CHAPTER - III

Chapter Three

BEGINNING OF ART AND ARCHITECTURAL HISTROY IN INDIA (BHUDDHIST & HINDU PERIOD)

Humanity took a long time in its trial and error method in comming to the stage of constructing the houses which can be called as the sheltered idea of man. The sheltered idea made him settle in a fixed place.

RELIGIOUS ARCHITECTURE

Indian history of art and architecture primarily deals with religious buildings and allied things for these, rather than secular buildings. As we understand from the existing historical remains of different buildings from different eras, that the percentage of religious architecture is 80% while the other types remained between rest 20%. Study of all styles of temples is merely the vast topic meant of volumes of books. The important features of the temple architecture are mainly disscussed in this dissertation.

THE MONUMENTAL PRINCIPLES OF THE ANCIENT

Ancient monumental edifices all over the world have always been structured on the principle of being built over a wide base with the superstructure decreasing gradually in size towards an apex of sorts. To attain height, monumentality and structural stability, with

essentially inelastic materials like stone and brick, this was the soundest way of assuring a long life for the edifice. A solid monument of this nature creates virtually no lateral forces unlike, say, a cubic mass that would need to be contained within well reinforced and massive walls of mortar jointed masonry. Rather the load of the gradually tapering structure acts only downwards and as long the building material of the lowest course is not crushed by its own weight, structural immortality is virtually inherent in the design. The actual form that emerged from this sound principle, acquired various shapes in different regions, influenced as it was by local geographical, geological, climatic, social and religious reasons.

It is also no wonder then that though the houses and palaces of ancient times have vanished, buildings like the pyramids of the Egyptian's, Aztecs and Assyrians and the stupas of the Buddhists are still extant. The builders of Egypt for their memorials had crystallized the shape of the familiar sand dunes of the desert into great pyramids or, may be, attempted to symbolize the rays of the sun from horizon to horizon, in its profile. The Assyrian cut stepped terraces into the sides of the pyramid to create the famous Ziggaruts more suited probably to the performance of their sacred rituals. Even in far away Mexico, the Aztecs built their temples,

over piles of receding masonry, designed virtually like monumental staircases to the heavens above. The one structural principle common to the Egyptian, the Assyrian and Aztec builder though is, that he always started from a broad base tapering to a narrow apex. Just as the ancient craftsman the world over had built his monumental edifices over a plan that was an elementary geometric profile, the evident choice open to the Buddhist architect was either a square or a circle, the two purest and most perfect of geometric forms. He chose the circle; to him not only did it symbolize the Buddhist "wheel of law" but was also an ideal focus for performing the Buddhist ritual of endless circumambulation of a sacred object. Moreover, its connotations were significantly contrary to the square which had formed the basis of the plans of the Vedic altars of sacrifice.[1]

THE BUDDHIST STUPA

The irregular humble mound of rubble that had been piled over by the reverent worshippers over relics, and ancient treasures to mark a sacred site, was now transformed by the royal builders into a hemispherical brick paved tumuli, the plan, elevation, section and total form of which were all derived from the circle. The embryo of the most powerful architectural form of Buddhism, the famous

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1. Satish Grover, The Architecture of India (Buddhist & Hindu) pp.27-32
   Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
   Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

Stupa, thus emerged for the first time under the architectural patronage of Asoka.[3]

Asoka, however, seems to have been fully aware of the transitory nature of such mud and brick stupas, however elaborately decorated. Since his proclaimed aim was to ensure a "long endurance of the good law," he inevitably started "thinking in stone." In his meticulously planned operation, not unlike a modern advertising campaign for the spread of Buddhism, he was quick to use the well tried techniques of the Persian emperor Darius. Messages of Buddha, in the Pali text, were carved into tablets of stone and installed at various strategic locations. The success of his campaign can be gauged by the fact that a number of these effectively affirm the gospel of the Buddha to his followers as much as 2,000 years after they were erected.[3]

THE STAMBHAS

To these stele's Asoka also added his own special innovation. Inspired undoubtedly by the wooden totem poles of the primitive tribes, he ordered the inscriptions carved on columns of stone

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2,3 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

instead of mere slabs and these were set up at regular intervals along roads leading to places of Buddhist pilgrimage. The Indian stone mason had learnt his lesson well from the Persian "gurus," In what may be called his first test in the crafting of stone, he carried out the emperor's commands with great sculptural and technological ingenuity. Columns, some 40 feet (12 metres) in length and weighing as much as 50 tones, were carved out from a single block of sandstone, won out of the now famous quarry at Chunnar, in modern Bihar. These massive pillars were then carried, unbroken and intact to sites over hundreds of miles away. The means of transport employed fro this amazing feat are still not clear. Presumably, the operation involved building specially designed, huge bullock-drawn timber carts, and even flat barges for floating down the well tried highways of trade - the numerous Indian rivers.

The tapering shaft of the column, once it had reached its destination, was painstakingly varnished and polished to give it a unique and unbelievable mirror-like luster; a fantastic achievement indeed, with a sedimentary rock like sandstone. The column, it would appear, sometimes rose straight out of the ground without any base, like the trunk of a tree, or at some places had a circular

brick platform at its base. At the top was mounted a large sculptured figure of an animal.[4]

One of these, the famous sculpture of the four-lions has acquired great popularity since being adopted as the national emblem of modern India. The sculpture executed in a style reminiscent of Persian design, weighing five tonnes and about seven feet in height, was effectively joined to the pillar by a 2 feet (60 cm.) long cylindrical copper dowel, toned accurately into the shaft and sculpture without use of any cementing material. A magnificent, large as life lion sitting high in the air (as at Lauriya Nandgarh in Bihar) proclaiming the dharma to the world, must indeed have been a wondrous sight to the Buddhist pilgrims of the second century B.C.[5]

THE AJIVIKAS AND CAVE ARCHITECTURE

Though Asoka zealously propagated Buddhism virtually as the state religion, he was not entirely intolerant of other sects. The Ajivika tribes, he ordered the inscriptions carved on columns of stone

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4,5 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

ascetics were another of his beneficiaries. He ordered sanctuaries, to suit their needs, to be built at the cost of the state. As if to prove the basic tenets of their thinking, that "all change and movement were illusionary" and the "world in reality was eternally and immovably at rest" the Ajivikas discarded the conventional timber and brick structures of the materially engrossed oppidian. They chose instead to carve out habitable caves out of the "eternally immovable" hill sides, for their sanctuaries. Also in choosing this novel form of architecture, they intuitively immortalized the traditional dwelling of the Indian sage, who as a mark of the rebellion from the materialistic creed of the city dweller, had for years sought refuge to meditate in nature caves in eremitical hillsides. Unknowingly, the Ajivikas had pioneered an art form, that was to flower into some of the most unique works of Indian architecture.[6]

In the shaping of these caves, the builders with chisels and hammers as their main tools, were practicing more the craft of sculpture than of architecture. They were unhindered by the bother of calculating spans, adequate supports and checking the strength of materials. If tribes, he ordered the inscriptions carved on columns of stone

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6 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

they had really chosen to exercise their freedom and thrown to the wind all the normal restraints of traditional building forms, they could well have produced a hundred bizarre and exotic shapes. However, an inherent love, or weakness if you will, for the familiar, made them reproduce in rock, almost exact copies of existing structures in wood and thatch.7

This curious and novel adaptation of the carpenter's art to the stone carvers, however, produced its own inimitable results, that can be seen in some seven caves of the Ajivikas in the hills of Barbara and nearby Nagrajuni, north of modern Bhubaneswar in Orissa. Of these, the cave popularly known as Lomas Rishi is surely the crowning glory. Its interior circular cell 19 feet (6 metres) in diameter has a hemispherical domed roof and is approached through a 33 feet (10 metres) long tunnel-like hall. The barrel-vaulted rectangular thatch hut and the beehive roofed shrine, crafted by the Aryan carpenter and to be found in any of the innumerable Indian villages, had thus been perpetuated in the form of a cave. The shape of the entrance arch on the hill-side is the familiar gable, end of the same rural-dwelling, described earlier. The minutest tribes, he ordered the inscriptions carved on columns of stone

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7 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

structural details of the original hut have been faithfully reproduced in the Lomas Rishi. The rock cutters however lifted this work beyond mere plagiarism by deftly introducing a beautifully sculptured semi-circular panel at the crown of the arch depicting two rows of elephants walking towards a stupa. Such a panel could neither have been lifted nor inspired by any timber structure; only a skilled stone carver could have conceived of it and created it. This combination of traditional building forms and applied sculpture obviously appealed immensely to the flowering genius of the Indian artist. It became, as we shall see, the unique essence of all Buddhist and Hindu architecture in India, for centuries to come.[8]

THE CHAITYAS

In the process of maturing into a religion, Buddism borrowed little from the sacrificial rites of the Brahmins; rather its simple ritual was inspired by the popular cult of the "Chaityas" (from the Sanskrit chita - a pyre) or "sacred spots". The traditional chaitya was a grove of trees in the middle of which small tumulii of earth tribes, he ordered the inscriptions carved on columns of stone

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8 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

had been built up over the ashes of the tribal chiefs. The rural folk found these chaityas, located on the outskirts of their villages, less expensive and more convenient to worship than the great Aryan gods. The Buddhist monks merely transferred the attention of their followers, from these to stupas that carried in them, ashes or relics of the Buddha.

With the growth of a large lay following and the assured patronage of the elite and rich mercantile classes, communities of Buddhist monks, instead of wandering around as alm begging mendicants, began settling down around such chaityas. The Chaityas thus grew into small monasteries and the cult of the chaitya became the touchstone of Buddhist ritual and worship. By the time of Asoka's death, the Indian country-side was probably dotted by a number of such Buddhist settlements.[9]

These establishments, to begin with, were of a very modest nature, much like the wayside village shrine of today. The stupa at best was a white-washed mound, probably decorated with festoons and prayer flags. A protective wooden fence around the stupa, apart tribes, he ordered the inscriptions carved on columns of stone

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9 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

from symbolizing the sacred nature of the enclosed area, demarcated a circumambulatory path along which monks would walk around the stupa, chanting Buddhist "slokas" or holy scriptures. Near the stupa were probably some simple thatch huts for the resident monks. By the very temporary nature of their construction, none of these, settlements have survived to this date. Curiously enough, the more permanent and enduring architectural masterpieces of the Buddhists were destined to be constructed after the patronizing umbrella of the Mauryan dynasty vanished.[10]

THE GROWTH OF SANCHI

In such an intimidating atmosphere, the orders of Buddhist monks began to retire from the centers of urban power. They however, continued to enjoy the patronage of the wealthy and sophisticated mercantile class that had little to gain by servility to the rising powers of resurgent Brahminism, since their place in society was virtually preordained. Funds continued to pour in to help the order of Buddhist monks to build their new monasteries in more peaceful tribes, he ordered the inscriptions carved on columns of stone

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10 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

and solitary environments. The largest and most famous of these blossomed upon a hill top in Sanchi (near modern Bhopal) close to Vidisha, the new centre of Shunga power. Sanchi had already been marked as a sacred spot when a semi-circular brick mound some 70 feet (21.3 metres) in diameter had been built here, as a part of Asoka's historic architectural campaign. The stupa was now enlarged to double its size by building another stone-faced mound, increasing the diameter of the original to 120 feet (36.5 metres) and its height to 54 feet (16.4 metres). Sixteen feet high from the ground level of the Stupa the builders created an elevated Pradakshina Path perhaps reserved for the clergy, the traditional one at ground level being open to the common pilgrim. The crown of the hemispherical mound was flattened out to make place for circular platform from the middle of which rose a three tiered stone umbrella, set inside a square enclosure, marked out by a low stone fence.[11]

THE STONE VEDIKA

In the process of carrying out the enlargement of the stupa, the traditional timber fence surrounding the original stupa had to be pulled down. It was now replaced by a massive and austere railing,

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11 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

fabricated entirely out of stone. In assembling together this railing the craftsmen of India were taking yet another decisive step towards the proficient use of stone as a comprehensive building medium. They were already postmasters in the sculpting and polishing of stone and had successfully installed massive Asokan pillars all over India. Octagonal stone pillars 18 inch (45 cm) in diameter and 9 feet (2.7 metres) high were planted along the circular periphery at a distance of about 2 feet (60 cm) from each other. The space between each pair was spanned by three, 2 feet (60 cm) deep, lens-shaped horizontals, which were meticulously tenoned into corresponding mortises cut in the pillars. The railing was topped by an appropriately massive stone coping, giving in a total height of 11 feet (3.3 metres). It is obvious that the shape and form of the security oriented timber firence around the Aryan village, a prototype of which had surrounded the early Buddhist stupa, had over the centuries also acquired sacred and magical virtues. Thus, in the entire process of erecting the sacrosanct Vedika in stone, the craftsman had diligently reapplied the structural techniques of the Aryan carpenter so as not to tamper with the physiognomy of the timber original.[12]

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12 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

THE BUDDHIST TORANA

The work on the extensions and refurbishing of the stupa went on for almost a 100 years. The imagination, religious zeal and vigor of the builder as well as the coffers of the mercantile patronage, however seemed inexhaustible. The designers were soon devising schemes to add new dimensions to the architectural ensemble. The wondrous pathway around the stupa was like a forbidding wall from outside. A touch of invitation was lacking. What more appropriate than to install gateways to match the magnificence of the Vedika. Elaborating once again on traditional village forms, the rural bamboo gateway of the Aryan village was transformed by the Buddhist builders into a great 34 feet (10.3 metres) high Toran (from Sanskrit Tor-a pass). Four such gateways were installed at cardinal points of the railing. The techniques of stone masonry employed in constructing the tornas were no doubt as primitive as those in erecting the railing. Nevertheless, after erecting the two stone uprights the stone mason realized the futility of cutting mortises and making tenons in stone. Instead for the first time, he applied the rationale of building with stone and merely spanned the twenty feet between the verticals with curved stone beams resting firm and square and sailing over on either side of the uprights. The horizontal spaces between the beams were then filled in with vertical uprights to create a sort of stone trellis, the "jharokas" of

which were adorned with sculpture. The surfaces of the two pillars as well as the cross beams along the top received a generous measure of the carvers chisel and were covered with finely wrought sculpture, rich in the symbolism and imagery of Buddhist lore. It is in fact the sensuous sculpture on these gateways that has provided the Indian historian with an invaluable visual record of the myths, legends and social mores of the day.[13]

SYMBOLISM AND STRUCTURAL FUNCTION

The final tectonic composition comprising the dome of the Stupa (or the Anda) the square railing at the crown (or the Harmika) and the three tier umbrella (or chatra) have in course of time been invested with various elaborate geomantic, theological and philosophical meanings. The hemisphere is the "Dome of Heaven" or "the fixed cosmic structure", the Harmika "Heaven of the 33 gods," the umbrella "the world axis". The plan of the pradakshina-path at the ground level is read to be a Swastika and pregnant with the symbolism of ancient solar cults. The structural reason for the development of such forms are however, much more pertinent. The hemispherical stupa, as explained earlier, was a geometric

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13 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

crystallization of the rudimentary mound of earth eminently suitable for the ritual of endless circumambulation. The Harmika and Chatra, are a stylized visual depiction of the famous Bodhi tree surrounded by the sacred Vedika-or railing. The Swastika is most likely the fortuitous result of solving a planning problem. The torana, erected after the railing was completed, was planted some feet away from the opening in the railings, so as to ensure privacy for the pilgrim circumbulating the Pradkshina, a planning principle, effectively employed later in the entrance gateways to fortresses for ensuring security. Seen purely in plan, the metaphysical observer would of course read the Swastika in its ensuring outlines.[14]

THE BUDDHIST VIHARA

An ensemble as glorious as the great stupa inevitably led to the growth of other ancillaries. Buildings were needed to house the resident monks. In contrast to the richly sculptured gateways of the stupas, the places of residence in their bareness, reflect rather the inherent austerity of monastic life. These were built as a series of individual cells or dormitories enclosing a rectangular or square

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14 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

open-to-sky court. The open court served all the community facilities, at places including a well for drinking water. The cells, on the other hand, afforded the monks sufficient privacy for the practice of meditation. As one can see the basic idea was only an enlargement of the traditional concept of the "house around a courtyard" harking back to the days of the Indus Valley civilization. In due course, these came to be known as "Viharas". Since they were built in one or more stories, in timber frame and brick walls, only the foundations of these at Sanchi have survived the superstructure having vanished soon after the monasteries were deserted.[15]

CHAITYA HALLS

The great stupa, though a magnificent structure, had its limitation. It was essentially an open air edifice incapable of being used in inclement weather. The need was felt, therefore, for an enclosed hall in which a miniature stupa (so far the only acceptable symbol of Buddhist veneration) could be conveniently worshipped the year round. The simplest solution was to place the stupa at the end of a

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15 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

long rectangular hall. Soon, however, the designers realized that the circular stupa sat rather incongruously within its rectangular enclosure. The walls directly behind the stupa were then made semicircular to echo the profile of the stupa.[16]

The path for the ritual of circumambulation around the stupa was also thus clearly defined. The roof of such a structure was the familiar barrel vault in timber, covered with tile and supported on brick walls framed by timber pillars. The entire composition was built on a high plinth enclosed by the inevitable sacred railing. The nascent form of the famous apsidal ended halls of worship, essentially like Roman bascilicas in plan, thus emerged in the so called Temple No. 40 of Sanchi; a form that was to captivate the obsessions of the Buddhist builder, though in another medium, and result in the famous Chaitya caves at Ajanta, Ellora and Karle.[17]

15,17 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

ART & ARCHITECTURE

Formation of the Traditional Temple Styles

The Indian Silpasastras recognize three main styles of temples, known as the Nagara, the Dravida and the Vesara. The descriptions given of them are, however, vague and inadequate, and it is not possible at the present stage of our knowledge to equate the descriptions of the texts with any of the extant examples of Indian temple architecture. The term Dravida indicates that the names were primarily geographical. Various texts also contain passages mentioning the respective regions in which the different styles were current, though some of the texts maintain that all the styles may be found in all the regions. All the available texts are agreed on the point that the Nagara style was prevalent in the region between the Himalayas and the Vindhyas. The Dravida country is well known, and the texts rightly confine the Dravida style to that part of the country lying between the river Krishna and cape Kanyakumari. The Nagara and Dravida styles can thus be explained with reference to Northern India and the Dravida country respectively, and the characteristic form and features of each easily determined. Some of the texts ascribe the Vesara style to the country between the Vindhyas and the river Krishna. In this region, or more properly in the region for some time under the royal dynasty of the Chalukyas, a separate style of temple architecture may be recognized - a style known to the archaeologists as the "Chalukyan". This style,

however, is a hybrid one, borrowing elements and features both from the Nagara and the Dravida styles, and does not become clearly distinguished before the eleventh century A.D.[18]

They are always distinguished in the texts by their shapes. As for example, all the texts lay down that a Nagara temple is quadrangular all over, i.e. from the base to the stupi. But this feature of the plan is so very general and common that it is difficult to consider it as a sure and distinctive cognizance of a particular style of temple. The octagonal and circular shapes, respectively, of the Dravida and the Vesara styles are also too inadequate to be regarded as sure and distinguishing marks for the styles concerned. Under the circumstances, one has to depend on the evidence of extant monuments for a knowledge of the particular form and features of any one of the styles mentioned in the Silpasastras.[19]

A study of the temples of Northern India reveals two distinct features - one in planning and the other in elevation. In plan the temple is always a square with a number of graduated projections in the middle of each side. These projections give it a cruciform shape

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18,19 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

with a number of re-entrant angles on each side. In elevation it exhibits a tower (sikhara), gradually inclining inwards in a convex curve. The projections in the plan are also carried upwards to the top of the sikhara, and thus there is a strong emphasis on vertical lines in elevation. On account of this and the prominence of the vigorous and unbroken outline of the tower, it is also known as the rekha sikhara. Widely distributed over a greater part of India, the Nagara style, as could be expected, exhibits distinct varieties and ramifications in different localities, conditioned by the different lines of evolution and elaboration that each locality chose for itself. The cruciform plan and the curvilinear tower are, however, common to every mediaeval temple of Northern India, wherever it is situated and whatever its local stamp might be. In spite of elaboration's and modifications in different localities, these two fundamental features are always present in a North Indian temple, and may be considered as distinctive characteristics of the Nagara style of temple architecture. Each of the projections on each face of the square plan leaves out a small portion at either corner, and may be considered as distinctive characteristics of the Nagara style of temple architecture. Each of the projections on each face of the square plan leaves out a small portion at either corner, and thus are formed a number of projecting angles (asras) and facets (known as rathakas in Sanskrit and rathas in the canonical texts of Orissa). In this connection it should be observed that some of the texts

describe a Nagara temple both as chaturasra (quadrangular) and as ayatasra. The latter terms has been interpreted as rectangular.

The fundamental characteristics of a Nagara temple are, as noted above, the cruciform plan and the curvilinear sikhara; and the simplest archetype of this style may be found in a group of shrines that were in existence in the sixth century A.D.[20]

The Dravida style was current in the south, evidently in the Dravida country, roughly the country between the river Krishna and Kanyakumari (Cape Comorin). The texts merely lay down that a Dravida prasada should be octagonal (some say hexagonal) from the neck to the top, or, as one or two texts would enjoin, from the base to the top. But such descriptions are too vague and hardly fit the facts.

The outstanding and common characteristic of the temples of the Dravida country is the pyramidal elevation of the tower (vimana,) which consists of a multiplication of storey after storey, each a replica of the sanctum cella and slightly reduced in extent than the one below, ending in a domical member, technically known as the stupi or stupika, as the crowning element. This storeyed

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20 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

arrangement of the tower in gradually receding stages may, therefore, be regarded as a distinct individuality of the Dravida style of temple, though in later phases of its history the stages become more and more compressed, so much so that they are almost hidden under a profusion of details which become characteristic of the subsequent evolution of the style. In plan the Dravida temple presents an inner square chamber as the sanctum cella within a bigger square enclosure, covered and roofed over, serving as the pradakshna (circumambulatory passage). The division of the external walls into niches by pilasters is also a characteristic element of South Indian temples. The convex roll cornice, with chaitya-window motifs, demarcating each of the stages, and the little pavilions around the upper storeys may also be regarded as peculiar features of the style. The pillared halls and corridors and the immense gopurams (gateways) are invariably associated with temples that are considerably late, and may be left out of the present discussion. [21]

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21 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

Many of the distinctive elements of what came to be known as the Dravida temple style may be found in the second group of Gupta temples, mentioned above, which exhibits a building consisting of an inner sanctum with a covered pradakshina forming a bigger square around. The roof is flat, and in several examples (the Parvati temple at Nachna Kuthara, the Lad Khan, the Kont Gudi, and the Meguti temples at Aihole, etc.) we find an upper storey, which being placed above the inner sanctum cella is necessarily set back. These storeyed pavilions, shown in relief, on the Audumbara coins from the Kangra valley of about the first century A.D.

The plan of the inner sanctum with a cloistered gallery around is a special characteristic common to this type of Gupta temples and a temple of the Dravida style. Again, the scheme of the division of the walls of the Dravida temple by pilasters and niches may have its origin in the peculiar device of enclosing the pradakshina square with thin slabs of stone socketted to pilasters placed at intervals, as we have in the Lad Khan at Aihole. In the Jain temple of Meguti such a decorative scheme of the exterior walls becomes clearly established. The Lad Khan as well as the Meguti further show the use of the roll cornice carved with well-shaped chaitya arches - an

essential motif that came to be regarded as a distinguishing mark of the Dravida style of temples.[22]

The archetypes of what came to be known as the Dravida style had originally nothing to do with the Dravida country, and appear first in the Deccan and Central India, occasionally also in Northern India. Even in the seventh century A.D. the sikhara, archetype of the Nagara style, and the storeyed forms occur side by side at Aihole, Pattadakal, and Badami. The geographical delimitation of the two styles is thus yet to come.

NAGARA STYLE

The Nagara style of temple architecture had a long and varied history. Temples, with distinctive characteristics of the style as mentioned above, are found to be widely distributed over the greater part of India. According to the Silpasastras the geographical extent of the Nagara style coincied with Northern India. i.e. the region between the Himalayas and the Vindhyas, and Fergusson's nomenclature, the Aryavarta style, is nearly approximate in this

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22 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

connection. Actually, however, the style transcends the canonical limit far to the south, and temples belonging to the style may be seen from the Himalayas in the north to the Bijapur District in the south, from the Punjab in the west to Bengal in the east. With such a vast geographical extent it is natural that there are local variations and ramifications in the formal development of the style in the different regions, although such local developments do not alter materially its basic characteristics. Such variations are caused by local conditions, by different directions in development, as well as by assimilation of extraneous trends wherever these made themselves felt. On account of such wide distribution and varied developments, a consecutive historical treatment of the style is not possible, except on a regional basis. The different phases of the Nagara style will, therefore, be dealt with geographically.[23]

Orissa - Temples Styles (Nagra Stylization)

Of all the regional developments of the Nagara style that of Orissa is one of the most remarkable. From the seventh to the thirteenth century A.D. innumerable temples were erected in Orissa, and it has

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23 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

been truly observed that "there are perhaps more temples now in Orissa than in all the rest of Hindustan put together". The activity centered round the sacred city of Bhuvanesvara (Bhuvaneswar), a temple town which alone contains hundreds of temples, large and small, in various stages of preservation. Circumscribed within this area, these temples form, to quote Fergusson, "one of the most compact and homogeneous architectural groups in India." This prolific and sustained architectural activity was due in a large measure to the patronage of the different dynasties of kings, and the preservation of so many fine examples, to the comparative immunity of the country from Muslim inroads till a late period.

The Orissan group may be said to represent, to some extent, a pure form of the original Nagara style. Its graceful proportions, solemn and unbroken outline, and elegant design and decorative scheme enhance the beauty of the original archetype, but without any loss of balance, strength, or stability. Not only historically, but architectonically too, it is the most interesting and instructive series of all the temple forms of the Nagara style, and it is only natural and logical that a study of the development of the style should begin with Orissa.[24]

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24 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

The earliest temple in Orissa, like the older type of the Gupta period, is a single building consisting of a square sanctum, topped by a curvilinear tower, with one buttress-like projection in the middle of each face. The typical Orissan temple, however, has, in addition, the porch hall in front distinguished by a pyramidal roof (known locally as mukha-mandapa or jagamohana). In the early temples the porch hall appears to have been absent. In the Parasuramesvara temple at Bhuvanesvara there is a rectangular porch all roofed over by two sloping tiers forming a clerestory; but this porch, too, appears to have been a later addition. In subsequent examples, however, the porch hall became a necessary concomitant of the Orissan temples.

Each part and each section of the building had its particular name, and those describing the essential members may, with a certain amount of appropriateness, be used with reference to the other temple groups of the Nagara style.

The sanctum and the jagamohana in Orissa may each be divided along the vertical axis into four distinct sections, namely the pishta (pedestal or the platform on which the temple stands), the bada (the cube of the sanctum cella or of the porch hall), the gandi (or the sikhara, the tower), and the mastaka (or the crowning elements).

The pishta does not appear to have been an essential element, asthere are important examples where it has been found to be absent. The bada rises perpendicularly straight up to a certain height and, in case of the rekha deul, merges into the gandi or the sikhara, which gradually inclines inwards in a convex curve. Usually there is a section, known as the baranda, demarcating the bada from the gandi. The gandi of the rekha is further subdivided into a number of sections, literally known as the Bhumis or planes, by ribbed elements at the corners. This ribbed element no doubt represents a sectional amla, known as bhumi-amla for demarcating the bhumis, and a substitute, in the body of the gandi, of the enormous spheroid stone, amalaka-sila, that caps the tower. In the bhadra devi the gandi is composed of a number of phdhas or horizontal platforms, compressed in height and piled up in the form of a pyramid, so that they decrease in size from the bottom upwards. The pidhas may be arranged in two or more sections (potala). From the top of the gandi in either case (rekha and bhadra), rise the different crowning elements, which may be collectively termed as the mastaka. First, there is a recessed portion known as the beki or the neck (Sanskrit-Kantha); above this is the amla (Sanskrit amalakn-sila or amalasaraka), which is a flattened spheroid ribbed at the edges. In the full-fledged bhadra deul an enormous member, shaped like a bell and sometimes ribbed at the edges, intervence between the beki and the amla. Next to the amla

there is the Khapuri (literally the skull of the head), which is a flat domical member resembling an unfolded umbrella. Above it is placed the kalasa or water jar, an important auspicious object in Indian religion and ritual. The bada as well as the gandi is square in cross section all through, but the crowning elements are circular, and above them all appears the dhvaja or ayudha, i.e. the emblem of the particular deity to whom the temple is consecrated.[25]

In plan the sanctum as well as the jagamohana is plainly square inside, but on the exterior the walls exhibit several buttress like projections in the middle of each face, on account of which the ground plan assumes what may be called a cruciform shape. Each such projection leaves out a portion at both the ends, and hence the plan is also one of projecting and re-entrant angles. Where there is only one such projection in the middle of each face, the wall is divided into three vertical section (literally known as rathas or rathakas), and such a plan is hence known as triratha or composed of three rathas, the two on either side being on the same plane and the other being set forward a little. In a similar way there are pancharatha, saptaratha and navaratha plans, according as there are

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25 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

two, three, or four such projections on each face of the cube of the bada. The projections on the bada run along the entire height of the gandi, and the corresponding sections on the body of the latter are known as the pagas. Usually there runs a narrow depression between the vertical sections, thus demarcating and accentuating the projections still more.[26]

The small but exquisitely decorated Parasuramesvara temple be regarded as a representative specimen among the early Orissan temples, and from it should properly begin the story of the development of Orissan temple architecture. The sanctum is triratha in plan, but on each face there are two subsidiary niches on either side of the central niche accommodated in the buttress projection in the middle. This mode may just be an anticipation of the subsequent pancharatha plan. The pabhaga or the plinth consists of three simple mouldings. The jangha is occupied by three niches on each face, each capped by a tiered superstructure. The baranda or the section demarcating the bada from the gandi, consists of a narrow recessed frieze of couples of human figures alternating with chess-board patterned panels. The gandi is low and stunted, and begins to

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26 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

curve inward from the very bottom, thus resulting in a gradual curvilinear outline. The projection of the central niche is carried up and forms the raha-paga (i.e. the central paga), while two intermediate pagar (anurahapagas) are formed on either side as a result of the continuation, though not in the same alignment, of the projections of the subsidiary niches on the two sides. At the outermost or the corner pagas (konaka-pagas) the gandi is divided into five planes or stages, literally bhumis, by bhumi-amlas. Above the fifth bhumi there is a flat tier, known as the bisama, also called the vedi or altar. The gandi is throughout square in cross section, and the sharp edges at the corners as well as those of the ratha-paga projections are rigidly maintained. On account of the gradual inward inclination, the gandi or the tower ends with the vedi in a much smaller square, and next begins the circular section of the crowning elements, the enormous amalaka-sila having an appearance of being supported at each of the four corners on the figure of a seated lion with two hinder parts, technically known in Orissa as the dopichha simha. Nothing now remains above the amalaka, but it is possible that it was topped by a prism-shaped object, which is the usual finial in the early examples of the Orissan group. The height of the temple is approximately three times the inside length of the garbhagriha or the sanctum, and in form and appearance, in plan and elevation, it has but very little difference with the earlier examples of the sikhara type noticed elsewhere. Another significant

fact is that the bisama, i.e. the tier at which the gandi ends at the top, in conformity with the early sikhara temples, is square without the indentations of the paga projections on the body of the gandi.[27]

The long and rectangular jagamohana, preceding the sanctum, was very probably a subsequent addition, and the joining between the two is a rather haphazard piece of work. The rectangular hall is topped by a sloping roof formed by flat stone slabs having in the centre a sort of clerestory supported on two rows of three pillars each in the interior. The Orissan temple is essentially astylar and the pillars have seldom a place in the composition of the Orissan temples. The pillars in the Jagamohana accordingly disappear alongwith the evolution of the usual type of pyramidal jagamohana characteristic of Orissa. The porch hall is approached by three doorways, one each on the larger sides and the third in front, the last being subsequently closed up by a sculptured slab forming a grilled window. Besides, light is admitted into the interior of the hall by means of a latticed window of a chess-board pattern in one of the longer walls. The sculptured decorations of both the jagamohana and the garbha-griha are in elegant taste and, though widely separated in time, the Gupta flavour is not yet extinct.

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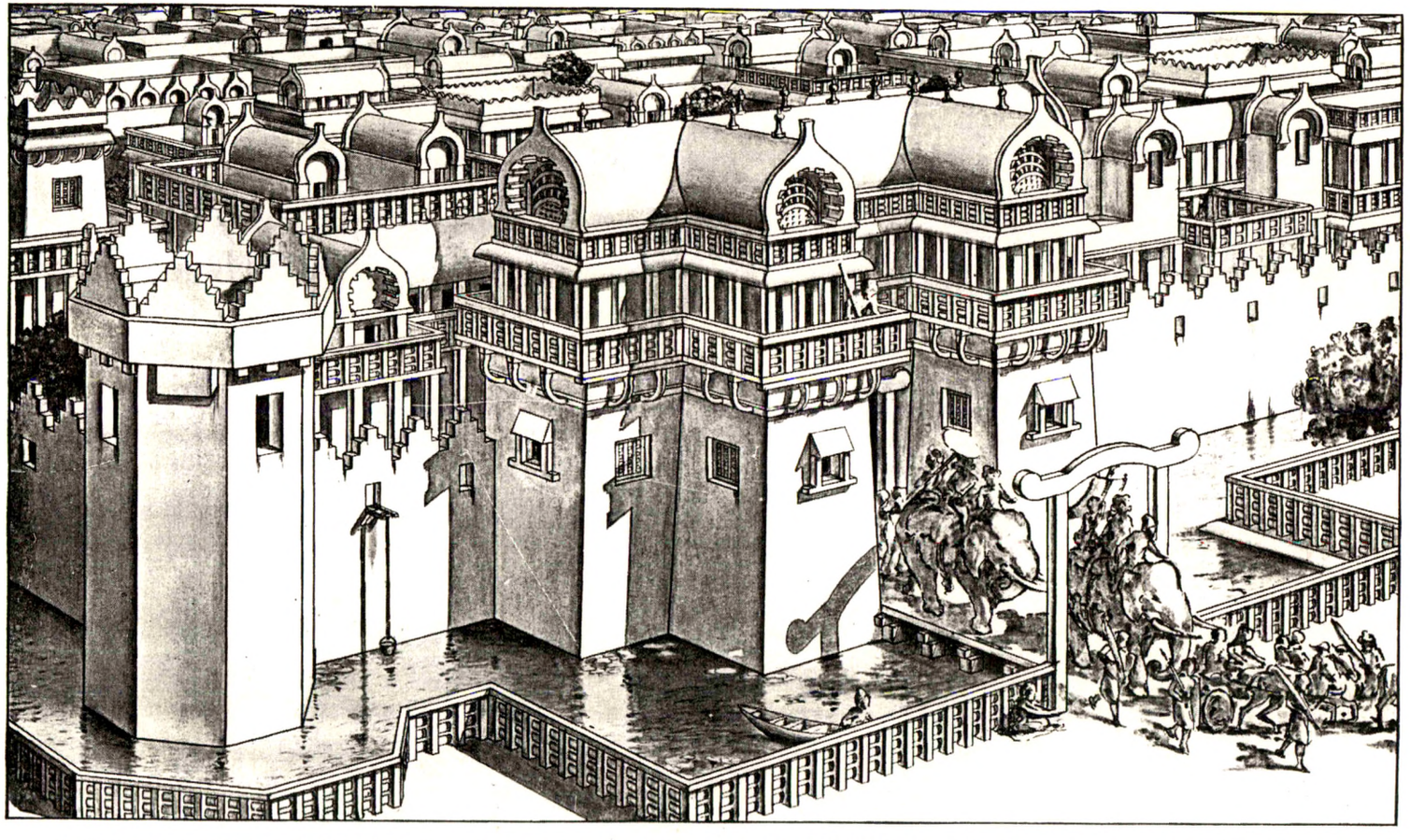
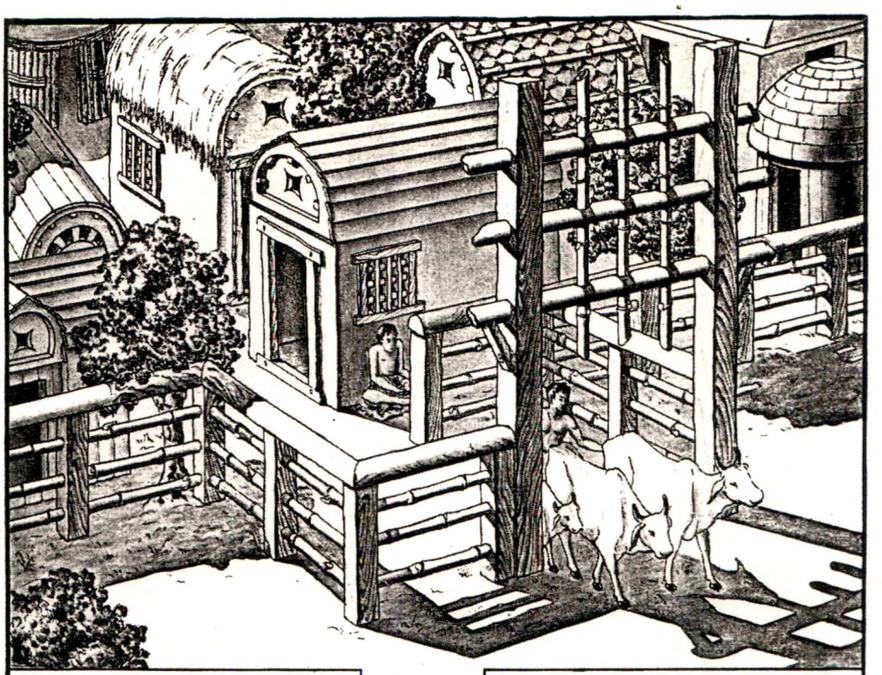
27 Satish Grover, The Architecture of India (Buddhist & Hindu) pp.33-37
Percy Brown, Indian Architecture (Buddhist & Hindu Period) pp. 7-142
Bhartiya Vidya Bhavan, The History & Culture Of The Indian People Vol. - V, The Strggle for Empire, pp. 530 - 534, 535/ 609 -622.

The temple is not large, the garbha-griha being only 20 feet at its base, the entire length with the jagamohana, 48 feet, and the height of the sikhara from the base to the top, only 44 feet. The method of construction is extremely simple, with stone masonry of large size set without mortar and kept in position by their weight and balance, strengthened further by a system of interlocking flanges. Simple though its construction is, the methods employed in this small shrine remained in vogue in Orissa, and were followed in the subsequent period even in raising up such enormous piles of structures, as the great Lingaraja at Bhuvanesvara and the far-famed Sun temple at Konark (Konarka).

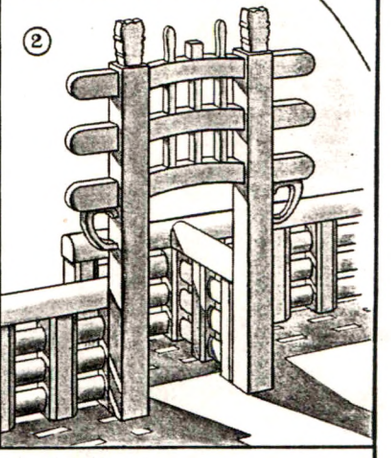


Conjectural reconstruction of the Main Gateway to the ancient city of Kusinagara (cir. B.C. 500) in Magadha (Bihar). Adapted from a bas-relief on the Southern Gateway of the Great Stupa at Sanchi, Bhopal State.

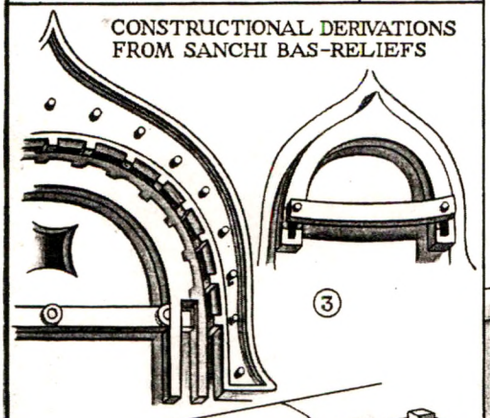


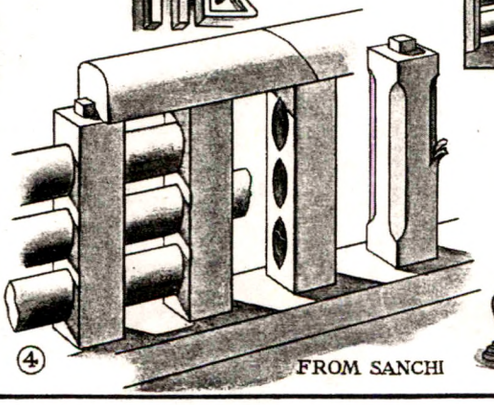
VEDIC VILLAGE SHOWING GATEWAY AND FENCE ①

BUDDHIST TORAN AND RAIL DERIVED FROM ABOVE

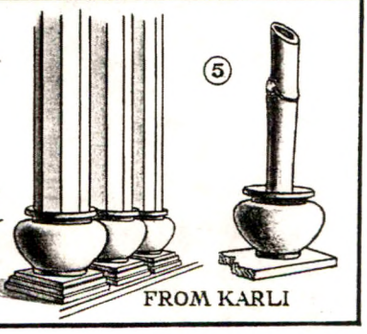


CONSTRUCTIONAL DERIVATIONS FROM SANCHI BAS-RELIEFS

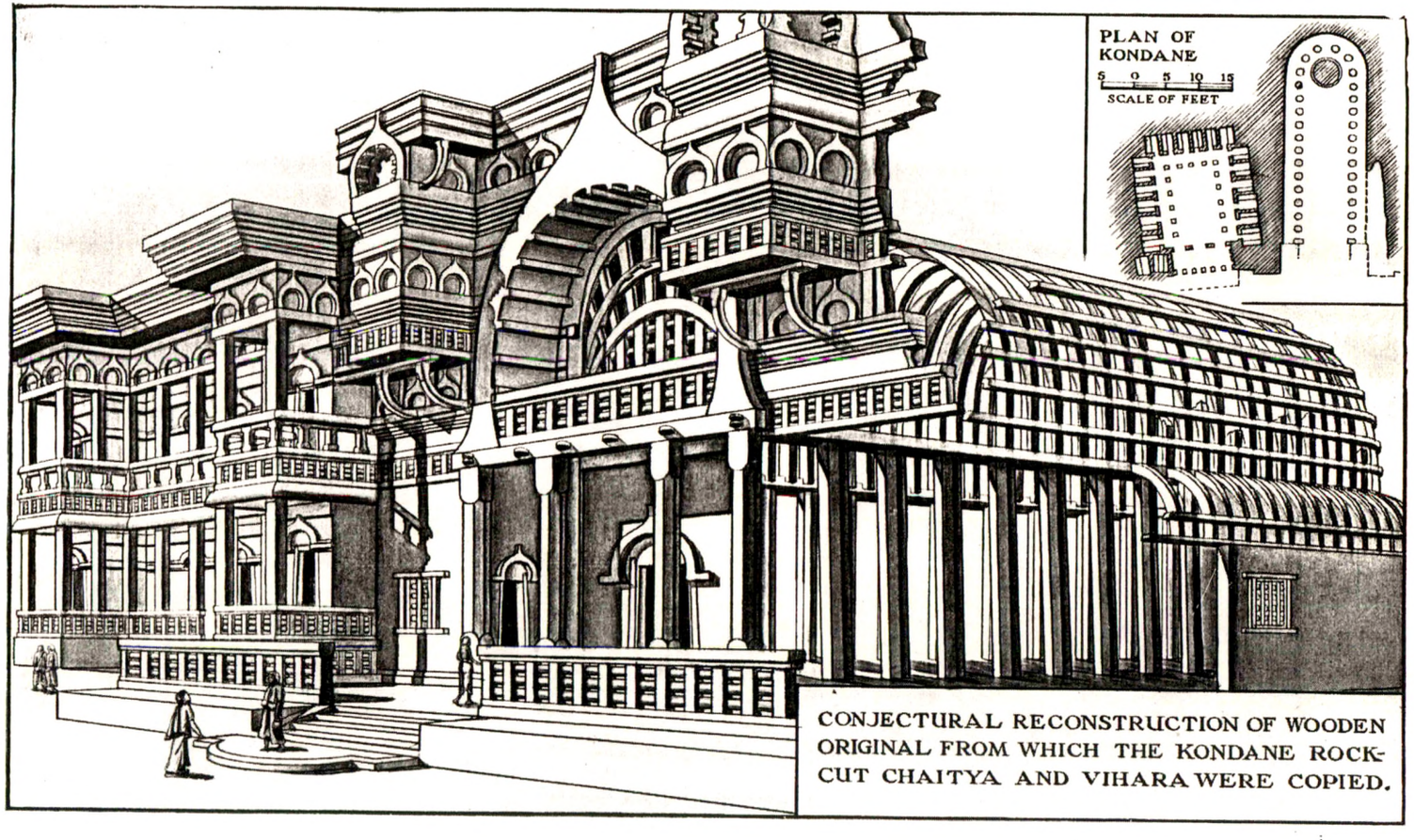




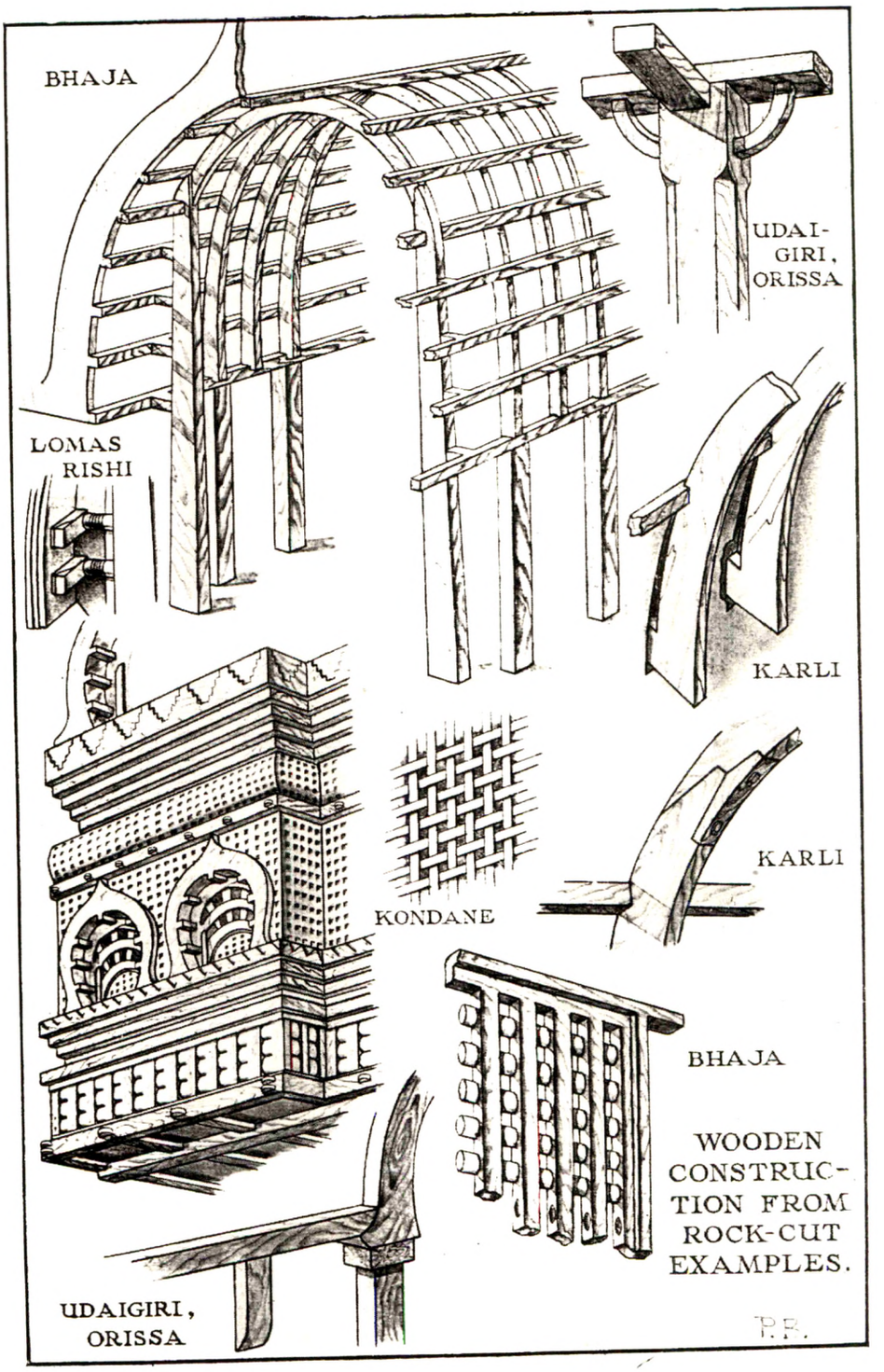
FROM SANCHI



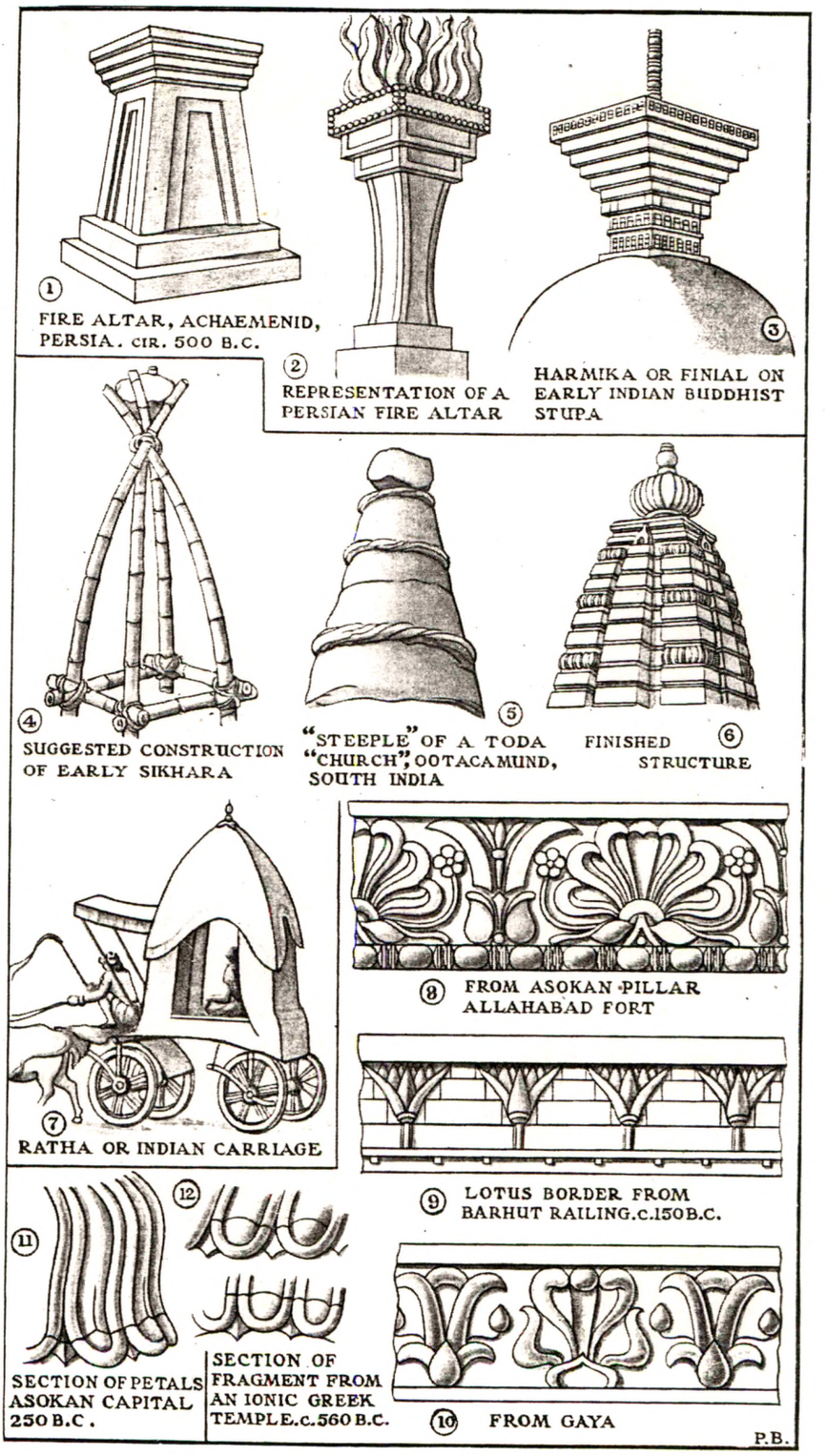
FROM KARLI



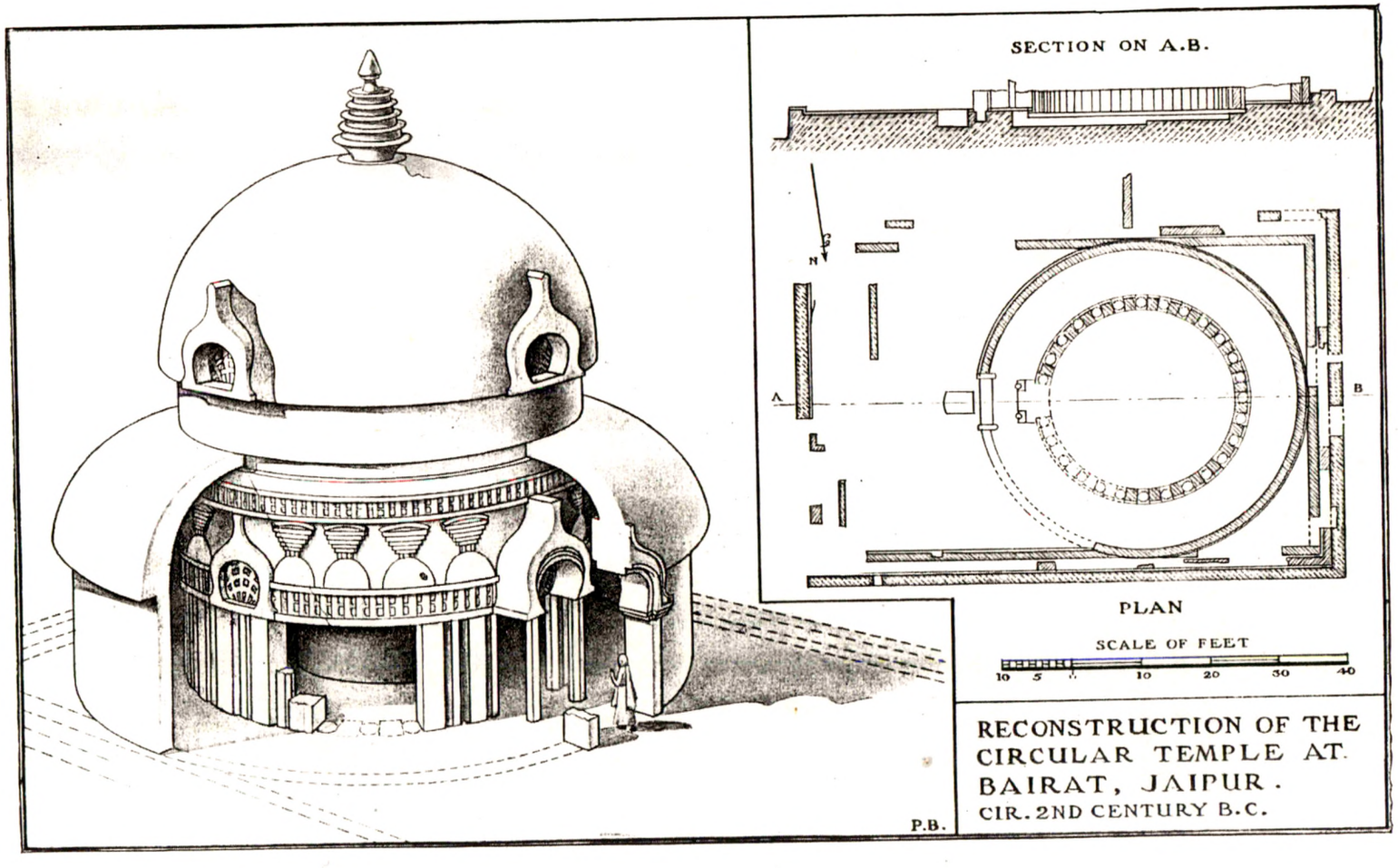
CONJECTURAL RECONSTRUCTION OF WOODEN ORIGINAL FROM WHICH THE KONDANE ROCK-CUT CHAITYA AND VIHARA WERE COPIED.



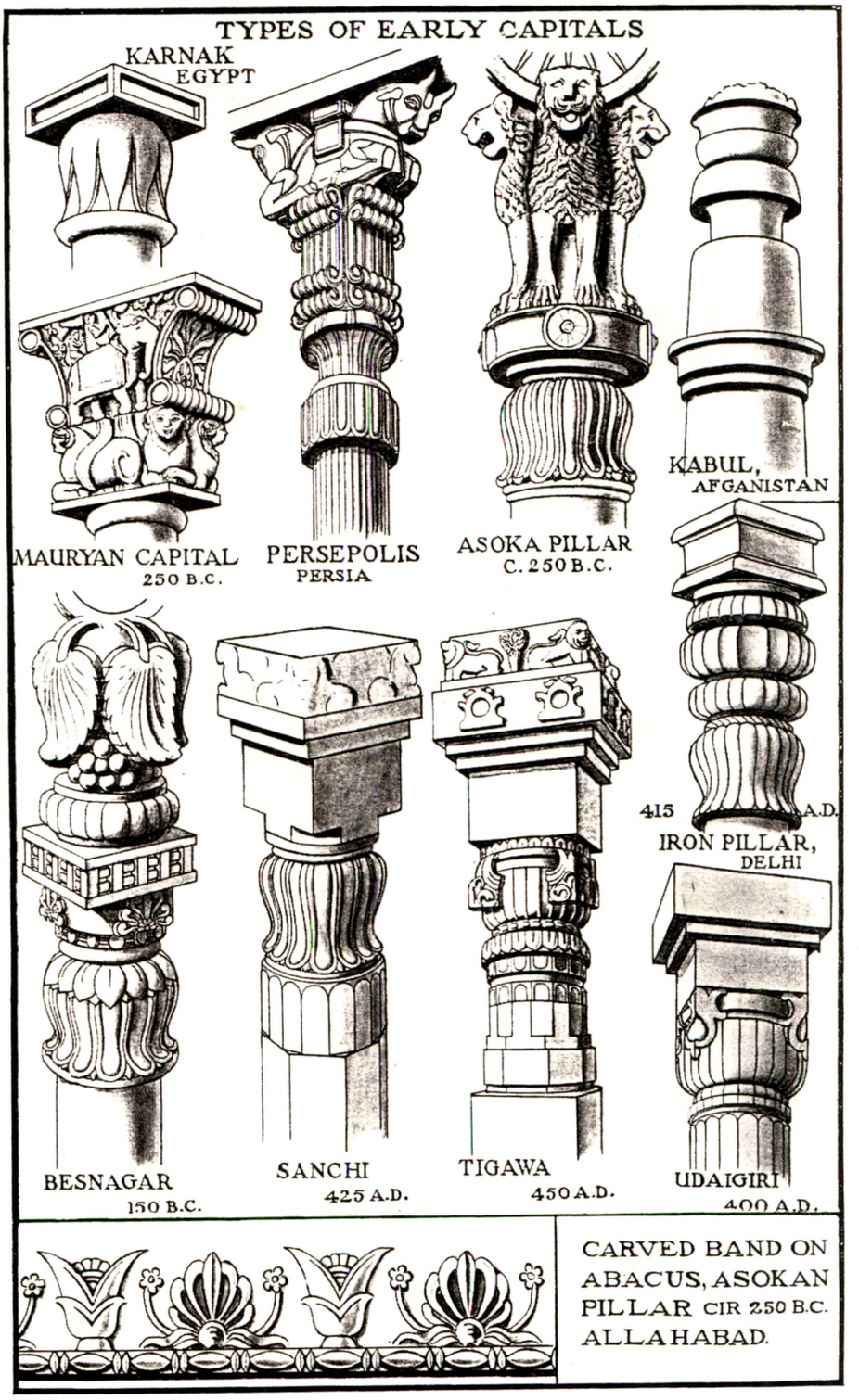
WOODEN CONSTRUCTION FROM ROCK-CUT EXAMPLES.

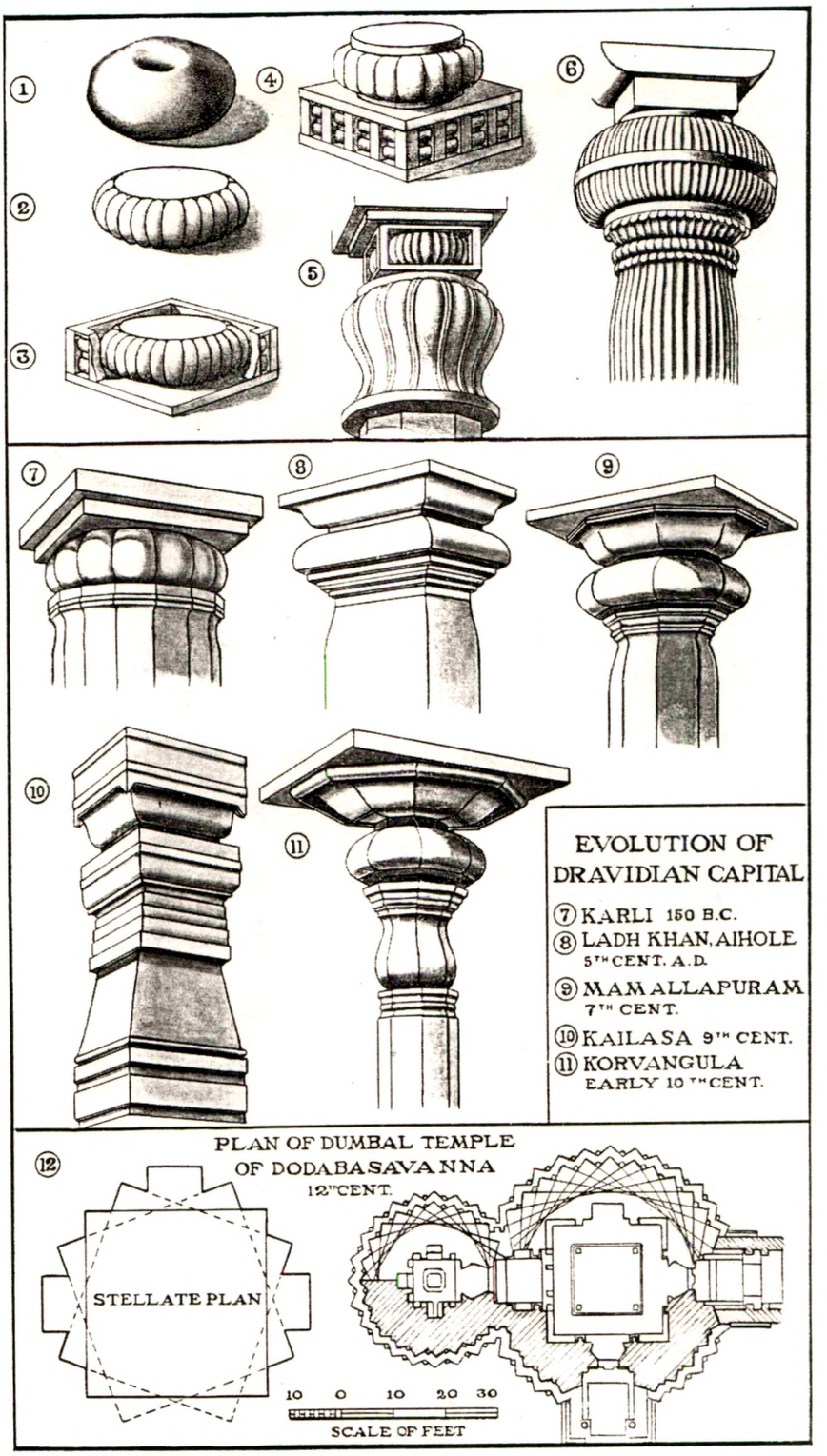


Conjectural Origins : Details



RECONSTRUCTION OF THE CIRCULAR TEMPLE AT BAIRAT, JAIPUR.
CIR. 2ND CENTURY B.C.


TYPES OF EARLY CAPITALS
KARNAK
EGYPT
MAURYAN CAPITAL
250 B.C.
PERSEPOLIS
PERSIA
ASOKA PILLAR
C. 250 B.C.
KABUL,
AFGANISTAN
415 A.D.
IRON PILLAR,
DELHI
BESNAGAR
150 B.C.
SANCHI
425 A.D.
TIGAWA
450 A.D.
UDAIGIRI
400 A.D.
CARVED BAND ON ABACUS, ASOKAN PILLAR CIR 250 B.C. ALLAHABAD.


EVOLUTION OF
DRAVIDIAN CAPITAL
⑦ KARLI 150 B.C.
⑧ LADH KHAN, AIHOLE
5TH CENT. A.D.
⑨ MAMALLAPURAM
7TH CENT.
⑩ KAILASA 9TH CENT.
⑪ KORVANGULA
EARLY 10 TH CENT.
PLAN OF DUMBAL TEMPLE
OF DODABASAVANNA
12TH CENT.
STELLATE PLAN
10 0 10 20 30
SCALE OF FEET

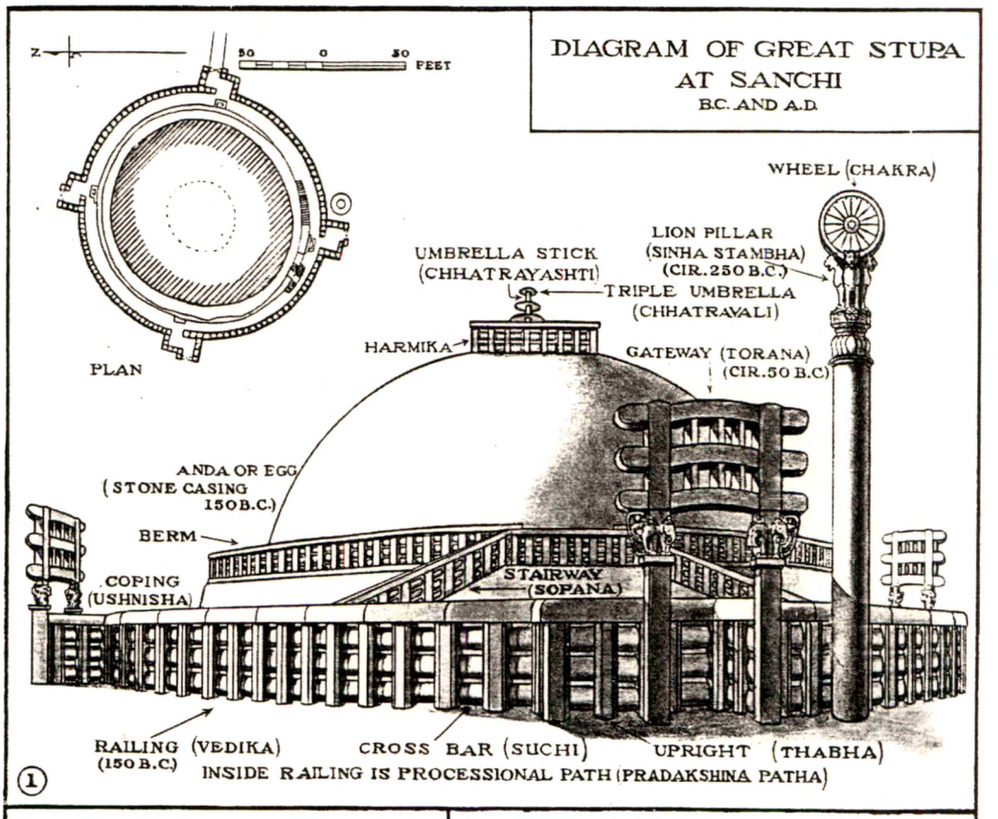
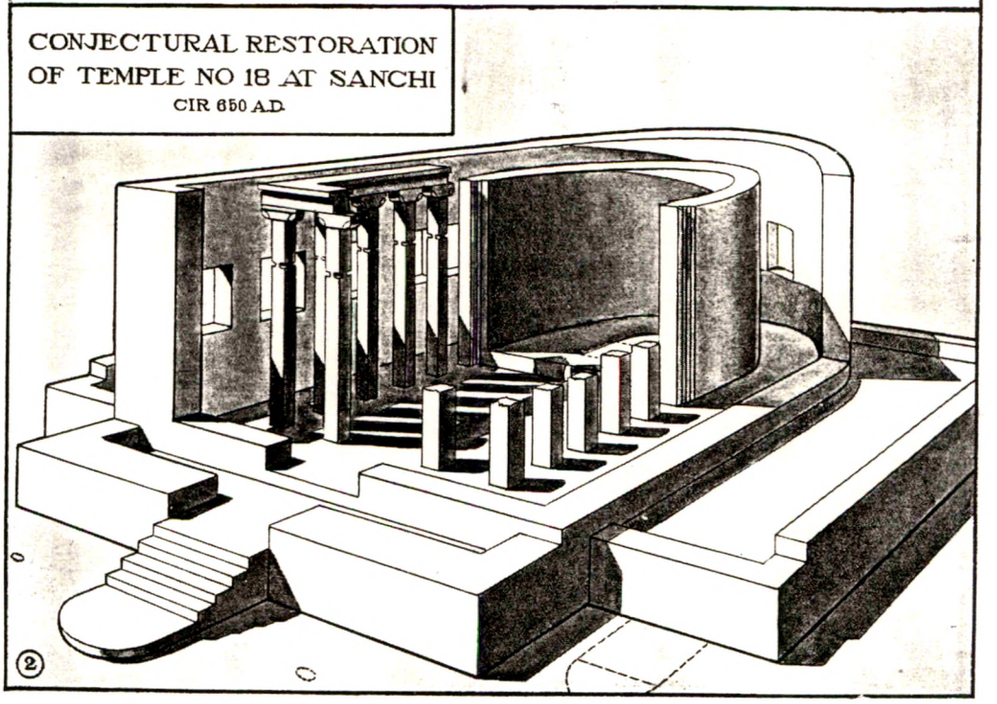
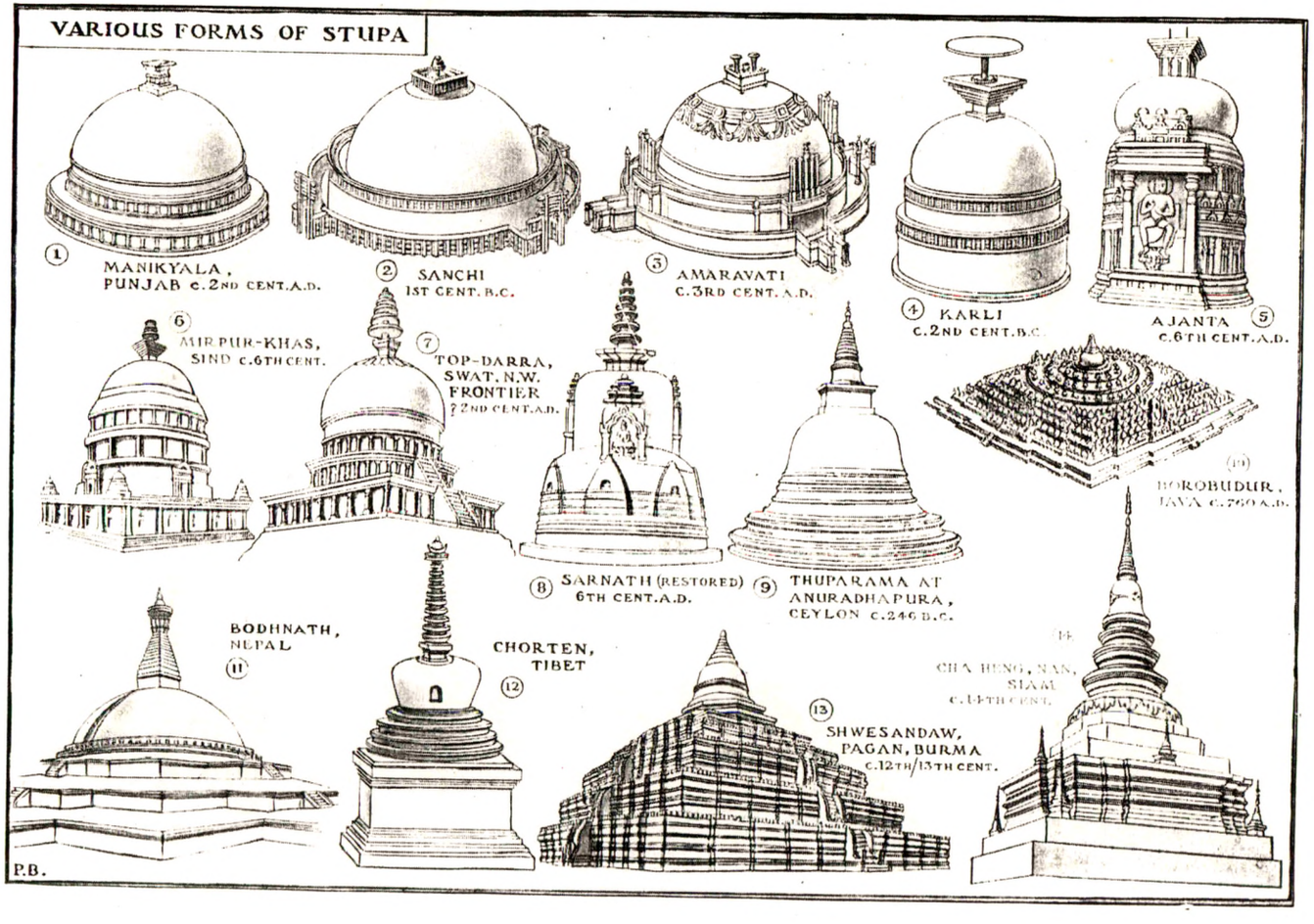
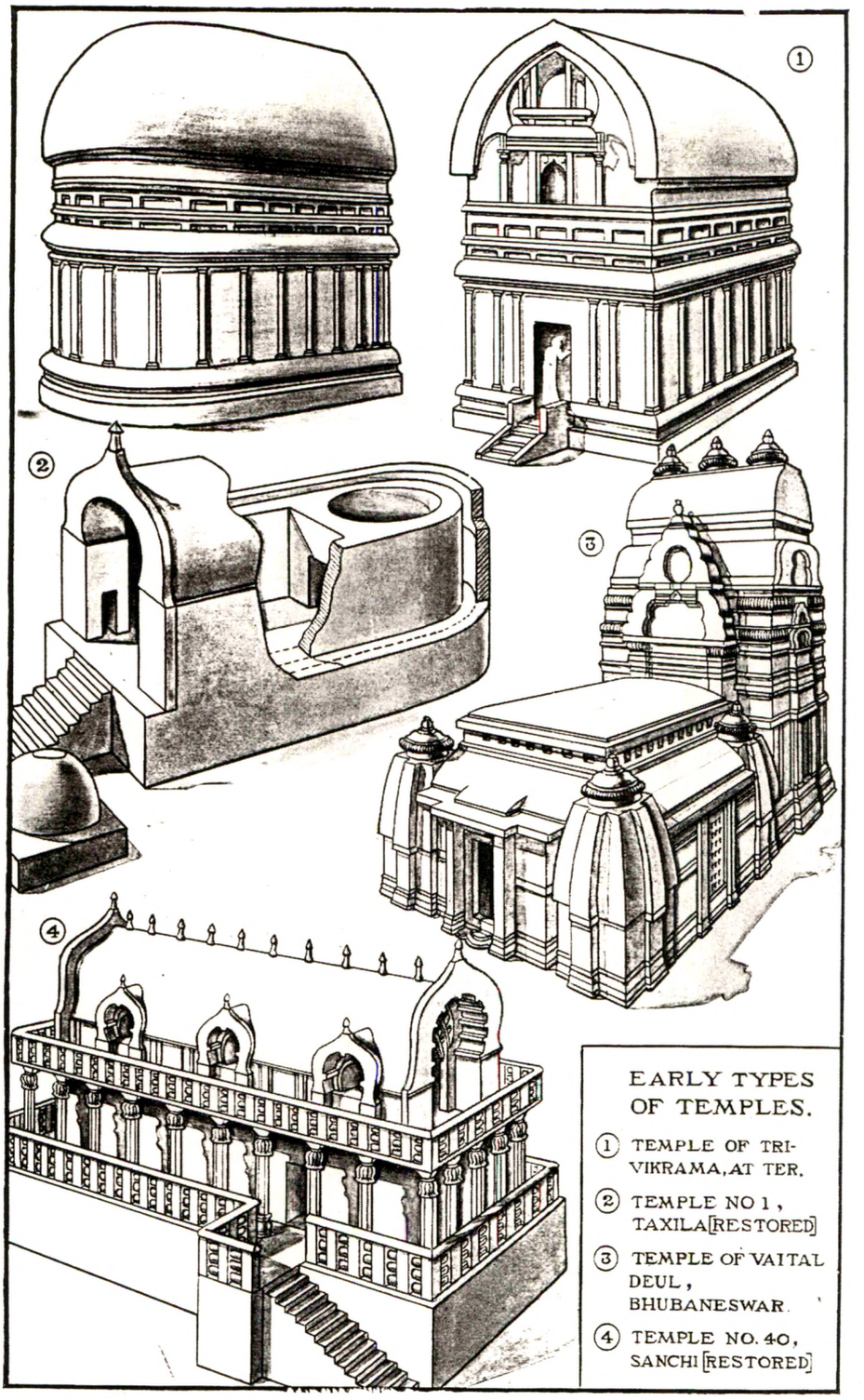


DIAGRAM OF GREAT STUPA AT SANCHI
B.C. AND A.D.
N
50 0 50 FEET
PLAN
WHEEL (CHAKRA)
LION PILLAR (SINHA STAMBHA) (CIR. 250 B.C.)
UMBRELLA STICK (CHHATRAYASHTI)
TRIPLE UMBRELLA (CHHATRAVALI)
HARMIKA
GATEWAY (TORANA) (CIR. 50 B.C.)
ANDA OR EGG (STONE CASING 150 B.C.)
BERM
COPING (USHNISHA)
STAIRWAY (SOPANA)
RAILING (VEDIKA) (150 B.C.)
CROSS BAR (SUCHI)
UPRIGHT (THABHA)
INSIDE RAILING IS PROCESSIONAL PATH (PRADAKSHINA PATHA)
1

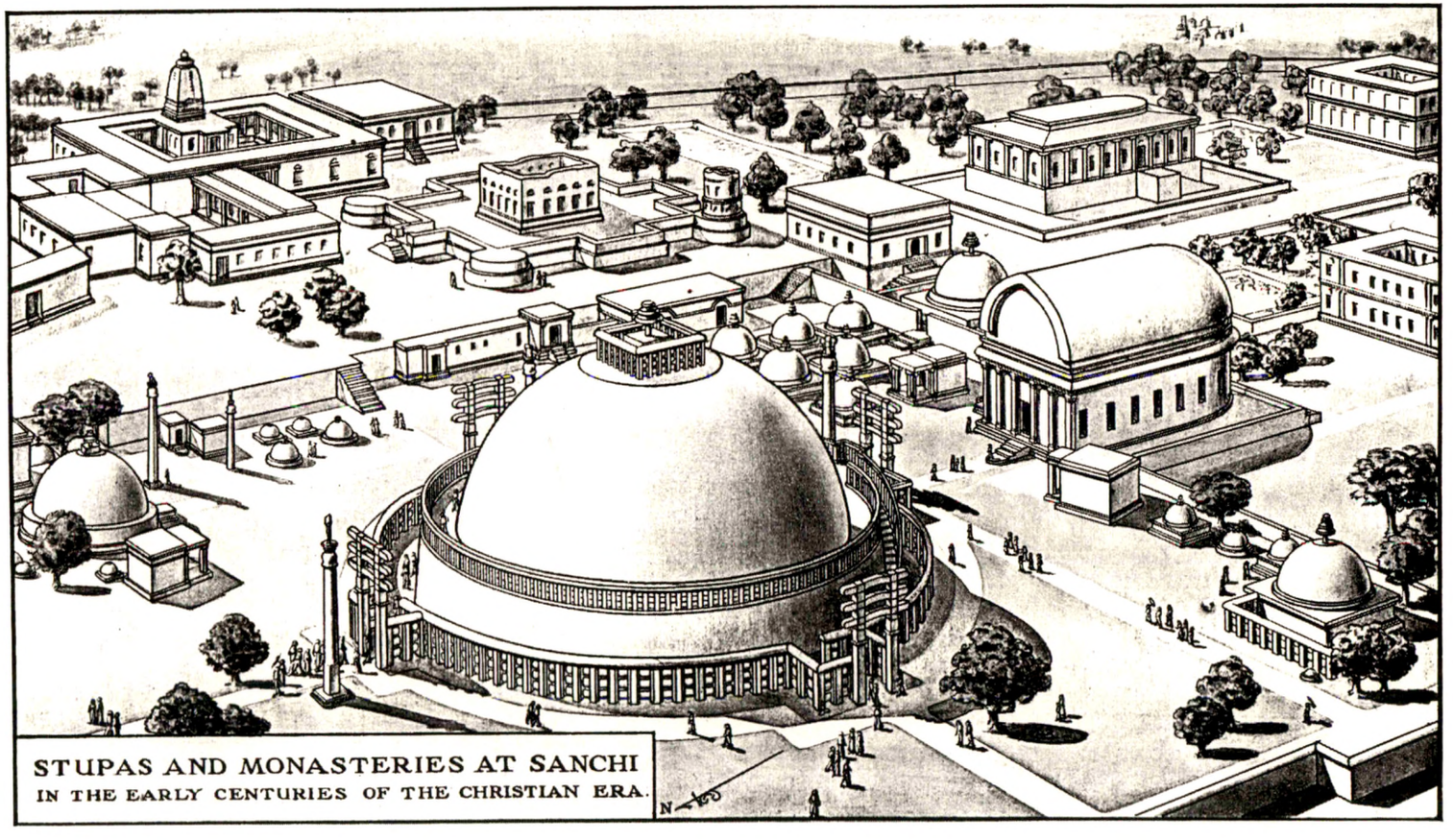

CONJECTURAL RESTORATION OF TEMPLE NO 18 AT SANCHI
CIR 650 A.D.
2


VARIOUS FORMS OF STUPA
1 MANIKYALA, PUNJAB c.2ND CENT.A.D.
2 SANCHI 1ST CENT. B.C.
3 AMARAVATI C.3RD CENT. A.D.
4 KARLI C.2ND CENT.B.C.
5 AJANTA C.6TH CENT.A.D.
6 MIRPUR-KHAS, SIND C.6TH CENT.
7 TOP-DARRA, SWAT. N.W. FRONTIER ? 2ND CENT.A.D.
8 SARNATH (RESTORED) 6TH CENT.A.D.
9 THUPARAMA AT ANURADHAPURA, CEYLON C.246 B.C.
10 BOROBUDUR, JAVA C.760 A.D.
11 BODHNATH, NEPAL
12 CHORTEN, TIBET
13 SHWESANDAW, PAGAN, BURMA C.12TH/13TH CENT.
14 CHA HENG, NAN, SIAM C.13TH CENT.
P.B.

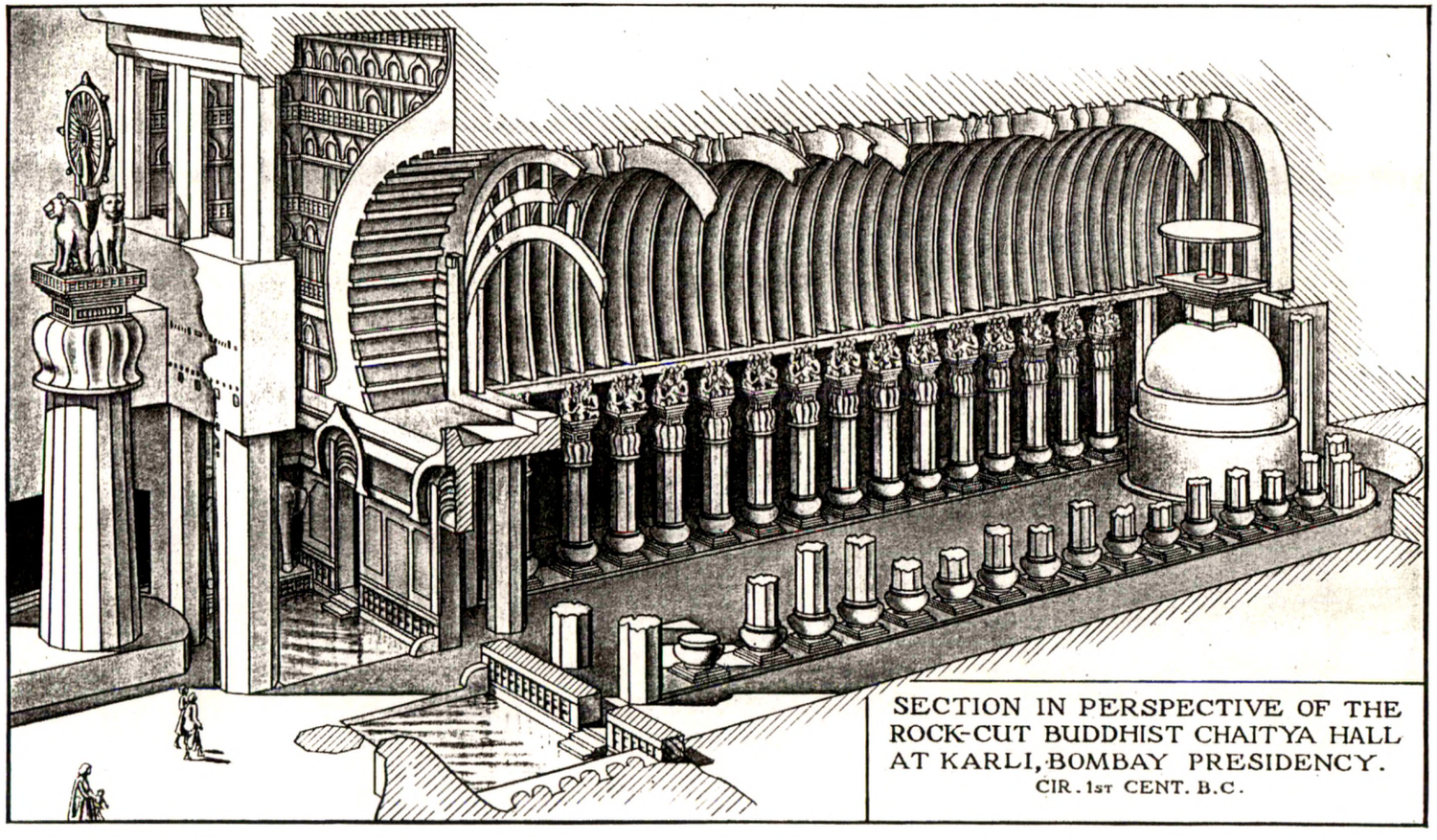


EARLY TYPES OF TEMPLES.

1. TEMPLE OF TRI-VIKRAMA, AT TER.
2. TEMPLE NO 1, TAXILA [RESTORED]
3. TEMPLE OF VAITAL DEUL, BHUBANESWAR.
4. TEMPLE NO. 40, SANCHI [RESTORED]



STUPAS AND MONASTERIES AT SANCHI
IN THE EARLY CENTURIES OF THE CHRISTIAN ERA.



SECTION IN PERSPECTIVE OF THE ROCK-CUT BUDDHIST CHAITYA HALL AT KARLI, BOMBAY PRESIDENCY.
CIR. 1ST CENT. B.C.

Fig. 1. Bhaja.

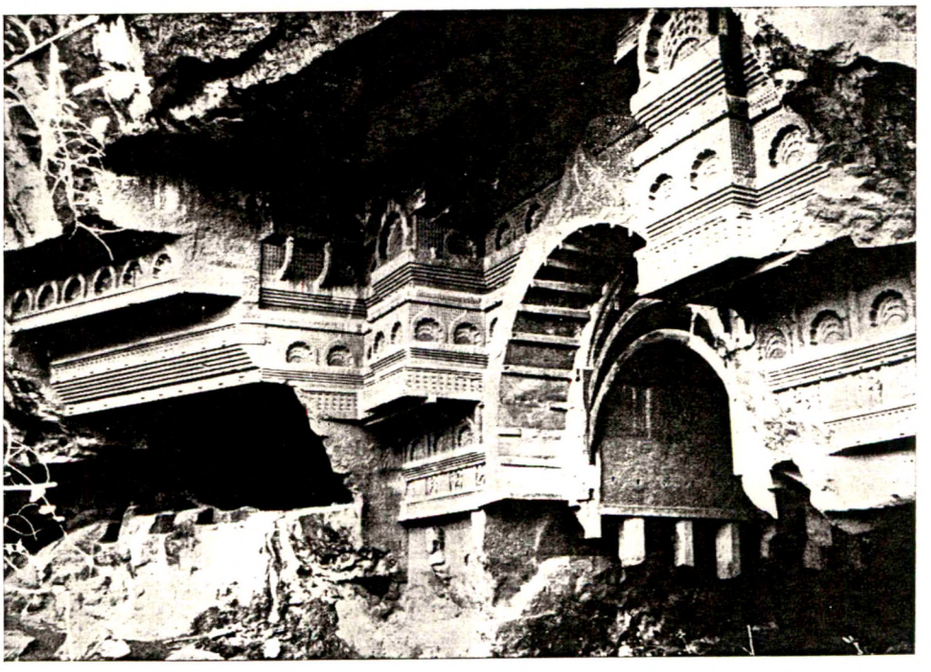
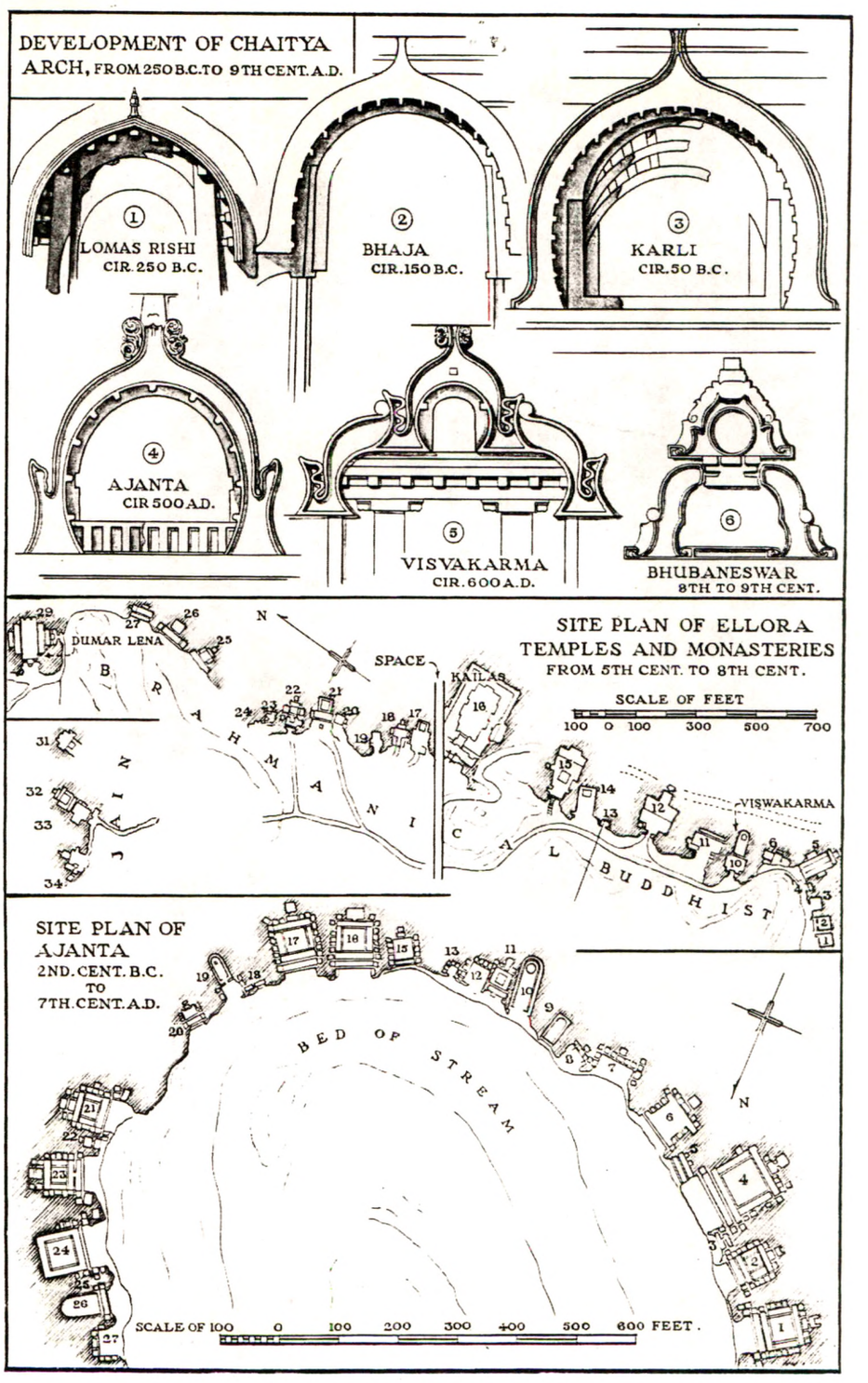
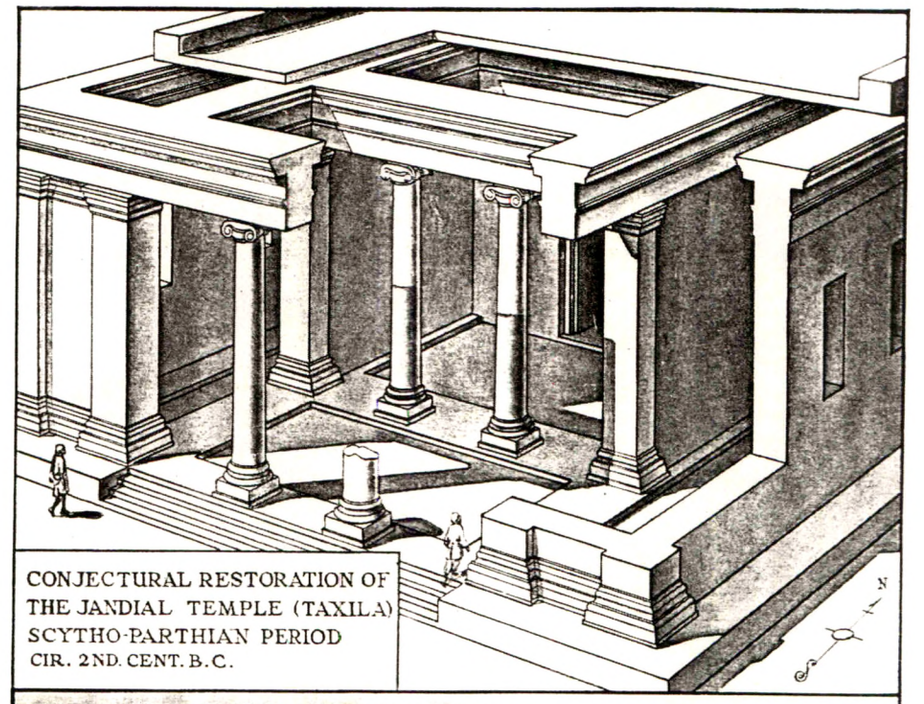


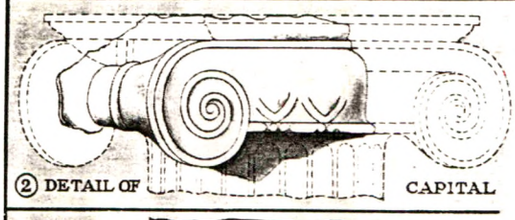
Fig. 2. Kondane.

Facades of rock-cut Chaitya-halls : 2nd cent. B.C.

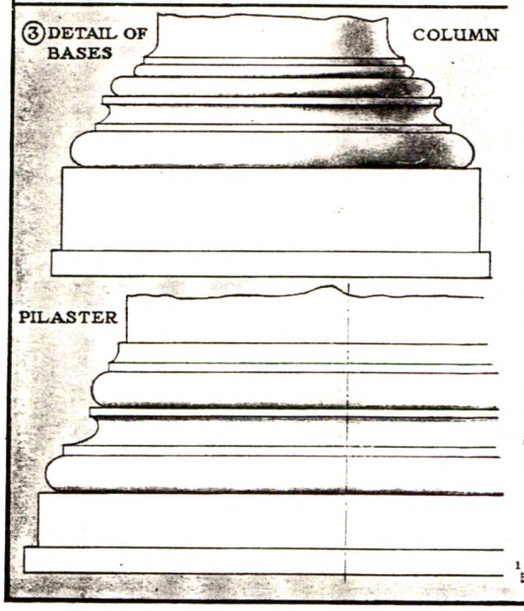

DEVELOPMENT OF CHAITYA ARCH, FROM 250 B.C. TO 9TH CENT. A.D.
① LOMAS RISHI CIR. 250 B.C.
② BHAJA CIR. 150 B.C.
③ KARLI CIR. 50 B.C.
④ AJANTA CIR 500 A.D.
⑤ VISVAKARMA CIR. 600 A.D.
⑥ BHUBANESWAR 8TH TO 9TH CENT.
SITE PLAN OF ELLORA TEMPLES AND MONASTERIES FROM 5TH CENT. TO 8TH CENT.
SCALE OF FEET
100 0 100 300 500 700
DUMAR LENA
SPACE
KAILAS
VISWAKARMA
BUDDHIST
SITE PLAN OF AJANTA 2ND. CENT. B.C. TO 7TH. CENT. A.D.
BED OF STREAM
SCALE OF 100 0 100 200 300 400 500 600 FEET.



CONJECTURAL RESTORATION OF
THE JANDIAL TEMPLE (TAXILA)
SCYTHO-PARTHIAN PERIOD
CIR. 2ND. CENT. B.C.

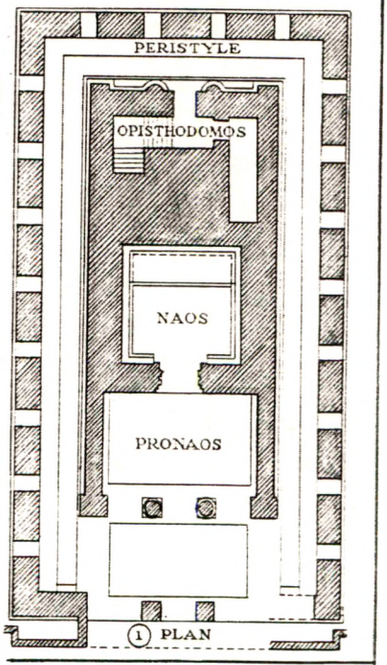


② DETAIL OF CAPITAL

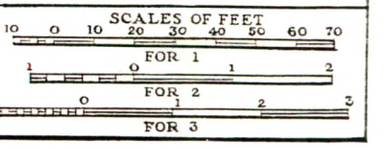


③ DETAIL OF BASES COLUMN

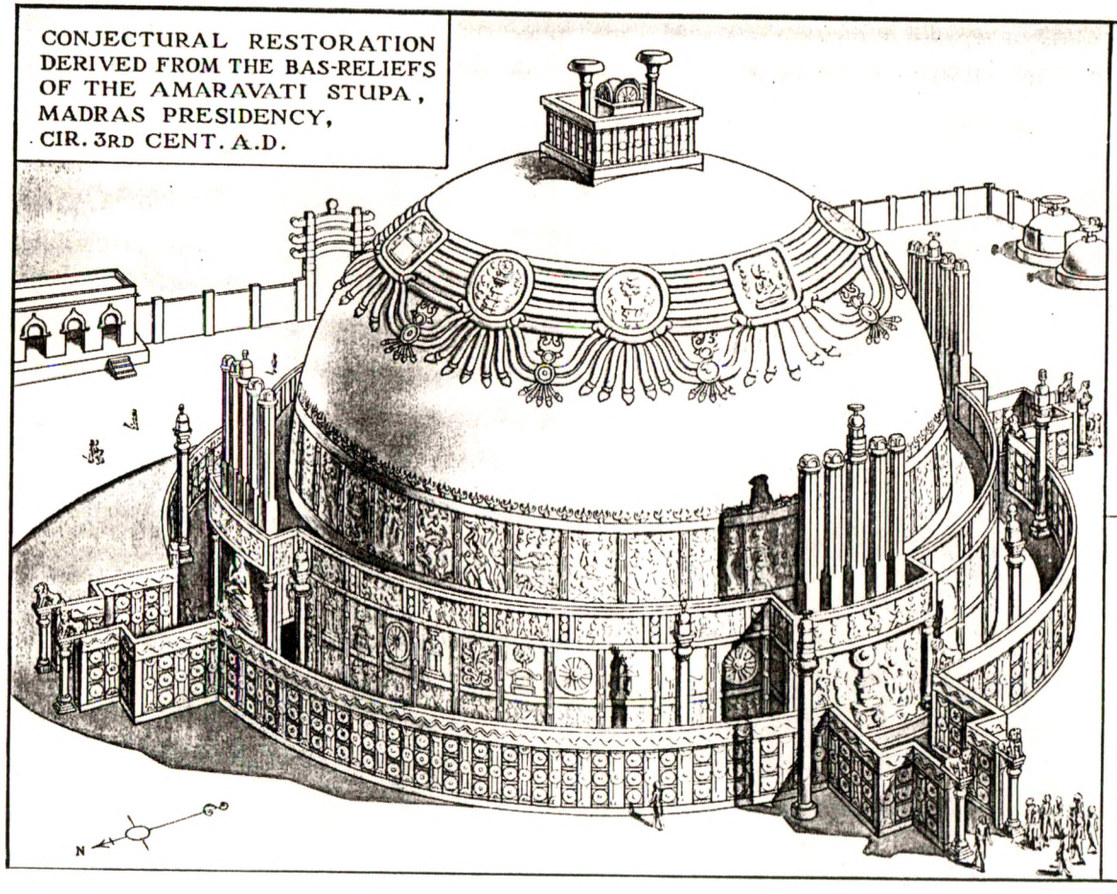
PILASTER

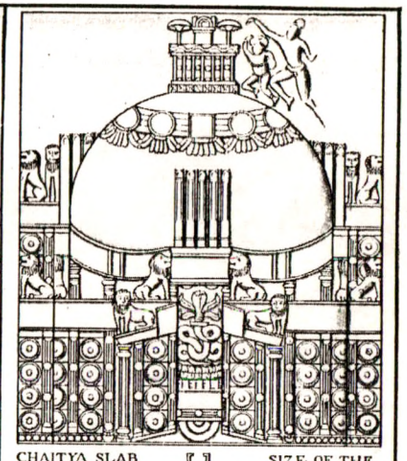


① PLAN



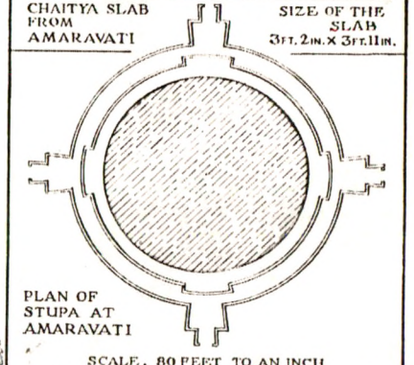
CONJECTURAL RESTORATION DERIVED FROM THE BAS-RELIEFS OF THE AMARAVATI STUPA, MADRAS PRESIDENCY, CIR. 3RD CENT. A.D.





CHAITYA SLAB FROM AMARAVATI

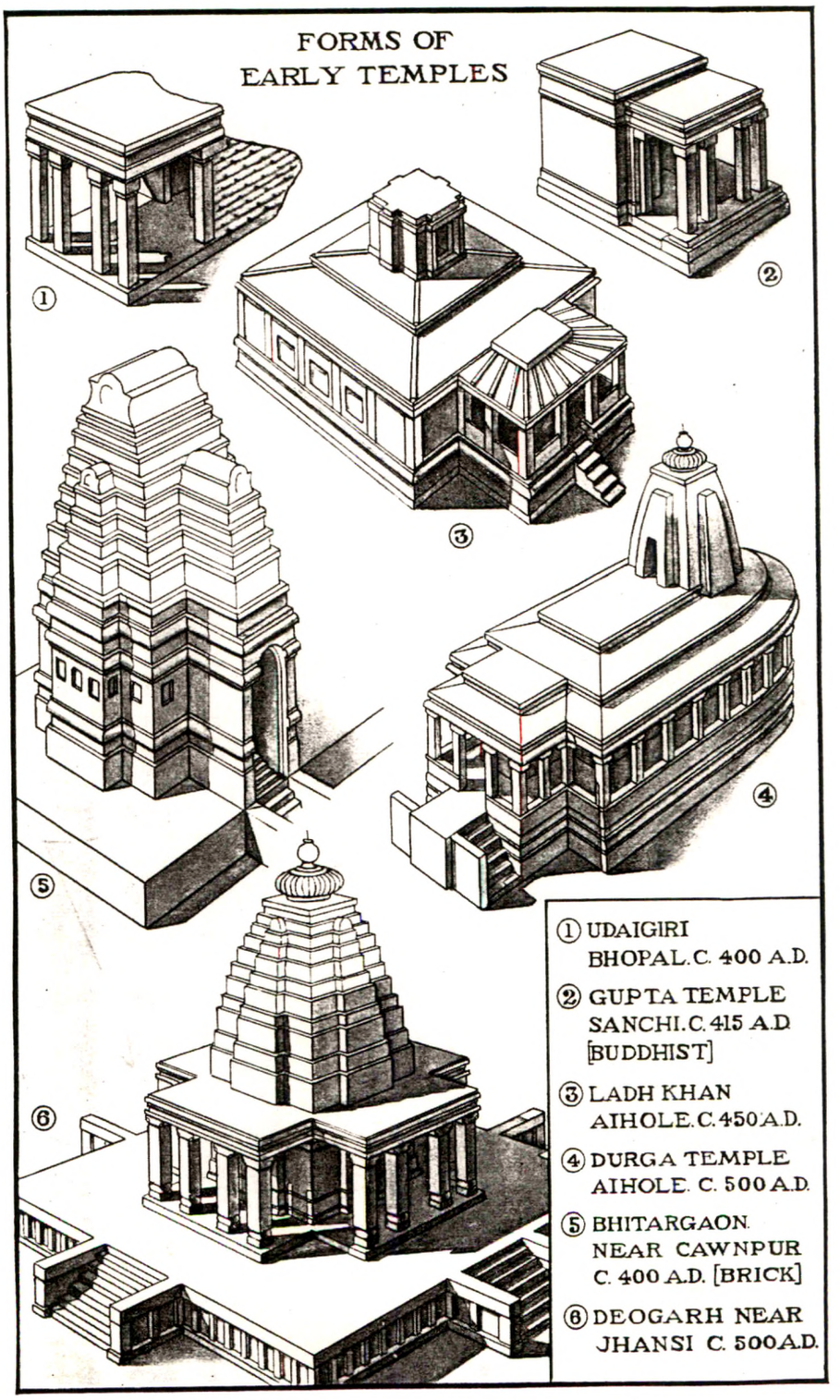
SIZE OF THE SLAB 3FT. 2IN. X 3FT. 11IN.

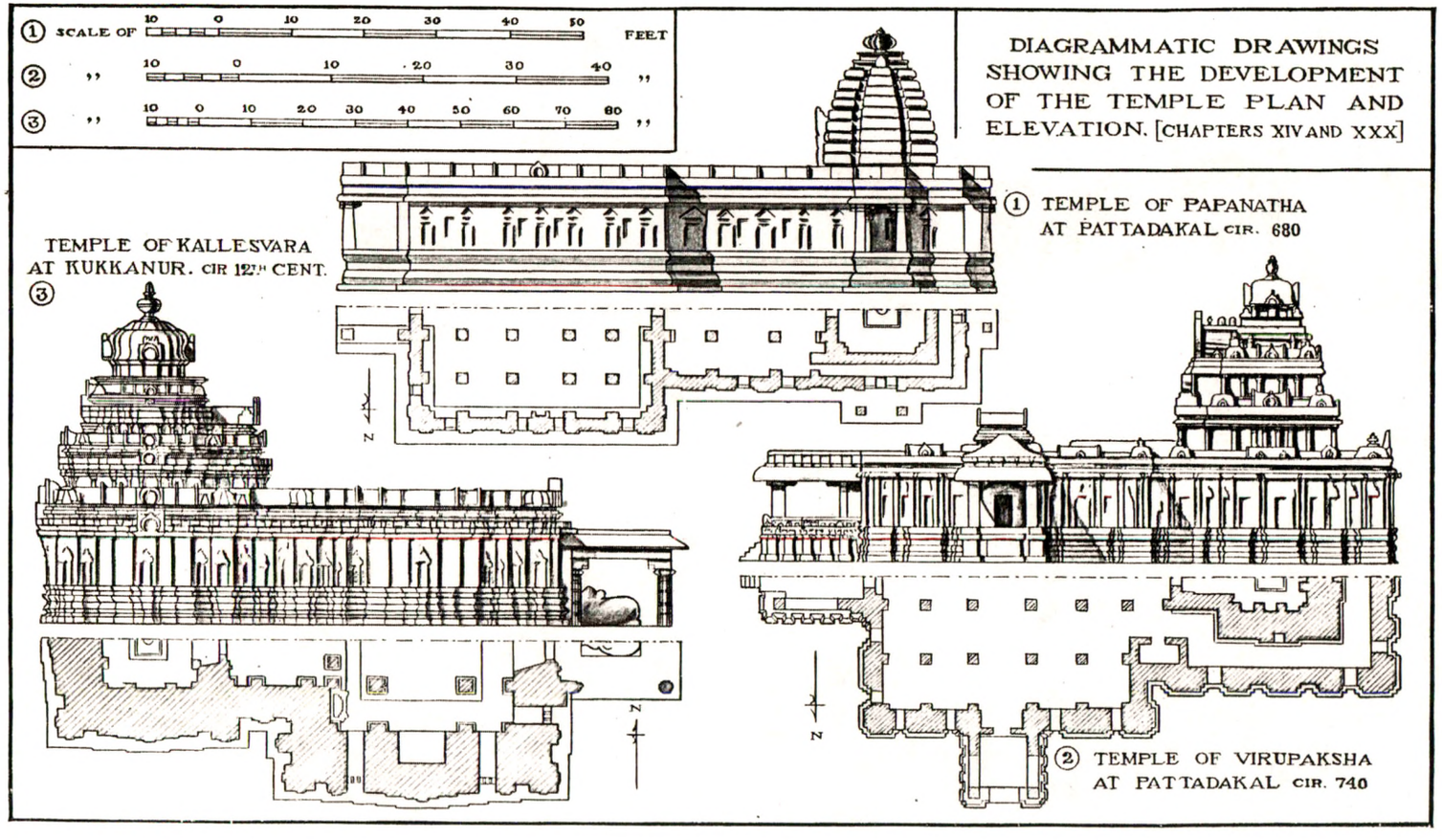


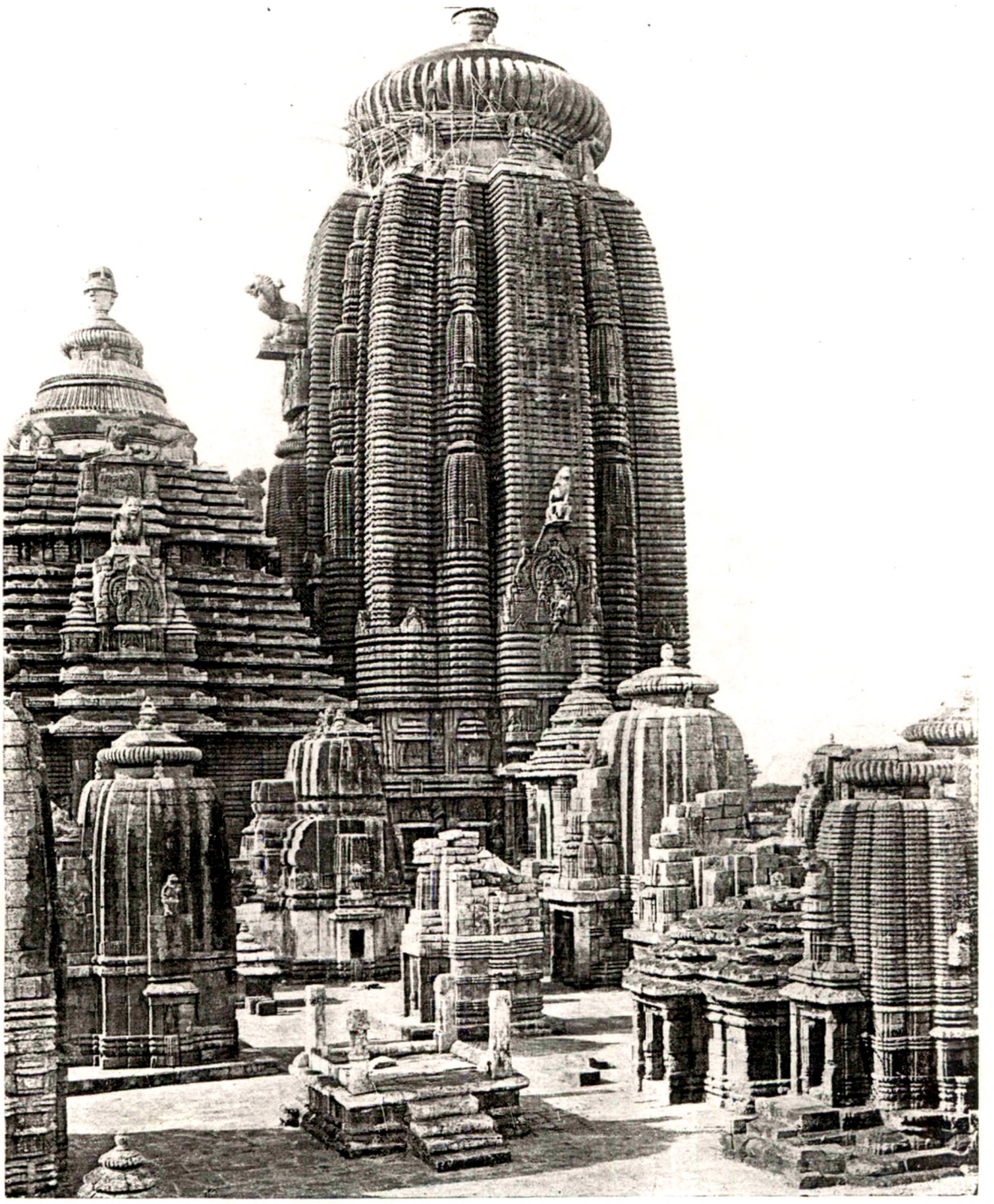
PLAN OF STUPA AT AMARAVATI

SCALE, 80 FEET TO AN INCH

80 60 40 20 0 80 160 FT.


FORMS OF
EARLY TEMPLES
①
②
③
④
⑤
⑥
① UDAIGIRI
BHOPAL. C. 400 A.D.
② GUPTA TEMPLE
SANCHI. C. 415 A.D
[BUDDHIST]
③ LADH KHAN
AIHOLE. C. 450 A.D.
④ DURGA TEMPLE
AIHOLE. C. 500 A.D.
⑤ BHITARGAON.
NEAR CAWNPUR
C. 400 A.D. [BRICK]
⑥ DEOGARH NEAR
JHANSI C. 500 A.D.


① SCALE OF 10 0 10 20 30 40 50 FEET
② ,, 10 0 10 20 30 40 ,,
③ ,, 10 0 10 20 30 40 50 60 70 80 ,,
DIAGRAMMATIC DRAWINGS SHOWING THE DEVELOPMENT OF THE TEMPLE PLAN AND ELEVATION. [CHAPTERS XIV AND XXX]
① TEMPLE OF PAPANATHA AT PATTADAKAL CIR. 680
TEMPLE OF KALLESVARA AT KUKKANUR. CIR 12TH CENT.
③
② TEMPLE OF VIRUPAKSHA AT PATTADAKAL CIR. 740



Lingaraja Temple, Bhubhaneswar.

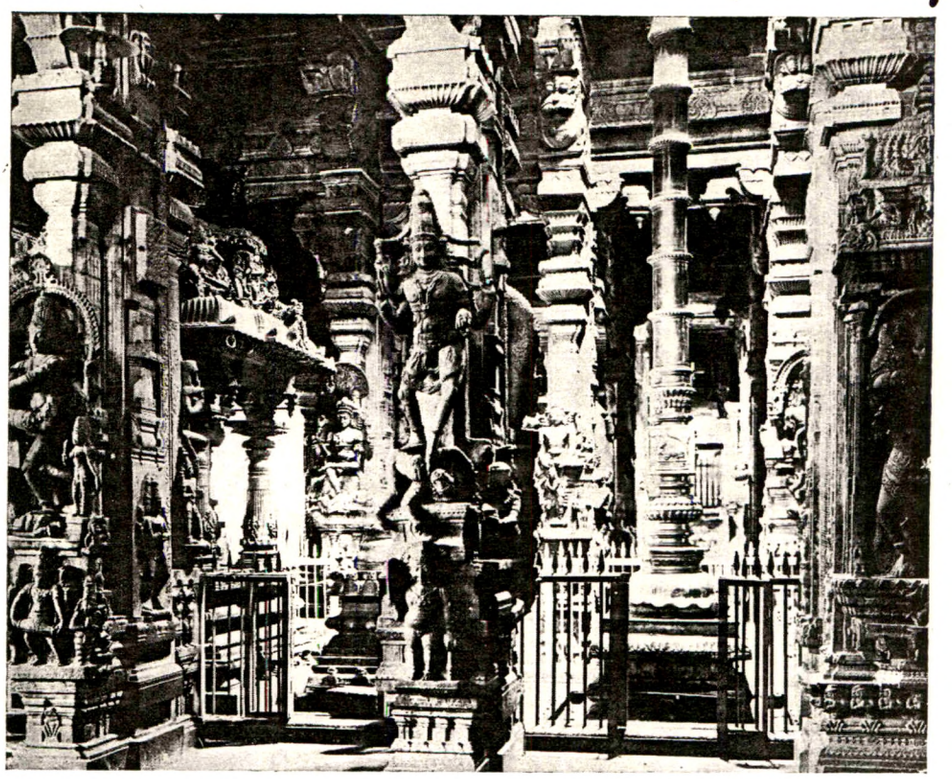


Fig. 1. Madura Temple, Swami Singothanam : Entrance to Main Shrine.

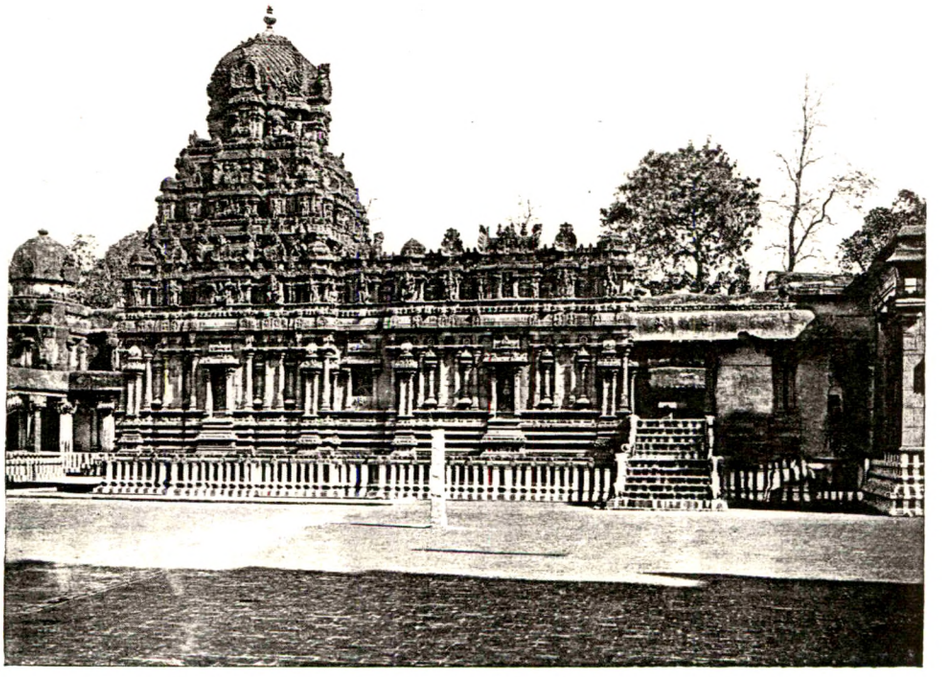
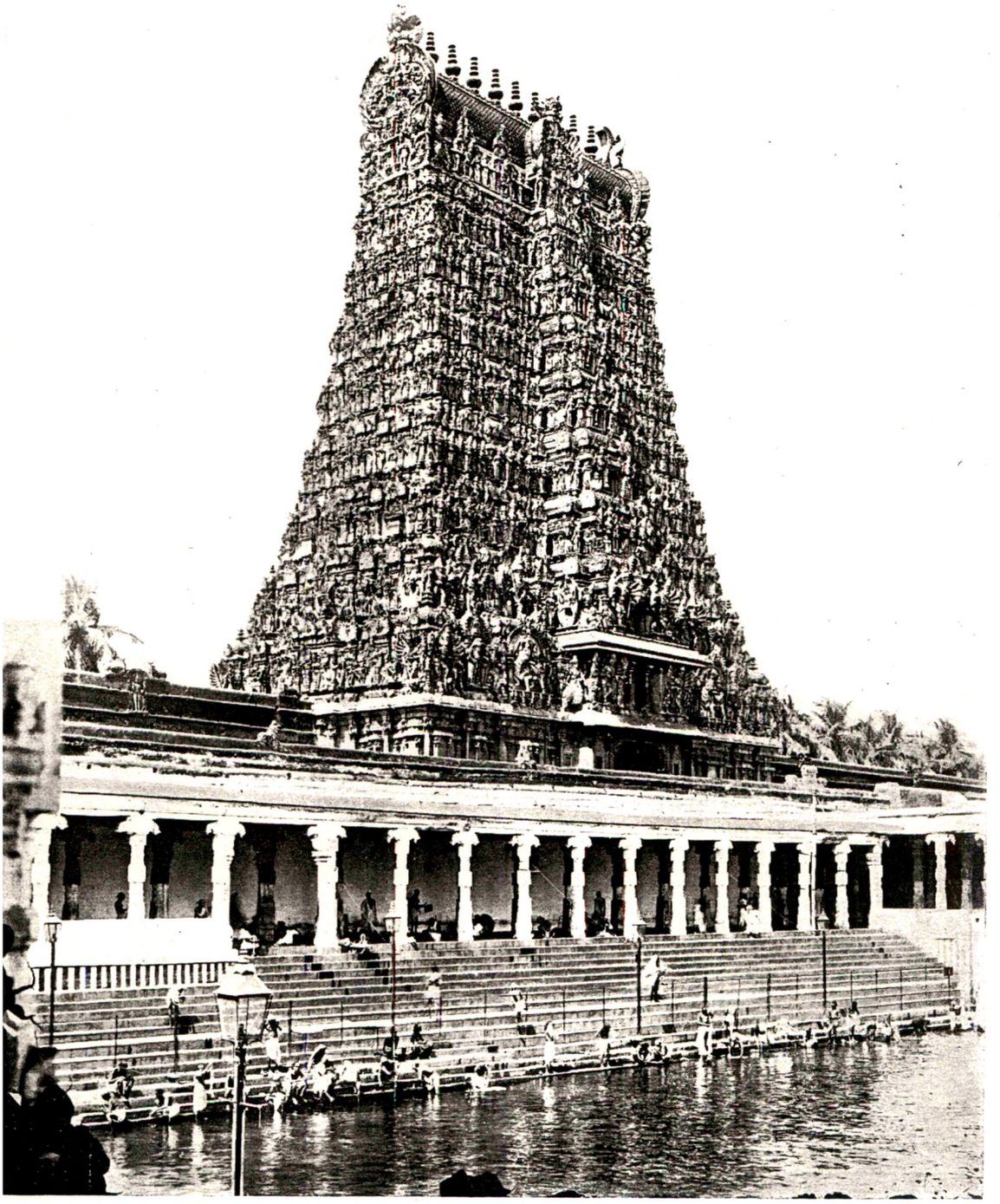
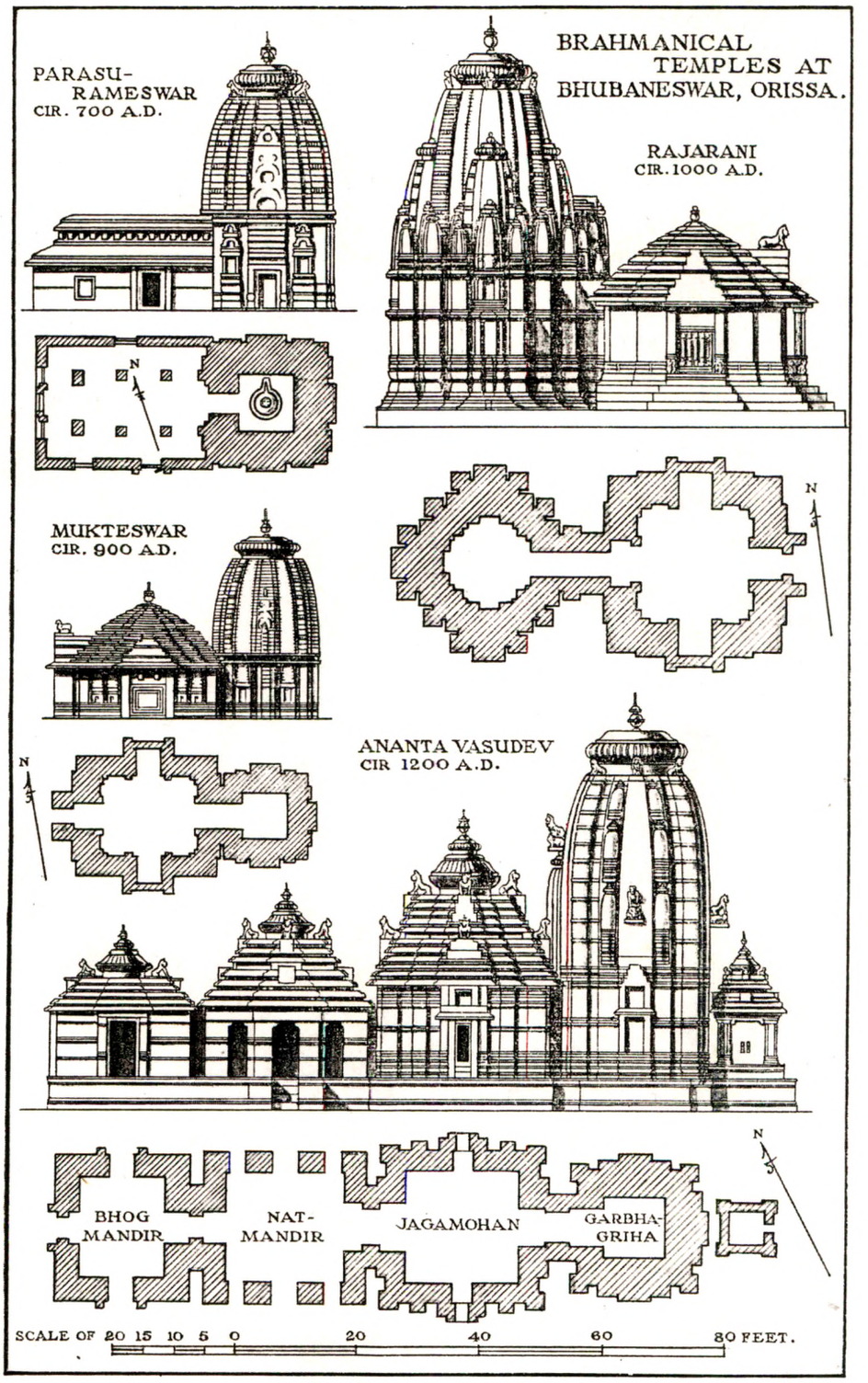
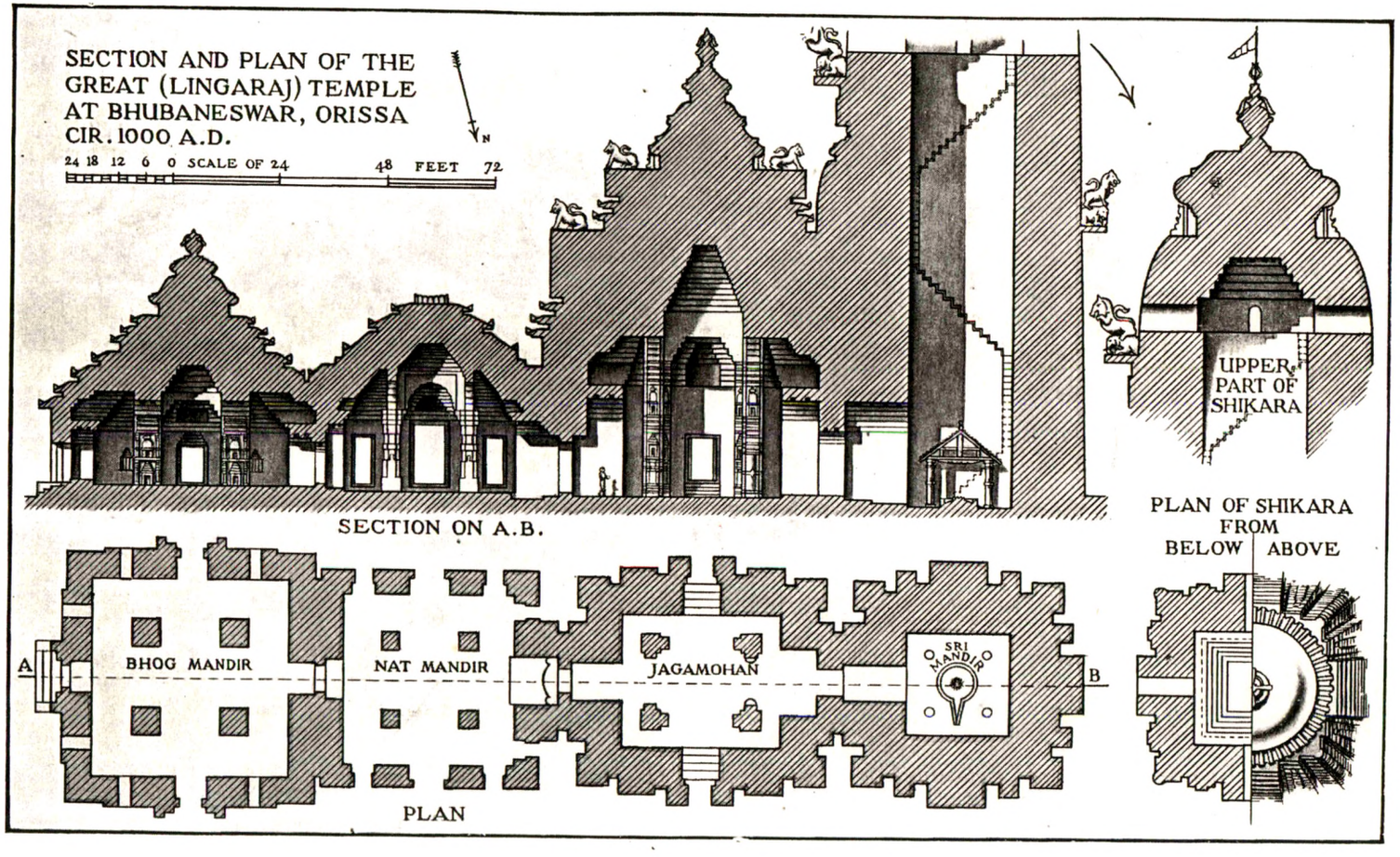


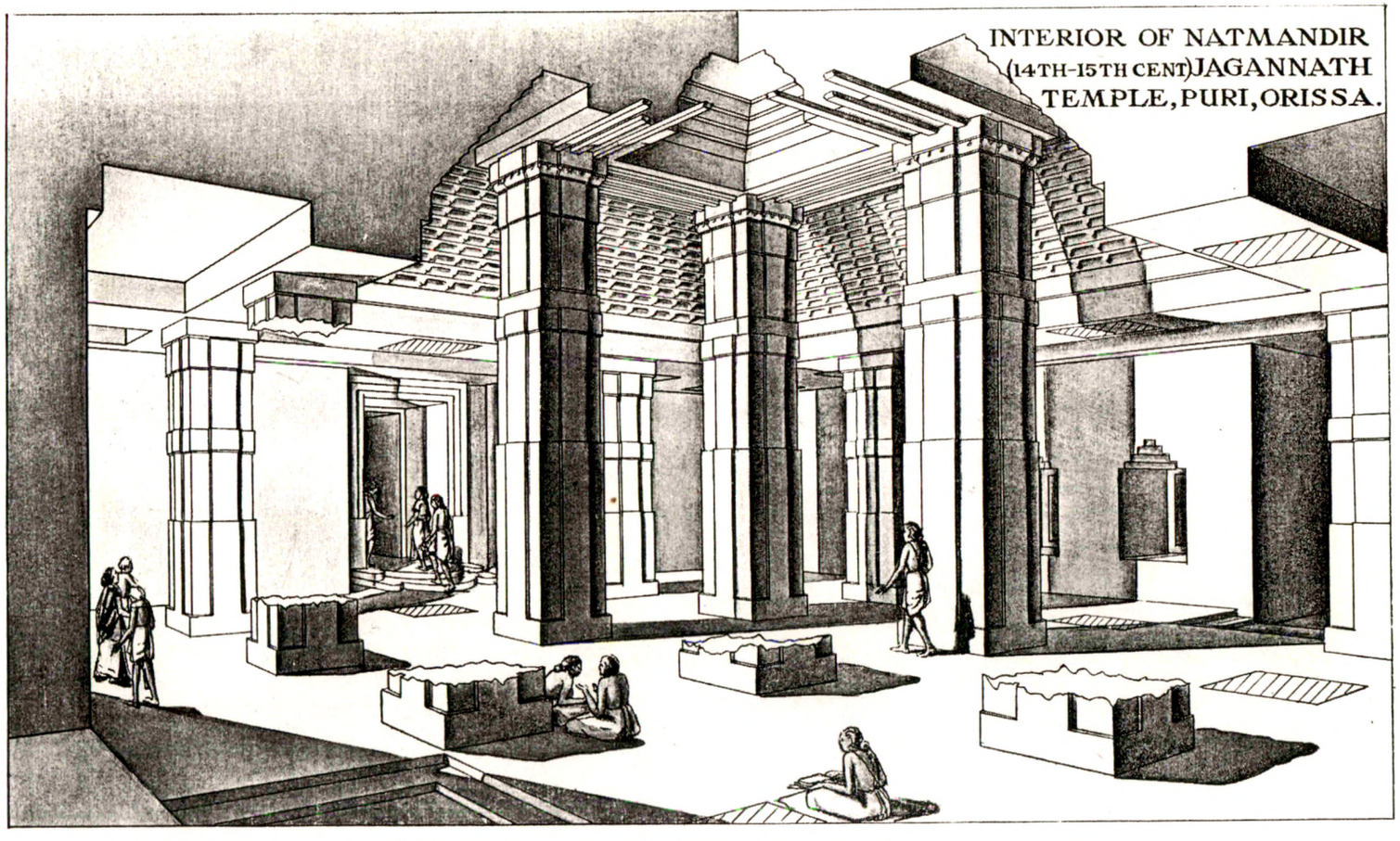
Fig. 2. Tanjore. Subramania Temple ; c. A.D. 1750.



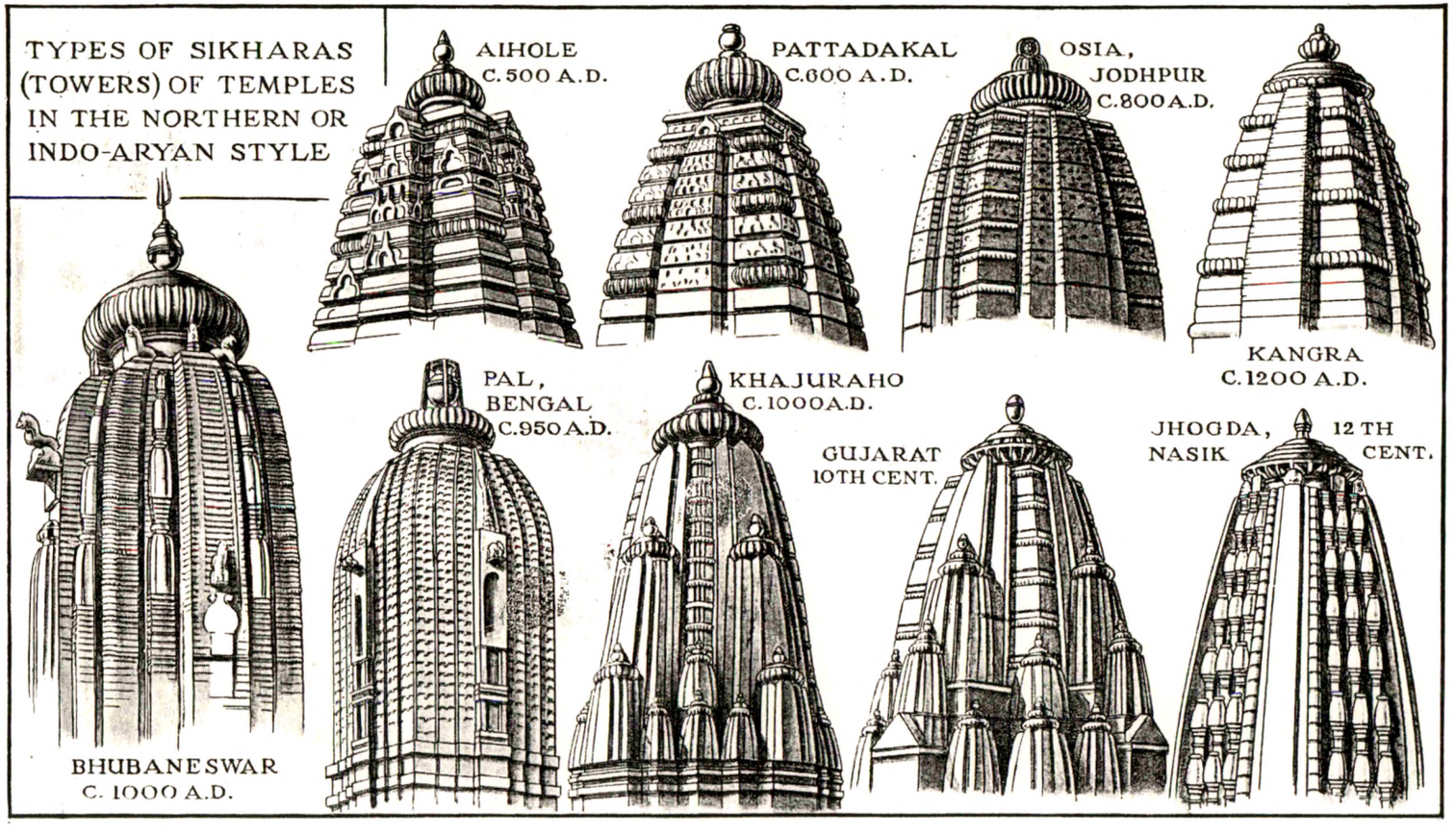
Madura Temple, Southern Gopuram.

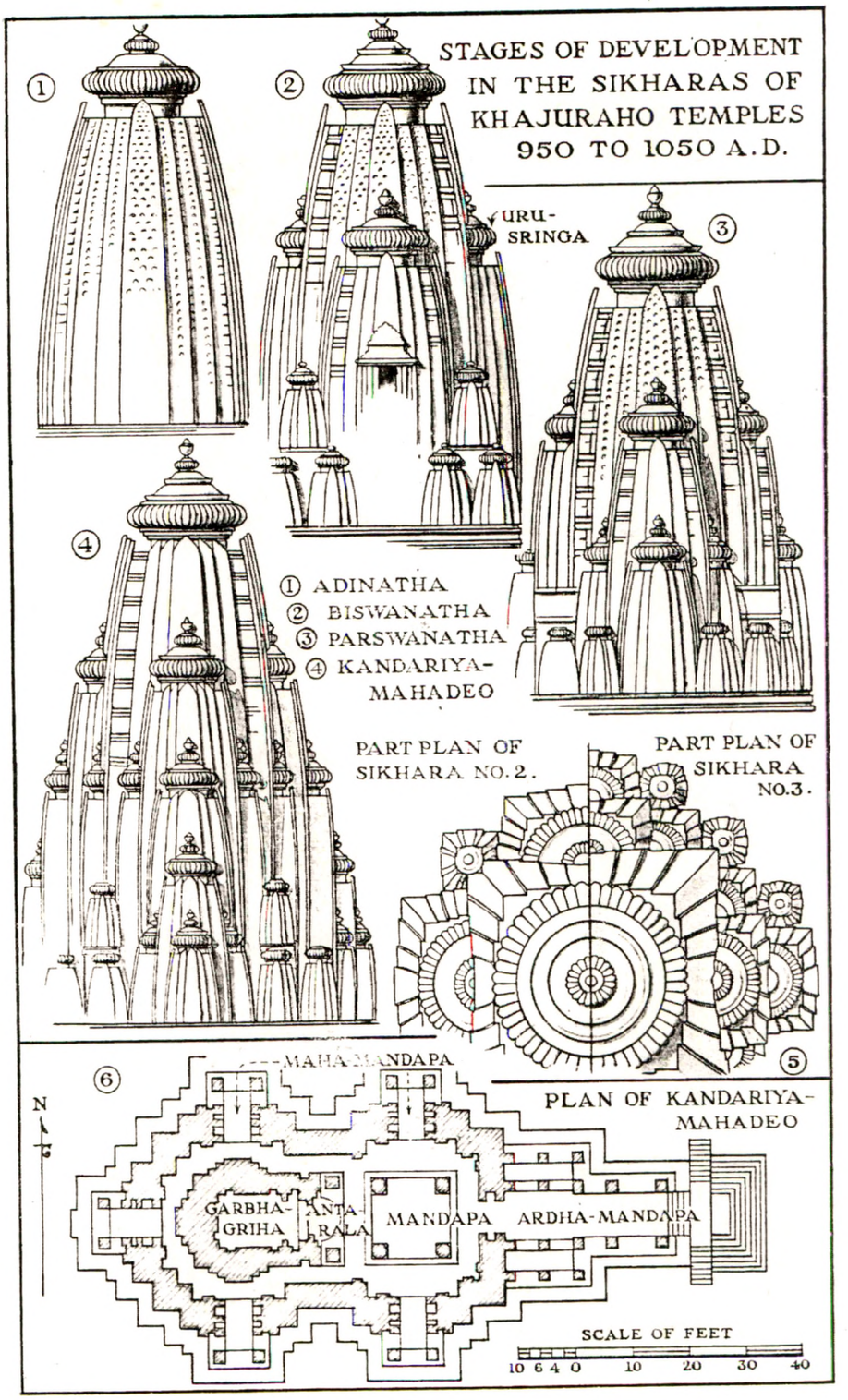

BRAHMANICAL TEMPLES AT BHUBANESWAR, ORISSA.
PARASU-RAMESWAR
CIR. 700 A.D.
RAJARANI
CIR. 1000 A.D.
N
MUKTESWAR
CIR. 900 A.D.
N
ANANTA VASUDEV
CIR 1200 A.D.
N
BHOG MANDIR
NAT-MANDIR
JAGAMOHAN
GARBHA-GRIHA
N
SCALE OF 20 15 10 5 0 20 40 60 80 FEET.


SECTION AND PLAN OF THE GREAT (LINGARAJ) TEMPLE AT BHUBANESWAR, ORISSA CIR. 1000 A.D.
N
24 18 12 6 0 SCALE OF 24 48 FEET 72
UPPER PART OF SHIKARA
SECTION ON A.B.
PLAN OF SHIKARA FROM BELOW ABOVE
A
BHOG MANDIR
NAT MANDIR
JAGAMOHAN
SRI MANDIR
B
PLAN



Puri : the Natmandir. Note the iron beams ceiling.


TYPES OF SIKHARAS (TOWERS) OF TEMPLES IN THE NORTHERN OR INDO-ARYAN STYLE
AIHOLE C. 500 A.D.
PATTADAKAL C.600 A.D.
OSIA, JODHPUR C.800A.D.
KANGRA C.1200 A.D.
BHUBANESWAR C. 1000 A.D.
PAL, BENGAL C.950 A.D.
KHAJURAHO C.1000A.D.
GUJARAT 10TH CENT.
JHOGDA, NASIK
12 TH CENT.


STAGES OF DEVELOPMENT IN THE SIKHARAS OF KHAJURAHO TEMPLES 950 TO 1050 A.D.
①
②
③
④
URU-SRINGA
① ADINATHA
② BISWANATHA
③ PARSWANATHA
④ KANDARIYA-MAHADEO
PART PLAN OF SIKHARA NO. 2.
PART PLAN OF SIKHARA NO.3.
⑤
⑥
MAHA-MANDAPA
N
PLAN OF KANDARIYA-MAHADEO
GARBHA-GRIHA
ANTA-RALA
MANDAPA
ARDHA-MANDAPA
SCALE OF FEET
10 6 4 0 10 20 30 40