.

Main features: Sanctuary type 2; facing west; square main shrine; enclosure walls.

State of preservation: Restored up to the superstructure.

Description: This compound is made out of four shrines and two enclosure walls.
The main temple faces west.

Its exact orientation is 272° 03' (Siswoyo 1996: 6).

Its base is square (13.65m x 13.65m), with a small projection on the western side.
The platform is reached through a *gopura* and is bordered by a balustrade. The latter is flanked with 15 tower-like elements (four on the northern and western sides, 5 on the eastern side and two at each side of the *gopura*). On the platform itself, one can notice 12 stone bases (4 square bases on the western side, round bases on the other sides).[75]
In the centre of the platform stands the temple body. It measures 4.70m x 4.70m and has lightly projecting niches on the northern, eastern and southern sides. The entrance is also protruding. The *cella* is 3,10m square and houses a *yoni*.[76]
In front of the main temple, one finds three secondary shrines, on a line, facing east.
The central shrine is rectangular. Its base measures 4.80m (E-W) x 5.90m (N-S). The platform is topped by a balustrade adorned with 7 tower-like elements (at the corners and at the centre of the northern, western and southern sides).[77]
The northern and southern secondary shrines share the same features, although adapted to a square plan (4.80m x 4.80m).
The central courtyard where stand the main temple and its secondary shrines measures roughly 46m x 46m.[78] It is further flanked by 8 *lingga*-like boundary stones (one in each corner and at the centre of the four sides).[79] These boundary stones demarcate a space of 35.40m x 35.70m that encloses all the buildings.[80] An enclosure

[75] According to Dumarçay (1986: 48), those supports would have been part of a wooden structure that covered the temple. This would explain the flat proportions of Sambisari, quiet unusual for such a "late" building.

[76] This *yoni* is too large to pass through the door and must have been placed before the building of the roof.

[77] It seems that, for the three secondary shrines, the only stone element to rise above the base was this balustrade. They do not appear as closed temples; it is possible that they were never covered with any wooden structure neither (no traces of such a structure are left) and were open-air structures.

[78] Inner measurements.

[79] The boundary stones are not exactly at the centre of the different sides. On the eastern and northern sides, they are slightly shifted to the north, while on the northern and southern sides they are shifted to the east. Their positions are so that they are not in the axis of the enclosure doors.

[80] The centre of the space determined by the boundary stones (as well as the centre of the central courtyard) does not correspond with the position of the main *yoni*. Actually, it falls south of the staircase leading to the main temple.

wall opened to the four directions borders this first courtyard.[81] The *gopura* of this first enclosure were left unfinished, as testified by the lintels prepared to receive *kāla* that wee never carved.
The second courtyard is more or less 1,15m below the first one.[82] It measures roughly 134m x 134m. As it has not been fully excavated, there is no information available about the *gopura* of this second enclosure wall.

Sculptures: The niches of the main temple shelter sculptures of Durgā (N), Gaṇeśa (E) and Agastya (S). A 41 cm square pedestal with padmasana and naga heads is visible within the central secondary shrine.

Misceallenous archaeological finds:

Under the stone bases around the main temple were found cavities. 4 of them had already been plundered, but in the remaining ones were found bronze pots, *kendi*, bowls and plates, bronze leaves and gold strips (Soediman 1980: 161-162).

Inscriptions:

In one of the circular stones surrounding the temple body of the main temple was found a gold leaf bearing a short inscription and reading "*Om siwa sthana*" (Soediman 1980: 162; Setianingsih 2002: BG 525).

PONDOK

Administrative localization: Pondok, Selomartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 44' 04.1" S
110° 28' 30.5" E
Precision: 8m
Alt.: 180m

Surroundings: In lowland, on flat ground, with a view on both Mount Merapi and *gunung* Kidul (by clear weather). The site is located a hundred meters from a small unnamed watercourse, 400m east of *kali* Bening and 800m west of the Opak River.

Religion: Hindu.

Main features: *Yoni*.

State of preservation: No standing structure.

Description: The only things left are a cut stone, two small *yoni* and a round stone with a hole.

Sculptures:

A sculpture of a man adorned with jewel was also found here (B698) and might be identified as a *bodhisattwa* (*Hasil pengumpulan data Kalasan*; *Daftar Peninggalan Benda DIY* 1985: 122).[83]

[81] According to information gathered during the excavation it is probable that the northern door was closed (*Mengenal candi Sambisari*: 8).
[82] Therefore, and given the short proportions of the main temple, the structures of the inner courtyard are invisible for people wandering in the second courtyard
[83] On photograph, the sculpture does not seem to bear any attribute of a peculiar *bodhisattva*.

BOGEM

Administrative localization: Bogem, Tamanmartani, Kalasan, Sleman, DIY.

Geographical localization: 07º 45' 17.3" S
110º 29' 14.0" E
Precision: Map.
Alt.: 135m

Surroundings: In lowland, on flat ground, a few hundred meters west of *kali* Opak. The site was located roughly 550m to the southwest of Loro Jonggrang, 750m to the north-northwest of Gatak and 1000m to the northeast of Bugisan.

Religion: Buddhist.

Main features: Sculptures.

State of preservation: No visible remains.

Description/sculptures:

The temple that once stood in Bogem was already no longer visible in the beginning of the 20th century (Bosch 1915a: 47).
Sculptures coming from here (mainly a *rākṣasa*, Padmapāni, Amitābha and Akṣobhya) have been moved to the nearby office of the Suaka Peninggalan (B692, B693, B694, B695) (*Hasil pengumpulan Kalasan*).

BUGISAN (Dinangon, Randoe Goenting) [84]

Administrative localization: Bugisan, Tamanmartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 45' 34.5" S
110° 28' 45.6" E
Precision: 12m
Alt.: 140m

Surroundings: In lowland, on flat ground, 550m west of the Opak River and 250m east of the *kali* Bening. The site is located 350m to the northwest of *gunung* Mijil and 600m to the east-southeast of Sari.

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[84] The name Bugisan is not found in ancient inventories, although it seems that the site was already known in the 19th century, but under a different name. IJzerman makes no mention of it in his text, but on his map the word *beelden* is written near the *desa* Randukunting, at the very place where Bugisan is located. The lack of information from IJzerman's inventory and the proximity with *candi* Dinangon/ *gunung* Mijil leaded later authors to mix up both sites. Indeed, in Verbeek's inventory, Randoe Goenting and Dinangon are under the same number. The only information he gives is that a few sculptures were found here, among others one *Buddha* and two *bodhisattwa* (Verbeek 1891: 178).
Similarly, Bosch uses the name Randoe Goenting to designate a vanished temple thought to have been located in the *kampung* Dinangon (Bosch 1915: 47). As for Krom, he too thought that the site called Randoe Goenting was probably the same as the *candi* Dinangon mentioned in earlier inventories (Krom 1923, I: 269). However it appears through fieldwork that IJzerman's map was correct and that Randoe Goenting and Dinangon are two separate sites. The first is now known as Bugisan and it was there that the Buddhist sculptures mentioned by Verbeek were found (and are still today). As for Dinangon, it should be associated with *gunung* Mijil (see this entry for more details).
According to IJzerman, *candi* Dinangon was located on a hill south of Randoe Goenting village. The summit of the hill had been made flat and was reached via staircases. He adds that no traces of a building were visible (IJzerman 1891: 34). This corresponds indeed to what can be seen today at *gunung* Mijil: the summit is flat and houses a graveyard that one can reach via staircases located on the eastern side of the hill.

Religion: Buddhist.

Main features: Single temple.

State of preservation: Only sculptures and loose stones remain.

Description: Stones, carved or not, are to be found around the whole *kampung*, leaving no doubt that a temple stood there. Parts of staircases, antefixes, *makara* and *kāla* (B 683, B685 and B686 in *Hasil pengumpulan Kalasan*) can be identified. Two huge stone vats are also lying in the neighbourhood.

In 1937, remains of the limestone foundation of a building were found (Stutterheim 1937:16).

Sculptures: Six Buddhist sculptures are still visible, gathered closed to each other (probably 3 *Buddha* – B675, B676, B677 - and 3 *bodhisattwa* – B679, B680, B681).[85]

GUNUNG MIJIL (Randukunting, Dinangon)

Administrative localization: Randukunting, Tamanmartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 45' 43.3" S
110° 28' 53.43" E
Precision: 121m
Alt.: 152m

Surroundings: In lowland, on the top of the small *gunung* Mijil, some 400m west of the Opak River and 500m east of *kali* Bening. The site is located 350m to the southeast of Bugisan, 700m to the west of Gatak and 800m to the east of Sari.

Religion: Hindu.

Main features: Unknown.

State of preservation: Loose stones.

Description: Some *candi* stones scattered within a Muslim graveyard and one Hindu sculpture (probably an Agastya), though not well preserved.

SARI (Bendah, Bedah, Bendan)

Administrative localization: Bendan, Tirtomartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 45' 41.2" S
110° 28' 26.6" E
Precision: 52m
Alt.: 138m

Surroundings: In lowland, on flat ground, 200m west of the *kali* Bening and 700m to the east of *kali* Wareng. The site is located 800m west of *gunung* Mijil, 600m west-northwest of Bugisan and 600m to the north-northeast of Kalasan.

Religion: Buddhist.

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[85] All *Buddha* are seated in lotus, wearing a monk robe. The better preserved has still his head and one can see his typical curls, *uṣnīṣa* and long ears. Two of the *Buddha* were probably in *bhūmiṣparśamudrā*, while the third one might have been in *waradamudrā*. Inventory numbers are taken from: *Hasil pengumpulan Kalasan*.
One of the *bodhisattva* bears a Brahmanical cord.

Main features: Single temple; facing east; rectangular with porch; enclosure wall.

State of preservation: Restored up to the superstructure.

Description: *Candi* Sari is a large rectangular building facing east.

> Its exact orientation is actually 89° 51' (Siswoyo 1996: 6).

Its base measures 20m (n-S) x 14m (E-W) and has a single deep projection on the eastern side.

The temple body is 18m (N-S) x 10.70m (E-W). It probably had an important porch on the eastern part (traces of it are still visible on the eastern wall). Only two niches pierce the outer wall of the temple body: one is located in the eastern part of the northern wall, the other in the eastern half of the southern side. Walls are divided into panels and adorned with divinities from the Buddhist pantheon.

A corridor leads to the central *cella*. The three *cella* have roughly the same dimensions; they are 3.50m (N-S) x 5.80m (E-W). The central room has one niche in the centre of the northern and southern wall, as well as doors leading to the two other *cella*. The southern and northern *cella* have only one niche each (respectively in the southern and northern walls). Both rooms have also windows (east and south for the southern *cella*, east and north for the northern one).

The cornice running along the walls of the three rooms suggests that there once was a wooden floor dividing each room vertically. The upper floor was reached via the southern room. There were thus 6 rooms rather than 3.

Because of its shape and peculiar inner space, *candi* Sari is considered as a *wihāra*, rather than as simple temple.[86]

> Test pits made to the north and west of the temple revealed the existence of an enclosure wall (Stein Callenfels 1929a: 11).
>
> Fragments of limestone *stūpa* were also found next to the temple, but they were not *in situ* and might have originated from *candi* Kalasan (Stein Callenfels 1929a: 15)

Inscriptions: Minor inscription in black back on the lower inner walls (early to mid 9th c.)

Miscellaneous archaeological finds:

> Seven earthen pots were also discovered to the north of the temple, some 0.25m beneath the original ground level of the courtyard. In two of them there were iron fragments. As they were not found within a stone casket or a *stūpa*, it is difficult to determine if those pots are urns or just common ceramics (Stein Callenfels 1929a: 11).

[86] This organization makes think to the prayer and meditation halls (*wihāra*) one usually finds in Buddhist monasteries, allowing monks to both gather and still be able to enjoy some loneliness in side rooms. IJzerman (1891:26) compares Sari with present-day Buddhist temple in Nepal, where the ground floor is dedicated to the adoration of idols, whereas the upper floor is used as habitation for monks. It is on the base of this structural similarity that both Sari and Plaosan have been called *vihāra*, although no inscription mentions them as such.

KALASAN (Kalibening)

Administrative localization: Kalibening, Tirtomartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 46' 02.2" S
110° 28' 21.1" E
Precision: 10m
Alt.: 135m

Surroundings: In lowland, on flat ground, 125m west of a small watercourse, 300m west of *kali* Bening and 600m east of the Opak River. The site is located 600m to the south-southwest of Sari.

Religion: Buddhist.

Main features: Concentric compound; facing east; staggered square with 4 *cella*; enclosure wall.

State of preservation: Preserved up to the superstructure, even though the foreparts housing the secondary *cella* have long crumbled away.

Description: The original compound was probably much larger than the remains visible today: apart from the main temple, it probably counted housing for monks or pilgrims, as testified by remains of a *pendopo* found in the 19th century.

The main temple is an impressive staggered square facing east.

> Its exact orientation is 84° 34' (Siswoyo 1996: 6).

The base rises above a low square terrace (36m x 36m). The base itself is a staggered square measuring 27m x 27m; its projections are 20.5m large and 3.5m deep. It can be reached via four staircases. The eastern staircase was preceded by a beautifully carved doorsill.[87] A wall or a low fence, out of which only a few traces remain, once bordered the platform.

At the centre of this platform one finds the temple body; as the base, it is a staggered square (16.5m x 16.5m). It is reached via four staircases. Its outer walls are pierced by four doors and 16 niches (eight in the walls of the main square, the others in the lateral walls of the different projections).

North, west and south, a corridor leads to a 3.5m square secondary *cella*. The sidewalls of the *cella* are pierced by one niche, while a large pedestal occupies its rear part. The main entrance of the temple body, located east, opens on a corridor leading to a vestibule similar in dimensions to the three secondary *cella*. 3 niches pierce each of the sidewalls of this vestibule. West of the vestibule, a short corridor leads to the central *cella*. The latter is 7.50m x 7.50m. A large pedestal occupies its rear.

> According to Dumarçay (1986:20), the temple underwent modifications of its plan. During its first state, which would correspond to the date of the inscription of Kalasan (778), the temple was square. It is only in a later phase, probably around 790, that it acquired its present plan, a staggered square with four *cella*.
> Remains of an earlier structure were indeed discovered in 1940, inside the temple body and the base (Stutterheim 1940: pl.6).

Surrounding the main temple there are 52 small limestone structures (14 on each side).[88] These are small square bases measuring 2.10m x 2.10m.

> Fragments of their superstructure were still numerous enough for Van Stein Callenfels to identify them as *stūpa* (Stein Callenfels 1929a: 8).

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[87] To my knowledge, this stone is quite unique in Central Java. However, similar stones are common in Cambodia.

[88] Actually, most of those along the southern side have disappeared.

Northwest, east and west of the main temple were discovered remains of an enclosure wall (Stein Callenfels 1929a: 8; 1929b:137). According to the Dutch scholar the wall was probably similar to the low fence around the main temple of *candi* Sewu. In 1929, a test pit was made in order to identify the eastern gate of the enclosure wall. No traces of *gopura* were found, but 6 small earthen pots were discovered under the ground (Stein Callenfels 1929b: 138).
In the nineteenth century a brick *pendopo* terrace was still to be found 150 m south of the temple (Brumund 1854: 40-41; IJzerman 1891: 15-16; Krom 1923 I: 263). The latter structure was quite large. Its length was built on an east-west axis. It had two entrances, one to the east and another to the west. Both entrances were looked upon by guardian figures.[89] As sculptures on the eastern side were bigger, one is allowed to suggest that this was the main entrance. The *pendopo* itself was in wood and supported by 14 pillars. A 22-columns veranda surrounded it.

Inscriptions:

One stone inscription (Kalasan, 778-779 A.D.), 6 gold plates and 5 silver plates (Sarkar 1971-1972: nr 5).

Miscellaneous archaeological finds:

Within the 52 structures surrounding the main temple were found urns. Unfortunately, they had already been disturbed (Stein Callenfels 1929a: 8). These urns actually seem to have been stone caskets. According to Bernet Kempers, 81 such caskets were discovered. They contained, among other things, ashes and metal fragments (maybe remains of shavers). A miniature mirror was also discovered in or near the *stūpa*, as well as remains of cloth (Bernet Kempers 1954: 29) and two inscribed gold leaves (Bernet Kempers 1954: fig.22).

KEDULAN

Administrative localization: Kedulan, Tirtomartani, Kalasan, Sleman, DIY.

Geographical localization: 07° 44’ 33.2” S
110° 28’ 11.0” E
Precision: 7m
Alt.: 165m

Surroundings: In lowland, on flat ground, 35m east of the small *sungai* Wareng and 450m west of the Bening River, with a view on both Mount Merapi and Gunung Kidul. The site is located 1100m to the southwest of Pondok.

Religion: Hindu.

Main features: Sanctuary type 2; facing east; square; enclosure wall.

State of preservation: The base, as well as parts of the temple body, is preserved.

Description: The temple was found under 3-4m of volcanic ashes, like Sambisari, Morangan and Wades. It was nevertheless badly damaged and is currently under restoration.
Its base is 13,5m square with a projection to the east, for the staircase.[90]
A balustrade pierced on its eastern side by a small *gopura* bordered the platform. The pavement of the base had two levels: it is lower near the temple body than near the balustrade. On the highest level are 12 square column bases (4 on each side). On the lowest level, closer to the temple body, are 9 smaller column bases.

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[89] The guardians have both been removed from the site. Two of them ended up at the Sono Budoyo Museum in Yogyakarta, while the two others were sent to the Presidential Palace in Jakarta (Bernet Kempers, Soekmono 1974: 12).

[90] Measurements are approximative, since the temple was partly dismantled where I visited it.

The temple body is 4,7m square, with 5 niches (one at the centre of the northern, western and southern walls, two on the eastern wall, on each side of the entrance door).
The *cella* measures 3,2m x 3,2m.

Numerous stones from the balustrade and even from the temple body are re-used from another structure. Traces of modifications are also visible at the *gopura* (it seems to have been made smaller) (Haryono 2003, Personal communication).
Remains of an enclosure wall have been found 13,17m south of the temple (Haryono 2003, Personal communication).

Sculptures:

Several sculptures were found among the remains, not far from their original position, i.e. a Durgā *Mahīṣāsuramardinī*, a Gaṇeśa, a *lingga* and a *yoni* (*Laporan ekskavasi Kedulan* 1994). An Agastya would also have been discovered more recently (Haryono 2005, personal communication).

Inscriptions:

Two stone inscriptions have been discovered during excavations (Haryono 2005, personal communication), as well as two inscribed metal leaves (one of gold, the other of silver). The gold leaf reads "oṃ lā oṃ ō saḥ oṃ jūr jū saḥ". The silver leaf reads "oṃ lā oṃ jū saḥ oṃ raga jñana" (*Laporan ekskavasi situs Kaliworo* 1990: 32)

Miscellaneous archaeological finds:

An empty peripih casket was found in 2005 (Haryono 2005, personal communication)

SANAN

Administrative localization: Sanan, Tirtomartani, Kalasan, Sleman, DIY.

Geographical localization: 07º 46' 28.8" S
110º 28' 26.3" E
Precision: Map.
Alt.: 120m

Surroundings: In lowland, on higher ground, 100m west of *kali* Opak and 100m east of the Kali Bening River, not far from the meeting point of both watercourses. The site is located 550m west of Ngaglik, 750m west of Watugudig and 800m south of *candi* Kalasan.

Religion: Buddhist.

Main features: Unknown.

State of preservation: No visible remains.

Description:

According to ancient descriptions the site was located on a small elevation. Numerous stones testified the former presence of a temple, among others 5 doorsills and 6 stone cylinders (Verbeek 1891: 175).

Sculptures:

Ten Buddhist sculptures were found here; among them were 8 Buddha and one Tārā (Bosch 1915a: 41; Krom 1923, I: 255; Verbeek 1891: 175).[91]

[91] Numerous stones have been discovered in this area by the SPSP DIY, in the villages of Brintikan (to the northwest) and Sidomulyo (to the northeast). Among plain blocks, mouldings and finials were one *Buddha* in *dhyānamudrā* and one goddess, also in *dhyānamudrā* (*Hasil pengumpulan Kalasan*). The latter sculptures are maybe the remains of those seen by Verbeek.

BALANGAN

Administrative localization: Balangan, Sendangharjo, Minggir, Sleman, DIY.

Geographical localization: 07º 43'04.1" S
110º 16' 4.1" E
Precision: Map.
Alt.: 140m

Surroundings: In lowland, on flat ground, 1km south of the Progo River and the *kali* Putih, near a small unnamed watercourse. The site is located 1250m to the southwest of Punden.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/Sculptures:

No temple stones have been found in this village, but the SPSP DIY noticed the presence of four sculptures: one bull (B884), one Agastya (B887), one Gaṇeśa (B888) and one standing male figure (B885) (*Hasil pengumpulan Minggir*). As their style and dimensions are similar, it is probable that all these statues belonged to a single group and come from the same temple.[92]

PUNDEN (PLANDEN, PLUNDEN)

Administrative localization: Punden, Sendangharjo, Minggir, Sleman, DIY.

Geographical localization: 07º 42' 36.2" S
110º 16' 35.8" E
Precision: Map.
Alt.: 135m

Surroundings: In the low land, on the southern bank of the *kali* Putih, in an area flooded by numerous small watercourses flowing down Mount Merapi to the Progo River (which is 750m west of the site). Punden is also near the confluence of the *kali* Putih and the Progo River, and close to the meeting point between the Progo River and another important watercourse, the *kali* Krasak. The site is located 1250m northeast of Balangan.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Apart from stone blocks, two *yoni* (B890, B891) and a fragment of garland with squirrels (B894) were discovered here (*Hasil pengumpulan Minggir*).

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[92] The standing male figure is probably a *dwārapāla*. Compared with the traditional iconography of Central Javanese temples, Durgā and the second *dwārapāla* are missing. It is possible that the sculptures originally come from the village of Punden, where temple remains have been found (see below).

MULUNGAN WETAN

Administrative localization: Mulungan Wetan, Sendanghadi, Mlati, Sleman, DIY.

Geographical localization: 07º 43' 45.6" S
110º 22' 03.3" E
Precision: Map.
Alt.: 185m

Surroundings: In lowland, on flat ground, between two branches of the Winongo River (500m to the east and west).

Religion: Buddhist (?).

Main features: Single temple.

State of preservation: No visible remains.

Description:

Traces of a stone foundation were noticed in 1935 (Stutterheim 1931-1935: 17). Various stone fragments were found here, together with a finial (probably part of a *stupa*) (B279) (*Hasil pengumpulan Mlati; Daftar Peninggalan Benda DIY* 1985: 92-94). The discovery of four (un-inscribed) boundary stones (*Daftar Peninggalan Benda DIY* 1985: 94) confirms the former presence of a temple in the area.

Sculptures:

Four sculptures were also discovered: one seated goddess with a hand opened on her right knee (B278), one male figure in a similar position[93] (B275), one seated male figure in monastic clothes and touching the ground with his right hand[94] (B276) and another beheaded male figure adorned with jewels (B277) (*Hasil pengumpulan Mlati*; *Daftar Peninggalan Benda DIY* 1985: 92-94). [95]

NGAGLIK

Administrative localization: Ngaglik, Sinduhadi, Mlati, Sleman, DIY.

Geographical localization: 07º 45' 38.2" S
110º 21' 10.7" E
Precision: Map.
Alt.: 135m

Surroundings: In lowland, on flat ground, 100m tot the east of the Dengung River and 400m to the west of *kali* Winongo.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

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[93] The latter is adorned with jewel, but his position and the presence of another male figure in monastic clothes suggest that it might have been a *bodhisattva*.

[94] Given the clothes and the *bhūmiṣparśamudrā* one should probably identify the sculpture as a *Buddha*.

[95] Sculptures were also found in the nearby village of Mulungan Kulon; among them three would be Buddhist (one would be Akṣobhya), while one fragment would belong to a Gaṇeśa (*Daftar Peninggalan Benda DIY* 1985:92, 98-99).

Description/sculptures:

Several sculptures were found in the village, among others one bull (B432), one Durgā (B433), one Mahākāla (B434), one Gaṇeśa (B436) and two *yoni* (B439, B440) (*Hasil pengumpulan Mlati*). Their similarities and complementarities let think that they might belong to the same temple. Unfortunately, the area is densely populated (it is now part of the city of Yogyakarta) and no traces of a building have been identified.

BURIKAN

Administrative localization: Burikan, Sumberhadi, Mlati, Sleman, DIY.

Geographical localization: 07°42' 49.3" S
110° 20' 08.7" E
Precision: 12m
Alt.: 190m

Surroundings: In lowland, on the slope of a hill, in an area flooded by numerous small watercourses, between two branches of the Ngalang River (respectively 200m to the west and 300m to the east of the site). The site is located 600m to the east of Jumeneng, 1050 to the east southeast of Konteng, 1100m to the north northwest of Warak and 1150m to the northeast of Candi.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description/sculptures:

Lots of *candi* stones were found in this village by the SPSP DIY, testifying the former presence of a temple (plain blocks, fragments of finials, antefixes...). A few sculptures were also discovered: a goddess (B298/BG 418), two *yoni* (B302, B303), a *makara* (B345) and a magnificent Śiwa's head (B314) with a bun and a third eye (*Hasil pengumpulan Mlati*). [96]

Today just a few blocks remain, essentially fragments of finials. Some of them were left non-carved.

Miscellaneous archaeological finds:

Two jars, that might have been part of a foundation deposit, were found by the SPSP DIY (*Daftar peninggalan benda DIY* 1985: 85).

CANDI

Administrative localization: Candi, Sumberhadi, Mlati, Sleman, DIY.

Geographical localization: 07° 43' 05.6" S
110° 19' 36.5" E
Precision: 10m
Alt.: 190m

Surroundings: In the lowland, on flat ground, some 300m to the east of *kali* Konteng, 500m to the west of the Ngalang River. The site is located 600m to the southwest of Jumeneng, 700m southeast of Konteng and 1150m to the southwest of Burikan.

[96] Both the goddess and Śiva's head are now at the SPSP DIY office in Bogem.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description: Behind the graveyard and around the village, remain a few *candi* stones and, among others, fragments of mouldings, garlands and a plant-like relief.

A *yoni* (B382) was found here (*Hasil Mlati*).

CEBONGAN

Administrative localization: Cebongan, Sumberhadi, Mlati, Sleman, DIY.

Geographical localization: 07º 44' 00" S
110º 20' 00" E
Precision: Map.[97]
Alt.: 169m

Surroundings: In the lowland, on the lower slope of Mount Merapi.

Religion: Hindu.

Main features: Sanctuary type 4 (?); facing east.

State of preservation: No visible remains.

Description:

According to ancient reports, the site was composed of two or three temples in a row. The main temple base was square, with a projection on the eastern side for the staircase (Knebel 1911a: pl.168; Krom 1912a: 5).

Sculptures:

A Gaṇeśa, a *yoni* and a bull were found on the site (Knebel 1911a: pl.170; Krom 1912a: 6).

JUMENENG

Administrative localization: Jumeneng, Sumberhadi, Mlati, Sleman, DIY.

Geographical localization: 07° 42' 51.2" S
110° 19' 49.9" E
Precision: 43m
Alt.: 195m

Surroundings: In lowland, on flat ground, 350m west of kali Ngalang and 450m east of the Konteng River. The site is located 500m to the southeast of Konteng, 600m to the west of Burikan and 600m to the northeast of Candi.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

[97] Today, the small town of Cebongan covers a large area, including the villages of Cebongan Pasar, Cebongan Lor and Cebongan Kidul. As no detailed information is available in ancient reports and traces of the site have disappeared, the coordinates given here are those of the town centre.

Description/sculptures:

Nothing is left. However, several *yoni* (B388, 389, 392) were found in this village, together with a small sculpture of bull (B391) (*Hasil pengumpulan Mlati*).

KONTENG

Administrative localization: Konteng, Sumberhadi, Mlati, Sleman, DIY.

Geographical localization: 07° 42' 43.0" S
110° 19' 34.6" E
Precision: 41m
Alt.: 190m

Surroundings: In lowland, 50m west of *sungai* Konteng. The site is on a plateau dominating the small but deep canyon of the Konteng River. It is located 500m to the northwest of Jumeneng, 700m to the north of Candi and 1050m to the west-southwest of Burikan.

Religion: Hindu and Buddhist.

Main features: Unknown.

State of preservation: Scattered stones.

Description: A pile of *candi* stones is visible in the garden of a house. These are mainly plain blocks, but some fragments of moulding are also to be found.

Sculptures:

Earlier were discovered here a *Buddha* in *bhūmiṣparśamudrā* (B393) and an unidentified female sculpture (B396) (*Hasil pengumpulan Mlati*; *Laporan identifikasi Konteng*, 1982:3). In the direct surroundings an Agastya (B410) and a *yoni* were discovered (*Laporan identifikasi Konteng* 1985: 1).

WARAK

Administrative localization: Warak, Sumberhadi, Mlati, Sleman, DIY.

Geographical localization: 07º 43' 19.3" S
110º 20' 20.5" E
Precision: Map.
Alt.: 185m

Surroundings: In lowland, on flat ground, 900m west of the Ngalang River, 750 to the north northwest of Plaosan and 1100m to the south southeast of Burikan.

Religion: Buddhist.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

Earlier, numerous temple stones were visible in this village. One *kāla*, fragments of a staircase, one *makara*, fragments of pinnacles, one relief depicting an elephant with a monkey and two Buddhist sculptures (one was probably an Amitābha) were discovered in the surroundings (*Hasil pengumpulan Mlati*; *Daftar Peninggalan Benda DIY* 1985: 80, 82-84).

KARANG TENGAH (Karang Bajang)

Administrative localization: Karang Tengah, Tlogohadi, Mlati, Sleman, DIY.

Geographical localization: 07º 44' 26.3" S
110º 20' 35.7" E
Precision: Map.
Alt.: 160m.

Surroundings: In lowland, on flat ground, on the western bank of the Bedog River.

Religion: Hindu.

Main features: Sculptures.

State of preservation: No visible remains.

Description/sculptures:

Although no stones have been reported in the village, I still mention the site due to the number of sculptures that have been found here: 8 *yoni*, 4 Gaṇeśa and 4 bulls (*Daftar Peninggalan Benda DIY* 1985: 52-55).

PLAOSAN

Administrative localization: Plaosan, Tlogohadi, Mlati, Sleman, DIY.

Geographical localization: 07º 43' 26.7" S
110º 20' 40.7" E
Precision: Map.
Alt.: 183m

Surroundings: In lowland, on flat ground, 450m west of the Bedog River and 750m to the east southeast of Warak.

Religion: Hindu.

Main features: *Yoni*.

State of preservation: No visible remains.

Description/sculptures:

Two *yoni* (B426) are coming from here, as well as two bulls (*Hasil pengumpulan Mlati*; *Daftar Peninggalan Benda DIY* 1985: 58-60).[98]

[98] The *yoni* are 90cm x 90cm x 74cm; the *nandi* 105cm x 65cm x 53cm. Given these dimensions, the SPSP DIY thinks that they were not brought in the village from very far away and that a temple should have been in the neighbourhood of Plaosan village.

MARON

Administrative localization: Maron, Donoharjo, Ngaglik, Sleman, DIY.

Geographical localization: 07º 40' 47.6" S
110º 23' 19.7" E
Precision: Map.
Alt.: 330m

Surroundings: In lower middle land, in an area flooded by numerous small watercourses and where the slope of Mount Merapi can already be felt. The site is located between two tributaries of the Winongo River (respectively 100m to the east and to the west of the village) and 600m to the east-southeast of Ngepos.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Temple stones and a *kāla* were visible here in the 19th century (Verbeek 1891:163).

NGEPOS

Administrative localization: Ngepos, Donoharjo, Ngaglik, Sleman, DIY.

Geographical localization: 07º 40' 41.5" S
110º 23' 00" E
Precision: Map
Alt.: 338m

Surroundings*:* In lower middle land, in an area flooded by numerous small watercourses and where the slope of Mount Merapi can already be felt. The village is bordered to the east and west by tributaries of the Winongo River. It is located 600m to the west-northwest of Maron.

Religion: Hindu.

Main features: Bathing place.

State of preservation: No visible remains.

Description/sculptures:

The site seems to have been a bathing place. *Candi* stones were found in the area, together with one *lingga*, one Durgā and one Gaṇeśa (Hoepermans 1913: 221; Bosch 1915a: 18). Two Gaṇeśa, fragments of a seated figure and two bulls were still visible in 1977 (*Daftar Peninggalan Benda DIY* 1985: 96, 98, 103).

CANDI

Administrative localization: Candi, Sardonoharjo, Ngaglik, Sleman, DIY.

Geographical localization: 07º 42' 00" S
110º 24' 30" E
Precision: Map.[99]
Alt.: 280m

Surroundings: In lower middle land, between *kali* Kladuan and *kali* Pelang to the west), not far from the spring of the latter. In this area the slope of Mount Merapi starts to shape the landscape.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Formerly, traces of a temple were visible here (Hoepermans 1913:220), although Bosch was already unable to find them back (Bosch 1915a:19).

PALGADING

Administrative localization: Palgading, Sinduharjo, Ngaglik, Sleman, DIY.

Geographical localization: 07° 43' 33.9" S
110° 24' 39.4" E[100]
Precision: 11m
Alt.: 215m

Surroundings: In lower middle land, on the western bank of *kali* Kladuan. In this area the slope of Mount Merapi starts to shape the landscape.

Religion: Buddhist.

Main features: Sanctuary type 4; facing west.

State of preservation: Scattered stones.

Description: Today, the only remains of Palgading sanctuary are stones scattered around the village. According to villagers, these stones come from a single place, now a bamboo groove. However, previous literature gives us a better knowledge of the extent of the site.

Candi Palgading was made out of a main temple and two *stūpa* built in a north-south line (Bosch, Perquin 1925: 61-65).
In the early 20th century, the main temple was already badly damaged. Only parts of its base were preserved. It was carved with figurative reliefs, maybe inspired by the *Jātaka* (Bosch, Perquin 1925: 64).

[99] As literary sources do not give much precision and as remains have disappeared, the coordinates given here are those of the centre of the town including the villages of Candidukuh, Canditiga, Candikarang, Candiwinangun, Candirejo, Candisari and Candimendro.

[100] Coordinates are those of the place where, according to the villagers, stood the structure. It has nevertheless come to my knowledge that the SPS DIY has recently found remains of the structure a few hundreds meters away from the place pointed to me by villagers during my fieldwork in 2002.

South of the temple there was a small *stūpa*. It rose on a square base measuring more or less 2.30m x 2.30m and adorned with figurative reliefs. The whole structure must have been 3.60m high.
The northern *stūpa* was slightly taller. Its base was 2.20m x 2.20m, but from top to bottom, it should have measured 3.80m. Similar reliefs were carved on the base.

Sculptures:

A four-armed female figure in *waradamudrā* was discovered here (Bosch, Perquin 1925: 65),[101] together with a beheaded *Buddha* (Stutterheim 1937: 24).

MORANGAN

Administrative localization: Morangan, Sindumartani, Ngemplak, Sleman, DIY.

Geographical localization: 07° 41' 05.6" S
110° 28' 09.7" E
Precision: 12m
Alt.: 323m

Surroundings: In lower middle land, in area where the slope of Mount Merapi is already felt, some 150 m west of the Gendol/Pajangan River and 600m east of the Opak River.

Religion: Hindu (?).[102]

Main features: Sanctuary type 2 (?); facing west; staggered square with a porch.

State of preservation: Out of the main temple, only a quarter of the base is visible. One secondary shrine is preserved, from the base to the foot of the temple body.

Description: Nowadays two buildings are visible, a main temple, facing west, and a secondary shrine, located northwest of the main structure and facing east. Due to the position of the remaining secondary shrine, it is highly probable that the compound was once made out of four structures (a main temple facing three secondary buildings). Unfortunately, it has been impossible to carry out further excavations to the south and east, due to the presence of modern roads and houses.
The main temple is poorly preserved, but earlier sketches allow us to trace the main lines of its plan.

The base was square (7.80m) with a single projection, on the western side. The temple body was a staggered square measuring 4.80m x 4.80m. The western projection was more salient and sheltered the entrance; the southern, eastern and northern projections housed niches. A small vestibule leaded to the *cella* (2.40m square).

The secondary shrine has a square basement measuring roughly 4,30m x 4,30m. The temple body seems to have been square too (3,30m x 3,30m), but with slightly salient niches. The *cella* is 1,85m square.

[101] It has been identified as a Tara by Bosch and Perquin (1925:65).
[102] On the basis of its lay out, since all the other type 2 sanctuaries are Hindu.

GEBANG

Administrative localization: Gebang, Wedomartani, Nglempak, Sleman, DIY.

Geographical localization: 07° 45' 05.1" S
110° 24' 58.9" E
Precision: 13m
Alt.: 170m

Surroundings: In lowland, on the border between the plain and the first slopes of Mount Merapi. The temple, though built on a flat surface, faces the very steep bed of *kali* Sembung (this small river is located approximately 25m east from *candi* Gebang – and roughly 15 below). Some 400m west of Gebang, one finds another river, the Krandowan. Both watercourses merge 800m south of the temple to give birth to the Blokan River. *Candi* Gebang is located 800m to the south-southwest of Jetis.

Religion: Hindu.

Main features: Single temple; facing east; square with a porch.

State of preservation: The temple has been restored up to the superstructure.

Description: *Candi* Gebang is a very small shrine facing east, with at least two noteworthy particularities: the absence of staircase and the *yoni* on its western wall.

Its precise orientation is 101° 58' (Siswoyo 1996: 5).

The base is square (5.25m) and without staircase.[103]

The temple body is also square (3.25m) but possess a projection on the eastern side, for the entrance. In the middle of its northern, western and eastern wall is a niche. Two niches also flank the entrance. The western niche has received a peculiar treatment: below it, fitting within the temple body, is a small *yoni* (turned to the north).

A corridor leads to the small *cella* (1.80 x 1.80m).

Around the temple are 4 *lingga*-like boundary stones that delimit a sacred area of roughly 16m (N-S) x 8m (E-W).

On a lower terrace, further east and closer to the river, some other *candi* stones are to be found, though not *in situ*.

Sculptures:

The *cella* houses a *yoni*, while a Gaṇeśa is visible in the western outer niche and a *dvarapala* near the entrance.

In 1937, three *yoni* were found here (Stutterheim 1937: 24).[104]

Miscellaneous archaeological finds:

A square deposit box with a lid (23cm x 13cm) and 9 cavities forming a lotus flower was discovered on the site (Stutterheim 1937: pl.10). Unfortunately, there is no further information as for its original localization. Several metallic pieces (crescent, trident…) either in bronze or gold were found during excavations (Stutterheim 1937: pl.11).

[103] Maybe was *candi* Gebang a mere altar, with no need to enter it, all rituals taking place outside; or was it once possible to reach the *cella* through some wooden stairs.

[104] It is not clear whether this includes the central *yoni* or not.

JETIS

Administrative localization: Jetis, Wedomartani, Nglempak, Sleman, DIY.

Geographical localization: 07º 44' 42.3" S
110º 25' 06.5" E
Precision: Map.
Alt.: 175m

Surroundings: In lowland, 250m east of *kali* Sembung and 800m to the north-northeast of *candi* Gebang.

Religion: Unknown.

Main features: Sanctuary type 1.

State of preservation: No visible remains.

Description:

Remains of a shrine were found in this village. Only two stone layers from the base were still *in situ*, but numerous stones, antefixes and pinnacles were found.[105] East of the temple was a square foundation. (Bernet Kempers 1938: 19)

Miscellaneous archaeological finds:

Within the temple pit were fragments of gold, iron and bronze, together with a golden ring. Vietnamese ceramics dating to the 11th c. were also discovered on the site (Bernet Kempers 1938: 19).

CANDI[106]

Administrative localization: Candi, Purwobinangun, Pakem, Sleman, DIY.

Geographical localization: 07º 37' 52.6" S
110º 24' 11.5" E
Precision: Map.
Alt.: 565m

Surroundings: In upper middle land, between *kali* Boyong (350m to the east) and one of its tributaries (along the western edge of the village), a few hundreds meters north of Tawangrejo.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Earlier, numerous temple stones were still visible in this area, plain blocks but also finials and one *makara* (Verbeek 1891: 162; *Hasil pengumpulan Pakem*).

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[105] Most of the antefixes (if not all of them) were left non-carved.

[106] This site is maybe the same as Tawangrejo. In *Hasil Pengumpulan Data Kepurbakalaan Kecamatan Mlati* 1980, Candi and Tawangrejo are indeed used for one another. The description given by Verbeek (Verbeek 1891: 162), "ruim 1 kilometer ten noorden van het landhuis Wringin", corresponds also roughly to the localization of *desa* Tawangrejo.

CEPET (Ceper, Cepit)

Administrative localization: Cepet, Purwobinangun, Pakem, Sleman, DIY.

Geographical localization: 07º 39' 26.3" S
110º 23' 35.7" E
Precision: Map.
Alt.: 415m

Surroundings: In lower middle land, on the southern slope of Mount Merapi, between two tributaries of the Winongo River and 350m west of *kali* Boyong.[107]

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Earlier, some *candi* stones were still visible in the village, including a small *lingga* (B525), antefixes, a pinnacle, a small *yoni* adorned with a *nāga* (B542), a *peripih* (B532; simple stone box) and two *peripih* lids, one circular (B533), the other square (B534) (*Hasil pengumpulan Pakem*).

TAWANGREJO

Administrative localization: Tawangrejo, Purwobinangun, Pakem, Sleman, DIY.

Geographical localization: 07º 37' 56.3" S
110º 24' 11.5" E
Precision: Map.
Alt.: 560m

Surroundings: In upper middle land, between *kali* Boyong (350m to the east) and one of its tributaries (along the western edge of the village), a few hundreds meters south of *Candi*.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Numerous *candi* stones were found here, together with a *makara* (*Hasil Pengumpulan Mlati*: B480 ff).

[107] The localization of the site is not that clear. On the map of the Topografische Dienst, two villages of the area (Pakem, Purwobinangun), bear similar names: Tjepet (415m, to the south) and Tjepit (600m, to the north).

WRINGINREJO (Wringin)

Administrative localization: Wringinrejo, Purwobinangun, Pakem, Sleman, DIY.

Geographical localization: 07º 38' 39.0" S
110º 23' 45.6" E
Precision: Map.[108]
Alt.: 480m

Surroundings: In lower middle land, on the steep southern slope of Mount Merapi, between the Dengung River (to the west) and *kali* Boyong (to the east).

Religion: Hindu (?)

Main features: Unknown.

State of preservation: No visible remains.

Description:

Numerous stones, including mouldings, antefixes and two pedestals (B515, B518) were found in the village, together with a copper plate (B502) (*Hasil Pengumpulan Pakem*).[109]

BANYUNIBO[110]

Administrative localization: Cepit, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 41.5'' S
110° 29' 38.4'' E
Precision: 12m
Alt.: 125m

Surroundings: In lowland, on flat ground, although right at the foot of Mount Pegat-Ijo (the summit of Mount Ijo is not visible from here), between two small branches of the Sorogeduk River. The site is located 450m to the southwest of *candi* Barong, 500m to the southwest of Dawangsari, 600m to the east northeast of Semarangan, 750m to the south southeast of the *pendopo* of Ratu Boko, 800m to the northwest of Tinjon, 1000m to the east of Gaja, 1000m to the north northeast of Keblak.

Religion: Buddhist.

Main features: Compound; facing west; rectangular with a porch; enclosure wall.

State of preservation: The main temple has been restored up to the superstructure. As for the surrounding *stupa*, only their bases are still visible.

Description: The site is made out of a rectangular main building, 6 secondary structures and an enclosure (?) wall and remains of two further foundations.
The main temple faces west.

Its exact orientation is 267° 47' (SPSP DIY).[111]

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[108] As sources are not precise, coordinates have been taken at the centre of the village formed of the hamlets of Wringin Lor and Wringin Kidul.

[109] The site is not mentioned in early inventories. The proximity with Candi/Tawangrejo makes it possible that remains found in *desa* Wringin are actually coming from another place.

[110] Hoepermans calls Banyunibo "*candi* Semarangan", although in reality these sites are distant from one another.

[111] Although according to Siswoyo (1996: 7), it is 269º47'.

Its base measures 12,40m (E-W) x 14,60m (N-S) and possesses a projection on the western side.[112]
The temple body is 8.60m x 10.80m, with a deep projection on the western side. Small protruding elements are also to be noticed at the centre of each side and at the corners.[113]
A corridor leads to the rectangular *cella* (4.40m x 6.80m). Eight windows, located near the corners and on each side of the entrance, give light to the room. At the centre of the northern, eastern and southern walls is a niche.

> Beneath the *cella*, fitted up within the base, were 5 or 6 stone pits (Bernet Kempers 1941-1947: pl.14).

East and south of the main temple are 6 *stūpa*[114] (three to the east and four to the north). Their base is 6m square and topped with a staggered square plinth. Their upper part has a diameter of 3.60m. Surprisingly, the organization of these *stupa* seems independent from the main temple: the *stūpa* do not mark the centre or corners of the main structure.
Furthermore, 4.70m north of the temple, where one would expect another row of *stūpa*, there is nothing but a wall. It runs east west. The river has disturbed its western end, while its eastern end is unknown. North of the wall the ground is considerably higher (its level corresponds to the top of the wall).
No traces of such a wall were found on the other sides.

> South of the main temple and of the *stūpa* were identified foundations of two large square buildings (Bernet Kempers 1948: fig.)

Sculptures: Inside the *cella* are visible remains of various reliefs (sitting figures in praying attitude, female figure, flying figures, plants, trees…).

RATU BOKO

Administrative localization: Dawung, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization:

Western compound, 2d terrace *gopura*:
07° 46’ 07.4’’ S
110° 29’ 18.6’’ E
Precision: 6m

Southeastern compound, 2d terrace, miniature *candi*:
07° 46’ 18.7’’ S
110° 29’ 26.0’’ E
Precision: 7m
Alt: 160m – 200m

Surroundings: On the top of a high hill rising from the lowland and protected by steep slopes. Parts of the hill have been made flat to house this vast compound. From the various buildings, one can see Mount Merapi, the Prambanan plain, the Yogyakarta plain, the Opak River, Mount Pegat, Mount Ijo and other areas of Gunung Kidul. The site is located 700m to the west southwest of Sumberwatu and Arca Ganeça, 750m to the north northwest of Banyunibo, 800m to the northwest of

[112] Mouldings above the plinth also have recesses at the centre of each side as well as in the corners.
[113] Central projections are quiet usual in Javanese architecture, while corner projections are a peculiarity of *candi* Banyunibo.
[114] Scattered stones were numerous enough to allow the identification of the structures as *stūpa*. One has even been partly restored.

Dawangsari and Barong, 900m to the north of Semarangan, 1000m to the northeast of Watugudig and 1200m to the east northeast of Ngaglik.

Religion: Hindu and Buddhist.

Main features: Organic compound; facing west; no main structure.

State of preservation: Most of the structures seem to have been built out of wood and only their stone bases remains. The complex is undergoing restoration work.

Description: The site of Ratu Boko is made out of three compounds: the western, the eastern and the southeastern compounds.

- The western compound is composed of three terraces.

The first and westernmost terrace is a wide area, roughly 100m long, sloping down to the west. Its soil is made from natural rock covered by dust.

The only remains visible are located at the eastern end of the terrace and are those of a ramp leading to the second terrace.

The second terrace is sustained by an impressive 5m high retaining wall. The wall is running north south. Another retaining wall, running east west, extends it and links the western compound with the southeastern compound.
In its northern part, the second terrace is divided into two elongated courtyards separated by a wall.[115]
The western courtyard is 10m large and shelters no remains.
The wall demarcating the western and eastern courtyard is interrupted by an impressive 3-doors *gopura*. This *gopura* is linked to the *gopura* of the third terrace via a stone path.[116]
The eastern courtyard of the second terrace is 20m large. Apart from the remains of the above-mentioned path, it houses a stone base. The latter is located at the northern end of the courtyard. It is a 2m high square (11,20m x 11,20m) with fine mouldings but without any staircase.

The platform seems to have been edged by a parapet (Bernet Kempers 1948: 35).

The third terrace measures roughly 130m (E-W) x 170m (N-S). It is sustained on its western, southern and eastern sides by a wall doubled (at its feet) by a small open duct.[117] This duct is linked to the tank located in the northeastern part of the terrace.
To the west, the enclosure wall is interrupted by a five-doors *gopura*, linked through a staircase and a pathway to the *gopura* of the second terrace. Four simple *gopura* are located respectively on the western, southern (2) and eastern sides.
The third terrace houses numerous remains: a double stone base,[118] several pools, a *pendopo* and two stone podiums.
In the northern third of the terrace, are the double stone base and a wide water tank. Ground level of this part of the terrace is more or less 60cm higher than in the southern part. It is separated from the southern part of the terrace by a small wall or fence.

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[115] Given the poor state of preservation of this structure, it is impossible to say if it was a real wall or a low fence.
[116] Stone blocks on the side of the pathway let think that it was once bordered by a wall or a fence and had two side gates giving access to the northern and southern parts of the courtyard.
[117] Actually, the northern side of the terrace, as well as the northern two-third of its eastern side did not need any retaining wall: they are limited by a cliff. The rock has been excavated to give the terrace its present rectangular shape.
[118] It is commonly called "*candi pembakaran"*.

The *candi* measures 23m x 23m at its base and faces west. It is made out of two bases built one upon the other, which gives it the appearance of a small stepped pyramid. The upper platform is reached via a single staircase[119] and was apparently edged with balustrade.[120] No traces of a building are visible on the platform, but a stone pit occupies its centre.

> It measures 7m x 7m at its top, 4m x 4m at its bottom and goes as deep as ground level (Bernet Kempers 1948: 33). Excavations revealed that the pit was filled almost exclusively with wood coal and ashes and was therefore used as a fireplace (Bernet Kempers 1948: 35).

Behind the *candi*, to the west, a large water tank was excavated from natural rock.[121]
The other remains are all located in the southern part of the terrace.
Southeast of the main *gopura* are traces of one or two smaller water tanks.
Further east, one reaches remains of a large *pendopo* measuring 16m (N-S) x 23m (E-W). On its floor are visible traces of 3 rows of 10 column bases.
In the southeastern corner of the terrace, in front of its southern gate, are remains of two stone podiums measuring 13,50m (E-W) x 24,70m (N-S).

- The eastern compound

Leaving the western compound and heading east, one finds the so-called eastern compound. It has not been fully excavated yet, so that it is difficult to understand the nature of the remains and their relation with one another.
To the north, atop the hill, are remains of an enclosure wall.
The centre of the eastern compound is made out of two man-made caves. Nearby are ruins of a stone structure and a small water tank.

- The south-eastern compound

The southeastern compound is certainly the widest and the most complex. It is composed of at least 9 courtyards, scattered on various levels and housing numerous remains of *pendopo*, enclosure walls, gates, pools, bases and water tanks.

The first and westernmost terrace is roughly 150m (N-S) x 80m (E-W). It is edged on its western and southern side by a retaining wall.[122] The terrace seems to have been divided into three courtyards separated by walls. In each of these courtyards a staircase gives access to the eastern part of the compound. No buildings have been discovered in any of the three courtyards.

The second terrace has an irregular shape and measures more or less 130m (N-S) x 70m (E-W). Its retaining wall is doubled at its foot by an open duct (as already noticed for the enclosure wall of the third terrace of the western compound). The wall is also pierced by at least four gates (two to the west, one to the south and one to the north).[123]

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[119] One would expect two flights of stairs rather than a single one, so that the two-storey organization would be respected. It is not the case and, as result, there is no access to the platform of the first base.
[120] The balustrade was almost entirely destroyed. Restoration work is still in process, but it seems that it was not more than 1.50m high.
[121] It was not cleared yet when fieldwork for this inventory was carried on, so it was impossible to measure it precisely. Nevertheless it must be roughly 30m (E-W) x 18m (N-S).
[122] Its state of preservation is poor. Up to now, only one *gopura* has been identified, at the centre of the western side.
[123] No remains of a *gopura* have been found along the eastern side of the terrace. However, this part of the retaining wall is not well preserved and it is possible that a gate once existed near the northeastern corner. On the other hand, it is also probable that there were no door on this side: the second terrace communicates already with the rest of the compound, although indirectly. Using the southern *gopura* one reaches a lower courtyard that gives access to a passage leading to the pool area.

All the remains on this second terrace are located within its southern half.
A small mound has been created to sustain the main structure of the compound, commonly known as the *pendopo* complex. It is a fine enclosure wall pierced by three doors (north, west and south), measuring 34m (E-W) x 40m (N-S) and sheltering two 1.25m high stone platforms. The northernmost platform measures 20m x 20m and is reached via three stairs (west, north and east). It is linked to the southern platform by a stone gangway. On the platform floor are traces of at least 20 columns bases (6 on each side).[124] The gangway can be reached from both platforms but also directly from the courtyard via two side stairs. The southern platform is rectangular (20m x 6m) and has only one stair, to the south. On its floor are visible traces of 2x6 column bases.
To the south and east of the *pendopo* enclosure are remains of further stone platforms.
East, one finds an elongated stone terrace measuring roughly 37m x 6,40m. It can be reached via three staircases, located unevenly along its western side. On its floor are traces of 20 square posts. Between some of the posts (mainly along the edge of the terrace) a groove is visible. From these elements, it can be deduced that the stone platform sustained a closed building, and that the latter was divided into four rooms. Three of them were directly accessible via the stairs, while the southernmost chamber communicated with the following one.
To the north of this eastern platform is a small pool.
The area south of the *pendopo* enclosure is paved and shelters four terraces. The largest one is about 14m x 14m, higher at the centre and furnished with at least 8 rectangular pillars on each side. The platform is certainly not in its original state: traces of modification of the pavement are clearly visible. The structure was originally meant to be lower and, afterwards, was raised at its present level.[125]
To the east of this first terrace, and physically linked with it is a smaller stone platform (6.50m x 6.50m). Roughly at its centre, one finds a pit measuring 1.90m (N-S) x 1.25m (E-W) x 1.25m (deep). In its southeast bottom corner there is a drainage pipe going southwards.
East of the water storage trough but on the same terrace are three miniature *candi* on a line[126]. The three of them are square and possess a small porch. The central *candi* is the largest; it measures 1.35m x 1.34m, while the two others are only 1m square. Behind the central shrine are the apertures of three small grooves that go beneath the

[124] A groove is also running around the platform. It is possible that this groove was intended to receive wooden panels.
[125] At the foot of the enclosure wall of the *pendopo* are *makara* gargoyles. The water coming from the inner courtyard is collected and goes through the mouth of the *makara*, and then it is received by a sort of small *yoni* placed under the chin of the *makara.* The *makara-yoni* gargoyles are clearly visible all around the enclosure wall, except around the southeastern quarter, near the stone terrace. The first stone of the terrace is indeed under the *yoni*, but the second layer comes and covers the *yoni*. Therefore, it seems probable that the *pendopo* and the stone terrace as it is today were not conceived together. The latter is also the latest.
[126] Actually they were not found at this place. Before the restoration work carried on in 1981 they were located east of the *pendopo* enclosure, behind the eastern elongated terrace (Purnomo, Soenarto 1981: pl.). This localization was rather surprising. The *candi* were at a lower level than the terrace, facing its wall but were so close to it that it was barely possible to reach them from the front. As their dimensions were similar to the rectangular traces visible on the platform southeast of the *pendopo*, they were thought to belong to the latter and were moved by the SPSP DIY to the place they now occupy. I can see no objection to their removal, although I think it is important to keep in mind that at a later stage in the occupancy of the Ratu Boko compound they were moved to a secondary localization and were not linked to the water system any longer.

candi and finally reach the water through. North and east of the miniature temples are bare rectangular pedestals. Traces of a third pedestal are visible on the pavement south of the *candi*.[127]
To the north and south of the platform bearing the miniature *candi* are two small stone podiums.

From the second terrace of the southeastern compound, one can go southwards and, using a gate, reach a *lower terrace*.[128] Its space is divided into two courtyards. The western one is the larges and shelters remains of a stone platform. In its southeastern corner a *gopura* leads downhill. The eastern terrace is smaller and free of archaeological remains. A gate in its eastern wall gives access to a narrow passage fitted up between the bathing complex and the second terrace.

Further east, one reaches a large *bathing complex* made out of three or four courtyards and housing at least 14 pools of various dimensions, all excavated out of the natural rock.
In the northern part of this bathing complex are 6 rectangular pools. West of those pools, runs a pathway, enclosed by walls and accessible via three gates (north, east and west). The southern part of the bathing complex has its own enclosure wall. It measures roughly 50m (E-W) x 60m (N-S) and has a gate in the middle of each side. This enclosure houses 27 circular pools: 14 large pools (diameter: 3,20m) and 13 smaller (diameter: 1,50m). Further east, and at a lower level is the last and largest pool of the bathing complex. It is a trapezium measuring more or less 13m (base) x 20m (height).

East of the bathing complex, one finds *the last known courtyard* of the Ratu Boko compound. Traces of an enclosure wall are visible to the north, west and south, as well as remains of three *gopura*. The eastern edge of the enclosure has not been identified yet. Within this courtyard, one finds two stone platforms. The northern platform is 14m (E-W) x 15,65m (N-S) and has a staircase to the west. The platform has two levels: its eastern part is higher and linked to the lower western part by a flight of stairs. The southern platform is wider: 22,10m (E-W) x 21,50m (N-S). It has three staircases (west, south and east) and traces of wooden walls and columns are visible on its floor.
Northwest of these stone platform are visible remains of a large *stūpa*

Sculptures:

> Crawfurd quoted by Bernet Kempers (Bernet Kempers 1949: 186): "(…) a little way to the south of the building a mutilated stone figure which I imagine to represent Mahādeva destroying Tripurāsura."
> In the 1950's a statue of Durgā and another of Gaṇeśa were discovered in the southeastern compound, around the *pendopo*. More recently, an Agastya was found during excavations on the terrace below the *pendopo* (Bambang, personal communication, 2003).

In the southeastern compound, within the easternmost courtyard and close to the podium, were found columns bearing reliefs. Each column is divided into eight panels adorned alternatively by a flower and an animal (the same animal is repeated

[127] On a drawing made by the SPSP DIY, two sculptures are visible. A Durgā on the northern pedestal and a Gaṇeśa on the eastern one. However, I did not see any traces of them and do not known for sure if they were really found during excavations or simply assumed to have been there.
[128] Actually, this terrace is at the same level than the first terrace and can also be reached from the west.

four time on the same column). The animals are: horse, elephant, peacock and *garuda*.

Inscriptions: Inscription of the Abhayagiriwihāra (Ratu Boko I) dated 792-793 A.D. Crawfurd quoted by Bernet Kempers (Bernet Kempers 1949: 186): "Dr Tytler who accompanied me in one of my last excursions to Prambanan, discovered in the largest of the two piles of stones on the terrace a fragment of a slab of stone on which was a Déva Nagari inscription (…)."

On one of the gold strips found within the pit in front of the miniatures *candi* was an inscription reading "Om rudra ya namah swaha" (Setianingsih 2002: BG 1410a).

Miscellaneous archaeological finds:

In the southeastern compound, near the miniature *candi*, underneath the water trough were 6 *peripih*. Five of them were earthen pots containing metal fragments and semi-precious stones and were laid according to the cardinal points. The 6th *peripih* was of a slightly different nature: it was a bronze pot. Located south of the other and not in a line, it contained golden, silver and bronze strips, but also glass beads and seeds (Hambali 1993-1994: 13).

GATAK

Administrative localization: Gatak, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 45' 41.23'' S[129]
110° 29' 24.3'' E
Precision: 30m
Alt.: 140m

Surroundings: In lowland, on flat ground, roughly 400m to the east of *kali* Opak, not far from the northernmost tip of Gunung Kidul (700m to the south). The site is located 700m to the east of *gunung* Mijil, 750m to the west of *candi* Sojiwan and 1000m to the south-southwest of Loro Jonggrang.

Religion: Hindu.

Main features: Single temple.

State of preservation: Scattered stones.

Description/sculptures: The only visible remains are three *yoni* scattered in a garden and in a courtyard. In the direct neighbourhood of these *yoni*, numerous *candi* stones are to be seen; none is carved. The stones are nowadays used as fences.

Further to the south were remains of a temple. It was excavated in 1984 and then recovered by an extension of the nearby school (*Laporan Gatak* 1984). Among the stones, were found part of a stair, blocks carved with garland (B748e), fragments of sculptures (B748f) and three other *yoni* (B768, B769, B771) (*Laporan inventarisasi Madurejo dan Bokoharjo*; *Hasil pengumpulan Prambanan*).

Inscriptions:

Hoepermans would also have found a stone inscription in the village (Verbeek 1891: 178).

Miscellaneous archaeological finds:

The temple pit was dug out and a *peripih* was found at its bottom. The square deposit box contained fragments of gold, remains of a golden elephant, a pot and sand (*Laporan penggalian Gatak* 1984).

[129] These are the coordinates of the remains still visible (i.e. the three *yoni*).

WATUGUDIG

Administrative localization: Jobohan, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 30.4'' S
110° 28' 51.2'' E
Precision: 19m
Alt.: 125m

Surroundings: In lowland, on flat ground, 500m east of the Opak River. From here one can see Mount Pegat, Mount Ijo and the western edge of the Gunung Kidul hills. The site is located 200m to the east-southeast of Ngaglik, 750m east of Sanan, 750m to the northwest of Keblak, 1000m to the northwest of Semarangan and 1000m to the southwest of Ratu Boko.

Religion: Buddhist.

Main features: *Pendopo* and single temple.

State of preservation: Only the bases of the columns of the *pendopo* are left. Nothing remains of the temple.

Description: Huge stone column bases of different diameters (up to 75 cm) are visible, together with bricks, *makara* and other cut stones. Those remains do probably not belong to a temple but to *pendopo*.

> According to ancient literature, there was once a temple located 50 northwest of the *pendopo* (IJzerman 1891: 115). The temple was destroyed to enlarge a sugar factory (Knebel 1909a: 52).

Sculptures:

> An Amitabha statue was found within the temple area, so that it might be suggested that this place was Buddhist (IJzerman 1891: 115).

PRAMBANAN OR LORO JONGGRANG

Administrative localization: Karangasem, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 45' 07.4"
110° 29' 29.2"
Precision: 13m
Alt.: 150m

Surroundings: In lowland, on flat ground. Some 200m east of a branch of *kali* Opak. South of Sewu, Bubrah and Lumbung. From the main courtyard, view of the three above mentioned temples, as well as of Plaosan Lor, Ratu Boko, Dawangsari and Ijo. The site is located 550m to the northeast of Bogem, 500m to the south-southwest of Lumbung, 600m to the south-southwest of Bubrah, 1000m to the south-southwest of Sewu and 1100m to the northeast of Sojiwan.

Religion: Hindu.

Main features: Concentric compound organised around a sanctuary type 3; facing east; staggered square with four *cella*; enclosure walls; outer enclosure with a specific orientation.

State of preservation: Buildings in the central courtyard have been restored up to the superstructure. Several secondary temples within the outer enclosure have been

thoroughly rebuilt too, but most of them are reduced to their bases. Of the outer enclosure, only the southern *gopura* is still visible.

Description: Loro Jonggrang is a wide compound made out of three courtyards and corresponding enclosure walls.

- *First courtyard*

The first (or inner) courtyard measures 103m x 103m (inner measurements). Its ground level is considerably higher than the surrounding natural ground level.

> It was artificially raised by building a large number of walls in river stones and by filling the gaps between these walls with earth and sand (Stutterheim 1936: fig.4).

8 buildings occupy the courtyard. In the western part of the courtyard is a row of three huge temples (known as *candi* Brahma, Siwa and Wisnu), the widest (*candi* Siwa) being at the centre. In the eastern part of the courtyard, in front of the above-mentioned buildings are three smaller shrines in a line.[130] The space between the two rows of shrines is flanked to the north and south by an additional building. Further, 8 miniature temples mark the cardinal points of the courtyard.

Candi Siwa

Candi Siwa is the largest structure of the compound.

> It is almost exactly orientated towards the east (88º51') (Siswoyo 1996: 6).

Its basement is staggered square measuring 27.50m. It can be reached via four staircases, one on each side[131]. The staircases are flanked by some kind of miniature temples, although only the one located south of the eastern staircase has an inner space.[132]

A balustrade tops the base. From the four gates of this balustrade large stairs climb to the temple body, while two lateral, smaller staircases gives access to an open-air circumambulation path.[133] Rāmāyana reliefs adorn the inner side of the balustrade, while on the temple foot are dancers, musicians and the guardians of the winds.

The temple body is a staggered square (17.5m x 17.5m) and it rises on a high double foot. Its southern, western and northern staircases open on a short corridor that leads to a small *cella* (3.10m x 3.10m). On the eastern side, the corridor leads to a vestibule.[134] The vestibule then communicates with the central *cella* through a doorway. The main *cella* (7.10m x 7.10m) is roughly four times the surface of the secondary *cella*.

Candi Wisnu *and candi* Brahma

Located respectively to the north and south of *candi* Siwa, *candi* Wisnu and Brahma are two identical buildings.

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[130] Those shrines are commonly known as *candi wāhana* (Hamsa, Nandi and Garuda), although this appellation is dubious and will not be used here. The only *wāhana* ever found was a bull, in the central structure.

[131] During restoration work, it was discovered that at a previous stage, the eastern staircase was steeper and shorter that today (Bernet Kempers 1938: 5ff).

[132] It houses a *lingga*, which is the actual geometrical centre of the courtyard. The Śiwa temple, although it is the focus of attention, is not at the centre of the sacred space. It is rejected to the rear (west) and north.

[133] This organization is unique in Central Javanese architecture. Loro Jonggrang is indeed the only temple where the platform is at a lower level than the upper part of the entrance staircase. It gives the impression that the passage for circumambulation is not built atop the base but within it. This is strengthened by the fact that the temple body does not raise directly from the platform; it is built on a moulded podium, so that it really starts only at the level of the gates.

[134] This vestibule is similar in position and dimension to the three small *cella.*

Their base is a staggered square measuring 17.5m, with a single staircase to the east. As in *candi* Siwa, a balustrade adorned with reliefs tops it.
The temple body is a staggered square of 11.5m, with a double foot. A doorway, located on the eastern side, gives access to a long corridor leading to the *cella*. The latter is 5m square.

Candi Nandi

In front of *candi* Siwa, raises the smaller *candi* Nandi.
The temple base is rectangular: 15.20m (E-W) x 16.70m (N-S). It is topped by a balustrade and possesses a staircase and a gate on its western side.
The temple body also has a double foot, with the peculiarity that the first foot is rectangular (10m x 11.5m), while the second is a staggered rectangle (7.7m x 9.2m).
A corridor leads to the rectangular *cella* (8m x 5.5m). The centre of the room is occupied by a sculpture of *bull* while at the rear are visible two altars.

Candi B and Candi A

Respectively in front of *candi* Wisnu and *candi* Brahma are located two temples known as *candi* B and *candi* A. These buildings are similar, though not identical, to *candi* Nandi.
The base is square (14.1m x 14.1m), with one staircase on its western side. A balustrade tops it.
On the platform raises the temple body, again with a double foot. The lower part of the foot is square (9.50m x 9.50m) while the upper part is a staggered square (7.3m x 7.3m).
A corridor leads to the 3.5m square *cella*.

Candi Apit, boundary shrines and first enclosure wall

To the north and south of the inner courtyard are two small temples called *candi apit*.
The buildings have a square base measuring roughly 7.5m. On the contrary of the other temples, they possess neither a balustrade nor a circumambulation path. However, the temple body has also a double foot. Its lower part is square while the upper one is a staggered square. Both face the centre of the courtyard (i.e. the northern *candi apit* faces south while the southern one faces north).[135]
In the corner of the courtyard as well as in the middle of its sides are scattered 8 shrines housing a *lingga*. They mark the boundaries of the most sacred enclosure.
An enclosure wall flanked with four gates, one in the centre of each side, surrounds the inner courtyard.

- *Second courtyard*

The second courtyard is considerably lower than the first courtyard, although it is still higher than the local ground level.

> The ground was raised using the same technique as in the case of the central courtyard (Stutterheim 1931-1935: fig.9).

In the second courtyard are 4 rows of secondary shrines, counting respectively 44, 52, 60 and 68 buildings.
The courtyard is surrounded by an enclosure wall measure roughly 220m square. It has nowadays almost disappeared.

> Parts of the wall were discovered during excavations in 1926 to the north, east and south of the courtyard (Bosch 1926:6ff). Those researches revealed that the enclosure

[135] The staircase of the southern *candi apit* underwent modifications similar to those at *candi* Siwa: originally, the staircase was steeper and shorter (Stutterheim 1931-1935: fig.5).

had a projection at the centre of each side and was therefore a staggered square. In the eastern corner of the southern projection were found foundations of a temple (Bosch 1926: 8).

- *Third courtyard*

A third enclosure wall further surrounds the whole compound. The latter, to the contrary of the two other enclosures, is not orientated around the cardinal points. Nowadays, only its southern gate is still visible.

Parts of its northern and eastern sides were identified in 1926 (Bosch 1926: 6ff).

Within the space between the second and the third enclosures were several remains.

Remains of two walls, running north and linking the northern projection of the second enclosure with the third enclosure, were discovered in 1926 (Bosch 1926: 7-8). The same year, excavations carried out in the south revealed that a pathway existed there too. However, to the contrary of the northern causeway, it was not in the axis of the second enclosure, but in the axis of the third one.

The northern projection is linked with the third enclosure by two walls running south north. These walls were probably part of a pathway (Bosch, 1926: 7-8).

Sculptures: In the main temple are visible Śiwa (central *cella*), Durgā (northern *cella*), Gaṇeśa (western *cella*) and Agastya (southern *cella*). In the *cella* of temples north and south of the main temples are visible a Wiṣṇu and a Brahmā. In the secondary shrine in front of the main temple there is a bull flanked by Sūrya and Candra.

Inscriptions:

19 inscribed gold strips were found among the remains of candi B. Each one bears the name of a *lokapāla*, the 19th name being "Om pascima yatra ya namah" (Setianingsih 2002: BG 1751, BG 1804-1817).

Miscellaneous archaeological finds:

According to IJzerman, the excavations of the central pits of *candi* Siwa, Wisnu, Brahma, Nandi, *candi* A and *candi* B leaded to peculiar findings.

A stone box was discovered within the central pit of *candi* Siwa, at 5.75m from the ground level of the *cella*. The casket contained earth mixed with ashes and (wood) coal. It also contained metallic fragments, 20 coins, semi-precious stones, beads, copper strips and at least 12 gold leaves of different shapes (7 squares, turtle, naga, egg-shaped) (IJzerman 1891).

A similar find was made at *candi* Wisnu. From the central pit was excavated a bronze vase containing earth, ashes, bronze strips (turtle, cakra, vajra), a bronze cross, semi-precious stones, gold strips and copper leaves. (IJzerman 1891)

In the pit of candi Brahma, four broken pots were found, together with some fragments of bronze (Ijzerman 1891).

In *candi* Nandi, excavations of the central pit brought to the light several animal bones (squirrel, cow) as well as fragments of a vase (IJzerman 1891).

In candi A, the pit was filled with temples stones and, between those, fragments of human bones were found (IJzerman 1891).

A dog skeleton was found within *candi* B (IJzerman 1891).

In 1931, two stone caskets containing inscribed gold and silver plates were found near *candi* Brahma. In the following years (1931-1935), similar boxes were discovered elsewhere in the first courtyard (Stutterheim 1931-1935a: 7 and note 11). Such a casket was found at the southeastern corner of the eastern staircase of *candi* Siwa. Its cover was bound to the box by a chain of 6 rings and 2 plates. (Stutterheim 1931-1935b: fig.10; 1937: 25)

A human skeleton was discovered to the southeast of *candi* Nandi (Stutterheim 1931-1935b: fig.11).

More recently, during restoration work carried on at *candi* Wisnu by the SPSP, cavities were found within the walls of the temple body, in the SE, NE, SW and NW corners, as well as within the northern and the eastern wall. No such cavities were found in the southern and western walls (Soenarto 1985: 384). The cavities were

closed by a stone lid. They were filled with sand and contained bonze pots, bronze fragments, silver strips and gold leaves (Soenarto 1985: 385-387). The distribution was as follow:
- SE cavity: bronze vase with lid (ht: 15.5cm) containing sand, 4 silver strips, 5 gold leaves and fragments of bronze.
- NE cavity: bronze vase with lid (ht: 15cm).
- SW cavity: bronze vase with lid (ht: 17cm) containing sand, 3 bronze strips, 4 gold leaves and bronze fragments.
- NW cavity: bronze vase with lid (ht: 16.5cm).
- N cavity: sand.
- E cavity: sand.

KEBLAK (Geblak, Berbah, Brubah)[136]

Administrative localization: Marangan, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 51.9" S
110° 29' 04.8" E
Precision: 17m
Alt.: 120m

Surroundings: In lowland, on flat ground, 600m west of *kali* Gawe/Sorogedug. From here one can see the Ratu Boko Plateau, Mount Pegat, Mount Ijo and the rest of the western edge of the Gunung Kidul. The site is located 300m north of Singo, 400m to the west southwest of Semarangan, 400m to the south of Gaja, 750m to the southeast of Watugudig, 900m to the southeast of Ngaglik and 1000m to the west southwest of Banyunibo.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description: The only remains are a few stones and one *yoni* (1,20m square; 80 cm high; B811a; *Hasil pengumpulan Prambanan*).

Sculptures:

Two *yoni*, as well as sculptures of Śiwa and Gaṇeśa were found here (IJzerman 1891:116; Brumund 1854: 49; Verbeek 1891: 173). A beheaded female figure holding a *triśūlā* was also discovered among the remains (Soeroso 1985: 6).

[136] Keblak is the name commonly used by the villagers. IJzerman (1891: 116), Verbeek (1891: 173) and Bosch (1915a: 50), Krom (1923, I: 53)mention a temple called Keblak or Geblak. However, after a close examination, it appears that we are dealing with two different temples. The Keblak of ancient literature is the northernmost of three buildings including Keblak, Bubrah and Singo and the distant between Keblak and the southernmost temple (i.e. Singo) would be 700m. This ancient Keblak would be located 400m east of Watugudig, in *dusun* Candirejo while, according to early maps Singo would be on an east-west line with *candi* Tinjon.
This description does certainly not correspond with the modern Keblak. The latter is indeed in *dusun* Semarangan (Candirejo is much more to the north). Furthermore, if the relative position of Tinjon and Singo were correct, there would only be 300m between Singo and Keblak, not the 700m mentioned in older sources.
There is therefore a high possibility that the names of Keblak and Bubrah have been switched. This hypothesis is strengthened by the fact that Brumund, while listing the temples, says that the northernmost is called Gadjah, the central one Geblak and the southernmost Singo.
I will thus keep the name used by Brumund and present-day villagers and call the central temple Keblak. The reader should keep in mind that other ancient sources usually mention it as Bubrah or Berbah.

SEMARANGAN (Kertan, Marangan)

Administrative localization: Marangan, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 48.4" S
110° 29' 19.1" E
Precision: 40m
Alt.: 120m

Surroundings: In lowland, on flat ground, 400m west of *kali* Gawe. From here one can see the Ratu Boko Plateau, Mount Pegat, Mount Ijo and the rest of the western edge of the Gunung Kidul. The site is located 400m to the east southeast of Keblak, 500m to the southeast of Gaja, 600m to the northeast of Singo, 600m to the west southwest of Banyunibo, 900m to the south of Ratu Boko and 1000m to the southeast of Watugudig.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description: Nothing *in situ* but lots of stones scattered in several courtyards of the village, some used to build fences, other to build a well. Some fragments of architectonic elements: lintels, pilasters, finials, mouldings, antefixes and pinnacles. Most of the blocks seem to have been left unfinished, without any carving.

A *yoni* was also discovered here (B803) (*Hasil pengumpulan Prambanan*).

NGAGLIK

Administrative localization: Pelemsari, Bokoharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 27.7" S
110° 28' 44.4" E
Precision: 7m
Alt.: 125m

Surroundings: In lowland, on flat ground, 250 east of the Opak River. The site is located 200m to the west-northwest of Watugudig, 550m to the east of Sanan, 900m to the northwest of Keblak and 1200m to the west-southwest of Ratu Boko.

Religion: Buddhist.

Main features: Sanctuary type 4 or 5.

State of preservation: No visible remains.

Description:

At the beginning of the twentieth century, traces of 2-3 buildings were still visible (Bosch 1915a: 49). They were built on a north-south line.

Sculptures:

According to Krom, there were still a few *buddha* when he visited the site (Krom 1923, I: 252).

SINGO

Administrative localization: Candi, Madurejo, Prambanan, Sleman, DIY.

Geographical localization: 07º 47' 01.7" S
110º 29' 00" E
Precision: Map.[137]
Alt.: 115m

Surroundings: In lowland, on a small elevation, 600m west of *kali* Gawe/Sorogedug. The site is located 300m to the south of Keblak, 600m to the southwest of Semarangan, 700m to the south of Gaja and 800m to the northwest of Polengan.

Religion: Hindu.

Main features: Sanctuary type 3 or 4; facing west; staggered square.

State of preservation: No visible remains.

Description:

According to ancient inventories, *candi* Singo was located on a small hill, whose summit was partly erased to create a courtyard of 11 x 45m.
The main temple was said to be in a line with *candi* Geblak and Bebrah.
It was actually a compound made of a central sanctuary and two small shrines on the north and south. The main shrine had a projection at the centre of each side and was turned to the west (IJzerman 1891: 117). The *cella* of the main temple measured 12 feet square, while the sacred chamber of the secondary shrines was only 6.5 feet square.
In front of each shrine was a hole. According to Brumund, those three pits were certainly tanks for the holy water (Brumund 1854: 52). However, IJzerman suggested that those "holes" were not tanks but temple pits (IJzerman 1891: 118).

Sculptures:

A bull was found on the site together with a Gaṇeśa and one *yoni* (IJzerman 1891:118).

GAJAH (Geblak, keblak, kobla) [138]

Administrative localization: Candirejo, Madurejo, Prambanan, Sleman, DIY.

Geographical localization: 07º 46' 39.5" S
110º 29' 04.5" E
Precision: Map.[139]
Alt.: 115m

Surroundings: In lowland, on flat ground, 400m to the north of Keblak, 450m to the southeast of Watugudig, 500m to the northwest of Semarangan, 700m to the north of Singo and 1000m to the east of Banyunibo.

Religion: Hindu.

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[137] *Candi* Singo is mentioned neither on TD map nor on Bakosurtanal maps. I used both literary information and the map published by IJzerman (1891) to plott on the modern 1:25 000 map, taking into consideration the position of *candi* Tinjon and Gaja and the distance between the latter and Singo.

[138] As I followed modern villagers and Brumund in the case of Keblak, I will use the name given by Brumund for this temple, although remains have long disappeared and no contemporary appellation exist.

[139] The temple does not figure on any map but the one made by IJzerman (1891). I used the latter, as well as literary information (distance to Watugudig, position of Keblak and *dusun* Candirejo) to plot Gaja on the 1:25 000 Bakosurtanal map.

Main features: Single temple; facing west.

State of preservation: No visible remains.

Description:

Some years ago, a dozen of temple stones were still visible (*Laporan inventarisasi Madurejo dan Bokoharjo*).

According to Brumund (quoted by IJzerman 1891: 115), the temple had its entrance to the west and measured 20 feet square. In the rear wall of the *cella* was a niche. (Krom 1923, I: 253).

Sculptures:

One *yoni* was found here (Verbeek, 1891: 173).

Formerly, there was also a *lingga* with an inscription (Hoepermans quoted by Verbeek 1891: 174).

GREMBYANGAN (Grimbyangan)

Administrative localization: Grembyangan, Madurejo, Prambanan, Sleman, DIY.
Geographical localization: 07º 47' 25.9" S
110º 28' 01" E
Precision: Map.[140]
Alt.: 110m

Surroundings: In lowland, on flat ground, along the eastern bank of the Opak River. The site is located 30m to the east of Tanjuntirto.

Religion: Hindu

Main features: Unknown.

State of preservation: No visible remains.

Description:

Temple remains were still visible at the end of the 19th century, but they had vanished in the beginning of the 20th century (Verbeek 1891: 169; Krom 1923,I: 252). The SPSP DIY found some scattered stones more recently (*Laporan inventarisasi Madurejo dan Bokoharjo*).

Sculptures:

A few sculptures were found here, among others one Brahmā head (IJzerman, 1891:122).

Fragments of finials (B739a, b), a lion (B739c), an unidentified male divinity (B739e), a *makara* (B739g) and two *yoni* (B739j, k) were found in the area by the SPSP DIY (*Laporan inventarisasi Madurejo dan Bokoharjo*).

[140] Plotted on the Bakosurtanal map according to the sketch of IJzerman (1891).

NOGOSARI

Administrative localization: Nogosari, Madurejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 47' 50.6" E[141]
110° 28' 35.1" S
Precision: 17m
Alt.: 105m

Surroundings: In lowland, on flat ground, 1km east of the Opak River.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description:

Described by Brumund as an "oppervlakte van 60 x 40 pas" (Brumund, 1854: 44).

A few temple stones are still visible scattered around the village. Some of them bear decorative sculptures. Nothing seems *in situ*.

Sculptures:

A lintel representing the goddess Śrī between two elephants was found on the site (Bosch 1915a:44; now at the Sono Budoyo Museum). A *yoni* was also discovered in the village (IJzerman 1891: 121; Verbeek 1891: 169). According to the SPSP DIY, two *makara* (B737, B738k) and a *bull* (B739) were found here more recently (*Laporan inventarisasi Madurejo dan Bokoharjo*; *Hasil Pengumpulan Prambanan*).

POLENGAN

Administrative localization: Polengan, Madurejo, Prambanan, Sleman, DIY.

Geographical localization: 07º 47' 17.7" S
110º 29' 26.3" E
Precision: Map.[142]
Alt.: 115m

Surroundings: In lowland, on flat ground, at the foot of the Gunung Kidul and Mount Ijo, on the western bank of the *kali* Gawe/Sorogeduk. The site is located 800m to the southeast of Singo, 900m to the west-southwest of Gupolo and 1000m to the southwest of Tinjon.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

At the end of the 19th century, a temple pit was still visible, near the Sorogeduk River (Verbeek 1891: 170). A *yoni* was discovered in the area (B738j) (*Laporan inventarisasi Madurejo dan Bokoharjo*).

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[141] These are the references of the area known by villagers as *candi*. This place is planted with tree and there are no traces of a temple, except one carved stone, probably a part of a temple roof.

[142] The site was plotted on the Bakosurtanal map according to the maps of IJzerman (1891), Verbeek (1891) and Krom (1923).

Inscriptions: Twelve inscriptions were found in the surroundings, they are dated 873, 876, 877, 878 and 881.

TINJON

Administrative localization: Tinjon, Madurejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 47' 01.7" S
110° 29' 33.0" E
Precision: 13m
Alt.: 200m

Surroundings: In lowland, on the slope of Gunung Kidul, 400m east of *kali* Gawe/Sorogeduk. From here, one can see *gunung* Abang (SE), the Yogyakarta plain (E), the Ratu Boko plateau (NE) and Mount Merapi (N).[143] The site is located 200 to the north of Gupolo, 800m to the southeast of Banyunibo, 1000m to the northeast of Polengan and 1000m to the south of Barong.

Religion: Unknown.

Main features: Single temple; facing west; enclosure wall.

State of preservation: The temple is now reduced to a mere mound, but a short part of its wall is still visible on the eastern side.

Description:

> This temple, still visible at the beginning of the 19th century, was turned to the west (Brumund 1854:53; Verbeek 1891: 171). In 1889, it had already almost completely disappeared (Verbeek 1891: 171). In 1989, the SPSP DIY carried on a work of prospecting. It revealed that, although the remains had been badly damaged by the construction of a retaining wall to protect the road, parts of the structure were still *in situ* (*Laporan identifikasi Tinjon* 1989). Excavations allowed digging out part of the temple eastern wall[144]. Traces of an enclosure wall were visible 8m east from the temple base and also in the north and northeastern parts of the site. The enclosure must have measured more or less 57 x 65m (*Laporan identifikasi Tinjon* 1989:9).

Today, some stones of the eastern wall and of the enclosure wall are still visible, but the temple body is reduced to a pile of earth mixed with stones.

[143] With less trees *candi* Barong might also have been visible.

[144] The wall was not entirely excavated, so that it is impossible to know the dimension of the sanctuary. Only the first stones of the base were visible. The moulding was not complete but seems to have been characterized by a high and plain plinth.

BARONG (Sari, Sari Sorogeduk, Sari Sorogedug)

Administrative localization: Candisari, Sambirejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 32.3" S
110° 29' 49.9" E
Precision: 24m
Alt.: 200m

Surroundings: In lower middle land, atop a hill belonging to the Gunung Kidul massif, a hundred meters from the spring of the *kali* Gawe/Sorogeduk. From the path leading to the temple and from the sanctuary itself, the view is breathtaking. To the north, the summit of Mount Merapi raises above the hills. To the south and southeast, one can see the crescent formed by the range of Gunung Kidul. To the southwest *gunung* Abang is clearly visible. To the west, the landscape opens completely and one can see as far as the Menoreh hills. Banyunibo, Dawangsari and the *pendopo* of Ratu Boko can all be seen from the temple area.[145] The site is located 100m to the south of Dawangsari, 450m to the northeast of *candi* Banyunibo, 550m to the south of Arca Ganeca, 600m to the south southeast of Sumberwatu, 800m to the southeast of the *pendopo* of Ratu Boko and 1000m to the north of Tinjon.

Religion: Hindu (Vaishnava ?).

Main features: Sanctuary type 5; organic compound; facing west; square; enclosure walls.

State of preservation: The twin temples have been restored up to the superstructure, but out of the buildings of the lower courtyard only foundations remain.

Description: The upper part of the hill has been re-shaped into a terrace; it opens to the west, is reached via a single stair and measures 90m (E-W) x 63m (N-S). On the terrace raises an enclosure wall divided into two courtyards. Although the exact height of this wall is unknown, given its thinness, it should not have been very high.[146] The only access to the courtyard is the *gopura* pierced in the western wall.[147]

The western courtyard measures roughly 41m (E-W) x 46m (N-S) and is occupied by foundations of various buildings. Their organization is not symmetrical and does not seem to follow any logical pattern.

The southwest quarter of the courtyard shelters remains of a *pendopo*, measuring 10,60 (E-W) x 11,70m (N-S). This large building had a rectangular plan and was composed of a main room and a front room.[148] The main room was supported by 10 columns (3 on the northern and southern sides, 4 on the eastern and western sides). Only two columns remain in the front room.

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[145] Unfortunately, *candi* Ijo is too high to be visible from here and trees make it impossible to check if Ijo's "valley shrine" could ever be seen from Barong.

[146] It is only one stone thick. It might well have been a simple parapet.

[147] One should note that the gate is not at the centre of the façade, but slightly to the north, as it is also the case for the *gopura* leading to the eastern courtyard. This is linked to the modifications made around the two shrines. See below for further details.

[148] Given its shape (long but narrow) and position (facing the temple), the eastern room probably was the front room. It might have been a kind of *veranda*, a room opened to the front, while the main room was closed by wooden panels. Traces of a groove to fix wooden walls are indeed visible in the main room. However, as there are no traces of a doorstep, this is only a hypothesis and it is possible – although not highly probable – that the entrance was on the western side of the larger room.

The northwest, northeast and southeast areas of this first courtyard are also occupied by one platform each. These platforms are smaller than the one described above.
Right in front of the *gopura* a paved path leads to another foundation, situated at the rear of the courtyard and on its east-west axis. Its localization gives the impression that it was necessary to go through the building (maybe a kind of open pavilion or simply a terrace for offerings) to have access to the second courtyard.
In the southwestern part of the first courtyard, stand the remains of four small buildings or altars.
A second gopura leads from the western courtyard to the eastern – and rear – courtyard. Its inner space is almost entirely occupied by a huge terrace measuring 22m (E-W) x 36m (N-S) at the top. This rectangular terrace is asymmetrical: it is longer south of the gopura than north of it. Actually this was not originally the case; traces of enlargement are still visible in its southern part.[149] The terrace is bordered by an enclosure wall with a single gopura (to the west). On the northern, eastern and southern sides of the enclosure, instead of a *gopura*, one finds a false door. Symbolically, the sanctuary is thus opened towards the four directions.
Within the courtyard, stand two small monuments. Their bases are unusually high and the temples have neither stairs nor doors.

> They are 269º29' from the north (Siswoyo, 1996: 7).

The northern structure is commonly known as *candi* I while the south one is *candi* II. Both are square and built upon a three-storied podium (8.40m x 8.40m). The base measures 5m x 5m while the temple body is 3.70m x 3.70m. The latter has four niches, one on each side.

> Although there is no entrance, both temples do possess an inner space: a pit is going through both the base and temple body (Santoso 1992: 23).
> During the excavation, a layer of river stones was found under the base of *candi* I. Under this layer was discovered a sort of huge *peripih*. It measured 3x3m and was made out of 9 cavities directly dug in the ground. The central cavity measured 1.5x1.5m, while the 8 holes at its periphery were 1m square. In the southeastern square a stone box was discovered (Santoso 1992: 23).
> Under *candi* II there was only one huge cavity, directly dug from the earth. It measured 3x3m. Parts of an earlier stone structure were found beneath the present-day *candi* II (Santoso 1992: 24).

Sculptures:

> Several sculptures were found here: 3 female figures and three male figures (Darmojo, Hartini, Sastra, Soenarto, Tjandrasasmita 1984-1985: 27-29; *Laporan inventarisasi Wukirharjo, Sumberharjo dan Sambirejo* 1994). Among the female figures, one was left unfinished. The two others represent seated women with four arms. Unfortunately, only one of these sculptures is in a satisfactory state of preservation. It was found in the southeastern corner of the central courtyard. In her raised right hand, the woman is holding a flower, while the other right hand is opened on her knee. In her raised left hand, she's holding a rice ear. Her second left hand is opened and laying on her lap. Among the male sculptures, only one has been finished. It is also seated and four-armed, although his attributes cannot be identified. His head is adorned with a high cylindrical headdress. It is highly probable that, given the rice and the cylindrical headdress, these sculptures represent Wiṣṇu and *dewi* Śrī. An unfinished four-armed Gaṇeśa was discovered in the surroundings, probably coming from Sumberwatu (*Laporan Inventarisasi Wukirharjo, Sumberharjo dan Sambirejo* 1994).

[149] Reasons for this enlargement are obscure. Maybe the terrace was intended to bear only one temple and its enlargement was necessary when it was decided to build a second or even a third shrine.

Miscellaneous archaeological finds/inscriptions:

Four stone boxes were found within the precinct of the central courtyard.[150] Inside one of them were discovered fragments of gold, silver and copper (Darmojo, Hartini, Sastra, Soenarto, Tjandrasasmita 1984-1985: 29). On one of the silver leaves is an inscription, unfortunately unreadable (Setianingsih 2002: BG 1369).

ARCA GANEÇA (Sumberwatu)

Administrative localization: Dawangsari, Sambirejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 11.4" S
110° 29' 48.7" E
Precision: 10m
Alt.: 240m

Surroundings: In lower middle land, atop a hill in the northern Gunung Kidul, right above Sumberwatu, overlooking the Prambanan plain (Mount Merapi, Loro Jonggrang and Sewu are all visible from here). The site is located 450m to the north of Dawangsari and 550m to the north of Barong.

Religion: Hindu.

Main features: Sculpture; west.

State of preservation: Intact.

Description/sculpture: This huge Gaṇeśa is carved directly out of the rock. Although he is badly damaged, eroded and headless, one can still distinguish the massive feet, rounded belly and trunk of the elephant-god, looking west. The statue is 1,75m without the pedestal, 2,50m with it.

Inscriptions:

A Hindu inscription dated 856A.D. was found within the hamlet of Dawangsari (Bernet Kempers 1941-1947: 46). However, it is not clear whether it was found to the north of the village (near Arca Ganeça/Sumberwatu) or to the south (near Dawangsari/Barong).

DAWANGSARI

Administrative localization: Dawangsari, Sambirejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 27.1" S
110° 29' 51.2" E
Precision: 11m
Alt.: 180m

Surroundings: In lowland, on a high hill belonging to the Gunung Kidul massif. The site overlooks the Yogyakarta plain. The position of Dawangsari, north of Barong and on a slightly lower ground, limits the view one can have from the site: to the west, it is closed by the Ratu Boko plateau[151] and to the north by a higher hill, so that neither the Yogyakarta plain nor *gunung* Merapi are as visible as they are from Barong. The site is located 100m north of *candi* Barong, 450m south of Arca Ganeca, 500m to the

[150] One of them had 9 holes (Laporan inventarisasi Sumberharjo dan Sambirejo)
[151] The *pendopo* and the pools of Ratu Boko are visible from Dawangsari.

south-southeast of Sumberwatu and 800m to the east-southeast of the *pendopo* of Ratu Boko.

Religion: Buddhist.

Main features: *Stūpa*.

State of preservation: The base of one *stūpa* is still partly visible.

Description:

> According to recent excavations, Dawangsari was made of at least two large *stūpa* (*Laporan ekskavasi Dawangsari* 2001).

However, their state of preservation is very bad and only one may clearly be identified (Dawangsari I). Among the stones, one can distinguish a square base surmounted by a circular structure carved with lotus petals. North of this first *stūpa* one finds an area of roughly the same dimensions, scattered with stones. This is probably the localization of the second *stūpa* (Dawangsari II).

> Some restoration work was carried on at Dawangsari I but, as it started before the discovery of the second *stūpa*, blocks coming from both monuments were probably mixed up (*Laporan ekskavasi Dawangsari*, 2001).

Further excavations would be needed to determine if the *stūpa* stood alone or if they were part of a wider complex.

Inscriptions:

> A Hindu inscription dated 856A.D. was found within the hamlet of Dawangsari (Bernet Kempers 1941-1947: 46). However, it is not clear whether it was found to the north of the village (near Arca Ganeça/Sumberwatu) or to the south (near Dawangsari/Barong).

GUPOLO (ÇIVA-PLATEAU)

Administrative localization: Groyokan, Sambirejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 47’ 09.0” S
110° 29’ 53.9” E
Precision: 19m
Alt.: 200m

Surroundings: In lower middle land, in the Gunung Kidul, west of Mt Ijo, on a steep slope between two hills, with a limited view. The site is located 200m south of Tinjon and 900m to the east-northeast of Polengan.

Religion: Not religious.

Main features: Stonecutter/sculptor workplace.

State of preservation: Unfinished sculptures.

Description/sculptures: Some sculptures and stone blocks have been gathered around a huge, apparently *in situ* statue of Agastya (B742a), which is the only recognizable sculpture and is approximately 3m high. Other sculptures include a male figure with four arms (B742b) and two seated women (B742e, g).[152] These might have been Buddhist as well as Hindu and appear unfinished. The area was probably a stonecutter workplace. The rough pavement around the Agastya statue lets think that

[152] Inventory numbers are taken from *Laporan Inventarisasi Wukirharjo, Sumberharjo dan Sambirejo*.

some scanty layout has been carried for the needs of cult.[153] The sculptures were maybe left there because of some fragility of the stone, discovered while working.
This site must probably be identified as the "Śiwa-plateau" described by IJzerman (1891: 119-120) and Bosch (1915a: 38). 80m to the south one finds a huge Gaṇeśa.

> According to IJzerman, besides a huge Agastya and Gaṇeśa, there was also a Śiwa Mahādewa (2,60m high), *bodhiśakti* and *bodhisattwa*. The Gaṇeśa was placed atop of a pedestal directly carved out of the rock. It was turned to the west and protected by an enclosure wall of 3,5m x 5m. Including its pedestal, the sculpture was 3m high.

IJO

Administrative localization: Groyokan, Sambirejo, Prambanan, Sleman, DIY.

Geographical localization:

Lower temple:	Main temple:
07° 47' 03.8" S	07° 47' 01.8" S
110° 30' 39.5" E	110° 30' 42.9" E
Precision: 24m	Precision: 10m
Alt.: 372m	Alt.: 380m

Surroundings: In lower middle land, almost at the top of Mt Ijo, on a steep slope. This impressive complex is located on the upper northwestern slope of Mount Ijo, a 427m high hill that is part of Gunung Kidul. The summit of Mount Ijo, covered with trees, appears just behind the temple, though not exactly in its axis. The localization offers a breathtaking view of the Opak plain. From *candi* Ijo, the Gunung Kidul hills seem to form a mountainous crescent overlooking the Opak valley, with the Sorogeduk at its feet.

Religion: Hindu

Main features: Terraced compound; sanctuary type 2; facing west; square main shrine; enclosure.

State of preservation: The main temple has been restored up to its superstructure. The secondary shrines facing it are currently under restoration. However, most of the structures of the lower terraces are reduced to their bases.

Description: *Candi* Ijo is actually a terraced sanctuary including a main temple, several secondary shrines and some other non-identified structures.
The original number of terraces is difficult to precise, as the state of preservation of the lower structures is poor. The SPSP DIY has identified eleven terraces,[154] though not all of them bear classical structures.[155]

- *Lowermost terraces.*

On terrace n°I, the angle of an enclosure is still visible.
In the northern part of terrace nº IV, traces of a stone foundation are visible.

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[153] This might have been done in later times or even by the workers themselves.
[154] I will keep the names used by Indonesian archaeologists (the lowermost terraces is n° I, the uppermost n° XI), although archaeological structures are usually numbered from the inside to the outside (allowing a continuous numbering in case further structures are found).
[155] It is possible that not all those 11 terraces date back to Central Javanese period. Most of the retaining walls are made of dry rough stones, a practice that is difficult to date. However, terraces n°I, VIII and XI show remains of usual classical walls, made of two faces of cut stones filled with rough stones. The only terraces to bear archaeological structures are terraces n° I, IV, V, VIII, IX and XI.

- *Terrace V and its sanctuary*

The lowermost remaining sanctuary is to be found on terrace n° V. Although its state of preservation is poor, three buildings may still be identified. Their orientation differs lightly from the orientation of the upper buildings. The main temple opens to the west and measures roughly 9.20m (E-W) by 8.40m (N-S) at its base. Its length let us think that the temple possessed a porch or was preceded by a gate. Of the *cella* itself, only the pit is still visible, whereas walls have fallen down and are nowadays limited to a shapeless amount of stones. Nevertheless, among those loose blocks, one can see interesting carvings, such as narrative reliefs,[156] pieces of decorative friezes with garlands and flowers, an ascetic-gargoyle,[157] pinnacles and a lion.
Facing the main temple are the remains a smaller shrine. Its staircase is almost touching the one of the main shrine. Given its very poor state of preservation, it is not possible to tell if the shrine was square or rectangular, but its front wall is roughly 4m long.
On the southern side of the main temple a small structure seems to have existed.
All shrines are built on a common, paved terrace, which is large enough to have sustained still another building to the north of the main temple – though there is presently no identifiable traces of it, this area being covered by dozens of stones probably fallen from the main shrine.

- *Terraces VIII and IX: middle compound*

Terrace n° VIII shelters two sets of buildings separated by a low stonewall. Ground level is slightly different in front of and behind this wall, so that one could talk about two terraces, VIII-a and VIII-b
Terrace nº VIII-a is delimited to the north, east and south by an enclosure wall.[158] Remains of four structures are visible. Three of these structures are in a north-south line, against the eastern wall of the enclosure.
Only the northernmost building was a shrine.[159] Its base is rectangular, measures 5.50m (E-W) x 6.25m (N-S) and has an important projection of 1.90m (E-W) x 5.25m (N-S) on the western side. Traces of stairs are lacking. The temple body follows the same pattern. It is a rectangle, 3.80 (E-W) x 4.70 (N-S), with niches on the northern, eastern and southern sides, and a porch on the face. The vestibule opens

[156] I have personally noticed two narrative reliefs. One is still *in situ* and is part of the cheek of the stair. The relief shows the lower parts of two animals (monkeys?), one standing, and the other kneeling. The second carving is a loose block showing the backside of a warrior holding a shield.
None of these reliefs are of high artistic value. They both seem rough, particularly in comparison with the nicely carved garlands still visible on some stones. They were maybe intended to be covered by stucco; it is also possible that they were not carved at the same period as the ornamental reliefs.

[157] The stone is triangle-shaped and is carved on two sides, so that it was intended to be seen from different directions and could stand alone, either on the roof or in the base. In its lower part, the stone is pierced by a small hole so that it might have functioned as gargoyle, maybe for ritual water. However, an ascetic-gargoyle is, to my knowledge, something unique, as gargoyles are usually *makara*-shaped. Maybe one should see a link between the motif chosen for the gargoyle and the nature of the temple.

[158] Unfortunately, the western ends of the northern and southern parts of this wall are not identifiable, so that it is impossible to determine if a fourth wall closed the terrace to the west. One should also note that it seems that the eastern wall continues further to the south. It is therefore highly probable that others buildings initially raised on this terrace.

[159] When the fieldwork for this research was carried on, the shrine was partly dismantled and restoration trials were carried on by the SPSP DIY. As a result, it was often difficult to distinguish details of the ground plan. Information from fieldwork has been completed on the base of a plan made by the restoration team in 1998. I apologize for possible mistakes.

on a short corridor leading to the *cella*. The latter is 2m (E-W) x 2.80m (N-S)[160]. Against its rear wall there is a 50cm-deep stone bench.[161]
In front of this shrine is a stone pavement measuring approximately 5.20m (N-S) x 4.65m (E-W).
South of if are two stone platforms. Both have roughly the same dimensions: 6m (E-W) x 8m (N-S). The southernmost one bears traces of 10 pillar bases and may be identified as a covered pavilion/*pendopo*.
Terrace VIII-b is occupied by two shrines. Only their bases remain. The northern shrine is slightly bigger than the southern one, but they seem to share the same plan. The southern shrine rose in the middle of a small courtyard, whose enclosure wall is partly excavated out of the natural rock.[162] The courtyard measures 18m (E-W) x 12.70m (N-S). The temple base is 7.40m square, with a projection on the western part. The porch is at the same level as the base, thus considerably lower than the ground of the *cella*. A flight of stairs links the porch to the *cella* door.[163] The temple body is a simple square.
South of the two temples, there is a levelled area where lots of temple stones are visible, some of them is possibly *in situ*.

The only structure now visible on terrace nº IX is a pavement measuring roughly 12.50m (E-W) x 16.50m (N-S).[164] Its western border is not clearly identifiable, so that it might have been wider.

- *Main compound*

The uppermost terrace shelters four structures: a main temple turned to the west and a row of three secondary shrines facing it.
The base of the main temple is 18.40m square, with projecting stairs on its western side.

> Its orientation is 269º09' (Siswoyo, 1996:7).

South of the stairs, within the base, there is a small niche housing a *lingga*; it is the geometrical centre of the sacred enclosure.
The temple body is also square, but with a projection for the porch on the western side. It measures 13m x 13m. Its outer walls are pierced by 11 niches (two on the western side and three on the other sides). The doorway gives access to a corridor leading to the *cella*. The latter is 6.20m square and has one niche in the northern, eastern and southern wall. In the middle of the room there is a huge *yoni*, adorned with a *nāga* and a turtle, and bearing a magnificent *lingga*.
The temple pit is not at the exact centre of the *cella*.
In front of the main temple are three small shrines, looking east. The northern and southern shrines have similar ground plans, measuring 5.11m x 5.11m at the base and 3m x 3m at the temple body level. On the northern, western and southern outer walls is a niche, while the eastern side is occupied by lightly projecting entrance way. The *cella* is 2.30m x 2.30m.

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[160] The whole organization of this temple inevitably recalls secondary temples of Plaosan Kidul (Prambanan) and *candi* Bima (Dieng plateau). The three structures possess this unusually wide vestibule. As it was already the case at Plaosan Kidul, temple body mouldings are continuous and also visible inside the vestibule, giving the impression that the latter is a mere addition.
[161] The front wall of the bench is divided into three panels by four pilasters. It might have been occupied by small sculptures.
[162] An aperture is visible within the southern side of the enclosure wall.
[163] The door giving access to the *cella* is adorned as an outer door.
[164] Two octagonal column bases are visible on the pavement; it is possible that the terrace was covered, like a *pendopo*.

The central shrine is a bit larger and slightly elongated. It measures 5.50m (E-W) x 6.60m (N-S) at the base.[165]
Remains of several enclosures of retaining walls were found around the uppermost terrace. The eastern side of the innermost enclosure would be 6m from the main temple while the outermost would be 10m away from it.

> The inner enclosure would measure more or less 48m x 48m (*Peta Grid Situs Candi Ijo* 1998).

Within the inner courtyard, at the cardinal points, were *lingga*-shaped boundary stones. As in Loro Jonggrang, the geometrical centre of the courtyard is located south of the stair leading to the main temple.

Sculptures:

> A sculpture of Śiwa was found on the site (Bosch 1915a: 40), and a Gaṇeśa was discovered near the main temple (Mundarjito 2002: 84). A Narasiṃha and a Wiṣṇu Triwikrama would also come from this site (Fontein 1990: 145).[166]

A sculpture of a female goddess, identified as Pārvatī, found near the temple is now at the Prambanan museum.

Inscriptions:

> Gold plate: inscription of Pāṇḍuranggabhasmaja (*candi* Ijo) dated early to mid 9th century (Casparis 1956: 174).
> Stone inscription made out of a single word on the doorjamb of the "secondary shrine of the second row" (Groneman 1889: 317).

Miscellaneous archaeological finds:

> The temple pit of the main temple (upper terrace) was excavated in the 19th century (Groneman 1889: 319ff). Although it had already been disturbed by that time, the excavation brought forth some interesting finds. The pit was filled with sand and stone fragments. Among those were found two small deposit boxes in stone and a kind of miniature altar. Mixed with sand there were also fragments of iron and gold. At the centre of the pit, apparently still *in situ*, was discovered a pillar made of 9 layers of cut stones, with a small duct piercing the stones from top to bottom. Between the different layers and in a cavity made at the bottom of the "pillar" were found two metal rings, several golden coins, one ruby, one golden plate and a piece of coral.

MIRI (Miring)

Administrative localization: Nguwot, Sambirejo, Prambanan, Sleman, DIY.
Geographical localization: 07° 46' 18.8"S
110° 30' 27.6" E
Precision: 7m
Alt.: 293m

Surroundings: In lower middle land, near the top of Mount Pegat (322m), with a view on *candi* Ijo, the Yogyakarta plain, the Prambanan plain and Mount Merapi.

Religion: Hindu.

Main features: Sanctuary type 2 (?); facing west.

State of preservation: Part of the temple base is still *in situ*.

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[165] When fieldwork was carried out, the central shrine in front of the main temple was in course of restoration and partly dismantled, so that I was not able to check dimensions of the temple body and *cella*.
[166] It is however not clear whether these two statues originates from *candi* Ijo, since they are elswhere reported as having been found at Sumur Bandung, which is a hundred meters to the north.

Description:

The site seems to have been made out of three terraces (*Ekskavasi Miri* 1989: 20), but today only the uppermost one is still visible.

The main temple stands on the highest and easternmost terrace. It opens towards the west.

Its exact orientation is 279º45' (*Ikhtisar Temuan Ekskavasi Situs Miri* 1989).

Only its square base remains (9,5m).

Southeast of the main temple, ruins of another building were found (4,5m square) (*Ekskavasi Miri* 1989: 20). Most of the sacred area is still to be excavated.

On the middle terrace *candi* stones were also found; they might have been part of a paved way leading to the upper terrace (*Ekskavasi Miri* 1989: 23). Fragments of bricks are also visible.

50m to the east of the temple were discovered the remains of a *stūpa* (namely its *yasti* and *padmasana*) (Soeroso 1985:3)

Sculptures:

On the site were discovered three *yoni* of different dimensions (the biggest, being 1,05m x 1,05m), one bull (B744c), a Śiwa Mahādewa (B744a; 2,34m), one *dwārapāla* and an Agastya (*Laporan Identifikasi di Nguwot*; *Laporan inventarisasi Wukirharjo, Sumberharjo dan Sambirejo* 1994).[167]

SUMBERWATU

Administrative localization: Sumberwatu, Sambirejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 06.1" S
110° 29' 47.5" E
Precision: 9m
Alt.: 200m

Surroundings: In lower middle land, on a hill in the northern part of Gunung Kidul, between the Ratu Boko plateau and Mount Pegat. It overlooks the Prambanan plain and offers a magnificent view of Mount Merapi, but also *candi* Loro Jonggrang, Sewu, Sojiwan and Plaosan. A few dozens meters below Arca Ganeça.

Religion: Buddhist (?).

Main features: Unknown.

State of preservation: Scattered stones.

Description: In the middle of a field, behind the houses, one can see a heap of *candi* stones. Among those are fragments of mouldings (some with a tore) and a few pieces of *stūpa*-like elements (probably parts of *yasti*) of different dimensions. *Candi* stones have been used in the construction of at least two houses and a stable of the *dusun*. A 1,70m long lintel is still lying nearby.

Identification of the site is difficult. It might have been either a compound made of several *stūpa* and/or a temple. The fact that a lintel is visible in the direct neighbourhood, that *stūpa*-like elements are numerous and not of the various dimensions could confirm the temple hypothesis.

However, it is also possible that all the stones do not belong to the same structure.

Shaiva remains have also been found in the area (several *lingga* and two Gaṇeśa statues) (*Laporan Inventarisasi Wukirharjo, Sumberharjo dan Sambirejo*).[168]

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[167] The *dwārapāla* (of which only the lower part remains) and two *yoni* are still on the site.

[168] The *lingga* are still in Sumberwatu. They have been gathered on the ground of a modern Hindu *pura*.

Sculptures:

Apart from the above-mentioned Hindu sculptures, several other statues were discovered on the territory of *dusun* Sumberwatu, although not directly near the architectural remains. Three unfinished sculptures of seated men, measuring between 1,70m for the smallest to 2m for the tallest (B743a, b, c) were found (*Laporan inventarisasi Wukirharjo, Sumberharjo dan Sambirejo*).[169]

Miscellaneous archaeological finds:

A *peripih* was discovered in the village. It is a cubic stone (36.5cm x 35.5cm) with a triangle-shape hole in its middle. Around the triangle are carved four attributes (clockwise): a *gaḍa* (at the triangle top), an arrow, a spear and a wheel. Between the drawings are four small inscriptions (*Laporan identifikasi di Sumberwatu* 1985: pl.14).

SUMUR BANDUNG

Administrative localization: Groyokan, Sambirejo, Prambanan, Sleman, DIY.

Geographical localization: 07° 46' 57.8" S
110° 30' 43.1" E
Precision: 15m
Alt.: 375m

Surroundings: On a flattened area on the northern slope of Mount Ijo, with a view on the Prambanan plain, some 150 to the north of Ijo.

Religion: Hindu.

Main features: Unknown.

State of preservation: Only one line of stone is still visible.

Description: The area is scattered with several stone blocks. A few of them, in a line, seem to be remains of an *in situ* wall running N-S.

Sculptures:

In this area, north of *candi* Ijo, were discovered a sculpture of Narasimha and another of Triwikrama (Santoso 1992: 58).[170]

KRAPYAK

Administrative localization: Krapyak, Sumberharjo, Prambanan, Sleman, DIY.

Geographical localization: 07º 48' 26.7" S
110º 29' 15.2" E
Precision: Map.[171]
Alt.: 95m

Surroundings: In lowland, on flat ground, roughly 900m west of *kali* Gawe/Sorogeduk. The site was located 200m south of Polangan.

Religion: Hindu.

Main features: Unknown.

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[169] Those sculptures are maybe linked with the site called Arca Ganeça, which is located right above the village of Sumberwatu. It is possible that, as in the case of Gupolo, there was a stonecutter workplace nearby.

[170] They might come from *candi* Ijo, see under this entry.

[171] The site has been plotted on a Bakosurtanal map according to the map given by IJzerman (1891).

State of preservation: No visible remains.

Description:

Brumund described the site as an "oppervlakte van 50 pas" (Brumund, 1854: 44). A few years ago, some temple stones were still visible, together with fragments of a doorway (B746j) (*Laporan inventarisasi Wukirharjo, Sumberharjo dan Sambirejo* 1994).

Sculptures:

Hindu sculptures were found on the site, a.o. a *yoni*, a Durgā and 2 bulls (Verbeek 1891: 169; IJzerman 1891: 121; Brumund 1854: 44).

POLANGAN

Administrative localization: Polangan, Sumberharjo, Prambanan, Sleman, DIY.

Geographical localization: 07º 48' 20.1" S
110º 29' 14.4" E
Precision: Map.[172]
Alt.: 100m

Surroundings: In lowland, on flat ground, roughly 900m west of *sungai* Gawe/ Sorogeduk. The site was located 200m north of Krapyak.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

At the end of the 19th century, a couple of stones were still visible (Verbeek 1891:170). A lintel was found here more recently (*Hasil pengumpulan Prambanan*; *Laporan inventarisasi Wukirharjo, Sumberharjo dan Sambirejo* 1994).

Sculptures:

A few sculptures were discovered in the *desa*, among other two *yoni* (B745, B745a)[173] and two fragments of standing statues (B746, B747) (*Hasil pengumpulan Prambanan*; *Laporan inventarisasi Wukirharjo, Sumberharjo dan Sambirejo* 1994).

SAWO (SAWOEK)

Administrative localization: Sawo, Sumberharjo, Prambanan, Sleman, DIY.

Geographical localization: 07° 47' 58.9" S
110° 29' 53.8" E[174]
Precision: 16m
Alt.: 100m

Surroundings: In lowland, on flat ground but close to the steep western slope of the Gungung Kidul massif. Roughly 300m east of *sungai* Gawe/Sorogeduk.

Religion: Unknown.

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[172] The site has been plotted on a Bakosurtanal map according to the map given by IJzerman (1891).

[173] B745 measures 110cm x 110 cm and is carved with garlands, *bandes à châtons* and a lotus flower at the basis of the draining duct.

[174] The coordinates given are those of the stone still visible in the village. However, according to IJzerman's map (1891), it appears that the structure was originally a few dozens meters east of the localization of present-day remains.

Main features: Unknown.

State of preservation: Scattered stones.

Description:

On the site were found plain *candi* stones as well as antefixes, fragments of mouldings and a *makara* (B741w) (*Laporan inventarisasi Wukirharjo, Sumberharjo dan Sambirejo* 1994). As antefixes were not carved yet, it is probable that the temple, like many others, was left unfinished.

Today, only one stone is still visible, along a road heading north.

GROGOL

Administrative localization: Grogol, Margodadi, Seyegan, Sleman, DIY.

Geographical localization: 07º 44' 26.3" S
110º 18' 08.2" E
Precision: Map.
Alt.: 145m

Surroundings: In lowland, on flat ground, on the western bank of a tributary of the Krusuk River.

Religion: Hindu.

Main features: *Yoni.*

State of preservation: No visible remains.

Description/sculptures:

One Durgā (B858), one *dwārapāla* (B861) and several *yoni* were once visible in the village (*Hasil pengumpulan Seyegan*; *Daftar Peniggalan Benda DIY* 1985: 73-74) and might suggest the former presence of a temple.

PLANGGAK

Administrative localization: Planggak, Margokaton, Seyegan, Sleman, DIY.

Geographical localization: 07º 43' 16.8" S
110º 16' 48.1" E
Precision: Map.
Alt.: 140m

Surroundings: In lowland, on flat ground.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

Some remains were found in this village: one *yoni* (B840), one antefix, one Gaṇeśa (B842), one finial and one *dewi* (B844) (*Hasil pengumpulan Seyegan*; *Daftar Peninggalan Benda DIY* 1985: 71).

The presence of sculptures and architectural elements suggests that a temple might have existed.

SUSUKAN

Administrative localization: Susukan, Margokaton, Seyegan, Sleman, DIY.

Geographical localization: 07º 42' 49.0" S
110º 17' 16.5" E
Precision: Map.[175]
Alt.: 150m.

Surroundings: In lowland, on flat ground.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

In this village were found a few building fragments (a.o. a 193cm long stone), together with a Gaṇeśa and a *yoni* (*Daftar Peninggalan Benda DIY* 1985: 69-70).

KLACI

Administrative localization: Klaci-lor, Margoluwih, Seyegan, Sleman, DIY.

Geographical localization: 07º 45' 14.8" S
110º 17' 44.0" E
Precision: Map.
Alt.: 125m

Surroundings: In low land, on flat ground, on the banks of a tributary of *kali* Krusuk.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

Among stone blocks were found a four-armed Gaṇeśa (B864), a bull (B865) and an Agastya (B866)[176] (*Hasil pengumpulan Seyegan*; *Daftar Peninggalan Benda DIY* 1985:77-78). A little further were discovered a *yoni* and a Durgā (*Daftar Peninggalan Benda* DIY 1985: 77).

[175] In the absence of detailed information, the coordinates given are those of the centre of the town formed from the villages of Susukan Satu, Susukan Dua and Susukan Tiga.

[176] In Margoluwih itself there is a *yoni* (B862) and a Durgā Mahiṣāsuramardinī (B863) that could actually come from the same temple; the triad Gaṇeśa - Durgā -Agastya would then be complete.

MALANG

Administrative localization: Malang, Caturharjo, Sleman, Sleman, DIY.

Geographical localization: 07º 41' 23.8" S
110º 19' 41.5" E
Precision: Map.
Alt.: 240m

Surroundings: In lower middle land, on flat ground but in an area where the slope of Mt Merapi can already be felt, on the bank of a tributary of the Sangubanyu River.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/ sculptures:

Lots of *candi* stones were discovered in the village, together with two unfinished Gaṇeśa (B216, B217) and a small *yoni* (B254) (*Hasil pengumpulan Sleman*; *Laporan Kegiatan Sleman* 1990).

KARANGTANJUNG

Administrative localization: Karangtanjung, Pendowoharjo, Sleman, Sleman, DIY.

Geographical localization: 07º 42' 29.1" S
110º 22' 06.6" E
Precision: Map.
Alt.: 230m

Surroundings: In lower middle land, on the first slopes of Mount Merapi, in an area scattered with small rivers, on the banks of a tributary of *kali* Winongo.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Several *candi* stones were found here, among others a small antefix (B269); an unfinished sculpture (B265h) and a block carved with a medallion and *bande à chatons* (B270) (*Hasil pengumpulan Sleman*).

JETIS (Ngadiyono, Jogopaten)

Administrative localization: Jetis, Pendowoharjo, Sleman, Sleman, DIY.

Geographical localization: 07° 41' 43.7" S
110° 22' 36.1" E
Precision: 11m
Alt.: 270m

Surroundings: In the lower middle land, on the lower slope of Mount Merapi, with view of the mountain summit. Within the Doso River, a tributary of *kali* Winongo.

Religion: Hindu (?).[177]

Main features: Unknown.

State of preservation: Scattered stones.

Description:

Temple stones were numerous during the 19th century (Verbeek 1891: 163).

Today, only two blocks are still lying in the *kali* Doso. At a nearby modern bathing place, two *kāla* have been used as wall decoration (B265a, B266). Both have paws.

Sculptures:

Formerly, there was also a relief of a four-armed god, probably Wiṣṇu (B265/BG579)[178] (*Hasil pengumpulan Sleman*; *Laporan Kegiatan Sleman* 1990).

WADAS

Administrative localization: Wadas, Tridadi, Sleman, Sleman, DIY.

Geographical localization: 07º 41' 56.3" S
110º 21' 00" E
Precision: Map.
Alt.: 235m

Surroundings: In lower middle land, on flat ground, although on the first slopes of Mount Merapi, on the western bank of *kali* Bedog. The site is located some 750m to the southwest of Kepitu.

Religion: Buddhist.

Main features: *Stūpa*.

State of preservation: No visible remains.

Description: This site has furnished lots of fragments of *stūpa*. The most interesting pieces were brought to the office of the SPSP DIY in Bogem.

Archaeological excavations made in 1993 showed that the fragments belonged to two different *stūpa* (*Laporan penggalian Wadas* 1993). The northernmost structure (*stūpa* I) was built on a long square foundation made of natural stones. This foundation was 2,10m long and consisted of two levels, the upper one being slightly smaller. The monument was left unfinished: it was not carved.

Stūpa II was smaller than *stūpa* I. It rested on a natural stone foundation too, even though it only consisted of one layer of stones. The structure is almost complete, one the square base, one could see the *aṇḍa*, *harmikā*, *yasti* and *cattrā*. The total height of *stūpa* II was 2,60m. On the contrary of *stūpa* I, this second monument was richly decorated.

According to the plan drawn by the SPSP DIY, those *stūpa* were not positioned towards the cardinal points, but appeared to follow a NW-SE axis. From the existing documentation, it is difficult to determine the relative localization of both structures. However they do not seem on a line.

Some meters west of the *stūpa* were remains of a wall, probably part of an enclosure.

As noticed in *Laporan 1993*, this arrangement of two *stūpa* within a single, own site is rare, if not unique in Java. Usually, this type of monument is found as part of a wider sanctuary (such as at Plaosan or Sewu). However, these "double *stūpa*" are known from the reliefs of Borobudur (Ib/80).[179]

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177 On the basis of the discovery of a statue identified as Wiṣṇu.

178 It is now at the office of the SPSP in Bogem.

179 Dawangsari might also belong to "double *stūpa*" sanctuaries.

MIRING

Administrative localization: Morangan, Triharjo, Sleman, Sleman, DIY.

Geographical localization: 07º 41' 23.8" S
110º 20' 47.3" E
Precision: Map.[180]
Alt.: 250m

Surroundings: In lower middle land, on flat ground, although on the first slopes of Mount Merapi, between *kali* Konteng (to the west) and a tributary of the Ngalang River (to the east).

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

A *yoni* (B254) was discovered here, together with some plain stone blocks (*Laporan Kegiatan Sleman* 1990).

PANGGERAN

Administrative localization: Panggeran, Triharjo, Sleman, Sleman, DIY.

Geographical localization: 07º 40' 45.6" S
110º 20' 49.7" E
Precision: Map.[181]
Alt.: 290m

Surroundings: In lower middle land, on the first slopes of Mount Merapi, on the banks of *kali* Kuning, a tributary of the Konteng River.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Temple remains were once visible in the area, together with a *lingga* (Verbeek 1891:162; Hoepermans 1913: 221; Bosch 1915a: 19). More recently, the SPSP DIY was still able to notice the presence of a few stones and one antefix (*Laporan Kegiatan Sleman* 1990).

[180] In the absence of detailed information, the coordinates have been taken at the centre of the town formed of *dusun* Morangan Tujuh and Morangan Delapan.

[181] In the absence of detailed information, coordinates have been taken roughly at the centre of the town composed of the hamlets of Panggeran Kulon, Panggeran Wetan and Panggeran Tegal.

KEPITU

Administrative localization: Kepitu, Trimulyo, Sleman, Sleman, DIY.

Geographical localization: 07º 41' 39.8" S
110º 21' 17.3" E
Precision: Map.
Alt.: 250m

Surroundings: In lower middle land, in an area where the slope of Mount Merapi can already be felt, Between the Bedog River (to the west) and one of its tributary (to the east). The site was located some 750m to the northeast of Wadas.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Temple fragments were found here by the SPSP DIY, such as one antefix, carved stones, finials and pieces of pinnacles (*Hasil Sleman*; *Laporan Kegiatan Sleman*).

Sculptures:

One bull (B256), two *yoni* (B256c, B256a), one *lingga* (B256b) and one Gaṇeśa (B261) are also coming from this village (*Hasil pengumpulan Sleman*; *Laporan Kegiatan Sleman* 1990).

PLUMBON

Administrative localization: Plumbon, Mororejo, Tempel, Sleman.

Geographical localization: 07º 40' 23.8" S
110º 19' 18.0" E
Precision: Map.[182]
Alt.: 260m

Surroundings: In lower middle land, on the first slopes of Mount Merapi, along *kali* Putih and its tributaries.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description/sculptures:

Bosch (1915:15) noticed traces of a temple base, although there is nothing left today. A bull (B441) and a *yoni* (B442) were also found here by the SPSP DIY (*Hasil pengumpulan Tempel*).

[182] In the absence of detailed information, the coordinates are roughly those of the centre of the village composed of the hamlets of Plumbon Cilik, Plumbon Lor, Plumbon Tengah and Plumbon Kidul.

LENGKONG

Administrative localization: Lengkong Lor, Sumberejo, Tempel, Sleman, DIY.

Geographical localization: 07° 40' 23.9" S
110° 17' 34.7" E
Precision: 17m
Alt.: 210m

Surroundings: In lower middle land, on the first slopes of Mount Merapi, within the extended bed of the Krasak River.

Religion: Buddhist.

Main features: *Stūpa*

State of preservation: Almost intact.

Description: Remains of a *stūpa* are visible here. The stones were found a dozen of meters from their present place, in a field. The base is roughly 120m square and the superstructure is of similar diameter.

SOSROKUSUMAN

Administrative localization: Sosrokusuman, Suryatmajan, Danurejan, Kotamadya Yogyakarta, DIY.

Geographical localization: 07º 47' 38.2" S
110º 22' 04.9" E
Precision: Map.
Alt.: 110m

Surroundings: In lowland, along the western bank of *kali* Code.

Religion: Unknown.

Main feature: Single temple; square.

State of preservation: No visible remains.

Description:

A square temple base was discovered here in 1935 (Stutterheim 1931-1935b: 17).

APPENDIX 3

INVENTORY OF THE TEMPLE REMAINS OF KABUPATEN MAGELANG

GUNUNG (Candi Gunung, Sangubanyu)

Administrative localization: Sangubanyu, Banyuwangi, Bandongan, Magelang, JT.

Geographical localization: 07º 29' 08.2" S
110º 11' 47.3" E
Precision: Map.
Alt.: 365m

Surroundings: In lower middle land, on a gentle slope, 350m to the east of *kali* Sibangkong and 750m to the west of the Progo River.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

The graveyard of the hamlet was scattered with temple stones. A few sculptures were also discovered on the site, among others, one Gaṇeśa, a bull and a *yoni* (Verbeek 1891: 143; Krom 1914a: 216).

BOROBUDUR

Administrative localization: Borobudur, Borobudur, Borobudur, Magelang, JT.

Geographical localization: 07º 36' 28" S
110º 12'15" E
Precision: 15m
Alt.: 250m

Surroundings: In the lower Middle land, on flat ground

Religion: Buddhist.

Main features: Organic compound (?); facing east; staggered square.

State of preservation: The stepped pyramid has been restored up to its summit; remains of secondary structures (mainly terraces) are not visible anymore.

Description: The monument has been fully described in (at least) two main monographs: N.J. Krom, T. van Erp's *Beschrijving van Barabudur* (1920) en Dumarçay's *Histoire architecturale du Borobudur* (1977). I will thus be very brief and refer the reader to these works for further information.

Borobudur was erected on a natural hill, artificially modelled to serve as the core of a step pyramid. This latter is made of 9 steps. The 6 lower terraces have a staggered square ground plan, whereas the upper terraces are more or less circular.[1] The whole is topped by a huge *stūpa*. One accesses the monument *via* four axial staircases.

[1] The lower most of these circular platforms is actually lightly "squarish", while the uppermost is almost a circle.

The monument has undergone numerous modifications (see Dumarçay 1977). One of the most intriguing of these modifications is the addition of the lowermost staggered square terrace, built against the original base of the monument and hiding reliefs that had already been carved on the base.

The next 5 staggered square terraces are separated from the outside world by a high parapet. Both the wall of the terraces and the parapet are carved with reliefs.

The upper, circular terraces bear a multitude of cloistered *stūpa* sheltering sculptures of *buddha*.

BANON (Brajanalon)

Administrative localization: Jligudan, Borobudur, Borobudur, Magelang, JT.

Geographical localization: 07º 36' 09.5" S
110º 12' 53" E
Precision: Map.
Alt.: 235m

Surroundings: In the lower middle land, on flat land, along the western bank of *kali* Progo. Roughly 700m to the northwest of Pawon and 750m north of Barepan.

Religion: Hindu.

Main features: Sanctuary type 5 (?); facing west.

State of preservation: No visible remains.

Description:

According to Krom, there once stood a Hindu temple, but traces on the building itself had already disappeared when he visited the place (Krom 1923, I: 328).
According to photographs from the Oudheidkungigen Dienst, there were at least three temple in a north-south line. All the structures were made of bricks, with some pieces of stones (doorsills, lintels) and faced west. (Knebel 1905-1906: pl.82)
Bricks were found more recently by the Balai Arkeologi (Tjahjono 2002: table 1)

Sculptures:

Numerous sculptures come from this site, among others, one Śiwa Mahādewa, one bull, one Agastya, one Wiṣṇu on Garuḍa, one Brahmā and one Gaṇeśa (Krom 1923, I: 328). The Wiṣṇu was found *in situ* in the central temple; the Gaṇeśa was at the rear of the southern temple and probably belonged to its *cella* (Knebel 1905-1906: pl.82).

BRANGKAL

Administrative localization: Brangkal, Candirejo, Borobudur, Magelang, JT.

Geographical localization: 07º 37' 15.6" S
110º 13'41.5" E
Precision: Map.
Alt.: 225m

Surroundings: In lower middle land, on flat ground, on the western bank of the Progo River and 750m east of *kali* Sileng.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

Brick fragments were found in the village (Tjahjono 2002: table 1).
One bull (J.103), a Gaṇeśa (J.104) and a small *yoni* (J.105) were also discovered (*Pengumpulan data Magelang* 1997-1998).

KARANGREJO

Administrative localization: Paren, Karangrejo, Borobudur, Magelang, JT.

Geographical localization: 07º 36' 00.8" S
110º 11' 15.6" E
Precision: Map.[2]
Alt.: 260m

Surroundings: In lower middle land, on flat ground, 1km north of the Sileng River and 500m to the west of Kanggan.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Earlier there were fragments of bricks dating from the classical period (Tjahjono 2002: table 1).

Sculpture:

Fragments of a statue of Śiwa have been discovered here (Balai arkeologi Yogyakarta, Personal communication, 2002).

PAKEM

Administrative localization: Pakem, Majaksini, Borobudur, Magelang, JT.

Geographical localization: 07º 38' 04.5" S
110º 12' 07.4" E
Precision: Map.
Alt.: 400m

Surroundings: In lower middle land, on the northern slope of the Menoreh hills.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Traces of a brick structure were discovered in the village (Tjahjono 2002: table 1)

[2] The hamlet of Paren is not mentioned on Bakosurtanal map, but it is visible on the TD map.

DIPAN

Administrative localization: Dipan, Tuksongo, Borobudur, Magelang, JT.

Geographical localization: 07º 37' 09.0" S
110º 12' 35.7" E
Precision: Map.[3]
Alt.: 230m.

Surroundings: In lower middle land, on flat ground, on the southern bank of the Sileng River. The hamlet of Dipan is located some 700m to the south southwest of Jowahan

Religion: Unknown.

Main features: Single temple.

State of preservation: No visible remains.

Description:

> According to the Balai Arkeologi there was the foundation of a brick temple 1.5m beneath the ground level. It was a plain square base measuring 5m x 5m and turned to the east. (Tjahjono 2002: table 2)

Earthen antefixes and bricks coming from this structures are now at the Borobudur Museum.

BAREPAN

Administrative localization: Barepan, Wanurejo, Borobudur, Magelang, JT.

Geographical localization: 07º 36' 33.3" S
110º 12' 56.3" E
Precision: Map.
Alt.: 235m

Surroundings: In lower middle land, on flat ground, 900m north of *kali* Sileng and 650m west of the Progo River. The site is located 600m to the southwest of Pawon, 600 to the north northeast of Jowohan and 750m to the South of Banon.

Religion: Hindu

Main features: *Yoni.*

State of preservation: No visible remains.

Description:A *yoni* has been discovered here. It is now at the conservation in Borobudur.

[3] The hamlet of Dipan is not mentioned on Bakosurtanal map, but it is visible on the TD map.

JOWAHAN

Administrative localization: Jowahan, Wanurejo, Borobudur, Magelang, JT.

Geographical localization: 07º 36' 51.4" S
110º 12' 50.5" E
Precision: Map.
Alt.: 230m

Surroundings: In lower middle land, on flat ground, on the northern bank of the Sileng River. The site is located 600m to the south southwest of Barepan, 700m to the north northeast of Dipan and 1000m to the south southwest of Pawon.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Brick fragments have been found here (Tjahjono 2002: table 1).

PAWON (BRODJONALAN)

Administrative localization: Brojongan, Wanurejo, Borobudur, Magelang, JT.

Geographical localization: 07° 36' 22.0"
110° 13' 1.03"
Precision: 9m
Alt.: 258m

Surroundings: Some 150m west from the Progo River.

Religion: Buddhist.

Main features: Single temple; facing west; staggered square; enclosure.

State of preservation: Restored up to the superstructure.

Description: Actually, the temple faces west northwest.

Its exact orientation is 287º 59' (Siswoyo 1996: 4).

The temple base is a staggered square measuring 9.30m (E-W) x 9.40m (N-S). Projections are shallow. An additional projections on the western side shelters the staircase.

On the platform raises the temple body. It is also a staggered square and measures 5.5m x 5.5m. It has a porch on its western side.[4]

A short corridor leads to the 2.60m square *cella*.

Roughly 10.50 from the temple, on its four sides, were found remains of a kind of enclosure. The latter was made of one layer of brick laying on river stones.

[4] At the level of the temple body, the vestibule does not bear mouldings and seems to be structurally independent from the temple itself.

Some 13.20 to the east of the building were discovered remains of a brick wall parallel to the temple and running roughly north south. Excavation of this wall revealed traces of one staircase (Kenbel 1909: pl.62).

KANGGAN (Asem)

Administrative localization: Kanggan, Wringin Putih, Borobudur, Magelang, JT.

Geographical localization: 07° 36' 01.0"
110° 11' 32.2"
Precision: 9m
Alt.: 317m

Surroundings: In lower middle land, on flat ground, some 500m to the east of Karangrejo.

Religion: Hindu

Main features: Single temple (?).

State of preservation: The only visible remains are two *yoni*.

Description: Two *yoni* are still standing on the site. One is a huge stone (1.18m x 1.18m x 1m) adorned with a *nāga*, a turtle and a *garuḍa*. The other is smaller (68cm x 68cm x 70cm), without any decoration.

Two more *yoni* coming from here have been brought to the Borobudur Museum.

According to the Balai Arkeologi, there were fragments of stone blocks in the surroundings (Tjahjono 2002: table 1). This is confirmed by a photo from the early 20th century (OD no 2089)

In the nineteenth century it seems that the main *yoni* was on a small earthen (?) mound and could be reached via a staircase (Verbeek 1891: 144).

Sculptures:

In the neighbourhood were a Śiwa and a Gaṇeśa (Knebel 1911a: pl.184; Krom 1914a: 272).

Miscellaneous archaeological finds:

In the neighbourhood there was a pit where an urn containing precious materials would have been found. (Krom 1914a: 272)

SIGENTAN

Administrative localization: Sigentan, Wringin Putih, Borobudur, Magelang, JT.

Geographical localization: 07º 35' 19.7" S
110º 11' 32.5" E
Precision: Map.
Alt.: 265m

Surroundings: In lower middle land, on flat ground, roughly 1km to the west of the Tangsi River and 1.5km to the east of *kali* Progo.

Religion: Hindu (?).

Main features: Unknown.

State of preservation: Scattered bricks.

Description: Fragments of ancient bricks are scattered in the village.

According to inhabitants, a *yoni* was found here (Tjahjono, 2002:15).

GIOMBONG (Gyombong, Gijbong)

Administrative localization: Giombong, Surodadi, Candimulyo, Magelang, JT.

Geographical localization: 07º 27' 56.3" S
110º 18' 40.7" E
Precision: Map.
Alt.: 650m

Surroundings: In upper middle land, on the western slope of Mount Merbabu, between *kali* Katang (to the north) and *kali* Kecapak (to the south).

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Traces of a bricks temple used to be visible (Krom 1914a: 221; Krom 1923, I: 408).

ASU (Kuning)

Administrative localization: Candi Pos, Sengi, Dukun, Magelang, JT.

Geographical localization: 07° 31' 38.9"
110° 21' 06.0"
Precision: 8m
Alt.: 665m

Surroundings: In upper middle land, on the western slope of Mount Merapi, 190m north of *kali* Tlising, 200m east of the Pabelan River and 250m to the northeast of their confluence. From the site, one has a great view on Mount Merapi, Mount Sumbing and the plain of Muntilan. The temple is located 280m to the east northeast of *candi* Lumbung and 190m to the south of Pendem.

Religion: Unknown.

Main features: Single temple; facing west; square.

State of preservation: The base and the lower part of the temple body are preserved.

Description: The temple faces west.

Its exact orientation is 269º 13' (Siswoyo 1996: 4).

Its base is 7.90m square and has a small projection on the western side.

The platform is almost non-existing: the temple body is only a little smaller than the base, leaving no space for circumambulation.

The temple body raises on a double foot that measures 5.60m x 5.60m at its bottom.

Lightly projecting niches are visible on the northern, eastern and southern walls, while two additional niches flank the entrance.

The *cella* is 3m square. At its centre, there is a pit 1.25m square and at least 4m deep.

LUMBUNG (Kuning)

Administrative localization: Candi Pos, Sengi, Dukun, Magelang, JT.

Geographical localization: 07° 31' 41.9"
110° 20'57.3"
Precision: 10m
Alt.: 650m

Surroundings: In upper middle land, on the western slope of Mount Merapi, along the northern bank of *kali* Pabelan. The temple is located 280m to the west southwest of *candi* Asu and 400m to the southwest of Pendem.

Religion: Unknown.

Main features: Single temple; facing west; square.

State of preservation: Only the base and the lower part of the temple body are preserved.

Description: The temple faces west.

> Its exact orientation is 267º 09' (Siswoyo 1996:4).

Its base is 8.66m square, with a small projection on the western side. As at Asu, there is no place for circumambulation on the platform.

The temple body has a double foot and 5.60m square. The northern, eastern and southern sides are pierced by one niche.

Within the *cella*, one can see the temple pit.

PENDEM (Kuning)

Administrative localization: Candi Pos, Sengi, Dukun, Magelang, JT.

Geographical localization: 07° 31' 32.9"
110° 21' 06.9"
Precision: 8m
Alt.: 675m

Surroundings: In upper middle land, on the western slope of Mount Merapi, along the southern bank of the Pabelan River. The site offers a magnificent view on the Merbabu and Merapi. *Candi* Asu is also visible from here. The temple is located 190m to the north of Asu and 400m to the northeast of Lumbung.

Religion: Unknown.

Main features: Single temple; facing west; staggered square.

State of preservation: Only the base and the foot of the temple body are left.

Description: The temple faces west.

> Its exact orientation is 249º 37' (Siswoyo 1996:3).

Its base is square, measures 12.80m x 12.80m and has a projection on the western side for the staircase.

The temple body is a staggered square, although the projections are not deep at all. It measures 7.15m x 7.15m and has niches on the northern, eastern and southern sides.

The *cella* was roughly 3.20m square.

Inscriptions:

Roughly 250m to the north of the temple was found an inscribed *lingga*, known as the Śrī Manggala inscription and dated 796 śaka (874 A.D.; Sarkar 1971-1972: no 32).

GONO (Gunung Gono)

Administrative localization: Gunung Gono, Banyudono, Dukun, Magelang, JT.

Geographical localization: 07° 33' 10.4"
110° 19'12.3"
Precision: 25m
Alt.: 535m

Surroundings: In upper middle land, on the top of the small *gunung* Gono, a hill that rises on the western slope of Mount Merapi. From the hill one can clearly see, Mounts Merapi, Merbabu and Sumbing. At the foot of *gunung* Gono, is one of the sources of the Birun River. North of hill, there is another branch of that river, while directly south of it flows *kali* Keji.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description/sculptures: Among the trees and bushes, one can still see a huge *yoni* lying on its side (1.15x1.15x1m; J.117) surrounded by river stones.[5] Not far from the *yoni* are fragments of sculptures. A body is recognizable, with a rounded belly and little legs folded underneath. This might well be the Gaṇeśa mentioned by Verbeek (Verbeek 1891: 154). There is no trace of the stone urn mentioned by the Dutchman.

GEDUNGAN (Gondangan, Kalibening Duwur)

Administrative localization: Gedungan, Kalibening, Dukun, Magelang, JT.

Geographical localization: 07º 33' 14.0" S
110º 21' 05.8" E
Precision: Map.
Alt.: 635m

Surroundings: In upper middle land, on the western slope of Mt Merapi, along the southern bank of the Cacaban River.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

There used to be remains of a small temple (Krom 1914a: 246; Aalst 1899: 397).

[5] River stones are an element commonly found within the foundation of Javanese temples, either Buddhist or Hindu. Their presence atop of a hill is certainly not natural and is a good indicator, together with the *yoni*, of the former existence of a shrine.

SUMBER

Administrative localization: Sumber, Sumber, Dukun, Magelang, JT.

Geographical localization: 07º 32' 34.1" S
110º 21' 15.6" E
Precision: Map.
Alt.: 675m

Surroundings: In upper middle land, on the western slope of Mount Merapi, between two tributaries of the Keji River (running north and south of the hamlet).

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

There were some temple remains, a Gaṇeśa and a *yoni* (Knebel 1911a: 238; Krom 1914a: 247; Verbeek 1891: 153).

WATES

Administrative localization: Kuwajuhan, Wates, Dukun, Magelang, JT.

Geographical localization: 07º 33' 45.2" S
110º 20' 17.3" E
Precision: Map.
Alt.: 550m

Surroundings: In upper middle land, on the western slope of Mount Merapi, along a tributary of the Blongkeng River and 300m north of the latter. The hamlet of Wates is located 1km to the north northwest of Ngampel.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

At the end of the nineteenth century, the base of a temple was still visible. It measured 5.12m x 2.56m and supported a *yoni* (Knebel 1911a: 238; Aalst 1899: 396).

KAPONAN (Keponan, Candi)

Administrative localization: Kaponan, Grabag, Grabag, Magelang, JT.

Geographical localization: 07º 22' 19.7" S
110º 19' 55.9" E
Precision: Map.
Alt.: 685m

Surroundings: In upper middle land, on flat ground but in an hilly area.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description/sculptures:

There were remains of a temple base and one Gaṇeśa (Krom 1914a: 233).

PLUMBON

Administrative localization: Plumbon, Grabag, Grabag, Magelang, JT.

Geographical localization: 07º 21' 52.2" S
110º 19' 14.7" E
Precision: Map.
Alt.: 670m

Surroundings: In upper middle land.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

According to Krom there were some temple stones on the top of a small hill (Krom 1914a: 230).

KALANGAN

Administrative localization: Puntingan, Grabag, Grabag, Magelang, JT.

Geographical localization: 07º 22' 20.5" S
110º 19' 32.9" E
Precision: Map.
Alt.: 685m

Surroundings: In upper middle land, on the slope of a hill.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

A heap of temple stones used to be here (Krom 1914a: 233).

UMBUL (Air Panas, Eijer Panas, Candi Panas)

Administrative localization: Candi Umbul, Kertoharjo, Grabag, Magelang, JT.

Geographical localization: 07° 21' 34.8" S
110° 17' 49.3" E
Precision: 8m
Alt.: 550m

Surroundings: In upper middle land, at the bottom of a small but deep valley surrounded by hills, 50m south of *kali* Elo.

Religion: Hindu.

Main features: Bathing place.

State of preservation: Both pools are still visible.

Description: The site is made out of two pools built on hot springs. The upper pool measures 7,15m (E-W) x 12.50m (N-S). A staircase located in its eastern side gives access to its bottom, made of river stones.

The second pool is slightly lower and is 8.50m x 7m. Its staircase is located to the north. It is linked to the upper pool by a 2m long water duct, so that water can freely flow from the large pool to the lower one.

Numerous scattered stones are visible around the pools, among other several *lingga* shaped stones, one *yoni*, numerous mouldings and one miniature temple.

> Friederich thought that it was possible that two temples once stood here, although their bases were impossible to locate (Friederich 1876: 104).

Sculptures: Fragments of seven sculptures with bird lower limbs are visible. They might have been birds, *kinnara* or *garuḍa*.

> Several other sculptures were discovered here, among others one *lingga*, 2 *yoni*, 2 Gaṇeśa, 2 Durgā and one Agastya (Friederich 1876: 104; Verbeek 1891: 151; Krom 1914a: 228). According to Krom, a *garuḍa* with a human body was also found among the ruins (Krom 1923, I: 409).

BATU RONG (Rong Watu, Selarong)[6]

Administrative localization: Duku (?), Ketangi, Kaliangkrik, Magelang, JT.

Geographical localization: 07º 29' 15" S
110º 09' 30" E[7]
Precision: Map.
Alt.: 500m

Surroundings: In upper middle land, on the slope of Mount Beser.

Religion: Hindu.

Main features: Cave.

State of preservation: Unknown.

Description/sculptures:

> This man-made cave was located near the village of Trami or Tresmi, near Paren, on the Mount Beser. Inside were a *yoni* and its *lingga*. (Friederich 1876: 98; Verbeek 1891: 144)
>
> However, Hoepermans (1913:156), says it is between *gunung* Beser and *gunung* Tersmi, near the villages of Duku, Paren and Kebon Pating.

---

6 I have not been able to find the exact place.

7 As the exact localization is unknown, have been taken at mid distance from Paren to Tresmi.

NAMBANGAN (Ngambangan)

Administrative localization: Candi Nambangan, Rejowinangun Utara, Magelang Selatan, Magelang, JT.

Geographical localization : 07° 28' 54.1" S
110° 13' 42.4" E
Precision: 8m
Alt.: 350m

Surroundings : In lower middle land, on flat ground though in a hilly area. The site is located within the village graveyard, 150m east of *kali* Manggis and 550m to the west of the Elo River.

Religion : Hindu.

Main features : Unknown.

State of preservation: Scattered bricks.

Description: One large *yoni* (1.24m x 1.24m x 1m) is still visible in the middle of the graveyard of Nambangan, together with several bricks.

> According to the Balai Arkeologi bricks dating from the classical period used to be numerous (Tjahjono 2002: table 1).

PLANDI (Tegal Tjandi)

Administrative localization: Plandi, Pasuruhan, Mertoyudan, Magelang, JT.

Geographical localization: 07° 33' 50.8"
110° 13' 12.2"
Precision: 8m
Alt.: 265m

Surroundings: In lower middle land, on flat ground, 900m to the west of the Elo River.

Religion: Hindu.

Main features: Single temple.

State of preservation: No standing structure.

Description: The site is actually a small mound made of earth and brick fragments in the middle of a rice field. At its centre, one can see the upper part of a huge *yoni* (it was 1.20m square).

> This would correspond to the description given by Verbeek and Krom. According to them there was, on the Tegal Plandi hill, a huge *yoni* partly covered with bricks and brick fragments (Verbeek 1891: 148; Krom 1914a: 213).

DAMPIT

Administrative localization: Dampit, Mertoyudan, Mertoyudan, Magelang, JT.

Geographical localization: 07° 30' 48.4" S
110° 13' 47.1" E[8]
Precision: 9m
Alt.: 330m

Surroundings: In lower middle land, on flat ground, 800m to the west of a tributary of the Elo River. The site is located more or less 1km to the northwest of Kalimalang.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

> According to the Balai Arkeologi, a large amount of bricks were found in the middle of a rice field, indicating that a brick structure is still probably under the earth (Tjahjono 2002: table 1).

One *yoni* coming from here is now in the museum at Borobudur.

KALIMALANG

Administrative localization: Kalimalang, Mertoyudan, Mertoyudan, Magelang, JT.

Geographical localization: 07° 31' 04.0" S
110° 14' 20.0" E
Precision: 50m
Alt.: 305m

Surroundings: In lower middle land, on flat ground, 120m to the west of a tributary of the Elo River and 300m to the west of the latter. The site is located roughly 1km to the southeast of Dampit.

Religion: Hindu.

Main features: Single temple.

State of preservation: No standing structure is visible at ground level, although evidences indicate that there is still something *in situ* in the earth.

Description: Several stones are scattered around the village, among others a stone lintel and one *kala*. In the backyard of a house, a large amount of bricks testifies the presence of an ancient structure.

> According to the Balai Arkeologi, a few years ago a brick structure, out of which 11 layers remained, was still visible. Several decorated bricks have been found here, together with a *yoni* (Tjahjono 2002: table 1).

[8] Coordinates are those of the place indicated by the villagers as the discovery place of temple remains.

GEDONGAN

Administrative localization: Gedongan, Blondo, Mungkid, Magelang, JT.

Geographical localization: 07º 32' 24.7" S
110º 14' 23.8" E
Precision: Map.
Alt.: 280m

Surroundings: In lower middle land, on flat ground, along the western bank of *kali* Elo.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

There were remains of a large brick temple and a *lingga* in the village graveyard (Knebel 1911a: 239; Krom 1914a: 253; Aalst 1899: 401).

Sculptures:

Several sculpture were found among the remains: 2 *makara* (J.76, J.78), one *lingga* (J.77) and a Gaṇeśa (J.79). The latter is now at the museum of Borobudur. (*Pengumpulan benda Magelang* 1997-1998)

KENDAL

Administrative localization: Kendal, Rambeanak, Mungkid, Magelang, JT.

Geographical localization: 07° 34' 57.7"
110° 14' 20.2"[9]
Precision: 15m
Alt.: 265m

Surroundings: In the lower middle land, on flat ground, 100m to the east of a branch of the Kuning River.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Temple stones would have testified the former existence of a sanctuary (Verbeek 1891: 154). However, Hoepermans saw nothing *in situ* (Hoepermans 1913: 141). Knebel mentions remains of a brick temple (Knebel 1911a: 239). A few years ago, the Balai Arkeologi still noticed the presence of stones fragments (Tjahjono 2002: table 1).

Today, nothing is left of this site, but villagers still remind a place in the rice fields where they used to go to take stones away.

[9] Coordinates are those of the place designated by the villagers as the former remains.

MENDUT

Administrative localization: Mendut, Mendut, Mungkid, Magelang, JT.

Geographical localization: 07° 36' 17.2"
110° 13' 48.8"
Precision: 9m
Alt.: 235m

Surroundings: In lower middle ground, on flat ground, roughly 200m to the east of *kali* Elo and 800m to the north northeast of the confluence of the latter with the Progo River. The temple is located 700m to the north of Progowati.

Religion: Buddhist.

Main features: Organic compound; facing west; staggered square.

State of preservation: Restored up to the superstructure.

Description: The temple faces west.

Its base is a staggered square measuring 25.5m x 25.5m. Its western projection is deeper than the others and a salient staircase is juxtaposed to it.

The platform is edged by a balustrade that creates a circumambulation path around the temple body.

The latter is also a staggered square (14.15m x 14.15m), with a deep porch on the western side.

A vestibule and then a corridor lead to the *cella*. The inner chamber is a trapezium. Its western side is 7.60m long, its eastern side measures 6.70m while the room is 7.25m deep. At the rear of the *cella*, one can see three pedestals. In the middle of the eastern wall sits Buddha, while against the lateral walls one finds two *bodhisattwa*. The front part of the *cella* is empty, but its walls are pierced by six niches (2 in the northern wall, two in the southern one and two flaking the entrance door).

> The temple was formerly standing within a courtyard measuring 110m (N-S) x 50m (E-W). *Candi* Mendut was located more or less 8m from the southern side of the enclosure (Krom 1923, I: 320ff; Bernet Kempers 1976: 212). Unfortunately, the wall was in such a poor state of preservation that it was not possible to determine the location of the entrances (Brandes 1903c: 75-76).
>
> The whole area within the courtyard was covered with several layers of mud alternating with ashes, probably from the Merapi. Stones coming from the secondary structures were scattered all over the area (Brandes 1903c: 76)
>
> Within the courtyard were other remains. To the north of the temple were foundations of a small staggered square stone temple and a cruciform structure, while further north were traces of a wider square base, probably a dwelling for the monks. (Brandes 1903c: pl.58; Krom 1923, I: 320ff). The northern most building had dimensions similar too that of the original *candi* Mendut. As the latter, its base was made of brick with some stones put around the bottom of the base (Brandes 1903c: 76-77, 79-80).
>
> Under the ground level dated from the Central Javanese period were found 5 tanks similar to the tanks still used during the 19th c. to prepare mortar (Brandes 1903c: 77-78).
>
> The *candi* Mendut visible today constitutes the last stage of a lengthy building process. It is actually the enlargement of an older temple that had been incorporated

into the present structure. During restoration work, brick walls (with mouldings) belonging the ancient building were found within the temple wall. The first Mendut temple was not destroyed: even is superstructure is preserved under its new cover. (Brandes 1903c:pl.23).

RAMBEANAK (Ramesanak, Rambianak)

Administrative localization: Rambeanak, Rambeanak, Mungkid, Magelang, JT.

Geographical localization: 07° 34' 41.9" S [10]
110° 13' 34.3" E
Precision: 10m
Alt.: 255m

Surroundings: In lower middle land, on flat ground, 100m to the west of *kali* Kujang and 300m to the east of the Elo River. The site is located 650m to the north northwest of Ngrajek.

Religion: Hindu (?).

Main features: Unknown.

State of preservation: Scattered stones.

Description/sculptures: Scattered temple stones are to be found behind the village primary school and in the courtyard of a nearby house. Nothing is *in situ*, but there are two dozens of stone blocks testifying the former presence of a building. Some of the blocks have mouldings.

A small *yoni* (J.65) was found in the village (*Pengumpulan benda Magelang* 1997-1998).

Formerly there were two *yoni*, a Durgā, a Gaṇeśa and a three-headed *nāga* gargoyle (Knebel 1911a: pl.183)

NGRAJEK

Administrative localization: Ngrajek, Ngrajek, Mungkid, Magelang, JT.

Geographical localization: 07° 35' 18.3" S
110° 14' 26.2" E
Precision: 15m
Alt.: 260m

Surroundings: In lower middle land, on flat ground, between *kali* Sunan (150m to the west) and the Kudal River (200m to the east). The site is located 650m to the south southeast of Rambeanak.

Religion: Unknown.

Main features: Single temple.

State of preservation: Scattered stones.

Description: Nothing is *in situ*, but several stones confirm the former presence of a temple. Near a garage one can see a rectangular block which, given its shape and decoration (miniature antefixes, mouldings and roof), is probably part of the

[10] Measurements taken in the courtyard where most of the blocks are laying.

superstructure of an enclosure door.[11] A little bit further, near the mosque, three miniature *candi* or pinnacles are used as support for flower pots. According to villagers, they were found 3 or 4 year ago while digging for the foundation of the new *pendopo* of the mosque.[12] In front of these miniature *candi* there are two rectangular stone boxes (roughly 1m long).[13]

> Earlier remains of a temple base were visible (Bosch 1920: 78). The lower part of this base is visible on a photo of the OD (OD no 2095). The moulding shows no torus..

PROGOWATI[14]

Administrative localization: Paren, Progowati, Mungkid, Magelang, JT.

Geographical localization: 07º 36' 40.7" S
110º 13' 51.3" E
Precision: Map.
Alt.: 225m

Surroundings: In lower middle land, on flat ground, on the eastern side of the confluence between the Elo and Progo Rivers and roughly 650m to the west of *kali* Pabelan. The hamlet of Paren is located 700m south of *candi* Mendut.

Religion: Unknown.[15]

Main features: Unknown.

State of preservation: No visible remains.

Description:

> According to the Balai Arkeologi, there were several temple stones in the hamlet (Tjahjono 2002: table 1).

TIBAN

Administrative localization: Tiban, Bumorejo, Mungkid, Magelang, JT.

Geographical localization: 07° 33' 29.7" S[16]
110° 13' 59.9" E
Precision: 10m
Alt.: 275m

Surroundings: In lower middle land, on a slope overlooking the Elo River, some 100m to the east.

---

[11] I am thinking of a door similar to that of the parapet of *candi* Ngawen or Sambisari.

[12] According to the inhabitants of the place, other stones were found while digging, but they have been re-used for the foundation of the *pendopo*; only those that looked nice were taken away.

[13] I have seen those kinds of "coffin" in several places, among others at *candi* Gunung Wukir. They might have been some sort of *peripih*, although their dimensions and shapes are quite unusual. They seem also too big to be only deposit boxes for the ashes of dead persons. On the other hand, they might have contained a corpse in foetal position. Unfortunately, I have been unable to gather information concerning their original localization. The only thing that is sure is that they are often found in relation with temples.

[14] It is possible, given the localization of the site, that Progowati is the Keparen of ancient inventories.

[15] If Progowati is indeed the same thing as Keparen, the site might be Hindu: a Gaṇeśa was found at Keparen (Krom 1914a: 261; Aalst 1899: 406).

[16] This is the position of the larger *yoni*; the smaller one is in the backyard of a house and used as mortar.

Religion: Hindu.

Main features: *Yoni.*

State of preservation: Good.

Description/sculptures: Two *yoni* (J.71 and J.72 in *Pengumpulan Benda Magelang* 1997-1998) are still visible in the village. The larger one is 69x69x66 cm, the smaller is 39x39x39cm.

> According to the Balai Arkeologi, brick fragments have also been discovered here (Tjahjono 2002:table1).

KETORAN (Ketaron)

Administrative localization: Ketoran, Tamanagung, Mungkid, Magelang, JT.

Geographical localization: 07º 34' 41.9" S
110º 16' 18.9" E
Precision: Map.
Alt.: 325m

Surroundings: In lower middle land, 500m to the southeast of the Pabelan River, along the banks of one of its tributaries.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description/sculptures:

> A temple base used to be there. A Gaṇeśa was also discovered on the site (Knebel 1911a: 238; Aalst 1899: 396).

GUNUNG LEMAH

Administrative localization: Lemah, Gondosuli, Muntilan, Magelang, JT.

Geographical localization: 07º 33'27.9" S
110º 17'00" E
Precision: Map.
Alt.: 414m

Surroundings: In lower middle land, on the western slope of Mount Merapi, atop a small hill, on the northern bank of the Pabelan River.

Religion: Hindu.

Main features: Scattered bricks.

State of preservation: Unknown.[17]

Description:

> According to the Balai Arkeologi there is a *yoni* (*Pengumpulan Benda Magelang* 1997-1998: J.119) as well as several bricks dating from the classical period (Tjahjono 2002: table 1).

[17] I haven't visited the place. According to information from the Balai Arkeologi, the remains would still be visible.

GUNUNG PRING

Administrative localization: Gunung Pring, Gunung Pring, Muntilan, Magelang, JT.

Geographical localization: 07º 35' 38.6" S
110º 16' 33.3" E
Precision: Map.
Alt.: 355m

Surroundings: At the top of *gunung* Pring, a hill that culminates at 358m. along the southern bank of a tributary of the Progo River and 600m to the northwest of *kali* Blongkeng.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

> According to the Balai Arkeologi, a boundary stone has been discovered atop the hill, within the Muslim graveyard (Tjahjono 2002: table 1). I wasn't able to find it.

JOMBORAN

Administrative localization: Jomboran, Keji, Muntilan, Magelang, JT.

Geographical localization: 07º 35' 49.3" S
110º 15' 54.6" E
Precision: Map.
Alt.: 285m

Surroundings: In lower middle land, on flat ground, more or less 300m to the southeat of the Keji River. The village is located 1km to the south of Sidikan.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

> According to the Balai Arkeologi, temple stones have been found under the ground level, together with two small *yoni* (*Pengumpulan Benda Magelang* 1997-1998: J.86, J.87). The latter were brought to the SPSP Jawa Tengah, in Prambanan.

SIDIKAN

Administrative localization: Sidikan, Keji, Muntilan, Magelang, JT.

Geographical localization: 07° 35' 15.5"
110° 15' 49.8"
Precision: 8m
Alt.: 290m

Surroundings: In lower middle land, on flat ground, along the southern bank of a tributary of the Pabelan River (800m to the northwest) and 350m to the northwest of *kali* Keji. The site is located 1km to the north of Jomboran.

Religion: Unknown.

Main features: Unknown.

State of preservation: Scattered stones.

Description: Two dozens of temple stones can be seen here; some are plain, others have mouldings.

> According to the Balai Arkeologi, bricks have also been discovered in this village (Tjahjono 2002: table 1).

NGANTEN KIDUL

Administrative localization: Nganten, Ngawen, Muntilan, Magelang, JT.

Geographical localization: 07º 36' 28.4" S
110º 16' 06.6" E
Precision: Map.
Alt.: 275m

Surroundings: In lower middle land, on flat ground, on the eastern bank of a tributary of the Blongkeng River. The village of Nganten is located roughly 550m to the southwest of Ngawen and 700m to the east northeast of Gejagan.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

> Temple remains used to be visible (Krom 1914a: 254: Aalst 1899: 406).

NGAWEN

Administrative localization: Ngawen, Ngawen, Muntilan, Magelang, JT.

Geographical localization: 07° 36' 14.5"[18]
110° 16' 20.8"
Precision: 9m
Alt.: 285m

Surroundings: In lower middle land, on flat ground, 500m to the west of the Blongkeng River. From here, one can see Mount Merapi, the Menoreh Hills and *gunung* Sari. The site is located 550m to the northeast of Nganten.

Religion: Buddhist.

Main features: Sanctuary type 5; facing east; staggered square.

State of preservation: The northern main temple has been restored up to its superstructure. Other buildings are reduced to their bases.

Description: The site is made out of at least 5 buildings in a north-south line. All of them face east. The two main temples alternate with three secondary shrines.

The northernmost structure (*candi* I) is a secondary shrine. Its base is 8.6m square with a single projection to the east for the entrance. The platform was bordered by a

[18] Measurements taken on the staircase of the rebuilt temple (2d shrine from the north).

parapet. The temple body is square, without any projection, and has three niches, one on each side.

Candi II is the largest temple of the compound (and the most complete). Its base is a staggered square with an additional projection on the eastern side. It measures 13.36m x 12.82m.

At the top of the staircase, on the platform, stands a *gopura*, independent from the temple body.

The latter is a staggered square too (7.30m x 7.30m), pierced by 12 niches (three on the northern, western and southern sides, two on eastern side, flanking the doorway.

A short corridor leads to the 4.60m square *cella*.

Candi III and V are similar to *candi* I. *Candi* IV is similar with *candi* II though a little smaller (12.88m x 12.82m).

Sculptures: Two statues of Buddha are visible on the site (*Pengumpulan Benda Magelang* 1997-1998: J.80 and J.81).

SEMAWE

Administrative localization: Semawe, Sokarini, Muntilan, Magelang, JT.

Geographical localization: 07º 36' 53.8" S
110º 14' 53.0" E
Precision: Map.
Alt.: 235m

Surroundings: In lower middle land, on flat ground, along the Pundung River.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

> According to the Balai Arkeologi, remains of a brick structure was found in the village (Tjahjono 2002: table 1).

GEJAGAN

Administrative localization: Gejagan, Sriwedari, Muntilan, Magelang, JT.

Geographical localization: 07º 36' 35.3" S
110º 15' 44.8" E
Precision: Map.
Alt.: 265m

Surroundings: In lower middle land, on flat ground, along the eastern bank of a tributary of the Progo River. The hamlet of Gejagan is located 700m to the west southwest of Nganten Kidul.

Religion: Hindu.

Main features: Single temple (?).

State of preservation: No visible remains.

Description/sculptures:

A temple pit made of brick as well as a *yoni* and a bull used to be visible (Krom 1914a: 255).

BLABURAN (Kajuran Kidul, Kajoran, Samur)

Administrative localization: Blaburan, Bligo, Ngluwar, Magelang, JT.

Geographical localization: 07º 41' 54.2" S
110º 16' 18.9" E
Precision: Map.
Alt.: 140m

Surroundings: In low land, on flat ground, 350m to the east of the Progo River and 500m west of *kali* Krasak.

Religion: Unknown.

Main features: Single temple.

State of preservation: No visible remains.

Description:

Earlier, remains of a temple and a temple pit were visible (Hoepermans 1913: 141; Aalst 1899: 410; Krom 1914a: 267).

BOBOSAN (Dali, Bedali)

Administrative localization: Bedali, Bobosan, Salam, Magelang, JT.

Geographical localization: 07º 37' 15.6" S
110º 17' 8.3" E[19]
Precision: 10m
Alt.: 290m

Surroundings: In lower middle land, at the top of *gunung* Dali, a small hill that raises in the plain, south of *kali* Depok/Gendol. The hill is located along the eastern bank of *kali* Depok.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

In the early twentieth century remains of a brick temple were visible atop the hill (Hoepermans 1913:139; Krom 1914a:264).

Sculptures:

One Durgā, one Śiwa, one bull, one Agastya, one *yoni* and two *lingga* (Hoepermans 1913: 139; Krom 1914a: 264; 1923, I: 166).

[19] Coordinates taken at the top of the small *gunung* Dali.

GUNUNG SARI

Administrative localization: Gunung Sari, Gulon, Salam, Magelang, JT.

Geographical localization: 07° 36' 08.2"
110° 16' 59.6"
Precision: 10m
Alt.: 350m

Surroundings: In lower middle land, at the top of the *gunung* Sari hill, 250m to the south of the Blongkeng River and 750m north of *kali* Putih. Along the eastern side of the hill flows *sungai* Silukanga/Jlegong, a tributary of the Putih River. From this hilltop there is a magnificent view on *gunung* Merapi, Wukir, Gendol and Gono. With less vegetation *gunung* Sumbing would also be visible.

Religion: Hindu.

Main features: Sanctuary type 3 (?); facing west; square; enclosure wall.

State of preservation: Only the base of the main temple and the foundations of the secondary shrines are left.

Description: The site is made out of at least five buildings, but their state of preservation is very poor and only the lower part of the base can be seen.

The main temple faces west and is roughly 12m square. It was not built at the centre of the sacred courtyard, but northeast of it, as testified by the central *lingga* boundary stone found south of the entrance staircase.

Opposite is a row of three secondary shrines.

To the south of the main temple remains of what was probably another secondary shrine are visible.

Traces of a brick enclosure are visible 8m east of the main temple.

> Apart from the central one, two other boundary stones were found on the temple ground: one east of the main temple and close to the enclosure, the other in the north-eastern corner of the enclosure wall.

Sculptures:

> Krom saw a *yoni* in the surroundings of the temple (Krom 1914a: 265). A statue of Mahākāla was found more recently during excavations (*Laporan ekskavasi Gunungsari* 1998: 28).

GUNUNG WUKIR (Kadiluwih, Canggal)

Administrative localization: Canggal, Kaliduwih, Salam, Magelang, JT.

Geographical localization: 07° 38' 03.5"
110° 17' 48.7"
Precision: 7m
Alt.: 336m

Surroundings: In lower middle land, at the top of the *gunung* Wukir. Along the eastern side of the hill flows *kali* Gandung/Pereng. From this hilltop, one can see Mount Sumbing, Mount Merapi and the Gendol Hills.

Religion: Hindu.

Main features: Sanctuary type 2; facing east; enclosure.

State of preservation: Only bases are left.

Description: The site is made out of one main temple facing east and three square secondary shrines turned west.

> The exact orientation of the main temple is 101º 25' (Siswoyo 1996: 5).

The base of the main temple is roughly 14m square, with a projection on the eastern side, for the staircase.

Opposite the temple are three secondary shrine in a north-south row. They are all 5m square.

> Remains of a brick enclosure wall were visible some 17m away from the main temple (Aalst 1899: 407; Stutterheim 1937: 12).

Sculptures: Several *yoni* can be seen among the remains; one is adorned with a *nāga*. A bull is still laying within the middle secondary shrines.

A rectangular stone box is visible near the main temple. From the outside, it is 1.15m long, 0.85m large and 0.60m high. The cavity is 0.86m long, 0.55m large and 0.36m deep.[20]

> Some sculptures have been found here too, among others two Gaṇeśa and one Durgā (Hoepermans 1913: 138; Krom 1923, I: 166).

JLEGONG

Administrative localization: Jlegong, Gulon, Salam, Magelang, JT.

Geographical localization: 07º 36' 13.1" S
110º 17' 25.9" E
Precision: Map.
Alt.: 325m

Surroundings: In lower middle land, on flat ground, 250m to the north of *kali* Putih and 700m to the south of the Blongkeng River. The village is located roughly 800m to the east southeast of *gunung* Sari.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description/sculptures:

> There were remains of a brick temple together with a *yoni* and a bull (Knebel 1911a: 238; Aalst 1899: 393).

[20] A lid might have topped the box, although I have seen no stone fitting it in the surroundings. A similar stone box is to be found on the river bank at the foot of *gunung* Wukir; another is visible in the village of Ngrajek. For comments on the subject, look the latter entry.

MANTINGAN (Kadiwulih)

Administrative localization: Mantingan, Mantigan, Salam, Magelang, JT.

Geographical localization: 07° 38' 18.6"
110° 18' 19.9"
Precision: 12m
Alt.: 305m

Surroundings: In lower middle land, on flat ground, a hundred meters west of a tributary of *kali* Cekel. The site is located 150m to the southeast of Singabarong.

Religion: Hindu.

Main features: *Yoni*.

State of preservation: Good.

Description: The only remain visible is a *yoni* (*Pengumpulan Benda Magelang* 1997-1998: J.26) lying along the road.

Earlier a second *yoni* (J.27) was visible (*Pengumpulan Benda Magelang* 1997-1998).

SINGABARONG (Mantingan)

Administrative localization: Mantingan, Mantingan, Salam, Magelang, JT.

Geographical localization: 07° 38' 17.1"
110° 18' 13.9"
Precision: 16m
Alt.: 315m

Surroundings: In lower middle land, at the top of a small hill called *gunung* Singabarong, on the eastern bank of *kali* Cekel, 150m to the northwest of Mantingan.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description/sculptures: This small hill raises near the village of Mantingan. At its summit, among a dense vegetation, one can see a huge *yoni* (1.26m square; *Pengumpulan Benda Magelang* 1997-1998: J.36) and at least 8 column bases (90cm of diameter).

In the nineteenth century, Van Aalst noticed the presence of a large pit of 3x5m (Aalst 1899: 408). When Krom visited the place he found no temple remains but he was still able to see some sculptures, among others one lion, one Gaṇeśa, *nāga*, one bull and several *lingga* (Krom 1914a: 263; 1923, I: 166).

SALAKAN

Administrative localization: Salakan, Sirihan, Salam, Magelang, JT.

Geographical localization: 07° 36' 52.5"
110° 16'29.1"
Precision: 6m
Alt.: 270m

Surroundings: In lower middle land, on flat ground, along the western bank of the Putih River.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

When Hoepermans visited the area, he was able to see a square area about 6x6m that was covered with temple stones (Hoepermans 1913: 140).

According to the Balai Arkeologi, temple stones were still visible a few years ago, within the village graveyard (Tjahjono 2002: table 1).

GOMBONG

Administrative localization: Gombong, Paripurno, Salaman, Magelang, JT.

Geographical localization: 07º 36' 13.1" S
110º 08' 39.9" E
Precision: Map.
Alt.: 315m

Surroundings: In lower middle land, on the first slopes of the Menoreh hills, in the valley of the Blubas River, that flows a few hundred meters south of the village.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered bricks.

Description: Brick fragments are visible here.

Sculptures:

Several sculptures, now disappeared, were once visible in the hamlet: a bull (J.235), a Gaṇeśa (J.236), an Agastya (J.237), a Pārvatī (J.238) and fragments of the legs of another sculpture (J.234) (*Pengumpulan Benda Magelang* 1997-1998:).

MULOSARI[21]

Administrative localization: Mulosari, Kalisalak, Salaman, Magelang, JT.

Geographical localization: 07° 35' 13.5"
110° 07' 14.4"
Precision: 22m
Alt.: 320m

Surroundings: In lower middle land, on a gentle slope, at the foot of the Menoreh Hills. Near Wurung and Pringapus.

Religion: Hindu.

Main features: Scattered bricks.

State of preservation: No standing structure.

Description/sculptures: Within the village graveyard there is a small *yoni* (73x73x80cm; *Pengumpulan Benda Magelang* 1997-1998: J.232) adorned with a flower on each side.[22]

> According to the Balai Arkeologi, brick fragments were also found here[23] (Tjahjono 2002: table 1). A small *yoni* was also discovered in the village (*Pengumpulan Benda Magelang* 1997-1998: J.233).

PRINGAPUS

Administrative localization: Pringapus, Kalisalak, Salaman, Magelang, JT.

Geographical localization: 07° 35' 22.2"
110° 07' 11.4"
Precision: 7m
Alt.: 332m

Surroundings: In lower middle land, on a gentle slope, at the foot of the Menoreh hills. Near Mulosari and *candi* Wurung.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered bricks.

Description: An unfinished *yoni* is visible in the middle of a rice field.

> According to the Balai Arkeologi, there were brick fragments too (Tjahjono 2002: table 1).

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[21] According to the localization of this site, north of Wurung, near the modern town of Mlanggen, it is possible that Mulosari is the Mlanggen mentioned in ancient inventories (Aalst 1899: 411; Krom 1914a: 268).

[22] According to ancient inventories, remains of a brick temple and several sculptures were visible in the village of Mlanggen (one Buddha, one *yoni*, one bull, one Śiwa, one Surya…) (Aalst 1899: 411; Krom 1914a: 268). About the association Mlanggen-Mulosari, see note above.

[23] I have not been able to see any bricks dating from the classical period near the *yoni*. It is also possible that the *yoni* comes from the nearby *candi* Wurung where, indeed, lots of bricks are to be found.

WURUNG[24]

Administrative localization: Candi, Menoreh, Salaman, Magelang, JT.

Geographical localization: 07° 35' 22.2"
110° 07' 11.4"
Precision: 7m
Alt.: 332m

Surroundings: In lower middle land, on a gentle slope at the foot of the Menoreh hills. Near Mulosari and Pringapus.

Religion: Hindu.

Main features: Single temple; octagonal.

State of preservation: Only the foundation remains.

Description:

Today, evidences of the former presence of a temple are still visible and, although disturbed, they are *in situ*. River stones, coming probably from the temple foundation, are mixed with bricks and brick fragments.

> Excavations made after my visit, in the summer 2002, revealed the presence of an octagonal brick structure. Unfortunately, only the western side of the site has been excavated, so that it is still impossible to determine the orientation of the structure. (Tjahjono 2002: 31ff)

Sculptures: Three *yoni* are laying on the ground. The biggest one is adorned with flowers[25] and a lion[26] (*Pengumpulan Benda Magelang* 1997-1998: J.230 and J.231).

> A small Śiva was also found here (J.229), together with an unidentified sculpture (*Pengumpulan Benda Magelang* 1997-1998: J.227; now at the Borobudur museum).
>
> Earlier, a pedestal in the shape of a cart with seven horses was discovered on the site, together with the head of a male deity and a pillar base in the form of an elephant (Knebel 1911a: pl.182).

MUNGKIDAN (Mungkiddan)

Administrative localization: Mungkidan, Butuh, Sawangan, Magelang, JT.

Geographical localization: 07º 31' 46.8" S
110º 18' 21.4" E
Precision: Map.
Alt.: 460m

Surroundings: In lower middle land, on the western slope of Mount Merapi, on the banks of a tributary of *kali* Gading.

Religion: Unknown.

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[24] It is not sure whether Wurung is the Candi or the Mlanggen of the ancient inventories. As the modern town of Mlanggen is located to the north of Wurung, it is possible that the Candi of ancient inventories refer to Wurung (located in the village of Candi), while Mlanggen could well be Mulosari.

[25] Those are similar to the flowers carved on the *yoni* of Mulosari. As the sites are not really far from each other, that might confirm that the *yoni* of Mulosari is actually coming from *candi* Wurung.

[26] One bull and a *lingga* were once laying at Candi (Verbeek 1891: 144; Aalst 1899: 411; Hoepermans 1913: 147; Krom 1914a: 269).

Main features: *Pendopo* (?).

State of preservation: No visible remains.

Description:

A foundation measuring 12.80m x 10.60m was once visible in the hamlet of Mungkidan. At the centre of the short sides were two staircases (2.60m large). This base was probably topped by a wooden structure. (Aalst 1899: 398-399).

SEKETI (Saketi)

Administrative localization: Saketi, Butuh, Sawangan, Magelang, JT.

Geographical localization: 07º 31' 26.3" S
110º 19' 05.3" E
Precision: Map.
Alt.: 535m

Surroundings: In upper middle land, on the western slope of Mount Merapi, between the Manggu and Sigug Rivers (respectively a few hundred meters to the north and south), close to the spring of a tributary of *kali* Gading.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

A small temple measuring 3.50x2.50m was still visible at the end of the nineteenth century (Aalst 1899: 399).

Sculptures:

A *yoni* and a bull have also been discovered among the ruins (Krom 1914a: 248).

SETAN

Administrative localization: Setan, Candiretno, Secang, Magelang, JT.

Geographical localization: 07º 26' 56.7" S
110º 14' 48.9" E
Precision: Map.
Alt.: 400m

Surroundings: In lower middle land, in a hilly area, roughly 350m north of *kali* Pucang. The village of Setan is located 650m to the south southwest of Tidaran and 800m to the south southeast of *candi* Retno.

Religion: Hindu.

Main features: Sanctuary type 5.

State of preservation: No visible remains.

Description:

According to Krom (1914: 236; 1923, I: 408), there were remains of seven temples on a line. At the centre was the main temple (4.85m square), with three smaller shrines on each side. All the temples raised upon a single rectangular terrace made of bricks. (Krom 1914a: 56, 189).

Sculptures:

Fourteen sculptures of Gaṇeśa have been found here. Therefore, Krom thought that the temple was dedicated to the elephant god (Krom 1923, I: 408).

BENGKUNG

Administrative localization: Bengkung, Candiretno, Secang, Magelang.

Geographical localization: 07° 25' 46.6" S
110° 14' 49.6" E
Precision: 8m
Alt.: 410m

Surroundings: In lower middle land, on flat ground, with a view on Mount Merbabu, Sumbing, Sundoro, Ungaran. More or less 100m west from *kali* Nongko and 400m to the east of the Elo River. The site is located 500m to the north northeast of *candi* Retno, 500m to the north northwest of Cetokan and 750m to the north northwest of Tidaran.

Religion: Unknown.

Main features: Unknown.

State of preservation: Scattered bricks.

Description: Numerous ancient bricks are concentrated in a *sawah*, among them a few bricks with mouldings and crowning pieces

Sculptures:

A relief of a bird and a standing male figure were discovered here (Nitihimanoto 1977: 2).

RETNO (Rejo, Candirejo)[27]

Administrative localization: Cetokan, Candiretno, Secang, Magelang, JT.

Geographical localization: 07° 26' 01.7" S
110° 14' 45.2" E
Precision: 11m
Alt.: 400m

Surroundings: In lower middle land, on flat ground, 150m east of *kali* Nongko and 500m east of the Elo River. The site is located 350m to the west of Cetokan, 450m to the northwest of Tidaran, 500m to the south southwest of Bengkung and 800m to the north northwest of Setan.

Religion: Hindu.

Main features: Single temple; facing east; square.

State of preservation: Only the base and the foundation of the temple body are still visible.

Description: The temple is made of brick and faces east southeast.

[27] The modern village of Candiretno was formerly a hamlet of the nearby Candirejo. Nowadays, administrative divisions have changed and Candiretno is a *desa* on its own. It is therefore probable that the site mentioned by Krom as Candirejo is the same site as Candiretno.

Its exact orientation would be 75º (Nitihaminoto 1977: fig.14).

The base is square and measures roughly 11.80m x 11.80m.

Only the foundations of the temple body remains. From the ruins, it can be deduced that the body was roughly 5.70m square, while the *cella* measured probably 3.30m x 3.30m. The walls of the temple body raised on a foundation consisting in an intricate network of walls that delimitated 16 compartments (each is roughly 80m square – inner measurements).

The description of Candirejo given by Krom is slightly different. According to the Dutch scholar, there were remains of one main temple and its secondary shrines. The constructions were built on a single brick terrace (Krom 1914a: 235; 1923, I: 408). No trace of any secondary shrine is now visible.

Sculptures: A *yoni* adorned with a *kāla* is still visible near the temple remains. A bull coming from here is now at the Borobudur Museum.

A sculpture of Durgā was found along the northern side of the temple, together with a *hapsari* (Nitihaminoto 1977: fig.14). Feet from a standing figure were also discovered near the stairs (Nitihaminoto 1977: fig.15). A sculpture of Agastya would also originate from the remains (*Pengolahan data candi Retno* 1998: 4).

Sculptures of the guardians of the winds have been found in Candirejo, among others Yāma, one Śiwa, 2 Durgā, one bull, one Wiṣṇu, one Indra, one Agni, one Waruna and one Wāyu (Krom 1914a: 235). However, as the association between Candiretno and Candirejo is not absolutely certain, this should be treated with care.

Miscellaneous archaeological finds:

Two bronze pots, earthen pots, one *peripih*, gold and silver beads, copper and Chinese ceramics were found among the ruins during excavation (Nitihaminoto 1977:11).

CETOKAN (Tjetohan)

Administrative localization: Cetokan, Candiretno, Secang, Magelang, JT.

Geographical localization: 07° 26’ 01.1” S
110° 14’ 55.8” E
Precision: 8m
Alt.: 415m

Surroundings: In lower middle land, on flat ground, 300m to the east of the Nongko River. The site is located 250m to the north northwest of Tidaran, 350m to the east of *candi* Retno, 500m to the south southeast of Bengkung and 850m to the north northeast of Setan.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description/sculptures: A *yoni* measuring 97cm x 98cm x45cm lies in a *sawah*, together with two other temple stones.

Earlier there were 5 temple stones and a bull (Nitihaminoto 1977: 2-3).

TIDARAN (Tidaro)

Administrative localization: Tidaran, Candiretno, Secang, Magelang.

Geographical localization: 07° 26' 09.3" S
110° 14' 59.1" E
Precision: 12m
Alt.: 415m

Surroundings: In lower middle land, on flat ground, 200m to the west of the Pucang River. The site is located 250m to the south southeast of Cetokan, 450m to the southeast of *candi* Retno, 650m to the north northeast of Setan and 750m to the south southeast of Bengkung.

Religion: Hindu.

Main features: Single temple (?)

State of preservation: Only two *yoni* remain.

Description: Nowadays, two *yoni* are still visible in the village. The largest one measures 90cm x 90cm x 80cm and is adorned with a *nāga*, a turtle and a lotus flower. The smallest *yoni* is plain and measures 58cm x 58cm x 65cm.

> According to the inhabitants, earlier a temple pit made of bricks was also visible (Nitihaminoto 1977: 3-4).

CANDI (Talun, Candisari, Canditalun, Gomblang, Gumbulan)[28]

Administrative localization: Candi, Candisari, Secang, Magelang, JT.

Geographical localization: 07° 24' 12.0" S
110° 15' 30.0" E
Precision: 12m
Alt.: 450m

Surroundings: In lower middle land, at the top of a hill raising at the confluence between the Elo River (300m to the west) and *kali* Malang (to the south and east).

Religion: Hindu.

Main features: Single temple.

State of preservation: Scattered bricks.

Description: Atop a hill, in the courtyard of a house, one can see a huge amount of ancient bricks, together with fragments of pinnacles and a huge stone *yoni* (*Pengumpulan Benda Magelang* 1997-1998: J.202). The latter has an unusually elongated shape: it is 177cm long, 67cm large and 68cm high.

> Knebel and Hoepermans mention the place as a (brick) temple (Knebel 1911a: 187; Hoepermans 1913: 148).

[28] Candi and Talun are two neighbouring villages. On the territory of Talun, one finds a few scattered stones, but most of the remains are within the administrative limits of *dusun* Candi.

Sculptures:

According to Hoepermans, a bull was discovered on the site (Verbeek 1891: 151; Hoepermans 1913: 148). Two small *yoni* are also coming from this hamlet (*Pengumpulan Benda Magelang* 1997-1998: J.203, J.204).

KRINCING

Administrative localization: Ngloji, Krincing, Secang, Magelang, JT.

Geographical localization: 07° 23' 18.9" S
110° 15' 14.6" E
Precision: 9m
Alt.: 515m

Surroundings: In upper middle land, atop of a hill, 200m to the north of a tributary of the Elo River.

Religion: Unknown.

Main features: Single temple.

State of preservation: Scattered bricks.

Description: Today, only a few scattered bricks are visible.

In the early 20th century, remains were sufficient for Krom to conclude to the existence of a small temple (Krom 1914a: 190).

PIRIKAN

Administrative localization: Pirikan, Pirikan, Secang, Magelang, JT.

Geographical localization: 07º 25' 39.9" S
110º 15' 55.5" E
Precision: Map.
Alt.: 415m

Surroundings: In lower middle land, on a slope in a hilly area, along the northern bank of *kali* Balong.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

According to Knebel, the place was scattered with temple stones (Knebel 1911a: 188).

Sculptures:

A *yoni* and a Gaṇeśa were also found here (Knebel 1911a: 188). A bull and a standing male figure were discovered more recently in the village (Nitihaminoto 1977: 5).

PUCANGGUNUNG (Sudagaran, Sedagaran, Pucang)

Administrative localization: Pucanggunung, Pucang, Secang, Magelang, JT.

Geographical localization: 07° 25' 02.5" S
110° 15' 34.5"
Precision: 24m
Alt.: 450m

Surroundings: In lower middle land, at the top of a small hill bordered to the south and west by the Pucang River and to the east by one of its tributary, *kali* Beruk. The site is located 650m to the east of Jeronboto.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description: Numerous temple stones, among others fragments of pinnacles and antefixes, are gathered atop of a small hill, testifying the former presence of a temple. A large *yoni* (1m x 1m x 1m; *Pengumpulan Benda Magelang* 1997-1998: J.193) is also visible and two gargoyles coming from here are now at the Borobudur Museum.[29]

Knebel also identify the place as a temple (Knebel 1911a: 187).

Brick fragments were also discovered here (Nitihaminoto 1977 3).

Sculptures:

A Gaṇeśa and a bull (*Pengumpulan Benda Magelang* 1997-1998: J.194) were discovered on among the remains (Knebel 1911a: 187; Krom 1914a: 237; Nitihaminoto 1977: 3). A *lingga*-shape boundary stone was also noticed here, as well as a *jaladwara* (*Pengumpulan Benda Magelang* 1997-1998: J.195) adorned with a *makara* and a lion (Nitihaminoto 1977: 3, fig.11). The bull and the *jaladwara* are now at the Borobudur museum.

JERONBOTO

Administrative localization: Kauman, Pucang, Secang, Magelang, JT.

Geographical localization: 07º 25' 1.6" S
110º 15' 14.4" E
Precision: Map.
Alt.: 430m

Surroundings: In lower middle land, in a hilly area, roughly 400m to the west of *kali* Pucang. The hamlet of Kauman is located 650m to the west of Pucanggunung.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

[29] These two pieces have a rather unusual iconography. One is adorned with a three-headed *nāga*, while on the other is carved an elephant mounted by his coronach.

Description:

According to the Balai Arkeologi, there would be a brick structure under the ground (Tjahjono 2002: table 1).

BRINGIN

Administrative localization: Bringin, Bringin, Srumbung, Magelang, JT.

Geographical localization: 07º 35' 22.2" S
110º 18' 38.2" E
Precision: Map.
Alt.: 410m

Surroundings: In lower middle land, on the western slope of Mount Merapi, between two tributaries of the Putih River (*kali* Polengan to the north and *kali* Suko to the south).

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description:

According to the Balai Arkeologi, there was a huge *yoni* (Tjahjono 2002: table 1).

KEMIREN

Administrative localization: Kemiren, Kemiren, Srumbung, Magelang, JT.

Geographical localization: 07º 35' 50.5" S
110º 21' 50.6" E
Precision: Map.
Alt.: 670m

Surroundings: In upper middle land, on the western slope of Mount Merapi, 500m to the north of *kali* Bebeng.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Temple remains were visible at the end of the 19th century (Aalst 1899: 411).

NGAMPEL

Administrative localization: Ngampel, Padanretno, Srumbung, Magelang, JT.

Geographical localization: 07º 34' 13.1" S
110º 20' 34.1" E
Precision: Map.
Alt.: 570m

Surroundings: In upper middle land, on the western slope of Mount Merapi, along the banks of a tributary of *kali* Bunut and 500m to the south of the Blongkeng River. The hamlet of Ngampel is located 1km to the south southeast of Wates.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

12 temple stones were found here by the Suaka Peninggalan Sejarah dan Purbakala Jawa Tengah (*Pengumpulan data Magelang* 1997-1998).

SOBOROJO (Sarbaja)

Administrative localization: Soborojo, Japan, Tegalrejo, Magelang, JT.

Geographical localization: 07º 26' 25.9" S
110º 17' 18.5" E
Precision: Map.
Alt.: 530m

Surroundings: In upper middle land, on the western slope of Mount Merbabu, on the southern bank of *kali* Gendu.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

A hilltop near the hamlet used to be scattered with temple remains and a few sculptures, among others one Śiwa, two Gaṇeśa and one *lingga* (Krom 1914a: 224; 1923, I: 408).

TUMBU

Administrative localization: Tumbu, Purwodadi, Tegalrejo, Magelang, JT.

Geographical localization: 07º 26' 51.8" S
110º 14' 47.3" E
Precision: Map.
Alt.: 400m

Surroundings: In lower middle land, on the western slope of Mount Merbabu, in a hilly area, near the spring of *kali* Plikon and 300m to the south of the Pucang River.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

Remains of a brick temple, together with a *yoni* and a *lingga* were once visible atop a hill (Krom 1914a: 223; 1923, I: 408).

Inscriptions:

Part of the foundation deposit was found back including an inscribed copper plate dated 886 A.D. (Krom 1914a: 223).

BOWONGAN

Administrative localization: Bowongan, Ringinamon, Tempuran, Magelang, JT.

Geographical localization: 07º 34' 57" S
110º 10' 53" E[30]
Precision: Balai Arkeologi.
Alt.: 255m

Surroundings: In lower middle land, on flat ground, roughly 300m to the west of the Tangsi River. The site is located 900m to the south of Candi.

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description:

According the Balai Arkeologi, there would be a brick structure beneath the ground (Tjahjono 2002: table 1).

Sculptures: An Agastya from Bowongan is now at the Borobudur Museum.

SAMBERAN (Candi)

Administrative localization: Candi, Ringinamon, Tempuran, Magelang, JT.

Geographical localization: 07º 34' 30" S
110º 10' 53" E
Precision: Map.
Alt.: 265m

Surroundings: In lower middle land, on flat ground, 75m to the west of *kali* Merawu and 700m to the west northwest of its confluence with the Tangsi River. The site is located some 600m to the south of Dimajar and 900m to the north of Bowongan.

Religion: Hindu.

Main features: Single temple; facing east.

State of preservation: Parts of the base were visible during excavation.

Description: The temple was made of brick.

[30] The hamlet of Bowongan does not figure on the map. The coordinates given here are from Balai Arkeologi Yogyakarta.

According to data gathered during excavation, the structure would have measured 16.70m (W-E) x 14.70m (N-S). Remains of what was probably the staircase were found on its eastern side. A *Yoni* was discovered near the temple pit. (Tjahjono 2001: 9-15).

DIMAJAR

Administrative localization: Dimajar, Sumberarum, Tempuran, Magelang, JT.

Geographical localization: 07º 34' 12.3" S
110º 11' 05.7" E
Precision: Map.
Alt.: 250m

Surroundings: In lower middle land, on flat ground, 400m to the west of the Progo River, 750m to the north of *kali* Merawu and 750m to the west of their confluence. The hamlet of Dimajar is located some 600m to the nor of Samberan.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered bricks.

Description: Brick fragments from the classical period are visible in the village, such as used as building materials for modern village houses and around the mosque.

A *yoni* was once visible in the same mosque (Tjahjono 2002: 16).

TEMPURREJO (Tempurejo)

Administrative localization: Samirejo II, Tempurrejo, Tempuran, Magelang, JT.

Geographical localization: 07º 31' 13.1" S
110º 11' 00" E
Precision: Map.
Alt.: 280m

Surroundings: In lower middle land, along the western banks of *kali* Progo.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

A brick structure of which two walls remains was discovered by villagers. The wall running south-north measured 2m, while the one running east-west was still 4m long. (Tjahjono 2002: 16)

SELOGRIYO (Selagria, Selagriija, Watu Rumah, Batu Rumah)

Administrative localization: Campurejo, Kembang Kuning, Windusari, Magelang, JT.

Geographical localization: 07° 25' 28.5" S
110° 10' 05.3" E
Precision: 10m
Alt.: 675m

Surroundings: In upper middle land, on the eastern slope of Mount Putih (1020m), one of the summits of the Giyanti massif. The temple overlooks the steep canyon of *kali* Selogriyo, a tributary of the Progo River.

Religion: Hindu.

Main features: Single temple; facing east; staggered square; enclosure wall.

State of preservation: The temple has been restored up to the superstructure, but its base is in very bad state of preservation and is shapeless.

Description:

> The temple base is now shapeless, but according to previous descriptions, it was staggered square and roughly 4m larger than the temple body (Krom 1923, I: 407).

The temple body is a staggered square with a porch on its eastern side. It measures 4.80m x 4.80m (without the projections). At the centre of the northern, western and southern walls is a niche, while the entrance door is flanked by two smaller niches.[31] The architectural ornamentation was left unfinished.

The *cella* is 2.70m square.

> According to ancient reports, four paths leaded from the temple to an enclosure wall. In the south-western and north-western corners of this enclosure were *lingga* shaped boundary stones. (Friederich 1876: 91)

Sculptures: In the northern, western and southern niche of the temple body are visible Durgā, Gaṇeśa and Agastya. On each side of the entrance stands a *dwārapāla*.

Miscellaneous archaeological finds:

> Several cylindrical stones were found near the temple. These are made of two parts. In the lower (?) part is excavated a shallow circular cavity, with a short tenon in its centre. The top part has been carved to fit into the cavity and tenon of the lower part. The upper part show 9 cavities: a circular one at the centre (that fits with the tenon of the other part of the stone), and 8 drop-like holes around it. (Knebel 1911a: pl.23)

[31] These eastern niches might have been a later addition to the temple. They indeed lack moulding and are built against the temple body rather then being integrated within it. Furthermore, the temple body mouldings seem to continue underneath the projecting wall forming the niches.

BATUR (Selagana, Batu Gono, Candi Gana)

Administrative localization: Ngoboran, Candisari, Windusari, Magelang, JT.

Geographical localization: 07° 24' 32.7" S
110° 09' 59.2" E
Precision: 6m
Alt.: 775m

Surroundings: In upper middle land, at the top of the Sukorini hill, on the eastern slope of Mount Damaran, one of the peaks of the Giyanti massif. The top of the hill has been flattened.

Religion: Unknown.

Main features: Organic compound (?).

State of preservation: Only remains of a staircase and scattered stones are now visible.

Description/sculptures: The top of the hill has been flattened into a large yard. At its eastern edge, facing Mount Sumbing, a small mound of stones and earth is visible. On the western side of this mound are two huge *makara* coming from a staircase. It is possible that they are still *in situ*.

To the northeast of the above mentioned remains, and slightly lower, is another couple of *makara*, though no other stone is lying in the direct surroundings.

> Ancient reports give us a different view of the place. It seems that the site was actually made out of two temples built on different terraces (Friederich 1876: 100-102; Verbeek 1891: 143; Hoepermans 1913: 155-156). The lowest temple was turned to the East. From it, a staircase of 20 steps leaded to the summit of the hill, which has been flattened to create a courtyard. This courtyard was surrounded by an enclosure wall (Friederich 1876: 102) and, in its centre, was the main temple, turned to the West.[32] According to the same Friederich (1876: 102) the latter structure was 63 feet long (E-W) and 40 feet large (N-S). According to Krom (1923 I: 403), remains of a third building were visible to the north.

[32] However, for Krom the upper temple is turned to the east, and the lowest to the west.

APPENDIX 4

INVENTORY OF THE TEMPLE REMAINS OF *KABUPATEN* BOYOLALI AND SEMARANG

MANGIS (Manggis)

Administrative localization: Manggis, Winong, Boyolali, Boyolali, JT.

Geographical localization: 07º 31' 21.8" S
110º 33' 29.0" E
Precision: Map.
Alt.: 550m.

Surroundings: In the upper middle land, on the eastern slope of Mount Merapi, on the banks of *kali* Kalongan.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

Hoepermans (1913: 271) thought a temple stood here. Two huge sculptures, including a *dwārapāla* were found here (Verbeek 1891: 194).

KUWARIGAN (Kwarigan, Rågå, Candiraga)[1]

Administrative localization: Kuwaringan, Bakulan, Cepogo, Boyolali, JT.

Geographical localization: 07º 30' 30" S
110º 32' 30" E
Precision: Map.
Alt.: 760m

Surroundings: In the upper middle land, on the eastern side of Mount Merapi, on the slope of the small *gunung* Wijil, between *kali* Garan and the Kurangdawet River. The hamlet is located 650m to the south southeast of Cabean.

Religion: Unknown.

Main features: Bathing place.

State of preservation: No visible remains.

Description:

The site is said to have been a bathing place (Bosch 1915a: 95). According to an earlier report, the site was actually a 6m square water tank collecting the water from a spring called Candiraga. The tank was divided in two parts by a wall adorned with mouldings and pilasters. The part used as a bath was further divided into three by small walls. (Knebel 1910a: 95-96)

[1] The site is very close to Cabean Kunti. As Cabean Kunti is not described in ancient sources, it is not impossible that both names designate the same remains. However, Cabean Kunti is not on *gunung* Wijil and is made of several pools, none of them corresponding to the description given by Knebel (1910a: 95-96).

SUMUR SONGO (Krikil, Kidul, Sukuh, Suko, Sindang Prompong, Sendang Songo, Sindang Beji, Bungulan, Lor)[2]

Administrative localization: Candi Kidul, Candi Gatak, Cepogo, Boyolali, JT.

Geographical localization: 07° 29' 54.9" S[3]
110° 33' 26.0" E
Precision: 28m
Alt.: 615m

Surroundings: In the upper middle land, on the eastern slope of Mount Merapi. In the canyon of the small *sungai* Jurang, a tributary of the Pule River.

Religion: Hindu.

Main features: Pits.

State of preservation: Seven of the 8 pits are preserved more or less in their original state, though in their upper parts numerous stone are re-used from other structures. The eighth pit has been covered by concrete. The temple has disappeared.

Description: The site is composed of eight pits made out of temple stones, scattered along the small *sungai* Jurang.

> Earlier, remains of a temple were visible on the hill above the pits, on the western bank of the river. This temple is called Soekoh by Verbeek and Lor by Bosch (Bosch 1915a: 97; Verbeek 1891: 194).
> In an earlier description, dated 1841, Van der Vlis mention the existence of three heaps of stones (two being in a line, another to the west). At least one of them would have the entrance on the western side. (Van der Vlis, quoted in Krom 1925a: 175)

The lower part of these pits is partly excavated from the natural rock, partly built. In their upper part, almost all the pits show a few reused blocks (mouldings, antefixes).
The eastern most pit is made out of river stone and uses temple stones only in its upper part. Most of the temple stones are not in their original position, as they are mouldings or stone with small, un-carved antefixes. It is possible that this structure is not ancient.
Some 55m south to the west of the first pit, are two other wells. They are roughly on a east-west line, though they are not orientated around the cardinal points. The nearest to the river measures 70cm x 70, whereas the western structure is slightly wider, measuring 90cm x 90cm. In their upper parts, one can recognize unfinished antefixes, mouldings and even one lintel.
More or less 60m to the northwest is the only well preserved pit. None of its stone seem to be a reuse. Its outer edge looks like a temple base. The structure is 160m square outside, while the pit itself is 95m square.
25m to the north is a smaller pit, measuring 65cm x 78 cm. Fragments of mouldings are to be seen in its upper part.
Further to the east, one still encounters 3 other wells. The first one has been entirely covered by concrete. The two other pits have also been renewed, but temple stones are still visible in their lower parts.

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[2] The site, made of wells and remains of a temple, corresponds to the description given by Bosch (1915a: 97), Verbeek (1891: 194) and Van der Vlis (see Krom 1925a: 175). Bosch clearly mentions that the site he calls Kidoel (in the district of Ngampel) is also known as Krikil, Samoer Prompong and Samoe Sindang Bedji. The location, in *desa* Candi Kidul, is also similar to that of Sumur Songo. However, the description of one relief found in a well strongly reminds Cabean Kunti.

[3] Measurements are taken at the southeastern pit.

Sculptures:

An Agastya was discovered among the remains of the temple, to the west of the pits (Bosch 1915a: 97).

Van der Vlis mentions two male figures, probably of śaivite character, one female sculpture and numerous carved stones with parrots, birds or tridents. All were found among the remains of the temple called Boengalan/Lor. In one of the pits would have been a relief showing men and women making offerings (Van der Vlis, quoted in Krom 1925a: 175ff).

SARI[4]

Administrative localization: Candisari, Gedangan, Cepogo, Boyolali, JT.

Geographical localization: 07° 31' 40.0" S
110° 30' 44.9" E
Precision: 9m
Alt.: 1000m

Surroundings: In the upper middle land, on the eastern side of Mount Merapi, between *kali* Musuk (75m to the south) and the Gandul River (100m to the north). Atop a hill offering a great view on both Merapi and Merbabu. The site is located 900m to the southwest of Lawang.

Religion: Hindu

Main features: Single temple.

State of preservation: Only the foundation is visible.

Description: A foundation of 4,70m x 4,70m is visible here. Although it is orientated around the cardinal points, it is impossible to determine on which side was the entrance. Loose stones scatter the direct neighbourhood. Among those, one can see mouldings, antefixes and crowning pieces.

Sculptures: One bull, one *yoni* and two *lingga* are still visible on the site.

LAWANG

Administrative localization: Lawang, Gedangan, Cepogo, Boyolali, JT.

Geographical localization: 07° 31' 24.9" S
110° 31' 11.0" E
Precision: 7m
Alt.: 915m

Surroundings: In the upper middle land, on the eastern side of Mount Merapi, on sloping ground, 25m to the south of *kali* Gandul. The site is located 900 to the northeast of Sari.

Religion: Hindu.

Main feature : Sanctuary type 3; main temple square; facing west.

State of preservation: Only the bases of the secondary buildings are still visible. As for the main temple, the lower part of its temple body is partly preserved too.

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[4] These remains are not mentioned in old inventories. However, a site called Wantil is listed by both Hoepermans (1913: 271) and Bosch (1915a: 94). As this site is described as a mere foundation lying in the district of Boyolali, at the top of a hill, it is maybe possible that it is the same as the modern Sari.

Description: The sanctuary is made out of one main temple and two or three secondary buildings.
The main temple has a square base, with a projection to the west for the staircase. It measures 6,40m x 6,40m.
The temple body is 5m square and has a projection to the west.
The walls of the *cella* are no longer visible, but the temple pit is preserved. It is roughly 85cm square and 3,60m deep.
South of the main temple lies a secondary shrine. Its base is 3,35m square, with a projection to the west for the staircase.
North of the main temple was probably a similar structure, although only one line of stone is visible nowadays.
In front of the main temple, one finds an elongated structure measuring 12,45m (N-S) x 3,25m (E-W). It has three staircases on its eastern side.
At the rear of the main temple is a small rectangular structure. Only the lower wall is left. It measures 2.4m x 1.7m.

Sculptures: A *yoni* is still visible among the remains.

Inscriptions: On the door jamb a short inscription is visible.

> It reads "*ju thi ka la ma sa tka*" (Sugito 1999-2000: 2), i.e. 861 A.D. (Krom 1923, I: 412).

CANDIPETAK (Candi Peta)

Administrative location: Candipetak, Genting, Cepogo, Boyolali, JT.

Geographical location: 07º 30' 19.7" S
110º 29' 08.2" E
Precision: Map.
Alt.: 1330m

Surroundings: In upper middle land, on a steep slope between the peaks of Mounts Merapi and Merbabu, along the canyon of an intermittent watercourse.

Religion: Unknown.

Main features: Unknown.

State of preservation: No visible remains.

Description:

> Van der Vlis reports was told by inhabitants that the temple remains were destroyed by mud from the Merapi. The Dutch was himself able to find in the surroundings several sculptures and temple stones (Van der Vlis quoted in Krom 1925a: 181ff)

CABEAN (Cabean Kunti, Kunti, Sendang lerep, Sendang kunti, Sendang Semboja, Sendang Sida Tapa)

Administrative localization: Cabean, Kunti, Cepogo, Boyolali, JT.

Geographical localization: 07° 30' 12.1" S[5]
110° 32' 20.6" E
Precision: 21m
Alt.: 750m

Surroundings: In the upper middle land, on the eastern slope of Mount Merapi, on the banks of a *kali* Kunti/Pule. The site is located 650 to the north northwest of Kuwarigan.

Religion: Hindu (?)

Main features: Bathing place.

State of preservation: Three pools have been restored.

Description: The site is composed of five bathing places scattered along the banks of *kali* Kunti/Pule.[6] They all share roughly the same layout and dimensions: a rectangular pool measuring 4.70m x 1.50m, bordered on three sides by a wall. None of them is orientated around the cardinal points, neither are they in a line.
Most of the baths were left un-carved, the exception being the second pool to the west.
The latter has a niche in the middle of its rear wall and is adorned by reliefs. Reliefs on the outside are purely plant-like motifs, while inner panels are carved with birds and human figures.

Sculptures: A *lingga*, probably a boundary stone, is visible near the eastern bath.

PAHINGAN (Paingan, Pelem and Tampir)

Administrative localization: Karangrejo, Sukorame, Musuk, Boyolali, JT.

Geographical localization: 07° 32' 18.4" S
110° 33' 45.1" E
Precision: 29m
Alt.: 575m

Surroundings: In the upper middle land, on the eastern slope of Mount Merapi, on flat ground, 200m north of the Musuk River and 300m to the south of a tributary of *kali* Gandul. The site is located 450m to the east of Tampir.

Religion: Hindu.

Main features: Single temple

State of preservation: Scattered stones.

Description: A few temple stones are still visible behind a house, together with a large *yoni* (100cm x 100cm x 90cm). According to the inhabitants large bricks were also found on the site.

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[5] Coordinates of Sendang Kunti.

[6] From west to east, the pools are named Sendang Sidotopo, Sendang Lerep, Sendang Kunti (two pools) and Sendang Sembojo.

However, according to ancient literature, the site was made out of two temples located on the ground of the villages of Pelem and Tampir (Verbeek 1891: 194; Bosch 1915a: 94). As the villages of Pelem, Pahingan and Karangrejo are touching each others, the temple mentioned in Pelem is probably Pahingan.

Sculptures:

Some sculptures were found on the site of Pelem and Tampir, among others 1 Trimūrti, 4 Śiwa, 1 Gaṇeśa and 1 Durgā (Bosch 1915a: 94; Krom 1925a: 178). However, it is not clear if those sculptures should be associated with Pahingan or with Tampir, as the two temples are considered as one single site in ancient literature.

TAMPIR (Pelem and Tampir)

Administrative localization: Tampir, Sukorame, Musuk, Boyolali, JT.

Geographical localization: 07° 32’ 17.5” S
110° 33’ 29.0” E
Precision: 11m
Alt.: 600m

Surroundings: In the upper middle land, on the eastern slope of Mount Merapi, on flat ground, 100m to the south of *kali* Musuk. The site is located 450m to the west of Pahingan.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones.

Description: Behind the high school, a small mound of temple stones is visible. Lots of stones are also scattered in its direct neighbourhood, used to build walls in the fields. Among the stones that one can still identify, there are mouldings, an unfinished *makara*, lintels, parts of crowning pieces as well as one *lingga* boundary stone.

Ancient literature mentions that the site was made out of two temples located on the ground of the villages of Pelem and Tampir (Verbeek 1891: 194; Bosch 1915a: 94). Pelem is probably to be identified with Pahingan, which lies a few hundred meters to the southeast.

Sculptures : One *yoni* (90cm x 90cm x 80cm) is still visible on the site.

Some sculptures were found here, among others 1 Trimūrti, 4 Śiwa, 1 Gaṇeśa and 1 Durgā (Bosch 1915a: 94; Krom 1925a: 178). However, as in ancient literature both sites are associated with one another, it is not clear whether the sculptures come from Tampir or from Pahingan.

CANDIREJO

Administrative location: Candirejo, Kiringan, Tulung, Boyolali, JT.

Geographical location: 07º 36' 46.0" S
110º 36' 11.5" E
Precision: Map
Alt.: 310m

Surroundings: In the lower middle land, on the south-eastern side of Mount Merapi, in an area where its slope starts to be felt. Between *kali* Puluhan Selatan and *kali* Puluhan Utara.

Religion: Hindu.

Main features: Single temple.

State of preservation: Unknown.

Description:

Traces of a foundation made of river stone was discovered in the village. Furthermore, numerous temple stones were found under the ground, including fragments of crowning pieces, mouldings, decorative reliefs and one *yoni* (Soekmono 1953: 10, 31, pl. VII and fig.39-41).

Sculptures:

Reliefs of standing male figures (one is holding a trident) were discovered during excavations, together with a figure of Gaṇeśa (Soekmono 1953: 10, 31 and fig.40, 43).

PLIMPUNGAN (Plompongan, Plumpungan)[7]

Administrative location: Plimpungan, Kauman Kidul, Sidorejo, Kotamadya Salatiga, JT.

Geographical location: 07º 18' 27.5" S
110º 30' 54.6" E
Precision: Map.
Alt.: 525m

Surroundings: In upper middle land, in a hilly area, on the western bank of *kali* Ajawur.

Religion: Unknown.

Main features: Unknown.

State of preservation: Unknown.

Description:

An inscription and some temple stones were found in the hamlet (Krom 1914: 181; SPSP JT 2002).

[7] I have not visited the place.

GEDONG SONGO

This large organic complex is located on the southern slope of Mount Ungaran. From the temples, one can enjoy the great view on Mounts Telomojo, Merbabu, Merapi, Sumbing and Sundoro. The site dominates the whole Progo valley and is divided into two parts by a 50m deep canyon where flows a sulphurous hot spring.
Gedong Songo I, II and III are located on the eastern side of the canyon, while the other temple groups are west of it.

In addition to the groups described below there were once two other foundations, known as Gedong Songo VIII and Gedong Songo IX, respectively located to the west northwest of Gedong Songo IV and to the west northwest of Gedong Songo V (Krom 1923, I: 235, 238).

GEDONG SONGO I (Candi Ratna)

Administrative location: Darum, Candi, Ambarawa, Semarang, JT.

Geographical location: 07° 12' 29.3" S
110° 20' 30.3" E
Precision: 10m
Alt.:1265

Surroundings: In upper middle land, on the southern slope of Mount Ungaran. The temple is located on the eastern side of the canyon, 370m to the south southeast of Gedong Songo II.

Religion: Hindu.

Main features: Single temple; facing west; square.

State of preservation: Restored up to its superstructure.

Description: The temple base is 8.70m square, with a projection for the staircase on the western side.

Its exact orientation is 269º 21' (Siswoyo 1996: 5).

The platform was edged by a low parapet, of which only a few blocks remain.
The temple body is 5m x 5m and has a niche at the centre of its northern, eastern and southern side. On the western side, a small projection shelters the entrance door.
A small corridor leads to a 2m square *cella*. The *cella* walls are pierced by 11 niches (three in the northern, eastern and southern wall, two flanking the entrance). The centre of the room is occupied by a *yoni*.

Sculptures:

A *lingga* was found 5m away from the temple (Verbeek 1891: 91)

GEDONG SONGO II

Administrative location: Darum, Candi, Ambarawa, Semarang, JT.

Geographical location: 07° 12' 17.6" S
110° 20' 25.6" E
Precision: 8m
Alt.: 1350m

Surroundings: In upper middle land, on the southern slope of Mount Ungaran. The temple is located on the eastern side of the canyon, 370m to the north northwest of Gedong Songo I and 110m to the south southeast of Gedong Songo III.

Religion: Hindu.

Main features: Sanctuary type 1; facing west; staggered square.

State of preservation: The main temple has been restored up to its superstructure. Of the secondary building, only parts of the base remain.

Description: Gedong Songo II is composed of two buildings facing each other: a main temple looking west and a secondary structure facing east.
The main temple has a rectangular base measuring 6.30m (E-W) x 5.80m (N-S), with a projection on the western side for the staircase.

> Its exact orientation is 263º 08' (Siswoyo 1996: 5).

The temple body is a staggered square of 4.10m x 4.10m and has a porch on its western side.
A corridor leads to a 1.75m square *cella*. Niches are visible at the centre of the northern, eastern and southern walls.
The base of the secondary structure is 2.60m (E-W) x 4m (N-S). There are no remains of the body.

> The base of a third structure was formerly visible to the south-west of the main temple (Stein Callenfels 1916: 12)

Sculptures: A fragment of a four-horse cart is still visible near the temple.

> Two *yoni* were once visible near the temple and an Agastya (Verbeek 1891: 91; Brumund, 1868; Friederich 1876: 79).
> During excavations, sculptures of Nandiśvara, Mahākāla, Durgā and Gaṇeśa were discovered at the temple foot, respectively on the western, northern and eastern side (Krom 1923, I: 231).

GEDONG SONGO III

Administrative location: Kenteng, Ambarawa, Semarang, JT.

Geographical location: 07° 12' 14.0" S
110° 20' 24.8" E
Precision: 10m
Alt.: 1375m

Surroundings: In upper middle land, on the southern slope of Mount Ungaran. The temple is located on the eastern side of the canyon, 110m to the north northwest of Gedong Songo II.

Religion: Hindu.

Main features: Sanctuary; facing west; square.

State of preservation: The three buildings have been restored up to the superstructure.

Description: This sanctuary is made out of three buildings: one main temple and a secondary shrine (on a line and facing west) and a third, smaller building, facing the main temple and looking east.
The main temple has a rectangular base (6m x 5.5m), with a projection for the staircase on the western side.
The temple body is 4m square with a projecting porch to the west. The northern, eastern and southern walls are pierced by one niche each, while the entrance is flanked by two niches.
A corridor leads to a 1.7m square *cella*.
The northern secondary shrine possesses an equally rectangular base (4.5m x 4m), with a projection to the west for the staircase. The base has the peculiarity two have three niches (north, east and south).
The temple body is 3m square, with a porch on the western side. Salient niches are visible on the northern, eastern and southern outer walls.
Two additional niches are visible inside the porch, on each side of the corridor. The *cella* is 1.3m square.
The third structure, opposite the main temple, is a small rectangular building, measuring 2.25m (E-W) x 3.3m (N-S). Base and body are integrated with one another.
Traces of a pavement are visible in places around the temples.

> Earlier, remains of a sustaining wall were also noticed. As the latter was made of re-used blocks, it is almost certainly of later date and must probably be associated with the occupation of the site during the Diponegoro revolt (Verbeek 1891: 15; Bosch 1916: 40; Krom 1923, I: 231).
> Traces of a fourth building were once visible to the southeast of the main temple (Krom 1923, I: 231).

Sculptures: Within the niches of the outer walls of the main temple, one can see two *dwārapāla*, Durgā (north), Gaṇeśa (east) and Agastya (south).
In the southern niche of the base of the northern secondary shrine is a small kneeling elephant.[8]

> Other sculptures were found around the temples: two four-horse carts, a four-headed Brahmā, an Agastya, a lion, two bulls and various other fragments (Brumund 1868: 150; Verbeek 1891: 91; Stein Callenfels 1908: XX; Knebel 1910b: 228; Krom 1923, I: 233)

GEDONG SONGO IV (Gedong Songo V, Gedong Tjina)

Administrative location: Jubelan, Sumowono, Semarang, JT.

Geographical location: 07° 12’ 13.3” S
110° 20’ 17.2” E
Precision:
Alt.: 1375m

Surroundings: In upper middle land, on the southern slope of Mount Ungaran. The temple group is located on the western side of the canyon, on a flattened area. The temple group is located 85m to the southwest of Gedong Songo VI and 200m to the north of Gedong Songo V.

Religion: Hindu.

[8] The sculpture was actually found and the foot of the niche (Stein Callenfels 1916: 15; Krom 1923, I: 233).

Main features: Sanctuary; facing west; square; porch.

State of preservation: The main temple has been restored up to its superstructure. Other buildings are mere bases.

Description: Sanctuary made of 9 buildings: one main temple flanked by 4 secondary shrines on a line, a row of three secondary buildings facing the main temple, and remains of an eighth construction at the rear of the main temple.
The base of the main temple is a rectangle measuring 6.20m (E-W) x 5.5m (N-S). The staircase is on the western side.

Its exact orientation is 282º 52' (Siswoyo 1996: 3).

Its body is 4.10m square, with a projecting porch on its western side. At the centre of the northern, eastern and southern sides, as well as near the entrance door, are niches.
A corridor leads to a plain *cella* of 1.7m square.
To the north and south of the main temple, on a same line, are remains of two pairs of buildings. All have their entrance to the west.
The structure directly to the north of the main temple measures 2.50m (E-W) x 2.05m (N-S), while the northernmost building is 2.75m square.
The base directly to the south of the main temple is a rectangle of 2.50m (E-W) x 2.20m (N-S). The southernmost building measures 3.25m (E-W) x 2.80m (N-S).
At the rear of the main temple are remains of another building. It faces and is roughly 2.70m square.
In front of the main temple raises another building. Its rectangular base measures 2.80m (E-W) x 3.20m (N-S). It bears no traces of a staircase.
To the south one finds another large structure. Its base measures 4.6m (E-W) x 4m (N-S), with a projection for the staircase to the east. Parts of the foot of the temple body are still recognizable. According to those evidences, the temple body was a staggered square with projecting niches on the northern, western and southern sides. The eastern side was occupied by a salient porch. It was probably around 2.5m – 2.8m square.
The northernmost temple of this western row is a small structure measuring 3.3m (E-W) x 3.10m (N-S) and facing east.

Sculptures: In the southern niche of the main temple, a sculpture of Agastya is still visible.

A *yoni* was found near the same building (Verbeek 1891: 92).
Among the remains of this temple group were discovered a *kala* with lower jaw and limbs, one bull, one Mahākāla, one Durgā, one Gaṇeśa, two pedestals and fragments of a sculpture representing a couple holding hands topped by a trident (Brumund 1868: 151; Bosch 1916: 80; Krom 1923, I: 238)

GEDONG SONGO V (Gedong Songo IV)

Administrative location: Jubelan, Sumowono, Semarang, JT.

Geographical location: 07° 12' 19.8" S
110° 20' 16.5" E
Precision: 10m
Alt.: 1380m

Surroundings: In upper middle land, on the southern slope of Mount Ungaran. The temple group is located on the western side of the canyon, at the top of a flattened hill. The temple group is located 200m to the south of Gedong Songo IV.

Religion: Hindu.

Main features: Sanctuary; facing west; square.

State of preservation: The main temple has been restored up to its superstructure. Of the secondary shrine just north of it are preserved the base and parts of the temple body. The other structures are reduced to their bases.

Description: The group is constituted of 6 buildings, all of them facing west. The four northern buildings are in a row and on an upper terrace, while the two southern ones are not in a line with the others and are located slightly lower.

- *Northern group*

The northern group is composed of one main temple and three secondary buildings.
The main temple has a rectangular base measuring 6.1m (E-W) x 5.5m (N-S). the staircase is to the west.

Its exact orientation is 283º 09' (Siswoyo 1996: 3).

The temple body is 4.1m square, with a projecting porch to the west. At the centre of the northern, eastern and southern walls are pierced niches.
A small corridor leads to the 1.65m square *cella*.
To the north of the main temple lies a base measuring 4.55m (E-W) x 4m (N-S), while to the south are remains of another structure of roughly 4.4m (E-W) x 3.6m (N-S).
Further south is a base measuring 3.5m (E-W) x 3.3m (N-S).

- *Southern group*

Still further south there are two bases, though not on a line with the preceding four structures.
The northern one measures 3.7m (E-W) x 3.3m (N-S), while the other is 3.7m x 3.2m.

Sculptures:

Near the main temple were visible various sculptures, among others one Agastya, one Durgā, one Mahādewa, one Wiṣṇu and two bulls.
Near the northern secondary shrine of the northern group were discovered *one* Gaṇeśa, two *dwārapāla* and one *yoni*.
Among the remains of the shrine directly to the south of the main temple were found one bull, one Gaṇeśa, one Agastya and one head of Brahmā. (Brumund 1868: 152-153; Krom 1923, I: 235-236)
In the neighbourhood of the southern groups was a Gaṇeśa (Brumund 1868: 153)
Other sculptures were found within the temple ground of Gedong Songo V, although their exact provenance is unknown. It is the case of at least one Durgā and one *lingga* (Krom 1923, I: 236).

GEDONG SONGO VI

Administrative location: Jubelan, Sumowono, Semarang, JT.

Geographical location: 07° 12' 11.6" E
110° 20' 20.0" S
Precision: 10m
Alt.: 1373m

Surroundings: In upper middle land, on the southern slope of Gaṇeśa Ungaran. The temple group is located on the western side of the canyon and 85m to the northeast of Gedong Songo IV.

Religion: Hindu.

Main features: Sanctuary type 5; facing the east; staggered square.

State of preservation: Bases and parts of temple body are still visible.

Description: Two temples in a row, orientated around the cardinal points and looking east. The base is 2.80m square. According to the remains, the temple body should have been staggered square, with projecting niches on the northern, western and southern sides.

On ancient plans, the group is composed of three buildings in a row (Lulius van Goor 1919: plan)

GEDONG SONGO VII[9]

Administrative location: Jubelan, Sumowono, Semarang, JT.

Geographical location: 07° 12' 12.5' S
110° 20' 17.7" E
Precision: 7m
Alt.: 1376m

Surroundings: In upper middle land, on the southern slope of Mount Ungaran. The temple group is located on the western side of the canyon and a few meters to the north of Gedong Songo IV.

Religion: Hindu.

Main features: Sanctuary type 5; facing west.

State of preservation: Only the bases of two buildings are still clearly recognizable.

Description: Today, only two bases on a line are visible. The southern one is 2.80m square, with remains of a staircase on the western side. The northern one is roughly 2.45m square and faces west too.

On ancient maps, the group was made of four structures on a line (Lulius van Goor 1919: plan; Krom 1923, I: 238).

BUTAK WETAN

Administrative location: Jubelan, Ambarawa, Semarang, JT.

Geographical location: 07º 11' 00.8" S
110º 20' 53.8" E
Precision: Map.
Alt.: 2031m

Surroundings: In highland, at the top of Mount Butak Wetan, one of the summits of Mount Ungaran.

Religion: Unknown.

Main features: Single temple, facing east.

State of preservation: No visible remains.

Description:

Remains of a temple were visible on *gunung* Butak Wetan. Verbeek was still able to see part of the staircase and determine that the entrance was to the east (Verbeek 1891: 90).

The temple was destroyed by the Topographische Dienst (Krom 1923, I: 222).

[9] This group has no official modern number. In ancient inventories, it is usually referred to as part of Gedong Songo V. As the structures are not in a line with the buildings of the latter group, I have preferred a distinct number.

NGAMPIN

Administrative location: Ngampin Ngentak, Ngampin Kulon, Ambarawa, Semarang, JT.

Geographical location: 07° 15' 55.1" S
110° 23' 01.7" E
Precision: 13m
Alt.: 480m

Surroundings: In lower middle land, on a gentle slope, with a view of Mount Ungaran and Telomojo. The site is located a few dozens of meters east of *kali* Kulon/Suko.

Religion: Unknown.

Main features: Single temple; facing west.

State of preservation: Scattered bricks.

Description: Numerous bricks and river stones in the backyard of a house testify the former presence of a building.

> Excavations were carried out in the 1980's. Remains of a brick base were found. The structure measured roughly 6m square and faced west, Its foundation was made of river stones. Numerous fragments of architectural ceramic were found, some with plant-like ornamentation. (Dwiyanto e.a. 1980-1981: 16)

Miscellaneous archaeological finds:

> Foreign ceramics shred from various periods were found during excavations: Chinese ceramic from the Ming era (14^{th}-17^{th} c.), as well as Thai pottery from the 15^{th}-16^{th} c. (Dwiyanto e.a 1980-1981: 18)

KALIKLOTOK (Doplang)

Administrative location: Klotok, Doplang, Bawen, Semarang, JT.

Geographical location: 07° 14' 06.1" S
110° 24' 15.0" E
Precision: 8m
Alt.: 585m

Surroundings: In upper middle land, on the slope at the foot of *gunung* Kendalidoso. The rice field of the area are scattered with hot springs. The site is located at a spring called Reco, one of the sources watering *kali* Panjang.

Religion: Hindu.

Main features: Bathing place (?).

State of preservation: Scattered stones.

Description: Within the spring called Reco are still visible several temple stones, among others two carved pediments (adorned with two birds looking to the centre of the pediment).

> Krom and Verbeek thought the place could have been a temple or a bathing place (Verbeek 1891: 93; Krom 1914a: 173; 1923, I: 223).

Sculptures:

> Two Gaṇeśa have been discovered on this site (Verbeek 1891: 93; Krom 1914a: 173; 1923, I: 223).

SIDOMUKTI (Siddhomoekti, Coblong)

Administrative location: Sidamukti, Sidamukti, Bawen, Semarang, JT.

Geographical location: 07º 12' 16.4" S
110º 22' 53.0" E
Precision: Map.[10]
Alt.: 850m

Surroundings: In upper middle land, on the south-eastern slope of Mount Ungaran, near one of the sources of *kali* Wonoboyo.

Religion: Hindu.

Main features: Organic compound; single temple; bathing place.

State of preservation: No visible remains.

Description:

There once were a bathing place and a hilltop temple (Friederich 1870: 505; 1876: 75). The temple had already disappeared at the end of the nineteenth century, but remains of the bathing place were still clearly visible, together with sculptures (Verbeek 1891: 90).
The bath was made out of two pools. From a small pool, the water flowed to a larger one (Krom 1923, I: 224).

Sculptures:

Around the pools were one Gaṇeśa and one Agastya, while a second Gaṇeśa was lying within the small pool (according to Krom, one of these Gaṇeśa originating from the temple). Two stone rams[11] were visible within the large pool (Krom 1914a: 173; 1923, I: 223).

DUKUH (Banyubiru, Brawijaya)

Administrative location: Brawijaya, Rowoboni, Banyubiru, Semarang, JT.

Geographical location: 07° 18' 40.9" S
110° 25' 34.2" E
Precision: 9m
Alt.: 496m

Surroundings: In lower middle land, at the top of a small hill overlooking the Rawapening Lake and backed by Mount Telomojo and Mount Merbabu. To the west Mount Ungaran is clearly visible. Down the hill are two hot springs.

Religion: Hindu

Main features: Single temple; facing east; staggered square; enclosure.

State of preservation: Only the base of the building remains.

Description: The temple base is square and measures 5,80m x 5,80m. Its eastern face is unfortunately badly damaged and it is not possible anymore to confirm the existence of a stair on this side.

The temple body would have been lightly staggered square and turned to the east (Friederich 1876: 75).

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[10] According to Krom, the remains were on the ground of *desa* Sidomukti, but on the border with *desa* Coblong. As the site has disappeared coordinates given here are those of the border between both hamlets, at a place along the bank of *kali* Wonoboyo.

[11] According to Verbeek (1891: 90), those sculptures were simply two bulls.

When Friederich visited the place, traces of an enclosure wall were still visible near the structure (apparently quite close to the temple itself, probably like the enclosure of *candi* Arjuna on the Dieng plateau) (Friederich 1876: 75).

Sculptures:

Several sculptures were found in the direct surroundings, among others one Gaṇeśa, a bull, 3 *lingga*, one Agastya, one *yoni* and one Durgā (Friederich 1876: 76; Verbeek 1891: 94; Krom 1914a: 175).

ARCA GANECA BESAR (Sikunir, Bergas Lor, Sawah Redsjo, Beji)

Administrative location: Sikunir, Bergas Lor, Bergas, Semarang, JT.

Geographical location: 07° 10' 47.6" S
110° 25' 07.4" E
Precision: 10m
Alt.: 490m

Surroundings: In lower middle land, on flat ground, 400m to the north of *kali* Lulung. The site is located 1km to the east northeast of Wujil.

Religion: Hindu.

Main features: Single temple (?).

State of preservation: Only a huge Gaṇeśa sculpture remains.

Description:

Friederich would have been able to see temple remains (quoted by Verbeek 1891: 89).

Sculpture: A huge, almost 2m high sculpture of Gaṇeśa is all that remains from the site.

Krom and Verbeek thought that the sculpture, given its height, could have been the central sculpture of the ancient temple (Verbeek 1891: 89; Krom 1923, I: 222). Krom mentions that, apart from temple stones and the huge Gaṇeśa, 4 smaller Gaṇeśa were found here (Krom 1914a: 177). In the neighbourhood of the village were also discovered a *yoni*, a bull, two reliefs and other temple stones (Krom 1914a: 177).

WUJIL (Kalitaman, Sindang Beji, Wijil)[12]

Administrative location: Wujil, Wujil, Bergas, Semarang, JT.

Geographical location: 07° 10' 53.0" S
110° 24' 34.7" E
Precision: 7m
Alt.: 525m

Surroundings: In upper middle land, at the top of a hill named *gunung* Sukorini, 600m to the north of *kali* Lulung and 900m to the east of the Garong River, with a nice view on Mounts Ungaran, Telomojo and Merbabu.

Religion: Hindu.

Main features: Bathing place and single temple.

[12] The name and approximate location reminds of the place that Hoepermans calls *candi* Gunung. He indeed mentions two other names for this *candi* Gunung: Bedsi and *kali* Alang. Bedsi and Beji are quite close to each other, while *kali* seems to indicate the presence of a river nearby. Hoepermans saw temple remains atop of a hill (Hoepermans 1913: 200).

State of preservation: Scattered stones.

Description: Atop of the hill are visible a few scattered stones, fragments of crowning pieces and an unfinished *yoni*. The area has been flattened and traces of cutting are visible on the natural rock surface.

> During the nineteenth century a temple base was still visible (Friedrich 1870: 507; Verbeek 1891: 89)

At the foot of the hill is located a cold spring called Kalitaman. No remains are visible there.

> However, stones used to be there and the site was usually thought to be an ancient bathing place. Two or three temples would have been standing in front of the bath (Friederich 1876: 73). Around the spring used to be a few *lingga* and *yoni* (Verbeek 1891: 89).

Sculptures:

> A Gaṇeśa was found here in 1827 and sent to Leiden by Domis (Krom 1923, I: 222). Two *lingga* and a *yoni* used to be visible near the bath (Friederich 1870: 506; Krom 1914a: 177).

RENTENG (RENTING)

Administrative location: Pandean Lor, Pandean, Getasan, Semarang, JT.

Geographical location: 07º 22' 32.5" S
110º 23' 21.4" E
Precision: Map.
Alt.: 1200m

Surroundings: In upper middle land, on the southern slope of Mount Telomojo, surrounded by the peaks of Mounts Telomojo, Andong and Merbabu.

Religion: Hindu.

Main features: Unknown.

State of preservation: No visible remains.

Description/sculptures:

> At the end of the 19th centuries scattered stones were still visible, together with a *lingga*, 3 *yoni*, one bull and one Durgā (Friederich 1876: 106; Verbeek 1891: 152; Hoepermans 1913: 149; Krom 1914a: 238; 1923, I: 409).

BEDONO (Bedana, Mawar, Yoni Besar)

Administrative location: Lendoh Atas, Bedono, Jambu, Semarang, JT.

Geographical location: 07° 18' 27.5° S
110° 20' 55.5" E
Precision: 12m
Alt.: 705m

Surroundings: In upper middle land, at the top of a hill, part of the Telomojo massif.

Religion: Hindu.

Main features: Unknown.

State of preservation: Scattered stones, *yoni*.

Description: Numerous scattered stones are visible here, some of them with mouldings and eroded reliefs. One octagonal column base can also be seen, as well as

a huge *yoni*. The latter is 1.22m x 1.22m x 1.05m and is adorned with a *nāga* and a lotus flower.

NGEMPON (Muncul)

Administrative location: Ngempon, Ngempon, Klepu, Semarang, JT.

Geographical location: 07° 11' 40.3" S
110° 26' 21.0" E
Precision: 7m
Alt.: 405m

Surroundings: In lower middle land, on a slope, almost at the bottom of a small valley. 50m north of the Lulung/Kedungdowo River, near hot springs and 150m to the northeast of the confluence between *kali* Lulung and *kali* Wonoboyo.

Religion: Unknown.

Main features: Sanctuary type 3; facing east; square; enclosure wall.

State of preservation: Mainly bases remain; parts of the temple body of the main temple are also visible.

Description: *Candi* Ngempon is composed of at least eight buildings. Five of these buildings are enclosed by a wall of river stones, while the three others are located outside of the enclosure.

- *Inner courtyard*

The five inner buildings are gathered into two rows. To the west, one finds the main temple and, north of the latter, a secondary shrine. Facing those constructions is a row of three secondary buildings.
The base of the main temple measures 3.80m (N-S) x 4m (E-W). The staircase is on the eastern side. The body must have been 2.10m square, with a short porch to the east. In the northern, western and southern walls is a niche. The *cella* is roughly 1.30m square.
The secondary building located north of the main temple has a 2.80m square base. Its body should have been more or less 1.70m square and the *cella* 0.80m x 0.80m.
In front of the main temple is a base measuring 2.70m x 2.70m.
North and south of it are visible remains of secondary building of roughly the same size.

> South of the main temple were once ruins of an unidentified structure (Soekmono 1951-1952: fig.69).

- *Enclosure wall*

Around the above-mentioned buildings runs an enclosure wall. It is a thick wall, out of which only the foot remains. It is made of river stones. It is roughly 13.5m square from the inside, and 14m square from the outside. Remains of gates are still visible at the centre of the southern and northern sides, as well as slightly in the southern part of the eastern and western wall. Near the north-eastern corner of the enclosure, piercing the wall, there is a *jaladwara*.

- *Outer structures*

To the east, outside the enclosure, is a row of three buildings. The southernmost construction is 2.45m square. The central building measures 1.95m x 1.95m and has stairs on its western side. The northernmost shrine is barely recognizable. It is

noticeable that although the northernmost structure is more or less in a line with the main temple, the two other bases are not aligned with the buildings of the inner courtyard.
To the north are remains of a well.

Sculptures:

A Gaṇeśa, a Durgā and a seated male figure holding a rosary were found among the remains (Soekmono 1951-1952: fig.34, 36, 37).

Miscellaneous archaeological finds:

A square *peripih* was discovered in one of the secondary shrines. It contains several jewels, glass beads, quartz and metal strips (Soekmono 1953: fig.33-34; Soediman 1980: 163).

NGENTAK (Klero, klera)

Administrative location: Ngentak, Klero, Tengaran, Semarang, JT.

Geographical location: 07º 24' 42.3" S
110º 31' 08.2" E
Precision: Map.
Alt.: 735m

Surroundings: In upper middle land, on flat ground, between *kali* Ngentak (N) and *kali* Tanggi (S).

Religion: Hindu.

Main features: Single temple.

State of preservation: No visible remains.

Description/sculptures:

Remains of a temple basement have been found here, together with a *yoni* and a bull (Krom 1914a: 183).

SANJAYA (Kali Senjaya,Tegal Wetan, Lali Sendjaga, Tingkir)[13]

Administrative location: Jebug, Tegal Waton, Tengaran, Semarang, JT.

Geographical location: 07° 22' 27.1" S
110° 31' 32.6" E
Precision: 50m
Alt.: 685m

Surroundings: In upper middle land, at the bottom of a small valley, between hills, lies the cold spring of *kali* Sanjaya. It is now a waterworks.

Religion: Hindu.

Main features: Bathing place and temple.

State of preservation: Scattered stones.

Description: The site shelters numerous temple stones, scattered around the concrete pools of the waterworks. Near the southern pool are gathered a large amount of

[13] Sanjaya is located a few hundred meters to the south of Tingkir. It is highly probable that the latter name, when used by Stutterheim (1937: 26; 1940: 16), refers to Sanjaya: not only the hamlets of Jebug and Tingkir are neighbours, but Stutterheim mentions that Tingkir is near the spring of *kali* Senjaya, as is Sanjaya.

blocks. Some of them might be *in situ*. Among the stones can be seen mouldings, antefixes and fragments of cornices. Given the present state of preservation, it is impossible to identify the nature of the site, temple or bathing place.

However, Friederich was of the opinion that the site probably sheltered a bathing place and a temple (Friederich 1876: 72).

Sculptures: A badly damaged Gaṇeśa is still to be seen.

Formerly, a *kāla* head was also lying in the surroundings (Friederich 1876: 72; Verbeek 1891: 96-97).

A relief depicting a mythic being half dog half lion was discovered among the stones (Stutterheim 1937: 26).

GENTONG

Administrative location: Unknown.[14]

Geographical location: Unknown.

Surroundings: One of the summits of Mount Ungaran.

Religion: Unknown.

Main features: Unknown.

State of preservation: Unknown.

Description:

This is another summit of Mount Ungaran. Krom thought that there used to be a temple on it (Krom 1923, I: 222).

[14] I have not been able to locate the place. It might be *gunung* Gendol, a 1999m high peak north of Gedong Songo.

APPENDIX 5

LIST OF CENTRAL JAVANESE TEMPLE REMAINS OUTSIDE THE SCOPE OF THE INVENTORY

BANJARKULON

Administrative localization: Banjarkulon, Banjarkulon, Banjarmangu, Banjarnegara, JT.

Religion: Hindu.

Description: some 500m north of Karanggondang. Two *yoni* from limestone, one of them still partly beneath the ground (both 1x1x1m) (Tjahjono 2000: 33).

KARANGGONDANG

Administrative localization: Karanggondang, Banjarkulon, Banjarmangu, Banjanegara, JT.

Religion: Hindu.

Description: 20m to the north of *sungai* Wadas. Two bulls (1 x 0.5 x 0.23m and 1.1 x 0.55 x 0.32m), one *lingga*-boundary stone, one pedestal (Tjahjono 2000: 33)

CONDONG

Administrative localization: Condong, Condong, Karangkobar, Banjarnegara, JT ?

Religion: Hindu.

Description: *Lingga* and rough stones on a hill (Krom 1914a: 123).

CANDIAGUNG (Batu Kenteng, Kenteng Wetan)

Administrative localization: Kentengwetan, Kenteng, Madukoro, Banjarnegara, JT.

Religion: Hindu.

Description: One *yoni* (0.95 x 0.95 x 0.7m), one andesite block with moulding, one corner stone with moulding, one *batu lumpang*, fragment of staircase; everything made from andesite (Tjahjono 2000: 33-34).

KROMONG

Administrative localization: Kromong, Kadangwangi, Wanadadi, Banjarnegara, JT.

Religion: Unknown.

Description: A doorsill 1.4m long, together with one temple stone, both from andesite. According to the villagers, there used to be other stones and bricks (Tjahjono 2000: 34).

KARANGPUCUNG

Administrative localization: Karangpucung, Kasilib, Wanadadi, Banjarnegara, JT.

Religion: Hindu.

Description: One *yoni* (1x1x0.73m) and 10 small pillar bases, all from andesite (Tjahjono 2000: 34-35)

KALIBENING (Dawuhan, Dawuhan Wetan)

Administrative localization: Mangli, Kalisupe, Banyumas, Banyumas, JT.

Religion: Unknown.

Description: In the graveyard, 11 *batu lumpang*, temple stones and construction elements (Tjahjono 2000: 30).

BANYUMUDAL

Administrative localization: Banyumudal, Sokawera, Cilongok, Banyumas, JT.

Religion: Buddhist?

Description: Stones (andesite). According to the inhabitants, there used to be a *stūpa* (Tjahjono 2000: 26)

KALIDUREN

Administrative localization: Kaliduren, Gunungwetan, Jatilawang, Banyumas, JT.

Religion: Hindu.

Description: According to informants, a Ganeśa and remains of a brick structure were found here (Tjahjono 2000: 28).

KALIENCIT

Administrative localization: Kaliencit, Pajerukan, Kalibagor, Banyumas, JT.

Religion: Hindu.

Description: Andesite blocks are visible. Formerly, ancient bricks and stone with relief were found in the village. They have disappeared. On hundred meters away from the stone was a beheaded bull (moved to Kandepdikbud). Two jars were also discovered.

KRAMAT

Administrative localization: Kramat, Kramat, Kembaran, Banyumas, JT.

Religion: Hindu

Description: A small bull (50cm x 20cm) was discovered here. 100m away was found a *yoni* (Tjahjono 2000: 27)

CANDINEGARA

Administrative localization: Candinegara, Candinegara, Pekuncen, Banyumas, JT

Religion: Hindu.

Description: At the top of a small hill, a small Gaṇeśa (40cm) was discovered. It has been removed and is now in the hamlet of Legok (Pekuncen, Pekuncen, Banyumas, JT). On the finding place, fragments of ancient bricks and stones (andesite) (Tjahjono 2000: 26).

ARCAWINANGUN

Administrative localization: Arcawinangun, Arcawinangun, Purwokerto Timur, Banyumas, JT.

Religion: Unknown.

Description: 14 pillar bases and 16 temple stones discovered in the graveyard. According to villagers there was also a water duct cut in the rock (Tjahjono 2000: 29)

LEMBU AYU

Administrative localization: Lembu Ayu, Susukan, Sumbang, Banyumas, JT.

Religion: Hindu.

Description: Two small *yoni*, one bull, stones and other construction elements (Tjahjono 2000: 28)

TUGU

Administrative localization: Tugu, Sanggreman, Rawalo, Banyumas, JT.

Religion: Hindu?

Description: In 1974 a bronze sculpture was found here (transferred to the Semarang museum). On the same site were stone fragments (maybe from a *lingga*) and three pillar bases (Tjahjono 2000:29).

KECEPIT

Administrative localization: Kecepit, Deles, Bawang, Batang, JT.

Religion: Unknown.

Description: 1.50m long temple stone, doorsill, crowning (Tjahjono 2000: 40)

BENDOSARI

Administrative localization: Bendosari, Sidorejo, Gringsing, Batang, JT.

Religion: Unknown.

Description: Temple stones and *nāga* around a spring, maybe an ancient bathing place (Tjahjono 2000: 40).

KAUMAN

Administrative localization: Kauman, Tersono, Tersono, Batang, JT.

Religion: Hindu.

Description: Doorsill and bull (Tjahjono 2000: 39)

SIMANGLI

Administrative localization: Simangli, Silurah, Wonotunggal, Batang, JT.

Religion: Hindu.

Description: A 1.75m high Ganeśa, together with a 1m-high, unidentified sculpture and pillar bases (Tjahjono 2000: 37-38).

KARANGDAWA (Laren, Candi Kuda)

Administrative localization: Karangdawa, Laren, Bumiayu, Brebes, JT.

Religion: Hindu.

Description: Remains of a brick temple; 1 small *yoni*, 1 bull, three pillar base and a crowing stone. (Tjahjono 2000: 48; Krom 1914a: 153)

KRIKIL (Wanatirta, Kedawung, Angonrejo)

Administrative localization: Krikil, Wanatirta, Paguyungan, Brebes, JT.

Religion: Hindu.

Description: Several sculptures (Agastya, Kuwera, Ganeśa, Durgā), together with a few temple stones (Krom 1914a: 153; Tjahjono 2000: 48)

KEMIJING

Administrative localization: Kemijing, Sumberdadi, Kebumen, Kebumen, JT.

Religion: Hindu

Description: 2 *yoni*, one pillar base, scattered bricks (Tjahjono 2000: 22)

BATU KALBUT

Administrative localization: Kalbut, Ayah, Ayah, Kebumen, JT.

Religion:

Description: Fragments of a stone urn adorned with a *nāga* head and bearing Old Javanese script (1.8m x 0.5m x 0.62m), one boundary stone, fragments of *batu lumpang*, other stone fragments (everything from andesite), one *lingga*, a beheaded Ganęśa (of limestone). (Tjahjono 2000: 24)

PENGILON

Adminstrative localization: Pengilon, Pengilon, Permasan/Boja, Boja, Kendal, JT.

Religion: Hindu.

Description: Temple remains near a spring (Verbeek 1891: 89). According to Krom, there were remains of two buildings. A staircase leaded from the temple ground to a lower bathing place where a naga was found. Around the temples were discovered a Ganęśa, a lion and an elephant. (Krom 1914a: 189)

GANAVERTI WETAN (Ganarati)

Administrative localization: Unknown, probbaly between Medini and Pengilon, on Mount Ungaran (Pengilon, Boja, Kendal, JT)

Religion: Hindu.

Description: Remains of a small temple and a Ganęśa (Krom 1914a: 189).

GUNUNG GENTONG

Administrative localization: Unknown (Pengilon, Boja, Kendal?).

Religion: Unknown.

Description: A temple was supposed to be on one of the summit of Mount Ungaran (Krom 1914a: 190).

JUMBLENG

Administrative localization: Jumbleng, Trisobo, Boja, Kendal, JT.

Religion: Hindu.

Description: Numerous temple stones as well as fragments of a staircase, a *yoni* and part of a female figure (probably Durgā) were found in the village (*Daftar inventaris Semarang* 1976).

KRINCING

Administrative localization: Krincing, Boja, Kendal, JT (on Mount Ungaran)

Religion: Unknown.

Description: Remains of a small temple (Krom 1914a: 190).

NGLIMUT (Segono, Argakusuma)

Administrative localization: Nglimut, Gonoharjo, Limbangan, Kendal, JT.

Religion: Hindu.

Description: Around the villages of Gono and Nglimut were found numerous temple stones and antefixes, a *yoni* (1mx1mx1.15m), a *peripih* and a *lingga* boundary-stone (Tjahjono 1998: 10; 2000: 35-36; *Daftar inventaris Semarang*1976).
The place seems to have been known earlier as "Argakusuma". Verbeek indeed describes Argakusuma as located to the north northeast of Medini, not far from a village called Kloerak or Kloewak, near a hot spring (Verbeek 1891: 88). Actually, Kluwak is located 800m to the north northeast of Nglimut and, just above Nglimut, is a hot spring.
According to the Dutch scholar, two temples were visible near the hot spring. The first one measured 7m x 8m and was turned to the north, while the second building was 6m x 7m. Above these temples, three other buildings were probably standing, but they were not visited by Verbeek or Friederich (Friederich 1870: 512; Verbeek 1891: 88).
Krom mentions the existence of two temples and, slightly lower, traces of two other temples. Higher on the hill were supposed to be remains of three further buildings that he did not visit. (Krom 1914a: 189)

Sculptures: According to Krom, several sculptures were found among the remains of *candi* Argakusuma: one lion, one bull, two Gaṇeśa, one Kālī, one *ṛṣi*, one *rākṣasa* (Krom 1914a: 189).

SEGONO

Administrative localization: Segono, Gonoharjo, Limbangan, Kendal, JT.

Religion: Hindu.

Description: Two Gaṇeśa, a Kālī (Durgā?), an Agastya, a *dwarapāla*, a *lingga* and a Śiwa were found in the neighborhood (Friederich: 1870; Krom 1914a: 189; *Daftar inventaris Semarang* 1976; Tjahjono 1998: 10; 2000: 36).

KENTENGSARI

Administrative localization: Kentengsari, Purwosari, Sukorejo, Kendal, JT.

Religion: Hindu (?).

Description: Temple stones, a *jaladwara*, a *makara* and a 1.80m high Agastya were visible in the village (Tjahjono 2000:36). Maybe the Jambean or Selokaton mentioned by Krom (Krom 1914a:189)

NGRESEP

Administrative localization: Ngresep, Sumurboto, Banyumanik, Kotamadya Semarang.

Religion: Hindu (?).

Main features: Unknown.

Descirption/Sculptures: Numerous temple stones dating from the Majapahit period were found here, together with a sculpture of Durgā (Krom 1914a: 168).

CANDI

Administrative localization: Candi Subuh, Candi, Candi Sari, Kotamadya Semarang, JT.

Religion: Unknown.

Main features: Unknown.

Description: A few temple stones were found in the area (ROD, 1914:531; *Daftar inventaris Semarang* 1976).

DUDUHAN (Mijen)

Administrative localization: Duduhan, Mijen, Mijen, Kotamadya Semarang, JT.

Religion: Hindu.

Main ferature: Unknown.

Description/sculptures: Several temple stones and sculptures were found in the village, among others one Gaṇeśa, one bull, 5 *lingga* boundary-stones and one head of Durgā (*Daftar inventaris Semarang* 1976; Sujatmi Satari 1978).

KANGKUNG

Administrative localization: Kalikangkung, Gondorio, Ngaliyan, Kotamadya Semarang, JT.

Religion: Hindu.

Main features: Single temple.

Description/sculptures: Remains of a brick temple, together with antefixes, pinnacles, a Durgā and a Gaṇeśa (Sujatmi Satari 1978).

TUGUREJO (Tugu, Kjahi Toegoe)

Administrative localization: Tugurejo, Tugurejo, Tugu, Kotamadya Semrang, JT.

Religion: Unknown.

Main feature: Unknown

Description: Remains of a square foundation were found here, together with a (boundary?) pillar and a pinnacle. The pillar was 2.30m high and the pinnacle 1.10m (Verbeek 1891: 88; Stutterheim 1936: 9).

PRAWATA

Administrative localization: Sewanagaran, Prawata, Undaan, Kudus, JT.

Religion: Hindu.

Description: *yoni*, remains of a *gopura*, heaps of bricks (Krom 1914a: 205).

BARON SEKEBER (Kaom, Gunung Garamanik)

Administrative localization: Kaom, Rogoselo, Doro, Pekalongan, JT.

Religion: Unkown.

Description: A series of 5 terraces shaped from *gunung* Garamanik. In the lower part are to be seen 6 menhir and one *dwarapāla* (1.56m x 1.20m), while in the upper part of the complex a *yoni* (0.80m) and 2 pillar bases are visible (Tjahjono 2000: 41).
At the beginning of the 20th century two *dwarapāla* were still visible, as well as 6 pillar bases (Krom 1914a: 132).

PLAWANGAN

Administrative localization: Palwangan, Lawangrejo, Pemalang, Pemalang, JT.

Religion: Unknown.

Description: Brick fragments, a couple of stones, one pillar (3.75m) and a doorsill (1.60m) (Tjahjono 2000: 43).

BANYUMUDAL (Sigaleh)

Administrative localization: Banyumudal, Banyumudal, Moga, Pemalang, JT.

Religion: Hindu.

Description: One small Gaṇeśa and 5 temple stones (Krom 1914a: 161; Tjahjono 2000: 44).

BRENGKOL (Gumuk Pesanggrahan)

Administrative localization: Brangkol, Pengalusan, Mrebet, Purbalingga, JT.

Religion: Hindu

Description: Near the Bacok spring, a source of *sungai* Pejaranan. A big limestone *yoni* left unfinished (1m x 1m x 0.9m). Some 200m from the *yoni*, there are several pillar bases and *batu lumpang* (Tjahjono 2000: 32).

MENDANG KEMULAN

Administrative localization: Mendang Kemulan, Grobogan, Purwodadi, JT.

Religion: Unknown.

Description: Some heaps of stones and ancient bricks were formerly visible here (Krom 1914: 198).

GUA SILUMBU (Kaliwarah)

Administrative localization: Silumbu, Kaliglagah, Kemiri, Purworejo, JT.

Religion: Hindu

Description: *Lingga-yoni* within a man-made cave (Tjahjono 2000: 21)

GUA GONG (Kalitepus)

Administrative localization: Kalitepus, Kesawen, Pituruh, Purworejo, JT.

Religion: Hindu

Description: Fragments of *lingga*, together with one *yoni* carved from the natural rock. The eastern side of the *yoni* is against the wall of the cave. The duct for lustral water is turned northward (Tjahjono 2000: 21).

BANTARSARI (Bumijawa, Candi Lingga)

Administrative localization: Bantarsari, Bumijawa, Bumijawa, Tegal, JT.

Religion: Hindu.

Description: On the slope of the Tenjamaya Hill (on the northern side of Mount Slamet), remains of a andesite temple, together with two *yoni*, one *lingga* boundary stone, four bell-shaped stones, two crownings and two *jaladwara* (Krom 1914a: 149; Tjahjono 2000: 47).

MUNCANG LARANG (Candi Karang Golok)

Administrative localization: Muncang Larang, Keseran, Bumijawa, Tegal, JT.

Religion: Hindu.

Description: Two Gaṇeśa, one *lingga* and a crowning stone (Krom 1914a: 149).

GONDOSULI (Candi)

Administrative localization: Gondosuli, Gondosuli, Bulu, Temanggung, JT.

Geographical localization: 07° 18' 05.7" S
110° 06' 19.0" E
Precision: 10m
Alt.: 860m

Surroundings: On the northern slope of Mount Sumbing, 200m to the east of *kali* Sumbang/Kedu.

Religion: Hindu.

Main features: Unknown.

State of preservation: Unknown.

Description: Hundred of temple stones but none *in situ*. One bull, one huge *yoni* and 9 stone bases are still visible on the site, as well as the inscription of Gondosuli, dated 827 A.D.

> According to Krom, a Gaṇeśa and a *lingga* were once also visible (Krom 1914a: n° 983).

ARGAPURA (Gedong)

Administrative localization: Lempuyang, Candiroto, Temanggung, JT.

Religion: Hindu

Description: Remains of an east-facing temples. The foundation is *in situ*. A pedestal was found here (Hoepermans 1913: 170).
Two *rākṣasa* and two lions come from the site (Verbeek 1891: n° 234), together with a bull, a Gaṇeśa and an inscription dated 863 A.D. (Krom 1914a: n° 989).

KEDUNGLO (Kedoeng Lo)

Administrative localization: Kedunglo, Gandulan, Kaloran, Temanggung, JT.

Religion: Unknown.

Description: Ruins of a temple and a few sculptures. The sculptures from Pakunden, Gawanu and Plikon are maybe actually from here (Verbeek 1891: n°232).

PLIKON (Gandulan)

Administrative localization: Plikon, Gandulan, Kaloran, Temanggung, JT.

Religion: Hindu.

Description: Remains of two temples. Near the first one, located within the village, were one Gaṇeśa and seven stone bases. The second building was in bricks. A *lingga* and a bull were found in the surrounding rice fields (Krom 1914a: n°928).

NGABEAN (Ngabjean)

Administrative localization: Ngabean, Tegowanuh, Kaloran, Temanggung, JT.

Religion: Unknown

Description: Pit and temple stones (Krom 1914a: 284)

GUNUNG PERTAPAN (Bagusan)

Administrative localization: Gunung Pertapan, Bagusan, Ngadirejo, Temanggung, JT.

Religion: Unkown.

Description: Traces the foundations of a temple (Verbeek 1891: n°244).

BUTUH

Administrative localization: Butuh, Banjarsari, Ngadirejo, Temanggung, JT.

Religion: Hindu.

Description: Several temple stones have been found here, some of them decorated (garland with birds, *kāla*, plant-like designs, etc. Two *lingga* have also been discovered here (Dwiyanto e.a. 1981: 12).

NGLARANGAN (Larangan)

Administrative localization: Nglarangan, Katakan, Ngadirejo, Temanggung, JT.

Religion: Hindu.

Description:

A 1.35m high Gaṇeśa, 2 stone basis, 1 bull and fragments of a doorjamb have been found here (Dwiyanto e.a. 1981: 10-12).

According to Krom, numerous loose bricks and two *lingga* were once visible (Krom 1914a: n° 935).

PEROT

Administrative localization: Candi, Pringapus, Ngadirejo, Temanggung, JT

Religion: Hindu.

Description:

Square base facing east (Hoepermans 1913: 160). Reliefs of Durgā and Gaṇeśa were visible on the outer walls (Krom, 1914a: n° 959).

An inscription dated 850 A.D. was discovered here and transferred to the museum of Batavia (Verbeek 1891: n° 239).

PRINGAPUS

Administrative localization: Candi, Pringapus, Ngadirejo, Temanggung, JT.

Geographical localization: 07° 14' 53.2" S
110° 03' 06.3" E
Precision: 9m
Alt.: 956m

Surroundings: On the northeastern slope of Mount Sundoro, in an area rich in springs, near Perot.

Religion: Hindu.

Main features: Single temple, facing west.

State of preservation: Restored up to the superstructure.

Description:

This small temple is a plain rectangle measuring 4.35m from east to west, and 4.85m from north to south. The *cella* (2.10m x 2.56m) houses a huge bull (1.44m long).

Given its shape and the presence of a bull, it is possible that *candi* Pringapus was functioning as secondary temple of a more important foundation. It was maybe part of a single compound, together with the now disappeared *candi* Perot.

JAMUS (Kramat, Mudal)

Administrative localization: Jamus, Tegalrejo, Ngadirejo, Temanggung, JT.

Religion: Hindu

Description: Temple stones, four *yoni* and a bull with a sleeping female figure (Verbeek 1891: n° 238).

TRAJI (Tradsie)

Administrative localization: Traji, Traji, Ngadirejo, Temanggung, JT.

Religion: Hindu.

Description: Temple stones, a pedestal and a *lingga* were found here (Verbeek 1891: n° 242).

BONGKOL (Candi Sari)

Administrative localization: Bongkol, Candisari, Parakan, Temanggung, JT.

Religion: Hindu.

Description:

Hoepermans, although he did not see stones *in situ*, was of the opinion that a temple once stood there. He noticed the presence of numerous sculptures, among others one *yoni* and one bull (Hoepermans 1913: 171).

Verbeek confirms the presence of a "geheel vervallen" temple and of a huge 1.30m-square *yoni*. He also mentions an inscription, transferred to Magelang (Verbeek 1891: n°237).

In recent times, temple stones were still visible, including antefixes, a temple crowning and fragments of a *makara* (Dwiyanto e.a. 1981: 15).

BUMEN (Kebumen)

Administrative localization: Bumen, Candisari, Parakan, Temanggung, JT.

Religion: Unknown.

Description: Ruins of a temple with the staircase on the eastern side. A pedestal was found in the surroundings (Verbeek 1891: n°236).

CANDI

Administrative localization: Candi, Candisari, Parakan, Temanggung, JT.

Religion: Hindu

Description: It is most probably a collection of artefacts gathered from the surroundings sites of Bongkol, Bumen and Gunung Kembang. The collection includes a yoni, an unfinished *kāla*, a *yoni*, two reliefs of *gana*, two door guardians, a small Śiwa (55cm high), a *jaladwara* and numerous other stones (Dwiyanto e.a. 1981: 16-17).

GUNUNG KEMBANG

Administrative localization: Candi, Candisari, Parakan, Temanggung, JT.

Religion: Hindu.

Description: Numerous temple stones, together with 3 *kāla*, 1 bull, 1 Gaṇeśa, 1.95cm square *yoni* and one double *yoni* (92x55x30cm) (Dwiyanto e.a. 1981: 18).

KARANGBENDO (Tegalroso)

Administrative localization: Karangbendo, Tegalroso, Parakan, Temanggung, JT.

Religion: Hindu?

Description: A niche sheltering a kneeling ṛṣi (Krom 1914a: n° 969).

TLAHAB (Telahap)

Administrative localization: Tlahab, Tlahab, Parakan, Temanggung, JT.

Religion: Hindu?

Description: 89 steps of a stone staircase leading to Wonosobo were discovered following a landslide. An inscription was also found in the area (Krom 1914a: n° 950).

NGEPOH

Administrative localization: Ngepoh, Klepu, Pringsurat, Temanggung, JT.

Religion: Hindu.

Description: Temple remains on a hill, including *yoni* and *lingga* (Krom 1914a: n° 944).

PIATAK

Administrative localization: Piatak, Nglorog, Pringsurat, Temanggung, JT.

Religion: Unknown.

Description: Bricks from the classical period (Krom 1914a: n° 936).

PIKATAN

Administrative localization: Pikatan, Mudal, Temanggung, Temanggung, JT.

Religion: Hindu

Description:

Traces of a temple foundation (Krom 1914a: n° 906).

Temple stones would still be visible within a pool near *kali* Jambe. Numerous stones were found in the surroundings, together with a *yoni* (Siagan 2002: 54).

BRONGKOL

Administrative localization: Brongkol, Purworejo, Temanggung, Temanggung.

Religion: Unknown.

Description: The base of the local mosque is made of temple stones maybe taken away from Wonokerso (Verbeek 1891: n°252 and 256).

WONOKERSO

Administrative localization: Wonokerso, Wonokerso, Tembarak, Temanggung, JT.

Religion: Unknown.

Description:

Remains of two temples standing atop two small hills (Verbeek 1891: n°256).

In the neighborhood were discovered 2 bulls and one *buddha* (Krom 1914a: n°901).

CANDI BOGANG (Selomerto)

Administrative localization: Selomerto, Selomerto, Selomerto, Wonosobo, JT.

Geographical localization: 07° 24.457' S
109° 53.256' E
Precision: 9m
Alt.: 635m

Religion: Buddhist

Main features:

State of preservation: Scattered stones and sculptures.

Description: 2 huge Buddhist sculptures, a dozen of plain *candi* stones and river stones testify for the former presence of a temple.

> Excavations have brought to the light one Buddha and two *bodhisattwa* (Wajrapāni and, supposedly, Awalokiteśwara), together with fragments of a Gaṇeśa relief. A gold leaf bearing an inscription in Javanese script and sanskrit language was also discovered (Dwiyanto 1985).

KARANGSARI

Administrative localization: Karangsari, Sawangan, Wonosobo, Wonosobo, JT.

Religion: Hindu

Description: Temple remains were once visible, together with a Gaṇeśa (Krom 1914a: n° 1103).

BONGKOTTAN

Administrative localization: Bongkottan, Wonosobo, Wonosobo, JT.

Religion: Unknown

Description: Square base (Krom 1914a: n° 1104).

CANDI (Roenting, Boenting)

Administrative localization: Candi, Roenting, Garung, Wonosobo, JT.

Religion: Unknown

Description: Temple remains were once visible (Krom 1914a: n° 1116).

DIENG

Administrative localization: Dieng Kulon, Dieng Kulon, Batur, Banjarnegara, JT.

Surroundings: On high plateau (2000m) surrounded by volcano peaks, near the source of the Tulis River.

Religion: Hindu

State of preservation: Temples of the Arjuna group, as well as *candi* Dwarawati, Gatotkaca and Bima have been restored. Very little is left of the other structures.

Description: The plateau is scattered with remains. They may be divided into 6 geographical units: the Arjuna group (at the centre), the northeastern temple group, the eastern temple group, the southern temple group, the western temple group and the structures to the north of the Arjuna group.

- The Arjuna group

The group is composed of 4 main temples, all facing west and built more or less on a north-south line, and 4 secondary structures.
The first shrine to the north is *candi* Arjuna. The temple has a square base and a square temple body, with a projecting porch. In front, linked to the main temple by a short stone path, stands *candi* Semar. It is a rectangular structure, the wall of which are pierced by small windows. *Candi* Arjuna and Semar are surrounded by an enclosure wall. Access to the temple was possible *via* two doors, pierced at the centre of the northern and southern side of the enclosure walls. It is possible that a third door (or a false door) existed along the western side.
Directly to the south of *candi* Arjuna stands *candi* Srikandi. Both its base and its temple body are square, with a projection to for the entrance. The remains of a structure similar to *candi* Semar are visible in front of the temple and traces of an enclosure wall have also been identified.
South of Srikandi stands *candi* Puntadewa. The temple base and body are square with a projection to the west, but the temple body has projecting niches as well. Foundations of a rectangular structure have also been found in front of it at traces of a second, slightly wider rectangular structure are still visible to the east. The three structures - the main shrine and the two secondary buildings – were surrounded by an enclosure wall.
The last and southernmost temple of the group is *candi* Sembodro, a small staggered square structure.

- The northeastern temple group

To the northeast of the Arjuna group, already on the slopes of Mount Prahu several structures were still visible in the 19th and 20th century. Between the eastern temple group and *candi* Dwarawati, Krom (1923, I: 187) mentions four small structures, while Junghun (1854: 286-292) counts 6 temple remains.

Today, the only standing structure is *candi* Dwarawati. The temple has a square base with a projection on the western side. The temple body is staggered square with a porch.

- The eastern temple group

At least 9 mounds of earth and stones were still visible in the early 20th century on the eastern side of the plateau, namely *candi* Magersari (four structures), Wachtkamer, Pandu, Abyasa and Dwarawati (two structures) (Krom 1923, I: 187)

- The southern temple group

The southern temple group counted five structures: the main temple (*candi* Bima) and four secondary buildings that stood at its corners (Krom 1923, I: 181). Only *candi* Bima remains today. Its base was octagonal (Krom 1923, I: 181). The temple body is staggered square, with a projecting vestibule on the eastern side.

- The western temple group

The group was composed, from north to south of *candi* Sentyaki, Ontorejo, Petruk, Nalagareng, Nakula Sadewa and Gatotkaca. Only the last one is still standing today.
Candi Sentyaki was a square structure crowned by an octagonal, then circular superstructure. It faced southeast (Brumund 1868: 158-159).
Candi Onto Rejo was already almost vanished in the 19th century (Brumund 1868: 158-159).
Candi Petruk (also known as Petro and Sombo) was a bit wider than Sentyaki and opened to the east. Three bulls and one *yoni* were discovered on the temple ground (Brumund 1868: 158-159; Krom 1923, I: 177-178).
Candi Nalagareng (or Bagong) faced east (Brumund 1868: 158-159).
Candi Nakula Sadewa was composed of two small shrines most probably facing west (Brumund 1868: 158-159; Krom 1923, I: 177-178).
Candi Gatotkaca is slightly better known, since it is still visible today and is temple body is relatively well preserved. The temple stood on a rectangular platform that served as basis for a second temple – now completely vanished. The temple body is staggered square, with a projecting porch on the western side.

- The northern group

The northern group lies right to the north and west of the Arjuna group. It counts temple remains as well stone terraces.

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[1] Read "*candi Wisnu-Prambanan*" in place of "*candi Sewu*".

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INDEX OF THE TEMPLE REMAINS REFERRED TO IN THE TEXT, TABLES AND ILLUSTRATIONS

Names in **bold** are official names – names used in this book, names in normal fonts are other names under which the remains are known.
The first number; in *italics*, refers to pages in the appendices (inventory and list of the temple remains outside the scope of the inventory), the other numbers refer to the text.
f. = figure
n. = footnote
t. = table

Samenvatting

Candi, Ruimte en Landschap:
Een onderzoek naar de distributie, oriëntatie en ruimtelijke ordening van overblijfselen van tempels op Midden-Java

Tempels op Midden-Java werden niet willekeurig ergens gebouwd, integendeel: hun positie in het landschap en hun architectonische plan waren bepaald door een aantal sociaal-culturele, religieuze en economische factoren. Het uitgangspunt van dit boek was, dat een analyse van de mogelijke verbanden tussen de distributie van de tempels, hun natuurlijke omgeving en architectonische plan waardevolle inzichten zou kunnen verschaffen over hoe de bevolking van Midden-Java de ruimtelijke omgeving ordende, welke factoren deze ordening beïnvloedden en hoe het religieuze landschap dat op die manier werd gecreëerd zich ontwikkelde.

Het onderzoek dat hier wordt gepresenteerd werd in drie stappen uitgevoerd: het verzamelen van gegevens (door middel van literatuur(onderzoek) en veldwerk), het tekenen van archeologische kaarten en analyse van de data. Eerst verzamelde ik data uit oude Nederlandse inventarissen en moderne Indonesische lijsten. Vervolgens vulde ik deze informatie aan door het lezen van verschillende archeologische rapporten, met een nadruk op de rapporten die gedurende de tweede helft van de 20ste eeuw verschenen. Op grond van deze gedrukte bronnen maakte ik een voorlopige lijst van tempel overblijfselen, inclusief lokalisering en beschrijving (indien beschikbaar).

Om de nauwkeurigheid van de data en informatie uit de geschreven bronnen te controleren, heb ik veldwerk gedaan in the districten Yogyakarta, Magelang, Semarang en Boyolali. Ik bezocht alle dorpen waar zich volgens de rapporten tempelstenen hadden bevonden, ook als die stenen in latere rapporten als vermist waren opgegeven. In het eerste trimester van 2004 maakte ik op grond van de gedrukte informatie en de veldwerk gegevens een nieuwe beschrijvende inventaris van de Midden-Javaanse tempel ruïnes en tekende ik archeologische kaarten. Deze kaarten werden ingevoerd in MapInfo, een eenvoudig geografisch informatie systeem, waardoor op verschillende niveaus ruimtelijke informatie opgevraagd kan worden.

Deze geografische data vormden het uitgangspunt van overwegingen over de fysieke structuur van het Midden-Javaanse grondgebied (hoofdstukken 4-5), en een schatting van de reikwijdte van de hindoe-boeddhistische invloedssfeer in de aangrenzende gebieden van Java (hoofdstuk 4). Bovendien heeft de analyse van de correlaties tussen de tempel distributie patronen, ecologische zones en topografie, verrijkt met data van secundaire bronnen, mij in staat gesteld om de voornaamste kenmerken van het bewonen van het land te reconstrueren. Het grondgebied van het oude Midden-Java blijkt te zijn gestructureerd rond een kernlandbouwgebied (dat zich uitstrekte van Prambanan tot Muntilan), een reeks secundaire centra (bij Secang, Ngadirejo en Boyolali) en verschillende religieuze centra – soms relatief geïsoleerd (hoofdstukken 4-5).

Het patroon van de distributie van de tempels laat zien dat tempels deel uitmaakten van een communicatie netwerk dat de rijke landbouw vlakten van het zuiden verbond met de noordkust, via twee hoofdroutes: één volgde de Progo rivier en de ander liep rond de oostelijke voet van het Merapi-Merbabu massief (hoofdstuk 5). Het bestaan van dergelijke routes bevestigt dat de economie van Midden-Java geen gesloten economie gebaseerd op

geïsoleerde gemeenschappen was, maar juist het tegenovergestelde; gebaseerd op een uitgebreid handelsnetwerk, zoals al is gesteld door Jan Wisseman Christie op basis van inscripties (Wisseman Christie 2004).

Behalve tempels gerelateerd aan plaatsen van economisch belang, bezat Midden-Java een aantal religieuze centra die niet waren verbonden met wegen of nederzettingen (hoofdstuk 4). Dit is het geval bij de tempels van Dieng en Gedong Songo, en ook met de bouwwerken op de Pegat-Ijo berg. Verder hebben we aangetoond dat de dicht op elkaar staande ruïnes rond Prambanan niet moeten worden geïnterpreteerd als een grootschalige nederzetting: de scherpe toename van tempeldichtheid in het oosten van Prambanan kan beter worden verklaard door het bestaan van een belangrijk religieus centrum, in het oostelijke gedeelte van het Midden-Javaanse rijk, en onderbouwt niet de hypothese van een bruisend economisch centrum.

Ongeacht het feit of de tempels waren gebouwd in vruchtbare vlakten of op hoge grond, de keuze van de ligging situering werd beïnvloed door specifieke kenmerken van het landschap, zoals rivieren, samenvloeiingen van waterwegen, bronnen, geïsoleerde heuveltoppen, zwavelbronnen en overgangszones (hoofdstuk 5). Soms speelden markante plekken in het landschap een rol in de keuze van de ligging, maar had dit geen verdere invloed op de constructie. Soms, vooral in het zuiden van Midden-Java, waren de tempels georiënteerd in relatie tot specifieke kenmerken van het landschap, met hun achterzijde gericht naar een rivier of heuveltop.

Behalve de vraagstukken van grondgebied en landschap, geeft deze studie ook inzicht in de structuur van de gebouwde ruimte, en de mogelijke relatie met geconceptualiseerde ruimte. Wat betreft dit onderwerp hebben architectonische en epigrafische data de invloed van belangrijke Indiase begrippen aangetoond, maar ook hun beperkingen. De westwaartse oriëntatie van veel tempels, de rol die soms wordt gespeeld door markante plekken in het landschap bij deze oriëntatie, het idee van een ruimte gestructureerd rond twee assen en de heiligheid van de achterzijde, zijn allemaal elementen die aantonen dat de kunst van Midden-Java niet langer meer kan worden beschreven als “verbonden met feiten die elders bekend zijn” (dat wil zeggen uit India; Bernet Kempers 1959).

De analyse van tempelplattegronden en ruimtelijke ordening heeft verder aangetoond dat er een duidelijke boeddhistische architectonische traditie was op Midden-Java. Deze traditie werd gekenmerkt door het systematische gebruik van trapsgewijze vierkante of rechthoekige plattegronden en een neiging tot een concentrische structuur - in ieder geval in de grotere tempelcomplexen. De bestudering van architectonische lijsten heeft deze hypothese bevestigd, omdat zij aantoont dat de aanwezigheid van een torus niet gerelateerd was aan stilistische evolutie – zoals aanvankelijk werd aangenomen door Soekmono (1979) en Williams (1981) – maar was verbonden aan een aparte traditie: de torus geassocieerd met boeddhistische architectuur, zoals Dumarçay (1981) al had voorzien.

Door middel van dit proefschrift hoop ik te hebben aangetoond dat het architectonische landschap van Midden-Java het resultaat is van een complex sociaal-cultureel proces. De distributie, oriëntatie en structuur van Midden-Javaanse tempels was bepaald – op verschillende niveaus – door economische, politieke en religieuze factoren. Zij onthullen de veelvuldige aard van de relatie tussen heiligdommen, land bewoning, natuurlijke omgeving, geconceptualiseerde ruimte en bouwkundige tradities.

Curriculum Vitae

Véronique Degroot was born in 1972, in Charleroi, Belgium. After completion of her secondary education in Charleroi, she studied art and archaeology at the Université Catholique de Louvain, majoring in Antiquity. After graduating in 1994, she commenced a masters degree in the art and archaeology of Southeast Asia at the School of Oriental and African Studies (London University), supervised by Prof. Dr. Elizabeth Moore. At the end of 1995, she started working as a part-time tourist guide for the French cultural tour operator Clio and as field archaeologist for the École Française d'Extrême-Orient. She took part in three excavation campaigns at the Royal Palace of Angkor Thom (Cambodia), within the context of the Mission Études Urbaines, directed by Jacques Gaucher. In 1997, she received a price from the Fondation Belge de la Vocation to pursue her own research. From October 2000 to April 2005 she held the position of *Onderzoeker in opleiding* (junior researcher) at Leiden University, within a research project financed by a NWO ASPASIA grant and directed by Dr. Marijke J. Klokke. She commenced her doctoral thesis first under Prof. Dr. Aart J.J. Mekking, then under Prof. Dr. Ben Arps.

Véronique Degroot and Olivier Merveille, her partner, moved to the Netherlands in 2001, together with their daughter Leïla (born in Brussels in March 2001). In 2002 and 2003, the three of them spent some 11 months in Yogyakarta, Central Java, where Véronique completed fieldwork. Their second daughter, Shanti, was born in Leiden in 2005.

In 2004 and 2005, Véronique excavated in Batujaya, West Java, for an archaeological project of the Pusat Penelitian Arkeologi Nasional and the École Française d'Extrême-Orient, under the direction of Prof. Dr. Pierre-Yves Manguin. In 2007, she joined another mission of the École Française d'Extrême-Orient, at Padang Lawas (North Sumatra), directed by Dr. Daniel Perret. The same year, she received a six-month scholarship from the Gonda Foundation to complete her doctoral degree.

Véronique currently holds the position of researcher Hindu-Buddhist Insular Southeast Asia at the Rijksmuseum voor Volkenkunde - National Museum of Ethnology.