

ARCHITECTURE OF ASSAM

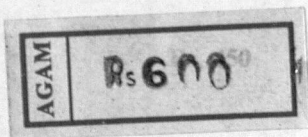


Dr P. C. Sarma

This book incorporates an analysis of the architectural aspects of the historical temples of Assam. Assam was known to the rest of India since the Epic days and was imbued by its art, culture and religious beliefs. But due to its extreme climatic condition and natural calamities, all of the mediaeval monuments upto 12th century A.D. were reduced to heaps of ruins and rubbles. In spite of this, the author has spared no pains to examine whatever was available *in situ* and has come out successful in making an objective analysis of the ancient architectural tradition from artistic as well as structural points of view. In doing so he has with logical consistency conjectured the style, stature and chronology of the temples.

As far the later-mediaeval temples, the majority of which are standing intact at present, save for their vegetal outgrowths and weathering, the author has precisely traced the stylistic evolution, affinities, deviations and exotic elements in them, with copious illustrations. In doing so, he has most skillfully sorted out the novel features that this architectural form has developed against their basic Indo-Aryan form.

The book is the result of author's strenuous field-works for six consecutive years under strict academic discipline. He has had his best, with the meagre materials available to him, in making it as objective as possible.



Dr. P.C. Sarma did his Intermediate in Science 1957 with a first division and his Diploma in Civil Engineering in 1960 with a first class. After joining the State Department of Archaeology, Assam, he received training in the Conservation of Monuments in the School of Archaeology, Archaeological Survey of India, New Delhi, with practical training in most of the major archaeological sites in India. After this, Dr. Sarma privately passed B.A. in 1961 and M.A. in History with the Ancient Group in 1973. Subsequently, he undertook the study of the development of temple architecture of the State, culminating in his securing Ph.D. from the Gauhati University in 1982 under Dr. V.B. Mishra.

Dr. Sarma has published a number of research papers on diverse subjects as well as popular articles and radio talks, such papers and articles numbering around fifty.

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Dr. P.C. SARMA

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Foreword

The Monograph of Dr. Pradip Sarma : "Architecture of ASSAM (from the Gupta period to the end of the Ahom rule)" is a singular and unique contribution to the History of ASSAM. There was a great void in the history of ASSAM. Though scholars from the West and the East worked on history of ASSAM, none prepared a monograph on the Temple Architecture.

Dr. Sarma's work throws a flood of light on the culture of ASSAM. He had made the Architecture to speak by his on the spot study. Many temples are in ruins covered by wild grass. It was difficult to imagine their height, but with the plinth area he scientifically exercised his imagination which is unquestionable and drew the whole plan on paper like an engineer.

The work is complete in all respects and indispensable for scholars and general readers who are interested to know the cultural history of Assam.

The work was prepared under my guidance and I went through it meticulously sparing no pains. The work was highly appreciated by his external Examiners who are renowned scholars of India in the field.

Dr. V.B. MISHRA
Formerly Professor, Head, Post-Graduate
Deptt. of History, Dean, Faculty of Arts
& Acting Vice-Chancellor,
Gauhati University.

Preface

Assam seems to have kept pace with other parts of the country in building temples in ancient times, though most of the pre-Āhom temples have either disappeared or are in ruins. As their structural components have not altogether disappeared, an attempt is made in the following pages to work out the architectural patterns of the complete temples. The clearance of a few ruins by the State Department of Archaeology, Assam, during the last few years has exposed the plinths of certain interesting stone temples which, along with other components now in existence, such as door-jambes, lintels, monolithic *aṅgāsikharas*, *āmalakas*, *kalāsas*, door-sills, etc., help us in reconstructing the whole view of the temples. I have arrived at conclusions by studying these ruins in their proper perspective. Most of the temples of the later mediaeval period are in their complete structural forms, but as no monograph was prepared so far on them the present work may fill the void.

I have made an attempt to study the origin and development of the Assam temples in the light of the available material from the Gupta period to the end of the Āhom rule in Assam. The study has been divided into two major parts: the Early Mediaeval Temple Architecture in Assam and the Architecture of the Later Mediaeval Assam. Emphasis has been laid on the study of the general lay-out, ground-plan and vertical features of the temple-structures. Since the temples in Assam appear to have borne the similar basic North Indian features of the *nāgara* style, a comparative study with the North Indian

temple architecture has been made with a view to bringing out the full architectural features of the temples in Assam, their origin and gradual deviations. So far as the Āhom temples are concerned, the age of most of the temples is well recorded, either in inscriptions or in the chronicles, but the age of the pre-Āhom temples is not known. An attempt is, therefore, made to determine the age by comparing the existing temple-components, such as, ground-plan, general-lay-out, door-frames, sculptures, friezes, architraves, pillar-capitals, decorative-designs, etc. with their counterparts in temples of known dates in other parts of India.

The main sources of our information for the study have been the temple-ruins and the extant temples. The earliest known site in Assam is the ruins of Da-Parvatiyā temple near the modern town of the Tezpur in the Darrang District. This site contains a typical door-frame of the Gupta period which has been acclaimed as one of the finest pieces of the contemporary art. The age of the ruins of the temple-complex over which this frame stands is a matter of controversy among the scholars. I have made an attempt to determine the age in the following pages by a thorough on the spot study of the site and the ruins.

Tezpur and Gauhati abound in archaeological ruins of the pre-Āhom period. Some of the door-jambs, lintels and architraves, now preserved in the Cole Park of Tezpur, are said to be of the 8th-9th century A.D. Other structural remains which are lying scattered in and around the town have been examined to determine the type and chronology of the temples. The ruins of the pre-Āhom temples in Gauhati and all over the Brahmaputra valley lying in abundance have been used to develop the thesis.

As regards the old temples now in existence, most of them cluster round the towns of Hajo, Gauhati, Biswanath and Sibsagar. All of them were constructed during the Āhom period. It is interesting to note that a few of them have the plinths of earlier period which are definitely of pre-Āhom origin. A study of these plinths has yielded valuable results to construct the architectural history of the temples in the pre-Āhom period.

Other sources of our information are the old records of the State, such as chronicles, copper-plate charters of the kings and stone inscriptions, accounts of the travellers, and old manuscripts. The Umāchala Rock Inscription of the 5th century A.D. records about a cave temple; Yuan Chwang's *si yu ki* refers to the existence of the Deva-temples in Kāmarūpa; and the copper-plate charters of the Sālastambha (7th-10th century A.D.) and the Pāla (10th-12th century A.D.) dynasties of Assam record erection of a number of temples. The sources for the study of the Āhom period are varied and precise. The Chāngrung Phukanar Buranji of the Āhom period maintains a valuable record of the date of erection, measurements and the materials used for building temples.

The reports on the exploration of sites and monuments of Assam published from time to time by the Archaeological Survey of India are another source of information. Reference to some of the monuments of Assam of the period of my study in the books on history and culture written by eminent scholars, and articles on the subject published in research journals like the Assam Research Society, and the Journal of the Asiatic Society of Bengal have helped me in making my study a fruitful one.

Records and data on the work of conservation, exploration and clearance of the old sites by the Department of Archaeology and State Museum, Assam, have been an indispensable source for my study. Devegetation and conservation of certain temples by this Department have exposed many unknown features. Clearance of a few archaeological remains by this Department has unearthed many a valuable material of archaeological importance. Explorations conducted by this Department have brought to light a number of sites of archaeological importance. All of these have been of substantial help in preparing the present work.

I have organised the whole study under five chapters : Origin of the Temple Architecture in Assam; the Early Mediaeval Temple Architecture in Assam; the Architecture of the Later Mediaeval Assam; the Assam Temple Architecture and the Indo-Aryan Style

and Conclusion, with illustrations. These chapters will throw light over the whole study as contemplated.

The terminology used in this book are mainly adopted from Dr. (Mrs.) D. Mitra's "Bhubaneswar", which, apparently, is an admixture of Indological terms of the classical period and the local standard Orissan terms. In addition to this, a few local terms of Assam are also used, where indispensable, an analysis on which is given in Chapter I under the sub-title "The terms used for a temple in Assam".

In conclusion, I offer my respectful thanks to Dr. V.B. Mishra, Professor and Head of the Department of History, and Dean of the Faculty of Arts, Gauhati University, Guwahati (Assam), without whose ungrudging help and guidance this work would never have been completed. I express my gratefulness to Shri G.N. Bhuyan, Director, Department of Archaeology and State Museum, Assam, Guwahati, for helping me with up to date information on the discovery of archaeological materials and also for allowing me to use a number of photographs of the sites and monuments of historical importance of Assam bearing on my study. I also acknowledge with thanks the help and co-operation extended to me by Dr. N.P. Choudhury, Dr. R.D. Choudhury, Smt. Chayanika Devi, Smt. Anu Sarma and Shri Gautan Sharma in more than one way in my study. Lastly, I express my indebtedness to Shri Kumarendra Sarma, who did the entire work of typing the book with meticulous care, to Shri R.N. Barthakur and Champak Bhattacharjya who with their skilled hands prepared the scaled drawings within a very limited time out of the rough sketches supplied by me, and also to Shri Madan Ch. Lahkar, Scientific Officer, Assam Forensic Laboratory, who spared no pains in printing out the photographs out of the negatives supplied by me, all of which were not in proper shape.

PRADIP CHANDRA SARMA

Abbreviations

- AB Architecture of Bengal, Bk. I, Saraswati, S.K., Calcutta, 1976.
- ABNI Asom Bani, Puja Edition, Gauhati, 1978.
- ACHA A Cultural History of Assam, Barua, B.K., Gauhati, 1969.
- AFD Assamese: Its Formation and Development, Kakati, B.K., 3rd Edition, Gauhati, 1941.
- AHCE A Handbook of Civil Engineers, Nath, R.M., Shillong, 1963.
- AIG The Age of the Imperial Guptas, Banerji, R.D., Benares, 1933.
- AIU The Age of the Imperial Unity, Bombay, 1960.
- ARA Archaeology in Assam, Choudhury, P.D., Gauhati, 1964.
- ARAS Annual Report of the Archaeological Survey of India.
- AHA Aspects of the Heritage of Assam, Gauhati, 1959.
- AIA The Art of Indian Asia, Zimmer, H., New York, 1955.
- Aṣṭa Aṣṭādhyāyī of Paṇini.
- BAC The Background of Assamese Culture, Nath, R.M., Gauhati, 1978.
- BASM The Assam State Museum Bulletin, Gauhati.

- BRW Buddhist Records of the Western World, Delhi, 1969.
- BSR Bhubaneswar, Mitra, D., New Delhi, 1961.
- BT Bengal Temple, Dutta, B.K., New Delhi, 1975.
- CA The Classical Age, Bombay, 1962.
- CAB Chandrakanta Abhidhana, Gauhati, 1962.
- CHA A Cultural History of Assam, Gauhati, 1969.
- CHI The Cultural Heritage of India, Calcutta, 1956.
- CI Cacharer Itibritta, Guha, U.C., Gauhati, 1971.
- CIA The Canons of Indian Art, Bhattacharyya, T.P., Calcutta, 1963.
- CII Corpus Inscriptionum Indicarum, III, Varanasi, 1963.
- CPB Changrung Phukanar Buranji, Jaisagar, 1961.
- DAB Deodhani Asom Buranji, Gauhati, 1932.
- DR Darrang Rājavamsāvalī, Gauhati, 1973.
- EHK Early History of Kāmarūpa, Barua, K.L., Gauhati, 1966.
- EI Epigraphiā Indicā.
- GAIT A History of Assam, E. Gait, Calcutta, 1967.
- GS Gupta Sculpture, Harle, J.C., London, 1974.
- GTA Gupta Temple Architecture, Agrawala, P.K., Varanasi, 1968.
- HAB Hemakoṣa Abhidhāna, 1st Edition, Jorhat, 1900.
- HCPA The History of Civilisation of the People of Assam, Choudhury, P.C., Gauhati, 1966.
- HIEA History of Indian and Eastern Architecture, Fergusson, J., Delhi, 1967.
- HLI Historical and Literary Inscriptions, Pandey, R.B., Varanasi, 1962.

- IA Indian Architecture (Buddhist and Hindu Periods), Brown, P. Bombay, 1956.
- IAA Inscriptions of Ancient Assam, Sarma, M.M., Gauhati, 1978.
- IAI Indian Architecture (Islamic Period), Brown, P., Bombay, 1968.
- JARS Journal of the Assam Research Society, Gauhati.
- KS Kāmarūpasāsanavali, Bhattacharyya, P.N., Calcutta, 1931.
- KT Kāmākhyā Tīrtha, Sarma, D.K. Dev, Gauhati, 1967.
- LAI Living Architecture : India, Valwahsen, A., Calcutta, 1969.
- MGK Mother Goddess Kāmākhyā, Kakati, B.K., Gauhati, 1948.
- NVM The Neo-Vaisnavite Movement and the Satra Institution of Assam, Sarma, S.N., Gauhati, 1966.
- PA Pavitra Asom, Neog, M., Gauhati, 1969.
- PKD Purani Kāmarūpar Dharma Dhārā, Kakati, B.K., Gauhati, 1955.
- PKS Prakash, Gauhati, 1977.
- PRMP Pagan Races of the Malay Peninsula, Skeat and Blagden, II, London, 1906.
- PS Prachya-Sasanavali, ed. Neog, M., Gauhati, 1974.
- RA Rajput Architecture, Ghurya, G.S., Bombay, 1968.
- RDED Reader's Digest Encyclopedic Dictionary, London, 1964.
- RESM Reports on Exploration, State Department of Archaeology, Assam, Gauhati.
- SAMM Sculptures in the Allahabad Municipal Museum, Kala, S.C., Allahabad, 1946.

- SHAA A Study of Hindu Art and Architecture, Shukla, L.K.,
Varanasi, 1972.
- SIA Studies in Indian Art, Agrawala, V.S., Varanasi, 1965.
- SIC A Survey of Indian Sculptures, Saraswati, S.K., Calcutta,
1957.
- Skt. Samskrt.
- TSRR Tai Sanskritir Ruprekha, Gogoi, L., Calcutta, 1971.

The System of Transliteration

(of the Saṃskṛt Alphabet into Roman)

The following deserve consideration

आ	ā
ऋ	ṛ
अं	aṃ
अः	aḥ
इ	ī
च	ca
छ	cha
ञ	ña
ट	ṭa
ठ	ṭha
ड	ḍa
ढ	ḍha
ण	ṇa
श	śa
ष	ṣa
क्ष	kṣa
ज्ञ	jña

Origin of the Temple Architecture in Assam

THE CONCEPT OF TEMPLE IN ASSAM

The Indian religious beliefs in the Vedic literature began with the worship of the natural phenomena, conceiving in a romantic poetic way the anthropomorphism of the deities. The deities were identified with nature and were assigned places of abode with the same imagination with which they were conceived. Their division in the three categories in the Ṛgveda, viz. *dyusthāna* (celestial), *antarikṣasthāna* (aerial) and *pṛthvisthāna* (terrestrial) was to carry home the concept that all the gods, though manifestation of one and the same Being, have their abode in different parts of the universe and they have a distinct role to play. There were, of course, deities who were terrestrial as well as aerial, e.g. Agni was a terrestrial as well as an aerial god. The Vedic Aryans did not build temples to enshrine the images of the deities nor they adopted the form of worship which became popular under the *bhakti-mārga* (cult of devotion). The first recorded reference to the images is in the *Aṣṭādhyāyī* of Paṇini where the images of Kṛiṣṇa-Vāsudeva and Arjuna (one of the five Pāṇḍavas) are mentioned.¹ As the country passed through the age of the *śrauta* and *smārta* sacrifices, the

concentration was on the propagation of the Vedic sacrifices which hardly demanded the raising of a temple for worship. It was when the *śrauta* and *smārta* sacrifices were on the decline and as they were beyond the reach of the common man that the religious thinkers, to bring the religious beliefs nearer the common man, conceived of crystallising their ideas in the form of image worship which could be an easy substitute of the grand Vedic sacrifices. The *Bhakti-mārga* (cult of devotion) gave an unqualified encouragement for the construction of the temple which became the places of popular worship.

Thus, when once the temple as an abode of the deity was materialised, a new craft in the form of temple building began which, with time, not only spread throughout the subcontinent but also to its neighbourhood, and even beyond. Assam being its next-door neighbour could naturally be expected to have fallen under the spell of this activity since its inception, distinct instances of which could be noticed among the earliest legends and relics of the land. Even most of the terms now popularly in use in Assam to denote a temple show their origin in the Indo-Aryan terminology.

THE TERMS USED FOR A TEMPLE IN ASSAM

The term "temple" in Assam is popularly expressed in a number of colloquial ways. In the eastern part of Assam covering the districts of Sibsagar, Dibrugarh, Lakhimpur and Darrang, a temple is popularly called as the *dol*. It is supposed to have been derived from the Sanskrit word *devakula*² or *devālaya*³ and often denotes a temple of the later mediaeval period. Kakati has traced its origin to the Austric language.⁴ In practice, *dol* clearly refers only to the temples erected by the later mediaeval Āhom rulers of the land. *Debāloy* (Skt. *devālaya*) is another word used to mean a temple and is popular in almost all the districts of the State. The word *thān* (Skt. *Sthāna*—a place) has its equal popularity. The numerous Vaisnavite Satras of Assam use this word in two senses: (i) to mean a seat of the religious head of the Vaiṣṇavas

and (ii) to indicate a place of worship established over the spot of cremation of a religious person.⁵ But, it is also used to mean a temple, as in the case of the Mālinī-Thān near Lekabali in the Lakhimpur District or the Mahāmāyā-Thān in the Karbi Anglong District. In Lower Assam covering the districts of Nowgong, Kamrup, western Darrang, Goalpara and south Assam, a temple is called as *mandir* (Skt. *mandira*).

Whatever literary meaning they may carry, a few words used by the common people of this province clearly mean a temple. The word *ghar*, as in the case of the Devi-ghar at Jaisagar, is used to mean a temple. Probably the shape of the temple structure, *i.e.* its imitation of a common Assamese house (*ghar* in Assamese means a building), is the cause behind this. Sometimes the word *gosainghar*, as in the case of the temple on the Talātalghar near Sibsagar, is also used for this purpose (gosain means God). Another expression used is the *piṭha*. The *piṭha* is a shrine established over the discarded limb of Satī, the consort of Mahādeva.⁶ But for the people in general it does not signify anything but a temple, *e.g.*, the Ramkhan-Piṭha of Sibsagar and the Mahāmāyā-Piṭha at Bagaribari in the Goalpara District are temples. *Maṭha* is another word used for a temple. The brick-built *sikhara* temples in the Vaiṣṇavitē Satras are invariably called a *maṭha*. Of course, the word has its general use for other types of temples also. The Namaṭha near the Kāmākhyā (Skt. Kāmākṣā) temple on the Nilāchala hills is a *pañcaratna* Śiva temple and the Mahādeva-Maṭha near North Salmara in the Goalpara District is a cave temple. In a few cases the word *bārī* is seen to have been used to mean a temple. This is confined only to the district of Goalpara. The Narasiṃhabārī near the town of Goalpara is a temple. The Assamese meaning of *bārī* is a compound while in Bengali it refers to a residence. Probably it is in this later sense that the word is used. Goalpara being the westernmost district of Assam and contiguous with West Bengal, a degree of Bengali influence on its dialects and usages can easily be marked. The use of the word *śāla* as a suffix is seen in a number of temples and shrines in Upper Assam, though its actual meaning or origin

can not be traced. However, most of such temples are associated with the different tribes of the State.

For our study, we shall be using the word temple to mean a masonry structure, complete or in ruins, bearing antique and archaeological value, which was used or is still in use for religious purpose.

From remote past it appears that Assam had her masonry building activities though traces of her archetypal edifices have failed to survive to this date. There is also no extant *śāstra* on the *vāstuvidyā* in this region to throw light on the principles which the masons followed in raising religious architecture. A close look at the existing temples or ruins enable us to presume that they are of the northern Indo-Aryan style, though regional influences on them are easily traceable.

MYTHS AND LEGENDS

As regards the background for the erection of certain temples, some popular marvels are often cited. The cow of a villager was found missing and was subsequently traced in a secluded place, exuding her milk automatically on a spot. Sensing some divine instruction the people fenced off the area and caused a temple to be constructed.⁷ Sometimes excavation in such a spot led to the discovery of an image or a symbol which was naturally enshrined and worshipped. The story is very popular with certain amount of variation in all the districts of the State and is put forward as the cause of origin of many temples. Another episode leading to the establishment of a temple seems to be equally popular and hints at the erection of Śakti temples.⁸ The cowherds of a village enjoyed a fun while grazing cattle by sacrificing a grass-hopper every day in the name of God. They used a grass-blade as the chopper. Every cowherd was to catch a grass-hopper on a particular day for this purpose. One day a cowherd could not collect his share. Being disgusted he put his neck on the sacrificial altar and requested his mates to sacrifice him. Upon this one of the cowherds

applied a grass-blade across his neck. Mysteriously enough, only one drive of the grass-blade beheaded the cowherd. This miraculous incident revealed the sanctity of the spot of sacrifice and inspired people to start a temple.⁹ Development of ant-hills on a spot which was already associated with a mystery or a miracle also encouraged people to construct a temple.¹⁰ The divine direction for an icon hidden beneath the earth through dream and its actual discovery led to the construction of some temples. In a few cases temples were erected on the last mortal remains of a pious man or a preacher.¹¹

The origin of certain temples is shrouded in deep mystery, while for a few others, legends connected with the great Indian Epics are current. The entire Brahmaputra valley appeared sacred and enchanting to the kings and rulers through the ages who dotted the entire region with shrines and temples. King Janaka of Mithila of the Rāmāyaṇa-age is mentioned as the foster father of Naraka, the legendary hero of the Kāmākhyā episode.¹² The Kuṇḍil-Nagar ruins near Sadiya in upper Assam, the temple ruins at Tezpur and the temples and shrines in and around Gauhati have Epical backgrounds.

The Buddhist-Tantric period seems to have inspired construction of some major Śakti temples of the State. The Purāṇic story of self-immolation of Satī, the consort of Śiva, and the rise of fifty-one *pūthas* "when her dead-body was carried hither and thither in frantic sorrow by her husband"¹³ led to the origin of certain temples. The Kāmākhyā and the Ugratārā temples in Gauhati, the Bāgheśvarī and the Tukreśvarī *Debāloys* in the Goalpara District are the examples of such *pūthas* bearing this story as the cause of their construction. However, the existence of Kāmākhyā as a place of worship prior to the Tāntric period has been traced by Kakati.¹⁴

In spite of the different backgrounds for the origin of temples, the fact remains that the royal patronage had always been the most dominating factor in their construction. Except for a limited number the credit of building almost all the religious edifices has been assigned to the different kings or dynasties. The inscriptions and copper-plate charters of the kings of yore record the building of temples

in this region in different periods of history. But, save for the later mediaeval period, we lack evidence to give names of the builders of the pre-Āhom temples or ruins now in existence. The Āhom chronicles systematically record the construction of temples of the Āhom period. For other contemporary dynasties with the Āhoms, we have a fair knowledge of their chronology.

STRUCTURAL SIGNIFICANCE

The temple building activities of Assam can be said as an offshoot of the same architectural type that was once popular in North India. They are basically the *nāgara* type with regional elements infused into them. Mostly they are *śikhara* or *rekhā deul* type in their elevation. An examination of the temple *śikharas* reveal that a variety of shapes, such as *rekhā deul*, *ratha*, hut shaped, barrel-vaulted, bulbous, round, pyramidal and polygonal, etc. exist. As for ground plan, we find all sorts of geometric patterns right from square, rectangle to stellate and polygonal. Composite plans similar to that of the *caityas* and multi-angular *ratha* types, are also common. Further, the same structure may have one shape internally and another externally.

A temple in Assam seems to have only one chamber, *i.e.* the *garbhagrha* or it may have the combination of a few separate structures joined together axially, diagonally or in cardinal directions. The *garbhagrha* may contain an *antarāla*, a *maṇḍapa*, a *mukhamaṇḍapa* or *ardhamaṇḍapa* or any one or all of them. The layout of a multi-chambered Assam temple is not separate for each chamber as in the case of the Orissan type of temples,¹⁵ but is normally one with common walls in between each pair of chambers, except in case of the existence of an *antarāla* which separates the layout of the *vimāna* from that of the rest. It may be a *dvikuṭa vimāna*, as in the case of the Śiva temple at Chatrakar, Gauhati, or a *pañcāyatana* as in the case of the Negheriting temple near Dergaon in the Sibsagar District. The *śikharas* may be a plain one or may contain *bhūmī-āmalaka*, *angasikhara* and other decorative elements. The Khajuraho type

of raised stereobatic platform (*piṣṭa* or *jagati*) is not generally associated with an Assam temple, but though not much significant, it is not altogether absent.

As regards materials for construction, both brick and stone were in use. Timber was also used for specific purposes in combination with brick or stone. Though the earliest known architectural remains of the state at Da-Parvatiyā consist of brick-masonry work, almost all the pre-Āhom temples display use of stone. In case of the later mediaeval temples, brick appears to have dominated the building activities. Of course, stone was invariably used in them for the portion below ground level. This seems to have been necessitated by a number of technical considerations. Brick being pervious in constitution was found less effective for using below the ground level, particularly in a region like Assam with high sub-soil water level due to higher intensity of rainfall. Brick has also a low bearing capacity which grows lower due to soakage of water when used below the ground level. The use of stone could be viewed from a different angle too. A peculiar fact in case of most of the later mediaeval temples is that their cella has been designed in the form of a well with its floor much below the surrounding ground level. This naturally raised the problem of water-proofing the cella, and brick being porous and pervious, was replaced here by stone. Probably the use of the old intact foundations of the early mediaeval stone temples for the later mediaeval brick-built temples has a say on this point. The lime-*surkī* mortar was commonly used as bonding material for the brick-masonry work. A more composite mixer consisting of *Māti-Kālāi* (*Vigna Sinensis*), molasses, tamarind (*Tamarindus Indica*), etc., with lime-*surkī* is also reported to have been in use.¹⁶ Mud of sticky consistency is found to be used in less important works, such as in case of boundary walls, fortifications, etc. Normally mortar was not used as a bonding material for stone masonry work, but instances are there where mortar is used to fill up voids, joints and interstices. Both the Cyclopean type as well as rubble and ashlar stone masonry work are seen. The use of iron dowels and

straps in stone masonry is found in almost all the ruins of stone temples. One temple, the Kachari Rajar Mandir at Maibong in North Cachar District, is hewn out of a solid rock. Examples of cella and shelter for the worshippers cut out of living rock are also found in a few places. The impermanent religious edifices will not be brought within the purview of our study. But the use of impermanent materials, such as timber, bamboo, straw, etc. for the purpose of roofing masonry structures, being a fact, will be examined where necessary.

The Assam temple architecture, like that of the other parts of the country, had always been considered as a piece of rigid religious geometry and not as a piece of unique product of art. In spite of the living evidence of designers sincere attempt at giving every structure some special and artistic elements within the strict boundaries of the prescribed canons, the designers seem to have played the role of assistants, not worthy of any recognition. "Much of this was due to the system by which architecture was treated not so much as an art, but as a craft, the building was not the creation of one man, but the combined and often equal efforts of several, each an expert in his profession and each making his own particular contribution to the whole."¹⁷ That is why the names of the master-masons or the architects are not to be found associated with any creation of art and architecture, save the name of the king or his consort who patronised it.

REFERENCES

1. *Aṣṭa*, IV. 3.98
Here a reference may be made to the image of Jina which Khāravela of Kalinga recovered from Magadha, carried away earlier by Nandarāja. *EI*, XX, pp.71 ff.
2. *CAB*, p. 483.
3. *HAB*, p. 494.
4. *AFD*, p. 36. Skeat and Blagden in their book, "Pagan Races of the Malay Peninsula" (Vol. II, London, 1906, p. 635), have shown by comparing vocabulary

of the aborigines that *dol* means a house. Since the word is found to have been used for the temples erected by the Āhoms, and Since the Āhoms came during the early part of the thirteenth century A.D. from Upper Burma, the probability of its Malayan origin cannot be ruled out.

5. *CAB*, p. 473; *HAB*, p. 482.
6. *MGK*, p. 36.
7. *PA*, pp. 190, 210, 251, 254, 307, 308.
8. *Ibid.*, p. 32.
9. *Ibid.*, pp. 67, 246.
10. *Ibid.*, p. 67.
11. *Ibid.*, pp. 60, 255.
12. *MGK*, pp. 28-29; *PKD*, pp. 55 ff.
13. *MGK*, p. 36.
14. *PKD*, pp. 18 ff.
15. *IA*, pl. LXXXV.
16. *AHCE*, p. 212.
17. *IA*, p. 79.