HISTORY
OF
EASTERN ARCHITECTURE
IN
FURTHER INDIA, CHINA AND JAPAN.
REVISED AND EXTENDED
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BOOK VIII.

FURTHER INDIA.

CHAPTER I.

BURMA.

CONTENTS.
Introductory—Types of Religious Buildings—Circular Pagodas—Square Temples, etc.—Ruins of Thatôn, Prome, and Pagân—Monasteries.

INTRODUCTORY.

The styles of architecture described in the preceding chapters of this work practically exhaust the enumeration of all those which were practised in India Proper, with its adjacent island of Ceylon, from the earliest dawn of our knowledge till the present day. It might, therefore, be possible to treat their description as a work complete in itself, and to conclude without reference to other styles practised in neighbouring countries. It will add, however, immensely, not only to the interest but to the completeness of the work, if the history is continued through the architectural forms of those countries which adopted religions originating in India, and borrowed with them architectural forms which expressed, with more or less distinctness, how far their religious beliefs differed from, or agreed with, those of the country from which they were derived.

The first of these countries to which we naturally turn is Burma, which adopted the religion of Sâkyamuni at a very early period, and borrowed also many of the Indian forms of architecture, but with differences we are now at a loss to account for. It may be, that, as we know nothing practically of the architectural forms of the Lower Bengal provinces before the beginning of the 6th century, these forms may have been taken to Prome and Pegû before that time; or it may be that a
northern or Tibetan element crept into Burma across the northern mountains by some route we cannot now follow. These are interesting problems we shall not be able to solve till we have a more critical knowledge than we now possess of Burmese buildings. Thanks to the zeal and intelligence of some English travellers, we do know a great deal about Burmese art. The works of Symes, Crawfurd, and, above all, of Colonel Yule, are replete with information; but what they did was done in the intervals they were able to snatch from pressing public duties. What is really wanted is, that some qualified person should take up the subject specially, and travel through the country with no other object than to investigate its antiquities.

This was attempted between 1884-1888, when Professor Forchammer was sent on a mission to study the temples in West Burma, but he unfortunately died before he could complete his task, and although his descriptions and plans of buildings at Mrohaung in Arakan and Kyaukku in Pagán are of great value, the former are not always quite intelligible owing to his want of acquaintance with architectural features.

This was not the case with Mr. Oertel, an engineer and architect in the Government service, who visited Burma with a similar object, but his permit was limited to about two months, so that he was only able to see some of the architectural centres. His report, however, contains much useful information, and the photographs which he took are of some value.

In Mr. Nisbet’s work, published in 1901, is a chapter on Burmese architecture which shows careful research, and he is perhaps the first writer on the subject who has drawn up a list of the oldest buildings in Pagán, giving the dates of their erection and the names of the kings by whom they were built. Many other works have appeared since the British Annexation of Burma, in some cases containing illustrations from photographs which add to our knowledge. Among these should be mentioned General de Beylie’s work, in which nearly one hundred pages are devoted to Burma, where he carried out some researches in the early part of 1907. The most important source of information at present, however, is given in the annual reports published by the Government of Burma, giving details of the

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1 "Embassy to Ava in 1795." London, 1800. 4to., 27 plates.
2 "Journal of Embassy to Court of Ava," 1827. 4to., plates.
3 "Mission to Court of Ava, in 1855." 4to., numerous illustrations.
5 "Notes on a Tour in Burma in 1902," by Fred. O. Oertel, F.R.I.B.A.
6 "Burma under British Rule and Before," by John Nisbet, D.C.E.C., 1901.
8 "Reports of the Superintendent of the Archaeological Survey, Burma, 1902-1908."
work required from year to year in order to preserve the existing monuments from further decay. These reports are supplemented in the India Office Library by a large number of photographs of the principal buildings with descriptive notes, giving in many cases the dates of their erection; it is to be hoped, therefore, that the subject will be taken up by some expert, and that the measured drawings of plans and sections, lists of which appear in the reports, may be published with reproductions of a selection of the fine series of photographs, some of which have been utilised in this work.

**TYPES OF RELIGIOUS BUILDINGS.**

The term Pagoda (in Burmese, Payá) seems to be applied by Europeans in Burma indifferently to two very different kinds of structure. Firstly: a bell-shaped stūpa raised on a series of terraces or platforms and crowned with a conical finial. To these the term *tsedi* or *zedi*, which corresponds with the Chaitya in Nepal and the Chedi of Siam, is sometimes given. They consist of solid masses of brickwork, with a small sealed-up chamber in the dome containing supposed relics of Buddha. Secondly: a temple which is square on plan with sometimes projecting porches or vestibules and, in the thickness of the walls, narrow corridors, the walls of which are decorated with frescoes or sculpture, with niches at intervals containing images of Buddha. Their roofs are pyramidal, consisting of a series of storeys of moderate height set back one behind the other and crowned with the curvilinear sikhara of the Indo-Aryan style.

This may be considered a sufficient indication that they derived some, at least, of their architectural features, as well as their religion, from India; but as this form was adopted by both Jains and Hindus in the north of India, from the mouths of the Indus to the Bay of Bengal in that age, it hardly enables us to point out the particular locality from which it was derived, or the time at which it was first introduced. It is, however, so far as we at present know, the only instance of its being found out of India Proper.

**CIRCULAR PAGODAS OR CHAITYAS.**

One of the earliest examples existing is that at Bu-payá, at Pagan, ascribed to the first years of the 3rd century, A.D., which although it has been repaired and renovated in later periods probably retains the original type of its design. The centre portion or bell is of bulbous form, raised on a triple base and
crowned with two features, the lower one a bold torus moulding, the upper one a conical finial, with cavetto sinkings between the bell and the torus and between the latter and the finial. A similar bulbous form is found in the pagoda of Ngakwe Nadaung in the province of Myingyan, dating from the 10th century, and in a less pronounced form in the Petleik-paya pagoda, where the torus becomes an important feature, we find here also the earliest example of the decorative bands carried about two-thirds up the bell, which has probably given rise to the idea that the upper part of the same represents the begging bowl of the mendicant monks.

There are, besides, three or four early examples in which a different outline is given to the bell. The Baubaugyi pagoda in Prome consists of a solid mass in brickwork of a cylindrical form, about 80 ft. high, raised on a triple base and surmounted by a finial carrying the Htil or umbrella, which is always in iron-gilt, a feature which crowns every pagoda, the total height being about 150 ft. It is ascribed to the 7th or 8th century, as also two other examples in Prome, the Payagyti and Payama pagodas. These, however, have convex outlines and resemble a bee-hive in shape. In all these cases the relative proportion between the height and the lower diameter is about 3 to 2, differing therefore greatly from the Indian tope. These are, however, exceptional examples, as from the 11th century, when the great development of Burmese architecture commenced, the Stupa or tope always took the form of a bell, sometimes of great size with decorative bands round, and raised on a series of three to five stages or platforms decorated with boldly projecting mouldings with square panels between. These platforms are generally either square on plan or have a series of projecting planes one in front of the other. In early examples the projections are greater than in later ones, but their appearance can best be judged from Plate XXXVII., representing the Shwedagon at Rangoon, where the four planes on each face have resulted in seven projecting angles at each corner of the platform. These projecting angles which occur so frequently, not only in the platforms, but sometimes in the superstructure, may have arisen from a desire to enrich and give more interest to the original square plan. Assuming A (Woodcut No. 444) to be the first structure, and B and C successive applications on each face,

1 *Ante*, vol. i. p. 70 and note 2.
2 There is one exceptional example in the Dhammayazika pagoda near Pagán, which is pentagonal.
the result on the plan would be three angle projections; an entrance porch D added on each face would give five angle projections, and so on. The platforms on which the structure was raised would necessarily follow the same plan, and its repetition in the superstructure would result in the sikhara of Hindu origin which has usually three angle projections. In the diagram here given the applied projecting plane on each face and its return are equal in dimension; this is not usually the case, and sometimes the former is only about half the latter. The nearest approach to the diagram is that shown in the temple of Vat Sisava at Sukhodaya in Siam (Plate XLVII.), where these angle projections form prominent features in the design. In the Shwe-Hmaudau pagoda (Woodcut No. 445) the plan of the platform is octagonal, and here the projecting planes, three in number on each face, have given five angles.

An instance of its introduction in the superstructure is shown in the Abhayadâna pagoda (Plate XXXVI.), where there are three projecting angles in the elaborate cornice, carrying the finial. In the Seinnyet pagoda a similar cornice is more complicated, having seven projecting angles and eight vertical fillets projecting one in front of the other.

The principal variations made in the design of the Zedi are those of the relative proportion of the bell to the rest of the structure, the outline of the same and its superstructure, and the decoration employed. Thus in the Lokânanda pagoda in Pagân, built by Anurahtâ in 1059, the bell is of immense size, being three-sevenths of the total height of the structure, including the triple base and finial, and that is generally the characteristic of the earlier examples, but, where occasionally employed to crown the sikharas of the square temple, as in the Abhayadâna temple, it is so small as to be scarcely recognisable. In the older pagodas of Pagân the several mouldings are all more or less convex in outline, but in later examples, and

1 These pagodas are generally described as polygonal on plan, a term which is misleading: multiplane would be more correct.
especially in those cases where the pagoda has from time to
time been built over and enclosed, as in the Shwe-Hmaudau and
Shwe-Dagôn, the converse outlines are alternated with concave
silhouettes which, whilst it lessens the vigour and boldness of
the design, gives it at times a certain elegance; so far has that
been carried that it is sometimes possible to determine the date
of the structure by its attenuation. This is shown in the Shwe-
Dagôn (Plate XXXVII.), where in the last rebuilding in 1768
the lower part of the bell was widely spread out, and the finial
or spire, originally conical with straight side, has been given
a concave outline.

The decorative treatment of the pagoda resolves itself into
three divisions.

(A) The boldly projecting mouldings of the sides of the
platforms or terraces, the introduction of square terra-cotta panels
with figure bas-reliefs between the upper and lower mouldings,
and in later examples the addition of an elaborate cresting.

(B) The carving of lotus leaves at the base of the bell and in
the upper part of the finial, the rich ornament applied to the
bell consisting of pendants on its upper surface, a deep moulded
ring round with bead festoons held in the mouths of gorgons and
other surface ornament above the ring. The pagodas of Seinnyet
and Petleik have in addition niches with figures of Buddhas on
the four sides facing the cardinal points, with enriched pediments
over-crowned with miniature storeys and sikharas.

And (C) additional decorative features such as ranges of small
pagodas on the lower terraces as in the Shwe-Dagôn and the
Shwe-Hmaudau, or at each angle of the several terraces, in many
cases taking the form of elaborate finials which in the Seinnyet
pagoda are of fine design.

Some of the pagodas have in the centre of each face a flight
of steps leading to the upper terraces, and on the level of the first
platform an archway similar to the examples in Boro-Budur.
In one or two cases also there are porches in front of each flight
of steps, cruciform in plan, similar to those of the temples of
Cambodia.

In the Sapada and Tamani pagodas, above the bell is a
square moulded plinth which by some authorities is thought
to be symbolic of the chamber in the basement containing the
Buddhist relics, and is in fact known as the “dhātu-garbha”
or relic-chamber. The feature is, however, of ancient origin,
as it is shown on the dâgabas in Kârlê and Ajantâ (ante, vol. i.,
Woodcuts Nos. 70 and 71). It forms an essential feature in
all the Sinhalese Dâgabas, and as Sapada, the builder of the
pagoda bearing his name, was a Buddhist monk from Ceylon,
he probably introduced it into Burma.
Two other pagodas of exceptional form in and near Sagaing exist, the Tupayón or Stūpārāma and the Kaung Hmaudau: the former was built in the 15th century by Narapati, King of Ava. Its plan is circular, and it consists of three storeys set back one behind the other with low pitched roof over the two lower storeys and a flat weathered top. On the vertical sides of the three storeys are projecting features like dormer windows, with a niche sunk in each; there are forty-eight of these on the lower, forty-two on the middle, and thirty-six on the upper storey. The Kaung Hmaudau pagoda, not far from Mingûn, on the same side of the river, bears a close resemblance to the Indian topes; the mass of the dome, according to Colonel Yule,1 is about 100 ft. diameter. It is taller than a semicircle—which would indicate a modern date—and stands on three concentric bases, each wider than the other. Round the whole is an enclosure, consisting of 812 stone posts, each standing 4 ft. 6 in. out of the ground, with receptacles in their heads for lights, each head being hollowed out to hold the same, and divided into four quadrants by four stone gateways (Woodcut No. 446). An inscription, on a white marble slab, records the erection of this pagoda between the years 1636 and 1650. This fixes its date, and is curious as showing how little real change had occurred during the eighteen centuries which elapsed between the erection of the tope at Sânchi (ante, vol. i., Woodcuts Nos. 12-14) and the 17th century.

Perhaps the most important pagoda in the Burmese Empire

1 'Mission to Ava,' p. 65.
is the great Shwe-Hmaudau at Pegu, of which a plan and elevation are given in Symes' account of his embassy to Ava. As will be seen from the plan (Woodcut No. 445), it deviates from the usual type, which is exclusively used in the edifices of this class hitherto described, having an octagonal base together with those elaborated multiplane forms which are affected by all the Hindū builders of modern date. It returns, however, to the circular form before terminating, and is crowned, like all Burmese buildings of this class, by an iron Htī richly gilt. Another peculiarity is strongly indicative of its modern date, namely that around its base is a double range of miniature pagodas—a mode of ornamentation that subsequently became typical in Hindū architecture—their temples and spires being covered, and, indeed, composed of innumerable models of themselves, clustered together so as to make up a whole. As before remarked, something of the same sort occurs in Roman art, where every window and opening is surmounted by a pediment or miniature temple end, and in Gothic art, where a great spire is surrounded by pinnacles or spirelets; but in these styles it is never carried to the same excess as in Hindū art.

The building stands on two terraces, the lower one about 10 ft. high, and 1391 ft. square; the upper one, 20 ft. in height, and 684 ft. square; from the centre rises the pagoda, the diameter of whose base is 395 ft. The small pagodas surrounding the base are 27 ft. high, and 40 ft. in circumference: they are in two tiers, the lower one of 75 and the upper 53, in all 128; while the great pagoda itself rises to the height of 324 ft. above its terrace, or 354 ft. above the country, thus reaching a height about equal to that of St. Paul's Cathedral: while the side of the upper terrace is only 83 ft. less than that of the great Pyramid.

Tradition ascribes its commencement to two merchants, who raised it to the height of 12 cubits, at an age slightly subsequent to that of Buddha himself. Successive kings of Pegu added to it from time to time, till at last it assumed its present form, most probably about three or four centuries ago.

The next in importance, so far as we know, is the more generally known Shwe-Dagôn pagoda at Rangoon (Plate XXXVII.), a building very similar in dimensions to the last named, and by no means unlike it, except that the outline of the base is cut up to even a greater extent, and the spire more attenuated—both signs of a comparatively modern date.

Its history in fact follows that of many of the pagodas of Burma: originally it is said to have been only 27 ft. high and

Literally "Golden great god."
to have attained its present height and dimension by repeated casings many feet in thickness. About the middle of the 15th century the height of the pagoda was raised to 129 ft., terraces were built round the hill, and the top—a platform—was paved with flagstones. In 1768 it reached its present height of 321 ft., not including the new Htf, which was presented by King Mindôn Min; the platform now measures 900 ft. by 685 ft. and rises about 165 ft. above the base of the hill. On the top of the ground storey of the pagoda, the plan of which is multiplane with seven angular projections, are several miniature pagodas as at Pegu.

There is, however, no essential difference between the two buildings, and this is principally interesting as leading us one step further in the series from the solid hemispherical mound to the attenuated spire, which, both in Burma and Siam, is the modern form usually assumed by these edifices, till they lose all but a traditional resemblance to the buildings from which they originally sprang.

The general appearance of these can be judged from the illustration (Plate XXXVII.) on the right and left of which are smaller pagodas which, with numerous other structures, are built round the platform. These are seen in the following woodcut (No. 447), where is also shown one of the leogriifs which may be considered as the last lineal descendant of those great human-headed winged lions that once adorned the portals at the palaces at Nineveh and which there served a definite constructional purpose, whereas here they are simply isolated features.

The Shwe-Daûn pagoda, like all the more important ones, is said to have been commenced about 2300 years ago, or about the era of Buddha himself; its sanctity, however, is owing to its containing relics, not only of Gaudama, the last Buddha, but also of his three predecessors—Buddha having vouchsafed eight hairs of his head to its two founders, on the understanding that they were to be enshrined with the relics of the three former Buddhas, where and when found.1 After numerous miraculous indications, on this spot were discovered the staff of Kakusandha, believed to have lived some 3000 years B.C., the water-dipper of Konâgamana, and the bathing garment of Kassapa, which, with the eight hairs above mentioned, are enshrined within this great pagoda.2 Originally, however, notwithstanding the value of its deposit, the building was small, and it is not more than a century and a half since it assumed its present form.

1 Ante, vol. i. p. 63.
2 'Asiatic Researches,' vol. xiv. p. 270. In their Payâs, Chaîtyas or Stûpas the Burmese place Kaukasan or Kakusandha on the south, Kathaba on the west, and Gotama on the north.—Conf. ante, vol. i. pp. 230, 277; 'Buddhist Art in India,' p. 195.
A crowd of smaller pagodas of all sizes, from 30 ft. to 200 ft. in height, surrounds the larger one; in fact there is scarcely a village in the country that does not possess one or two of these structures, and in all the more important towns they are numbered by hundreds; indeed, they may almost be said to be innumerable. They are almost all quite modern, and so much alike as not to merit any distinct or separate mention. They indicate, however, a great degree of progressive wealth and power in the nation, from the earliest times to the present day, and an increasing prevalence of the Buddhistic system. This is a direct contrast to the history of Ceylon, whose glory was greatest in the earliest centuries of the Christian Era and was losing its purity at the time when the architectural history of Burma first dawns.
upon us. Thus the buildings of one country supplement those of the other, and present together a series of examples of the same class, ranging over more than 2000 years, if we reckon from the oldest dāgabas in Ceylon to the most modern in Burma.

Another example of importance, the Shwe-zigon pagoda near Pagán, might here be included, especially as, although the original pagoda founded in 1094 was, according to Mr. Nisbet, built over and increased in 1164, it at all events is less attenuated than either the Shwe-Tshandau or the Shwe-Dagôn. It retains also in its three lower storeys, with terraces and processional paths round, the primitive form of the early dāgabas.

At a place called Mingûn, about half-way between the former capital of Amarapura and the present one at Mandalay, are two pagodas, which are not without considerable interest for our present purposes; if for no other reason, at least for this—that both were erected about a hundred and twenty years ago, and show that neither the forms nor aspirations of the art were wholly extinguished even in our day. The first, the Sinbyumê pagoda, is circular in form, and was erected in the year 1790, in the reign of King Bodauhpayâ (1781-1819). As will be seen from the woodcut (No. 448), it is practically a dāgaba, with five concentric procession-paths. Each of these is ornamented by a curious serpent-like balustrade, interspersed with niches containing, or intended to contain, statues of Buddha, and is accessible by four flights of steps facing the four cardinal points. The whole is surrounded by a low circular wall 750 ft. in diameter, said to represent the serpent Ananta. Within this is a basement, measuring about 400 ft. across, and this, with the procession-paths and dāgaba on the summit, make up seven storeys, intended, it is said, to symbolise the mythical Mount Meru.¹

The building was severely damaged by the earthquake of 1838, but was restored by King Mindôn Min in 1874; above the central tower shown in the woodcut (No. 448) a low storey has been built with projecting dormers and niches in them as in the Tupayon pagoda and, crowning the same, an octagonal base in two tiers supporting the bell, the finial with rings round and the Htf; a series of five consecutive entrance porches

¹ The above particulars are abstracted from a paper by Col. Sladen in the 'Journal of the Royal Asiatic Society,' vol. iv. (N.S.) p. 406, with remarks by Col. Yule and others. It is curious that there is a discrepancy between the native and the European authorities as to the number of storeys—not mechanical, of course, but symbolical; whether, in fact, the basement should be counted as a storey, or not. The above I believe to be the correct enumeration. We shall presently meet with the same difficulty in describing Boro-Budur in Java.
also rising one behind the other have been carried up to the height of the central tower.

It will be recollected that, when speaking of the great dâgabas of Anurâdhapura in Ceylon, it was pointed out (ante, vol. I. p. 230) that they had three procession-paths round their bases, ascended in like manner by flights of steps opposite the four cardinal points of the compass. It is interesting to observe here, after a lapse of 2000 years, and at a distance of nearly 1500 miles, the changes have been so small. It is true the number of procession-paths has increased from three to five, and the terraces become relatively much more important than in the older examples; but, barring this and some changes in detail, the monuments are practically the same, notwithstanding all the curious varieties that have sprung up in the interval.

The other building known as the Mingûn-payâ was commenced by Bodâuhipayâ, who spent twenty years over it, and died in 1819, leaving it incomplete. It would seem to have been an attempt to revive the old square forms of Pagân, in the same manner as the other was intended to recall memories of the older forms of early Indian Buddhism. "It stands on a basement of five successive terraces, of little height, the lower terrace forming a square of 450 ft. From the upper terrace starts the vast cubical pile of the pagoda, 230 ft. square in plan, and rising, in a solid mass, to the height of about 100 ft., with slightly sloping walls, Above this it contracts in successive terraces, three of which had been completed, raising the mass to a height of 165 ft., at the time the work was abandoned."¹ From a model standing near, it is inferred that, if completed, it would have risen to the height of 500 ft.; it is even now a solid mass containing between 6,000,000 and 7,000,000 cubic ft. of brickwork. Had it been carried out, it would have been the tallest building in the world. It was, however, shattered by an earthquake in 1838; but, even in its ruined state, is as large and imposing a mass of brickwork as is to be found anywhere.² Since the pyramids of Egypt, nothing so great has been attempted, and it belongs to the 19th century!

Belonging to the same century and in its way a remarkable building is the Kyauktaugyi temple at Amarapura, built in 1847 A.D. by King Pagân Min on the model of the Ānanda at Pagân. The illustration (Plate XXXVIII.) shows that the temple is raised a few feet from the ground so as to allow of a broad flight of steps in front of the principal front, and that instead of the two ranges of windows on the ground storey, as in the Ānanda, are lofty doorways which give great import-

¹ 'Mission to the Court of Ava,' p. 169.
² A view of this ruin will be found in Yule's 'Mission to Ava,' plate 23.
ance to the entrances. The five terraces and the sikhara with finial which, with the Ht, crowns the structure are in their proportions and in the simplicity of the mouldings almost equal to those of the Ananda. It is quite certain that here in England any attempt to copy a cathedral of the same period as the Ananda in the 11th century, such, for instance, as St Alban’s or Durham, would be a miserable failure compared with the 19th century example of the Kyauktawgyi temple in Amarapura.

Two other buildings might here be mentioned, firstly, the so-called Arakan pagoda, south of Mandalay, which was built by Bodauhpaya in 1785 to contain the brass statue of Gaudama carried off by him from Arakan. It is really a square temple on the plan of the Ananda, with four great vestibules projecting on each side, the roof being a seven-storeyed pyathat in brick.

And secondly the Kuthodaw or “thousand and one pagodas.” This consists of an immense sedi of the usual type, which was built by King Mindon Min, with three parallel rows round of small pagodas or shrines, all erected between 1857 and 1864 to shelter the 729 marble slabs on which are engraved in Pali the Buddhist scriptures. The four entrance gates are evidently inspired by those of Cambodia, consisting of an entrance vestibule with side wings, the vestibule or hall being surmounted by a tower in two storeys set back one behind the other.

**Square Temples.**

The earliest example of the second class of pagoda with square plan and corridors in the thickness of the walls is that of Lemyet-hnâ at Prome, attributed to the 8th and 9th centuries. It is about 24 ft. square and is built in brick with a solid pier 8 ft. square in the centre surrounded by a corridor 4 ft. wide; on each face of the pier are bas-reliefs carved in stone which are lighted from four entrance doorways, one on each side of the temple. These doorways still preserve the arches built with radiating voussoirs of brick which, laid flatwise, dispensed with the need for centering.

The sketch (Woodcut No. 449) shows that the bricks of the Burmese arches, which measure generally about 12 in. by 8 in. and 3 in. thick, formed a thin flat ring of voussoirs which, bedded in mortar, would remain in position till the ring was completed. This was the system employed in the vaulted passages leading to tombs in Egypt dating from 3500 B.C., in the drains of the Assyrian palaces, at a later date by the Sassanians at Serbistân, Firuzâbâd and Ctesiphon in Persia, and is said to be found in Chinese Turkistan. It is probable that the origin and development of these constructive
methods is due to the material employed, brick, which being of small dimensions necessitated a system of construction entirely different from that which obtained in India\(^1\) and other countries where stone was in abundance.

It would be a curious speculation to try and find out what the Hindús and Jains in western India would have done had they been forced to use brick instead of stone during the 11th and 12th centuries, which was the great building epoch on the Irâwadî and in Gujârât. Possibly they would have arrived at the same conclusion, in which case we can only congratulate ourselves that the westerns were not tempted with the fatal facility of bricks and mortar.

It is, however, remarkable, considering the close connection between India and Burma, so far as architectural style is concerned, to find the arch and vault employed systematically throughout the latter country in buildings many of which are said to have been built by Indian workmen (though this term may have been generally employed to signify a foreign origin), and further to note that those features appear only when they became an actual necessity, as in doorways requiring wide openings, or the covering over of corridors and small internal chambers with a permanent incombustible material to carry these roofs. It should here also be pointed out that those roofs were, as a rule, in the square temples, not flat terraces but assumed an ogee section following the rise of the vault. This is clearly shown in the Ánanda (Plate XLI.), the Kyauktawgyî (Plate XXXVIII.), and in the Abhayadâna, south of Pagân (Plate XXXVI.). In the latter illustration is shown on the left the side entrance doorway to the vestibule; in this case there is only one ring of voussoirs, but there are other examples in which two concentric rings of voussoirs were employed. In the temple of Nathlaung-gyaung, built by Taungthuâgyî in the 10th century, the upper ring is carried over the centre portion only of the lower ring, the haunches of the arch up to two-thirds of the height being filled with brickwork laid in horizontal courses. As a rule the span of these arches is only about 6 ft., but in the temple of Payâtaung, in Old Prome, there is an arch of apparently about 16 ft. span in which there are three concentric rings of voussoirs. Although the Burmese architects fully recognised the constructive value of the arch, it does not appear to have been held in high esteem by them as a decorative feature, and in consequence they masked it by a coat of stucco as in the Abhayadâna pagoda (Plate XXXVI.), or by some applied decoration which in many cases has now fallen off,\(^1\)

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\(^1\) Of course excepting the arches in the tower at Bodh-Gayâ, which, in Fergusson’s opinion, were introduced by these very Burmese in 1305. See ante, vol. i. pp. 77-79.
exposing the arched construction behind it. An illustration of this can be seen in Plate II. of Yule’s work, representing the Temple of Sembyo Koo (Tšülámānī), where half of the applied decoration has fallen off the left hand side of the doorway. That which remains on the other side shows arched forms twisted into a variety of curves, which, like those of the window pediments of Nan Payā (Plate XXXIX.), have no constructional value. The natural head of a niche sunk in the wall should either be a semicircular or pointed arch, but few of the niches in the corridors of the Ānanda temple are thus terminated; they are generally shapeless and in a few cases are quatrelobed. In fact the Burmese would seem to be the only people who, having discovered the constructional value of the arch proper and known how to build it with radiating voussoirs, not only never employed it as a decorative feature, but seemed to be ashamed of its invention, and endeavoured to hide or mask it.

In the vaulting over of these corridors, which in the Ānanda temple are from 7 to 8 ft. wide, the Burmese builders adopted a semi-pointed barrel vault, the section of which was similar to that of the flying buttress of a cathedral, except that it was rounded off at the top. This vault, which arose from the outer to the inner wall of the corridor, was a much stronger form than that employed by the Romans with their semicircular barrel vaults, though perhaps not of so agreeable a form. The adoption of the semi-pointed barrel vault (Woodcut No. 450) lessened the thrust, so that it is not surprising to find that nearly all these vaults exist down to the present day, suffering only from the percolation of rain and the growth of trees and shrubs on the top. Over the central corridors or vestibules of the Ānanda temple a pointed arch barrel vault is employed of similar pitch to that shown in the woodcut (No. 453), representing the section of the Thatpyinnyu temple. In a section given by Forchhammer of the Dukkantein temple in Mrohaung, the upper chamber has a semicircular barrel vault, but there the walls were of great thickness. It has already been noticed that the roof of all these square temples was as a rule laid direct on the vault; this was the case with the Lemyet-hnā temple already mentioned, and in the Bèbè temple, both in Prome, and also in the Patothamya temple in the province of Myingyan, the two latter ascribed to the 10th century. The form of these vaults and roofs are shown in Woodcut No. 450.

The two most interesting temples of this class are those at Nan Payā and Nagayon just south of Pagān; the first is considered to have been built by King Anaurāhā about 1050 and the second by Kyantsittāh in 1064. According to General de
Beylié the plan of Nan Payâ is about 33 ft. square, with a
central and four other piers inside, each measuring 6 ft. 6 in.
square, carrying the roof; externally this is stepped back and
in the centre is a square moulded plinth with a dormer window
on each side through which light is thrown on to the images
inside, the whole being crowned with a sikhara. The temple
is preceded by a vestibule 24 ft. wide and 18 ft. deep, which
is lighted by a window on each side. On each of the other
sides of the temple are three windows flanked by pilasters
holding a pediment of enriched design (Plate XXXIX.)
beating considerable resemblance to those in Cambodia. The
filling of the window is said to be in stone, which is the case
in that of the Kyaukku temple, but in this case the jointing
suggests a brick material. The plan of Nagâyôn is similar to
that of Nan Payâ, but there are five windows on each of the
three sides. Greater importance is also given to the vestibule,
which consists of central and side aisles, the former of greater
height so that the section resembles that of a Christian church,
without, however, any clerestory windows, the vestibule being
lighted by windows in the side aisles.

Both of these temples are of considerable importance on
account of the rich ornament carved externally and internally.
The design and style of this ornament is similar to that which
is found in the lower storey of the temple of Kyaukku in the most
northern part of Pagân. This was considered by Forchammer
to be a remnant of North Indian Buddhism, which existed
in Burma before the introduction of the Southern Buddhist
school from Thatôn. Plate XXXIX. represents the rich type
of ornament carved on the internal piers of Nan Payâ; the
upper portion or frieze consists of gorgon heads or Kûtti-mukhs
carrying beaded festoons and pendants. This is repeated as
an external frieze at the same temple, as also at Kyaukku and
Nagâyôn. In later work, and more particularly as a decora-
tion round the bell-shaped dâgabas of the sâdis, it is constantly
employed. The decoration of the lower part of the pier
(Plate XXXV.) consists of the gorgon head to a larger scale,
carrying foliage arranged to form a pendant, with bead
pendants between. A somewhat similar decoration of pendants
is found on pilasters—as on those of the window at Nan Payâ
(Plate XXXIX.) and on the angle pilasters of many of the
great temples in Pagân. The gorgon heads, beaded festoons
and pendants are occasionally found on Chinese bronzes, easy
of importation, so that it may have been from China or Lhâsa
that these decorative features were taken and reproduced, not
only in Burma, but in Cambodia and Jáva.

The temples of Nan Payâ and Nagâyôn are generally con-
sidered to have been the prototypes of the Ānanda, but, as has already been pointed out, the temples of Lemyet-hnā, Bēbē-payā and Patothamya, of still earlier date, have all the same plan, with internal corridors, from which it follows that there already existed, long before the conquest of Thatōn in 1057, a type of temple which was adopted by King Anauratā as his model for the Ānanda. It is, however, from this period that the great development took place in Burmese architecture resulting in the magnificent series of examples not only of the square temples but of the pagodas, a development which lasted till the invasion of Pagān by Kublai Khān in 1284, the last building of importance erected during this period being the pagoda of Mangalacheti, built by Taruk-pyemin about 1274 A.D.¹

Before passing on to a description of the principal temples at Pagān and the Burmese monasteries, there are two other classes of religious structures, the Thein and the Pitakat-Taik, which might here be included.

The Thein or ordination hall for priests would seem to correspond with the Bōt of Siam, except that they are not as a rule found in the temple enclosure, as in the latter country, and there are very few examples. The Upali-Thein in Pagān, dating from the 13th century, is rectangular on plan and is divided into nave and side aisles by arcades the arches of which are said to be well built. The centre aisle or nave is loftier than the side aisles, and in section the structure is similar to that of a Chaitya temple or of a Christian church, except that there are no clerestory windows. The summit of the roof is decorated with terra-cotta ridge tiles, and in the centre is an attenuated dāgaba. On the top of the nave and aisle walls is a cresting or pierced parapet similar to that which crowns the terrace walls of the pagodas. The interior is said to be decorated with fine and brilliant frescoes. There is a second Thein at Pegu dating from 1476.

The Pitakat-Taik or sacred library at Pagān was built by Anauratā in 1057 to house the Buddhist scriptures which he brought away from Thatōn. It was probably built by the masons whom he brought over from Thatōn, and was presumably a copy of the original library there. The plan of the structure is square with apparently, judging from the roof, four parallel corridors round the central chamber or cell. The illustration (Plate XL.) shows that externally the ground

¹ For an account of this temple and its interesting enamelled tiles, see 'Veröffentlichungen aus dem Königl. Museum für Völkerkunde,' Bd. V. (Berlin 1897); de Beylié calls it Sun Min Dgy, and remarks, ‘il a éveillé les convoitises d'archéologues peu scrupuleux qui ont arraché de nombreux bas reliefs en faïence.’—'L'Architecture Hindoue en Extrême Orient,' pp. 259-261.
storey is of moderate height, and that the roof consists of four storeys, set back one behind the other, with ogee roofs between resting direct on the vaults of the corridors (see Woodcut No. 450). The antefixa and cresting above the eaves of the roof are apparently copies of the carved woodwork which is found on the Pyâthat of a Kyaung or monastary, and in fact the whole structure bears some resemblance to a Pyâthat when built in brick instead of in wood, except that it is only about half the height. The corridors are lighted through perforated stone windows on three sides. On the fourth or entrance front are three doorways with approaches between balustrades with carved terminations in front, like those in Fig. 455 and 456. This suggests that in Thatôn the original library was raised a few feet above the ground as a precaution against inundations, and that the masons who built this one reproduced the balustrade and termination in front of the doorways as a necessary approach. The feature crowning the building is called a dubika in the Burmese archaeological report, and is similar to the finial of the Pyâthat of the king’s palace at Mandalay (Woodcut No. 455). In later examples of the Pitakat-Taik and of the Shwe-daik or sacred treasury at Amarapura and Mandalay, the buildings are raised on a platform with flights of steps to the entrance door. They are either in one or two storeys, and with flat roofs.

THATÔN OR THAHTÜN.

The earliest really authentic notice we have of these countries is in the ‘Mahâwansa.’ It is there related that, after the third convocation—B.C. 246—Asoka despatched two missionaries, Sono and Uttaro, to Suvarna-Bhûmi, the Golden Land, to carry the glad tidings of the religion of the Vanquisher. It is now perfectly ascertained that this place was almost certainly the Golden Chersonese of classical geographers, situated on the Sittang river, and now called Thatôn, about

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1 Turnour’s ‘Mahâwansa,’ p. 71. In Burma the two missionaries are known as Thawna and Uttara.
forty miles’ travelling distance north from Martaban.¹ Since it ceased to be a place of importance, either by the silting up of the river or the elevation of the land, it is now no longer a port; but there can be little doubt that for some centuries before and after the Christian Era it was the emporium through which a very considerable portion of the trade between China and the western world was carried on. The line of passage was apparently across the Bay of Bengal from the deltas of the Krishnâ and Godâvârī; and it was to this trade route that we probably owe the rise and importance of Amarâvatī till it was perhaps superseded by the direct sea-voyage from Gujarât and the west coast of India in the 6th century. The place was sacked and entirely destroyed, according to Sir A. Phayre, about A.D. 1050, by Anaurâhta, King of Pegu; but long before that time it had been dwindling, from the growing importance of Pegu or Hansâwatī, which was founded about A.D. 633.²

The only description of its ruins is by St. Andrew St. John, in the second volume of the ‘Phœnix’ above referred to; but they seem even now to be very extensive, in spite of neglect and consequent decay. The walls can still be traced for 7700 ft. in one direction by 4000 ft. in another, enclosing a regular oblong of more than 700 acres. In this enclosure are several old pagodas, some, unfortunately, recently repaired, but all of a form we have not yet met with, though we shall presently when we come to speak of Jâva.

The principal pagoda here, like all the others, is built of hewn laterite. Its base is a square, measuring 104 ft. each way, and 18 ft. high; the second storey is 70 ft. square and 16½ ft. high; the third 48 ft. square and 12 ft. high. On this now stands a circular pagoda, making up the whole height to 85 ft. Mr. St. John fancies this circular part may be much more modern than the rest, but he adds, “the whole face of the pagoda has been carved in patterns; but the most remarkable part is the second storey, to which access is given by four flights of steps, one in the centre of each face. The whole was apparently adorned with sculptures of the most elaborate character.”

There seem to be no data to enable us to fix with certainty the date of this or of other similar pagodas in this place, and no photographs to enable us to speak with certainty as to their details, which is to be regretted, as it is just in such an old city as this that we may expect to find those early forms which

may explain so much that is now unintelligible in subsequent examples. Thatōn was coeval with Anurādhapura in Ceylon, and if examined with care, might do as much for the square form of temple as the island capital may do for the round form. Their greatest interest would, however, arise from the light they might throw on the square temples of Pagan and other Burmese cities, whose origin it has hitherto been impossible to explain. Meanwhile it is a fact worth bearing in mind that we find here square three-storeyed pagodas, which certainly were erected before A.D. 1080, when the city was destroyed, and possibly before the 7th century, when it was practically superseded by the rise of the new city and kingdom of Pegu.

Prome.

If we might trust the Burmese annals, Prome¹ was founded by a King Duttabaung as his capital as early as the year 101 of Religion, or after the Nirvāna of Buddha.² In other words, it seems to be assumed that Buddhist missionaries from the second convocation held under Kālasoka, in the previous year, established themselves here, and introduced the new religion into the country.³ The real political capital of the country at that time seems to have been Tagaung, half-way between Ava and Bhāmo, on the Upper Irrawaddy.⁴ Prome, however, seems to have continued the religious capital till A.D. 107, when the two capitals were amalgamated, under the name of Old Pagan on the northern site, to be again transferred to New Pagan, below Ava, about the year 847.⁵ Upper Pagan seems to have been visited by Captain Hannay in A.D. 1835, and by others subsequently, and the remains are described as extensive, but too much ruined and obscured by jungle to admit of scientific investigation.

Many of those at Prome have been photographed by the Government, and other illustrations are given in de Beylié's book, together with the dates to which they are ascribed, those of de Beylié being earlier than others. Three of the pagodas,

¹ This is the European name, it is called Pyi or Pr in Burmese.—Phayre, loc cit. p. 10.
² Crawford's 'Embassy to Ava,' vol. ii. p. 277. The "year of Religion" or "Buddhavarsa" era, like the Sinhalese era, dates from 543 B.C., but this reckoning appears to be of comparatively late origin, the earlier dates being reckoned from 482 B.C., so that the date here mentioned would belong to 382 B.C.—'Journal of the Royal Asiatic Society,' 1909, pp. 326ff. and 344f. The present Burmese Sakkara era commences in A.D. 639, on the sun's entrance into Aries.
³ The holding of this convocation 100 years after the death of Buddha is doubtful, and missionaries are mentioned only in connection with the Council held by Asoka 218 years after the Nirvana, or in 246 B.C.
⁴ Yule, 'Mission to Ava,' p. 30.
⁵ Loc cit. p. 32.
the Baubaguayī, Payagyī and Payama, attributed to the 7th and 8th centuries, are by de Beylié put down as 6th century—certainly too early; the square temple at Lemyet-hnā, also at Prome, is ascribed to the 9th century, that is to say, long before the introduction of the southern school of Buddhism from Thatōn.

PAGĀN.

Practically the architectural History of Burma begins with the foundation of Pagān in the middle of the 9th century, and as it was destroyed by the Chinese, or rather the Tartar army of Kublai Khān, in 1284, its glory lasted little more than four centuries. During that period, however, it was adorned by a very extensive series of monuments, most of which still remain in a state of very tolerable preservation.

It will thus be observed that the rise and fall of Pagān are, as nearly as may be, coincident with that of Polonnaruwa, in Ceylon; but the Burmese city seems to have excelled the Ceylonese capital both in the extent of its buildings and in their magnificence. Their differences, too, both in form and detail, are very remarkable, but, if properly investigated, would throw light on many religious and ethnographical problems that are now very obscure.

The ruins of Pagān extend about 8 miles in length along the river, with an average breadth of about 2 miles, and within that space Colonel Yule estimates there may still be traced the remains of 800 or 1000 temples. Several of these are of great magnificence, and are kept in a state of repair; but the bulk of them are in ruins, and the forms of the greater part hardly distinguishable.

Of these, one of the most remarkable is the Ānanda, built by Kyantsitthā (1057–1085). As will be seen from the following plan (Woodcut No. 451), it is a square of nearly 200 ft. on each side, with projecting porticos on each face, so that it measures 280 ft. across each way. Like all the great pagodas of the city, it is several storeys in height, the two lower ones are square with square turrets at each end, the three above have seated lions at each angle, as shown in Plate XLI. The plan of these storeys, as also the base of the sikhara, follows that of the latter, being set back at the angles for reasons which have already been suggested. The sikhara is crowned with the conical finial and Hti. The setting back of each storey one behind the other gives the whole a pyramidal form, which in this case rises to the height of 183 ft.

1 Yule's 'Marco Polo,' vol. ii. pp. 84, et seqq.
Internally, the building is extremely solid, being intersected only by two narrow parallel corridors; but in rear of each projecting transept is a niche artificially lighted from above, in which stands a statue of Buddha more than 30 ft. in height. This is the arrangement we find in the Chaumukh temple at Pālitānā and at Rānpur (Woodcut No. 288), both Jaina temples of the 15th and 17th centuries, and which it is consequently rather surprising to find here as early as the 11th century (A.D. 1066); but the form and the whole of the arrangement of these temples are so unlike what we find elsewhere that we must be prepared for any amount of anomalies.

The plan of the Dhammayangyi built at Pagan by Narathu in 1160 A.D. is almost identical with the Ananda, but slightly larger, measuring 292 ft. across each way. With the exception of a deep recess facing the entrance in which the statue of Buddha is placed, the inner corridor has been bricked up. The other three statues are brought forward into the vestibules of the other three transepts. Great similarities exist also in the design, there being two ranges of windows on the ground storey, one above the other, as in the Ananda. The roof consists of five storeys set back one behind the other, but being all of the same height are very monotonous in effect, and are very inferior to the Ananda roof, where the three upper storeys of
less height give scale to the two lower ones; only a portion of the sikhara remains.

Next in importance to the Ananda is the Thatpyinnyu, "the Omniscient," erected about the year 1144 by Alaungssthan, the grandson of Anaurahtag. It is very similar to the Ananda in dimensions and plan, except that it has only one great vestibule instead of four, and only one corridor on the ground storey, the centre portion being solid brickwork. The height of the temple is 201 ft., the highest in Pagân. The additional height in this temple, as also in that of the Gaudapalin and Tsulamani (the Sembyo Koo of Yule) temples, both built by Narapatisitha in 1186 and 1196 respectively, arises from an important change in the design. The third storey is raised to a height almost equal to that of the ground storey, and in the Thatpyinnyu temple, as shown in the section (Woodcut No. 453), contains a central cell and a corridor round. To this upper storey there are porches on each side, and on the entrance front a vestibule as well. The access by flights of steps to this is shown in the section taken from Yule, and horizontal terraces exist in place of the ogee roofs of the Ananda and Dhammayangyi temples. A similar access by external flights of steps opposite the porch existed on one of the sides of the Tsulamani, but not in the illustration (Plate XLII.), where the ramps have more the appearance of flying buttresses. This view suggests in its effect a resemblance to the portal of a French cathedral, and it gives some idea of the rich decoration employed. The three planes, or orders, as they are technically called, of the pointed arch recall the European subordination of arches, but the complicated assemblage of arched forms above in the gable end, all built in brick covered with stucco, show how this material lends itself to

1 Alaungssthan, or Alungsthan, reigned from 1085 till 1160. He restored Letyymengnán to the throne of Arakan and caused the temple of Bodh-Gaya to be restored in 1105.—_Ante_, vol. i. p. 78.
decoration of the most debased character. The decoration of the pilasters of the ground storey and the frieze which reigns throughout the same are repetitions of the ornament of the Nan Payâ and Kyaukku temples already described. The general appearance of these temples will be understood from the annexed view (Woodcut No. 454) of the Gaudaupalin and their general arrangement from the section of the Thatpyinnyu temple.

1 In Pali Thatpyinnyu is Sabbannû.
(Woodcut No. 453). A design with slight modifications is shown in Plate XLIII., representing the Thitsawada temple in Pwaźaw (1080). Here the plan is of smaller dimensions, but great height is obtained by grouping the features closer together; without looking too close at the detail, it is singular how close a resemblance these two views bear to a Spanish or Italian church of the early Renaissance period. There is one other temple which should be mentioned here, viz., the Mahābaudī, built by Nandāungmya Min in 1198 A.D. in imitation of the Bodh-Gayā temple in Bengal (ante, vol. i. Woodcut No. 19). The temple is square, having a lofty ground storey, with two or three ranges of windows or niches; in the centre, but set back to leave a terrace round, is a lofty pyramidal tower in seven storeys, bearing a close resemblance to those of the Bodh-Gayā, but with small dorner windows in the centre of each side; the tower is crowned with the usual finial and Htf. It is the only example of its kind in Burma, and does not seem to have any influence on subsequent examples.

The first thing that strikes the enquirer on examining these temples is their remarkable dissimilarity with anything on the continent of India. They are not stūpas in any sense of the term, nor are they vihāras. The one building we have hitherto met with which they in any way resemble is the seven-storeyed Prasāda at Polonnaruwa (Woodcut No. 137), which, no doubt, belongs to the same class. It was thought that the square
pagodas at Thatón, when properly examined, may contain the
eplanation we are searching for. They evidently were not
alone, and many other examples may still be found when
looked for. On the whole, however, I am inclined to believe,
improbable as it may at first sight appear, that their real
synonyms are to be found in Babylonia, not in India. The
Birs Nimrûd was, like them, a seven-storeyed temple, with
external stairs, leading to a crowning cell or sanctuary. Of
course, during the seventeen centuries which elapsed between
the erection of the two buildings, considerable changes have
taken place. The lowest stairs in Burma have become internal;
in Babylonia they were apparently external. At the head of
the third flight at the Birs, Sir Henry Rawlinson found the
remains of three recesses. At Pagán these had been pushed
into the centre of the third storey. The external flights were
continued on the upper three storeys at both places; but in
Babylonia they lead to what seems to have been the real
sanctuary, in Burma to a simulated one only, but of a form
which, in India, always contained a cell and an image of the
deity to whom the temple was dedicated.

It may be asked, How is it possible that a Babylonian form
should reach Burma without leaving traces of its passage through
India? It is hardly a sufficient answer to say it must have
come vid Tibet and Central Asia; because, in the present state
of our knowledge, we do not know of such a route being used.
It is a more probable explanation to say that such monuments
may have existed in the great Gangetic cities, but, like these
Burmese examples, in brick and plaster; and have perished,
as they would be sure to do in that climate, and where hostile
races succeeded the Buddhists. But, however it may be
eventually accounted for, it hardly appears to me doubtful that
these Burmese seven-storeyed temples are the lineal descendants
of the Babylonian examples, and that we shall some day be
able to supply the gaps which exist in their genealogy.

Meanwhile one thing must be borne in mind. The earliest
capital of the Burmese was Tagaung in the north, and their
real affinities are with the north. They got their religion by
the western route from Bengal, but it was grafted on a stem
of which we know very little, and all whose affinities have yet
got to be traced to their source.

MONASTERIES.

As Burma is a country in which the monastic system of
Buddhism flourishes at the present day to the fullest extent,
if we had more information regarding its monasteries, or
kyungs as they are called, it might enable us to understand the
arrangement of the older ones. The travellers who have visited the country have been silent on the subject, principally because the monasteries are, in almost all instances, less magnificent than the pagodas to which they are attached, and are, with scarcely an exception, built of wood—a practice destructive of their architectural character, and also depriving them wholly of that monumental appearance of stability which is so essential to true architectural expression.

This peculiarity is not confined to the monasteries; all residences, from that of the poorest peasant to the palace of the king, having been constructed from time immemorial of this perishable material. The custom has now passed into a law,

that no one shall have the power of erecting buildings of stone or brick, except it be the king himself, or unless the edifices be of a purely religious character. Even this exception is not always taken advantage of, for the king's palace itself is essentially a wooden erection as the dwelling of any of his subjects. It is, however, not the less magnificent on this account—rather, perhaps, more so—immense sums being spent on the most elaborate carvings, and the whole being lacquered, painted, and gilt, to an extent of which we have no conception in our more sober clime.

The general appearance of the façade may be realised from the annexed view (Woodcut No. 456); but its real magnificence
consists in the profusion of gilding and carving with which every part is covered, and to which it is impossible to do justice on so small a scale.

The same profuse decorations are bestowed upon the monasteries, one of which is represented in the annexed woodcut (No. 455), showing a building in which all the defects arising from the use of so easily carved a material are carried to excess.

If the colouring and gilding could be added, it would represent a building such as the West never saw, and, let us hope, never will see; for, however dazzling its splendour, such barbaric magnificence is worthy only of a half-civilised race.
The naked form of these monasteries—if the expression may be used—will be understood from the following woodcut (No. 457) of one erected at Mandalay. It is apparently five storeys in height, but as a matter of fact only one storey is occupied, the first, or "piano nobile" as we would call it. The reason for this being that the Pôngyi or priest would refuse to reside in a building where any one's feet were above his head. The first storey of a Kyaung, and this applies to the example at Mandalay, is always raised about 8 to 10 ft. above the ground, being carried on great timber posts. It is surrounded by a balcony on three sides, access to which is obtained by flights of steps enclosed between balustrades with a peculiar curved termination in front, shown in the woodcut (No. 455). The steps, the walls carrying them and the balustrades are all in brick, whilst the rest of the structure is entirely in timber. On the eastern side is a shrine, in which is a statue of Gaudama, above which is the Pyâthat, a lofty structure with three, five or seven roofs according to the importance of the Kyaung; thus in the Royal monasteries and the King's Palace there are seven roofs, as in Woodcut No. 456. The monastery at Mandalay (Woodcut No. 457) was not completed when the photograph was taken, but not being masked by the elaborate carving as shown in Woodcut No. 455, the scheme of its design is easier to read. There are four storeys of roofs, the upper one covers a lantern only; the roof below covers the
central hall which is enclosed with double aisles all round covered over by the two other roofs. Virtually there is only one room in a Burmese Kyaung, at the east end; and next to the Pyêtthat is the Pôngyi’s quarter, where he receives visitors, teaches in the school and sleeps; at the west end are the students’ quarters and the store-rooms, and the school-room, if it may be so termed, is in the central hall.¹

These many-storeyed kyaungs, with the tall seven-storeyed spires (shown in Woodcuts Nos. 447 and 455), bring us back to the many-storeyed temples in Nepal, which are in all essential respects so nearly identical, that it can hardly be doubted they had a common origin. We are not yet in a position to point out the connecting links which will fuse the detached fragments of this style into a homogeneous whole, but it is probably in China that they must be looked for, only we know so little of the architectural history of the western portion of that great country, that we must wait for further information before even venturing on this subject.

The fact that all the buildings of Burma are of wood, except the pagodas, may also explain how it is that India possesses no architectural remains anterior to the age of Asoka. Except the comparatively few masonry pagodas, none of which existed prior to his era, there is nothing in Burma that a conflagration of a few hours would not destroy, or the desertion of a few years entirely obliterate. That the same was the practice of India is almost certain, from the essentially wooden forms still found prevailing in all the earlier cave temples; and, if so, this fully accounts for the disappearance of all earlier monuments.

We know that wooden architecture was the characteristic of Media, where all the constructive parts were formed in this perishable material; and from the Bible we learn that Solomon’s edifices were chiefly so constructed. Persepolis presents us with the earliest instance remaining in Asia of this wooden architecture being petrified, as it were—apparently in consequence of the intercourse its builders maintained with Egypt and with Greece.

In Burma these wooden types still exist in more completeness than, perhaps, in any other country. Even if the student is not prepared to admit the direct ethnographic connection between the buildings of Burma and Babylon, he will at any rate best learn in this country to appreciate much in ancient architecture, which without such a living illustration, it is hard to understand. Solomon’s House of the Forest of Lebanon

is, with mere difference of detail, reproduced at Ava or Amarapura; and the palaces of Persepolis are rendered infinitely more intelligible by the study of these edifices. Burma is almost equally important in enabling us to understand what an active, prosperous Buddhist community may have been in India at a time when that religion flourished there;\(^1\) and altogether, if means were available for its full elucidation, it would form one of the most interesting chapters in the History of Architecture in Asia.

\(^1\) For a succinct account of the history of Burma to 1837, the reader may consult Sir Arthur P. Phayre’s ‘History of Burma including Burma proper, Pegu Taungu, Tenasserim, and Arakan.’
CHAPTER II.

CAMBODIA.

CONTENTS.

Introductory—The various classes of temple and their disposition—Temples of Angkor Vât, Angkor Thom, Beng Méaleâ, Ta Prohm, Banteai Kedéi, Prah-khan, etc.—Palaces and Civil Architecture.

The King Builders.¹

<table>
<thead>
<tr>
<th>Approximate Dates</th>
<th>Approximate Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jayavarman II.</td>
<td>A.D. 802</td>
</tr>
<tr>
<td>Jayavarman III.</td>
<td>869</td>
</tr>
<tr>
<td>Indravarman</td>
<td>877</td>
</tr>
<tr>
<td>Yasovarman</td>
<td>889</td>
</tr>
<tr>
<td>Harshavarman I.</td>
<td>(?) 910</td>
</tr>
<tr>
<td>Isânavarman</td>
<td>(?) 918</td>
</tr>
<tr>
<td>Jayavarman IV.</td>
<td>928</td>
</tr>
<tr>
<td>Harshavarman II.</td>
<td>942</td>
</tr>
<tr>
<td>Râjendravarman</td>
<td>944</td>
</tr>
<tr>
<td>Jayavarman V.</td>
<td>A.D. 968</td>
</tr>
<tr>
<td>Sûryavarman I.</td>
<td>1002</td>
</tr>
<tr>
<td>Udayâdityavarman</td>
<td>1049</td>
</tr>
<tr>
<td>Harshavarman III.</td>
<td>(?) 1070</td>
</tr>
<tr>
<td>Jayavarman VI.</td>
<td>(?) 1090</td>
</tr>
<tr>
<td>Dharanândravarman I.</td>
<td>(?) 1108</td>
</tr>
<tr>
<td>Sûryavarman II.</td>
<td>1112</td>
</tr>
<tr>
<td>Dharanândravarman II</td>
<td>(?) 1152</td>
</tr>
<tr>
<td>Jayavarman VII.</td>
<td>1162-1201</td>
</tr>
</tbody>
</table>

SINCE the exhumation of the buried cities of Assyria by Mons. Botta and Mr. Layard nothing has occurred so startling, or which has thrown so much light on Eastern art, as the discovery of the ruined cities of Cambodia. Historically, they are infinitely less important to us than the ruins of Nimrud and Nineveh; but, in an architectural point of view, they are more astonishing; and, for the elucidation of certain Indian problems, it seems impossible to overrate their importance.

The first European who visited these ruins in modern times was M. Mouhot, a French naturalist, who devoted the last four years of his life (1858-1861) to the exploration of the valleys of the Me-kong and Me-nam rivers. Though the primary object of his travels was to investigate the natural productions of the country, he seems to have been so struck with the ruins of Angkor Vât that he not only sketched and made plans of them, but wrote descriptions of all the principal buildings. Unfortunately for science and art he never returned to Europe, being struck down by fever while prosecuting his researches in the northern part of the country; and, though his notes have been published both in this country² and in France, they were not

¹ Aymonier, 'Le Cambodge,' tome iii. p. 529.
² 'Travels in Indo-China, Cambodia, and Laos,' by Henri Mouhot. 2 vols. 8vo. Murray, 1864.
prepared for publication by himself, and want the explanatory touches which only an author can give to his own work. Though his melancholy death prevented M. Mouhot from obtaining all the credit he was entitled to for his discovery, it has borne rich fruit as far as the public are concerned.

The next person who visited these ruins was the very learned Dr. Adolph Bastian; 1 who wrote a most recondite but very unsatisfactory work on the Indo-Chinese nations, in five volumes.

The next visit was paid by Mr. J. Thomson, a professional photographer at Singapore, who at considerable expense and risk carried his photographic apparatus to the spot, and brought away a plan of the great temple at Angkor Vât, with some thirty photographs of it, besides views of other places in the neighbourhood.

Since that time the French have sent a succession of well-equipped expeditions to the place; the first, under Captain Doudart de Lagrée in 1866 and a second in 1873. His unfortunate death on the frontiers of China prevented his ever working out his results to the extent he no doubt would have done had he lived to return home. They were, however, published as he left them by Lieutenant T. Garnier, the second in command, with notes and additions of his own. 2

As they, however, could not complete the investigation, a third expedition was fitted out under Captain L. Delaporte, who had taken part in the previous expeditions. He returned to France in 1874, bringing with him not only detailed plans of some of the temples, but copies of numerous inscriptions and a large collection of antiquities and casts. These were at first located in the Chateau of Compiègne, but were afterwards removed to Paris and arranged in the Trocadero Museum.

Captain Delaporte's work 3 was published in 1880. He was followed by other travellers who shortly after their return brought out the results of their investigations, M. T. Moura, 4 A. Tissandier, 5 Fourniereau, 6 Captain E. Lunet de Lajonquière, 7

1 'Die Völker der Oestlichen Asien,' von Dr. A. Bastian. Leipzig, 1866. He also wrote an account of the ruins in the 'Journal of the Royal Geographical Society' (vol. xxxv.), and four papers in the 'Ausland' (Nos. 47-50).
3 'Voyage au Cambodge, l'Architecture khmère,' 4to. 1880.
4 'Le Royaume de Cambodge.' 2 vols. 8vo. 1883.
5 'Cambodge et Java: Ruines khmères et javanaises, 1893-94.' 4to. 1896.
6 'Les Ruines d'Angkor.' 4to. 1900.
and E. Aymonier, all of whom were sent out by the Minister of Public Instruction and under the direction of the École Français de l'Extrême Orient. The latest writer on the subject is General L. de Beylié, whose work includes a description with illustrations of the monuments of India, Burma, Cambodia, Siam, Jâva, and Ceylon.

In addition to these sources of information there is a most interesting account, written by a Chinese traveller, who spent two years in the country when the kingdom was in its most flourishing state between the years 1295-97. He was a Buddhist, and, like his predecessors in India, Fah Hian and Hiuen Tsang, sees things a little too much through Buddhist spectacles; but, with this slight defect, nothing can be more graphic than his account of the country and the people.

One of the earliest traditions is that first put forward by Dr. Bastian relative to the migration of an Indian prince, and this is repeated by Tissandier, who states that in 443 B.C. Prea-thong, a Hindu prince, son of the King of Indraprastha, emigrated with a large number of his followers and settled at Choukan (north of Angkor). The new emigrants introduced the Brähman rites which were engrafted on those of the Serpent worshippers of the country. Although at first they settled down amicably with the original inhabitants, in course of time troubles set in and the Indians, having vanquished their opponents, became masters of the country. In 125 B.C. the Chinese are said to have conquered the Cambodians and forced them to pay tribute. There is also a record that in the first centuries of our era emigrants from Madras made their way into Cambodia introducing the Brähman faith, the Sanskrit alphabet, and Indian rites and customs. The Khmer and Sanskrit epigraphic texts give details of a dynasty of seven kings who reigned from 435-680 A.D., among whom a certain Bhavavarman seems to have been a great conqueror; the last

1 'Le Cambodge.' 3 vols. Imp. 8vo. 1901-1907. The Sanskrit inscriptions were translated and commented by M. M. A. Barth and Abel Bergaigne, with atlas of phototypes of the estampages. Paris 1885 and 1893.
2 'L'Architecture Hindoue en Extrême Orient.' 1907.
3 The work is translated in extenso in Abel Remusat's 'Nouveaux Melanges Asiatiques,' vol. i. pp. 78 et seqq.
4 Bastian, loc. cit. vol. i. p. 393.
5 Tissandier, loc. cit. p. 17.
6 From ancient inscriptions we learn that the Eastern peninsula at an early date included six regions, states or kingdoms:— (1) Yavana-dera in the north-east, extending from the gulf of Tongkin westwards nearly to the 99th meridian, and including much of the Laos districts north of 17° 30'. Its capital was Chudhânagarî, now Luang Phrabang on the Me-kong. (2) Champâ-dera, corresponding to Annam and extending to about 160 miles westwards of the Me-kong. (3) Sayam-dera in the north-west, including Burma proper and the northern part of modern Siam east of the Salwîn, of which Haripunaspara, now Lampum on the Me-ping, was—if not the capital—one of its notable cities, (4) Kambûja-dera included all Cambodia.
of this dynasty was Jayavarman. From his death to the commencement of the 9th century there are no records, owing probably to internal dissensions, but in 802 A.D.\(^1\) Jayavarman II., who may have been a descendant of the older dynasty, formed a new dynasty of eighteen sovereigns, a list of whom, with the dates of their accessions, are given at the head of this chapter. To this monarch is attributed the foundation of the Cambodian kingdom, whose capital was Angkor Thom, situated in the valley of the Me-kong about 14 miles north of the lake known as Tonlé Sap. Jayavarman II. settled at first at Prah-khan north of Angkor Vât, and in the tenth year of his reign is supposed to have laid the foundations of the great city of Angkor Thom, as also those of the Royal palace in its centre, the pyramid temples of Phímânakas, the great temple of Bayon and other structures. To him, therefore, according to Aymonier,\(^2\) must be ascribed the inauguration of those colossal constructions which were raised during the four centuries following and which constitute the great Cambodian style. There are some small earlier temples built towards the end of the 6th or the commencement of the 7th centuries, in which the origin of the style may be found, but they are of comparatively small importance. It is, however, interesting to note that according to Aymonier, Jayavarman may have come into the country from Jâva, and therefore brought over some acquaintance with the great temple of Boro-Budur of the 7th or 8th centuries, to which there is a striking resemblance, so much so that some of the sculptures of the latter have been assumed in error to be those of Angkor Vât.

The third king, Indravarman, besides building the temples of Baku and Bakong, completed and consecrated the temple of Bayon in Angkor Thom, the *chef d'œuvre* of Cambodian architecture. The erection of the great capital, on account of its magnitude and the numerous temples and other structures it contained, would seem to have stretched over a long period, as it was not until the reign of Yasovarman, the fourth king, that the official capital was shifted about 900 A.D. from Hariharâlaya, which, since the death of the first king, had hitherto held that position, to Angkor Thom. To Yasovarman is attributed also the temple of Lolei and the pyramid temple of Phímânakas in the centre of the Palace enclosure. He is said to have been a man of prodigious strength, but in about

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\(\)\(^1\) The dates are those taken from the Indian Saka, to which is added 78; thus 724 Saka is 802 A.D.

the nineteenth or twentieth year of his reign was afflicted with leprosy and retired to a forest in the north of the kingdom, leaving two sons to succeed him, the second of whom, Isanavarman, left Angkor Thom about 926 A.D. and settled at Chok Gargyar (Kohker\(^1\)), which became the capital during his reign and that of his son. The ninth king, Râjendravarman, returned to Angkor Thom in 942, and it was in his reign that Buddhism commenced to be favoured, one of the two great temples built by him, Ta-Prom being Brâhman, and the other, Bântêai Kedei, Buddhist. Under the reign of his successor many other temples were erected, of which the most important is the pyramid temple of Bapuon, immediately south of the Royal Palace in Angkor Thom. The eleventh king, Sûryavarman, reigned forty-eight years, and was a great builder, the temples of Phnom Chisor (Prov. Bâti), Vât Ek near Battambang, Phnom Bâset, Prah Vihear (Prov. Kukhan) and Prah-khan (Kompong Svay), being attributed to him. His successor continued his work and built the temples of Banteai Ta Kean (Prov. Siemreap), Phimai (Prov. Korat), Pré Rup, and probably the temple on Mount Bakhêng, south of Angkor Thom. The dates of the accessions of the three following kings are not known for certain, and with the exception of Vât Phu at Pursat, built about 1090-1100, restorations and additions only are recorded during the period of their reigns. We pass on, therefore, to Sûryavarman II., who is said to have extended to its normal condition the empire which had suffered many calamities under his predecessors. He would appear to have been not only a great warrior, but a remarkable scholar and writer of verses, and to him is attributed the erection of the temple of Angkor Vât, the foundation of which is said to have been laid by his predecessor, but which he continued and completed during the forty years of his reign, including the magnificent series of bas-reliefs which are carved on the walls representing battle scenes taken from the Râmâyana. During the reign of the last two sovereigns of the dynasty, commenced the wars with neighbouring nations, and no further temples were built, so that our architectural history is confined to the three and a half centuries which elapsed between 802 and 1152.

It was to these incessant wars that the decadence of Cambodia must be attributed; commencing with the Champâs (Cochin China), continued by the Peguans and subsequently with the Siamese, Cambodia was invaded and devastated, Angkor Thom being taken after a seven months' siege in 1375 and again in 1460, when the capital was changed successively to various other towns, the last settlement being

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1 Lat. 13° 15’ N., long. 104° 31’ E.
at Phnom Penh\textsuperscript{1} on the Me-kong, the present capital of what remains of the great Cambodian kingdom.

**Temples.**

Broadly speaking, the temples, the relative position of which is shown in Woodcut No. 458, may be divided into four classes: firstly, those in which the enclosures, generally three in number, are all more or less on the same level, such as in the temples of Ta Prohm, Kedey, and Prê Rup; secondly, the pyramid temples, which consist of a series of narrow terraces rising one above the other as Phiméanakas and Bapuon; thirdly, those in which the two first classes would seem to be combined, where the enclosures, one within the other, are each raised from 15 to 20 ft. above the level of that outside, so as to give the whole a pyramidal form, such as in those of Angkor Vât and Bayon; and fourthly, the smaller temples, consisting of three or five sanctuaries placed side by side, the centre one being the most important, the whole surrounded by a wall or moat. The enclosures consist either of a moat within which may have been some kind of timber palisade now gone, or a stone wall 8 to 10 ft. high, with cresting at the top. In a large number of temples one or more of the enclosures take the form of a gallery or corridor, which is roofed over with horizontal courses of stone corbelled over till they meet at the top. The nature of this construction limits the width of the corridor to 7, or at the utmost 10 ft., so that if a greater width is required, an aisle is provided on one or both sides. An example of this is shown in Woodcut No. 461, a section of the corridor at Angkor Vât. In this case the support on the left consisted of a solid wall, the roof over the aisle being at a lower level than that over the corridor, but there are instances in which this system of construction is employed over the vestibules and halls leading to a sanctuary, in which case the outer supports are walls, the inner ones piers, constituting in plan what might be described as a nave and aisles.

The approaches to the temples acquire considerable importance, not only on account of their great length, but because they consist of causeways raised from 10 to 12 ft. above the ground, necessitated by the fact that from June to October the valley of the Me-kong, where all the more important Cambodian temples are found, is flooded, and the raised causeways form the only means of communication between the towns and temples: the whole valley, in fact, is mapped out with roads arranged at right angles to one another, along which the caravans pass.

In the approaches to the principal temples and the great

\textsuperscript{1} Lat. 11° 33' N., long. 104° 57' E.
tOWNS, these causeways have led to features which are confined to Cambodia, viz., the cruciform terraces (such as that shown in Woodcut No. 459, in front of the temple of Angkor Vât, and in Woodcut No. 470 in the foreground of the temple of Beng Méalea), the bordering of the causeways with steles, lions, and other animals, and, when crossing the moats, to stone bridges the balustrades of which consisted of serpents carried by
giants on sculptured pedestals, the serpent terminating at the entrance end by a lofty Nāga figure 10 to 12 ft. high, with from five to seven heads. A similar feature terminates the balustrades of bridges across rivers or streams, an example of which, the Spean Taon, is shown on Plate XLIV., Fig. 2. In the latter case the bridge is carried on great stone piers corbelled out at the top, the banks being widened out so as to give an equal passage to the torrent as that enjoyed before the bridge was built. Across the moats which surround the outer enclosure of the temples, the bridge is carried on circular or compound piers, sometimes carrying side walls enriched with Nāga figure sculpture.

In front of the temples and also in parts of the enclosure are tanks of water known as sras, with stone borders and steps round. These provide for the services of the temple; there are some cases in which these sras are of enormous dimensions, forming reservoirs to supply water for agricultural and other purposes.¹

The principal approach to the temples is, as a rule, from the east, unless, as in the case of Angkor Vât, where there is some special reason for the change, the main road from the capital Angkor Thom being on the west side of the former, which has accordingly a western entrance. The entrance gateways to the several enclosures are called gopuras ² and are cruciform on plan, owing to projecting wings thrown out on all four sides: the side wings being of greater length than the others, in some cases, as at Angkor Vât, having a second entrance on each side. Over the centre of the gopura is a tower which in the entrance gateway of Angkor Thom is carved on each side with Brahmā heads. The gopura is repeated for the entrance of each enclosure, always being in the centre of the east and west fronts, but on the north and south fronts nearer to the west end, where the main entrance is on the eastern side, and to the east end if on the western side; the reason being to provide additional space for other structures within the enclosures on the entrance side, the axis of the sanctuary and of the gopura being always the same.

In the pyramidal temples and in those of the third class, where each terrace or enclosure rises from 15 to 20 ft., the staircases are very steep—in some cases the rise of the steps being three times the width of the tread. The steps are enclosed between projecting spurs or ramps of stone, which are richly moulded and carved, and the width of each flight is of less dimension as it rises, so as to give the appearance of greater height. In some of the large temples—in addition to the towers over the central

and side entrances—there are others over the angles of each enclosure; and in the temple of Bayon, including those of the sanctuary and other buildings within the enclosure, there are as many as fifty towers,—that over the sanctuary rising to a height of 130 ft. above the central enclosure or platform, the latter being 34 ft. above the ground outside. The principal characteristic of the design in the Cambodian temples consists in the accumulation of features; thus the sanctuary, for instance, originally a square tower of the same height as width, with a series of five storeys, one above the other, diminishing in size as they rise, and crowned with the lotus flower, has been enriched with one or two slightly projecting bays on each face, in front of which elaborately carved doorways have been added; similar projecting bays and doorways, of less dimensions as they rise, are carried up each storey of the tower. The general effect of this accumulation of features may be judged by Woodcut No. 464, where the two rising roofs of the corridors add to those features above described, and in the view (Plate XLV.) of the gopura to the sanctuary enclosure of the temple of Prah-khan (Prov. Kompong Svay). The two upper stages of the tower over the gopura are gone, but on the left hand side there are four repetitions of the serpent gables over the doorways, such as are more clearly shown in Plate XLIV., Fig. 1.

Although to each enclosure there are four gopuras or entrance gateways, those on the north and south are invariably closed with imitation doors in stone. Similar false doorways, sometimes elaborately carved, are found on the three sides of the sanctuary, the east or, in some instances, the west doorway being the only entrance. The sanctuary is always situated on the axis of the principal entrance, and, owing to the projecting bays added to each side, presents a cruciform plan. In general design the sanctuary takes the form of a tower or sikhara, the lower portion rarely higher than the width but crowned with a series of receding stages; the walls are of great thickness, sometimes 5 to 6 ft. deemed necessary to carry the superstructure which was built with horizontal courses of stone or brick, corbelled out internally so as to meet in the centre. No trace of an arch of any description has ever been found in Cambodian architecture; so that corbelling out with horizontal courses of stone was the only expedient employed to roof over their corridors, sanctuaries, or other halls. The widest span never exceeds 10 ft., and to increase the width of a hall or vestibule, often found in front of a sanctuary, aisles are added: this applies to all temple buildings, the roofs of which would seem always to have been of stone. In secular buildings, timber roofs, none of which exist at the present day, were almost certainly
employed, as remains have been found of parallel walls of a much greater width. In the inner enclosure of a temple, on each side of the central axis, and in front of the sanctuary, two other structures are invariably found, which are assumed to have been the treasury for the deposit of the sacred vessels and other properties of the temple and the library for the records; their entrance doors face the opposite direction to those of the sanctuary; they are lighted by rectangular window openings closed with balusters such as shown in Plate XLV.; the sills of the windows of the treasury or library are always about 6 ft. from the ground, and the same is found in other buildings, which are assumed to have been occupied by the women. In some of the temples there are other structures in the rear of the sanctuary;¹ thus at Phnom Chisor (Prov. Bátı)² are five buildings of different sizes and similar in general design, all having doorways facing east which are undoubtedly shrines for divinities of the same cult, whether Saiva or Vaishnava. The temple of Phnom Chisor is built on an eminence, and is approached by long causeways with numerous flights of steps, there being in front of the gopura a flight of 392 steps; a second example exists in the Prab Vihear,³ where the temple is built on a cliff which in Europe would have been selected for a strongly fortified castle.

The three largest temples in Cambodia are those of Angkor Vât, Bayon and Beng Méalea; of these the first named is the best preserved, though of later date, the other two being built at a period when the architectural style of Cambodia had reached perhaps its highest development.

TEMPLE OF ANGKOR VÂT.

The temple of Angkor Vât, literally “the temple of the city,” is situated about a mile to the southward of the city of Angkor Thom itself, and between it and the lake Tonlé Sap. As will be seen from the small plan (Fig. 2, Woodcut No. 459) it is almost an exact square, and measures nearly an English mile each way.⁴ The walled enclosure of the temple measures 1080 yds. by 1100, and is surrounded by a moat 216 yds. wide. The moat is crossed on the west by a splendid causeway, carried on piers on either side. This leads to the great gateway five storeys in

¹ These are analogous to the small shrines connected with Hindû temples, as at Kailás, Elórâ, at Sinnar, Dhamãr, etc.
² L. de Lajonquiére, 'Inventaire archéologique,' tome i. pp. 16-29.
⁴ By the treaty of 23rd March 1907, France obtained from Siam the provinces of Battambang, Siemrêap and Siaphon. These include the temple of Angkor Vât, and numerous other examples that bear witness to the splendour of the ancient Cambodian civilisation.
Plan of the temple of Angkor Vat. Scale 176\(\text{\frac{1}{4}}\) ft to 1 in.
height, not unlike the gopura of a Dravidian temple, but extended by lateral galleries and towers to a façade more than 600 ft. in extent. Within this a second raised causeway, 370 yds. long, leads to a cruciform platform in front of the temple (shown in Fig. 1, Woodcut No. 459). On either side of this, about halfway down, is a detached temple, which anywhere else would be considered of importance, but here may be passed over.

The general plan of the temple will be understood from the woodcut (No. 459). It consists of three enclosures, one within the other, each raised from 15 ft. to 20 ft. above the level of that outside it, so as to give the whole a pyramidal form. The outer enclosure measures 590 ft. by 700 ft., and covers, therefore, about 413,000 sq. ft. The great temple at Karnak (Thebes) covers 430,000 sq. ft. There are three portals, adorned with towers on each face, and on either side of these are open galleries or verandahs, which, with their bas-reliefs, are probably the most remarkable features of this temple. Their external
appearance will be understood from the Woodcut No. 462; that of the interior from Woodcut No. 463; though these illustrations are on too small a scale to do justice to their magnificence.

Its appearance in elevation may be gathered from Woodcut No. 460, which shows it to be a pyramid more than 600 ft. in breadth across its shortest width north and south, and rising to 180 ft. at the summit of the central tower. It is, consequently, both larger and higher than Boro-Budur, and notwithstanding the extraordinary elaboration of that temple it is probably surpassed by this one, both in the extent of its ornamentation as well as in the delicacy of its carvings. There may have been as much, or nearly as much, labour bestowed on the colonnades at Râmâyânam as on this temple; but otherwise the Indian example cannot compare with either of these two. It has literally no outline and practically no design; while both Angkor Vât and Boro-Budur are as remarkable for their architectural designs as for their sculptural decorations.

The mechanical arrangements of the galleries or colonnades above referred to are as perfect as their artistic design. These will be understood from the diagram, Woodcut No. 461. On one side is a solid wall of the most exquisite masonry, supporting the inner terrace of the temple. It is built of large stones without cement, and so beautifully fitted that it is difficult to detect the joints between two stones. In front of this are two rows of square piers, with capitals also similar to the classical examples, but more ornamented. These piers have no bases, but on each face is carved a figure of a devotee or worshipper, surmounted by a canopy of incised ornament, which is also carried along the edge of the shafts. The piers carry an architrave and a deep frieze, which, in the inner part of the temple, is ornamented with bas-reliefs of the most elaborate character, and above this is a cornice of very classical outline. Above the cornices is a pointed arch, not formed with voussoirs, but of stones projecting one beyond the other, as with the old Pelasgic and with the Hindûs to the present day. This is quite plain, and was probably originally intended to be hidden by a wooden ceiling, as indicated in the diagram; at least Mr. Thomson discovered the mortises which were
intended to secure some such adornment, and in one place the remains of a teakwood ceiling beautifully and elaborately carved.

Outside this gallery, as shown in the Woodcuts Nos. 461, 462, is a second, supported by shorter piers, with both base and capital. This outer range supports what may be called a transverse tie-beam, one end of which is tenoned into the inner piers just below the capital. So beautifully, however, is this fitted, that M. Mouhot asserts the inner piers are monoliths, and, like the other joints of the masonry, the junction cannot be detected even in the photograph unless pointed out. The beauty of this arrangement will at once strike any one who knows how difficult it is to keep the sun out and let in the light and air, so indispensable in that climate. The British have tried
to effect it in India for 100 years, but never hit on anything either so artistic or convenient as this. It is, in fact, the solution of a problem over which we might have puzzled for centuries, but which the Cambodians resolved instinctively. The exterior cornice here, as throughout the temple, is composed of infinite repetitions of the seven-headed snake.

The most wonderful parts, however, of these colonnades of Angkor Vât are the sculptures that adorn their walls. These are distributed in eight compartments, one on each side of the four central groups of entrances, measuring each from 250 ft. to 300 ft. in length, with a height of about 6½ ft. Their aggregate length is thus at least 2000 ft., and assuming the parts photographed to be a fair average, the number of men and
animals represented extends from 18,000 to 20,000. The relief is so low that in the photograph it looks at first sight as if incised —intagliato —like the Egyptian sculptures; but this is not the case. Generally speaking, these reliefs represent battle-scenes of the most animated description, taken from the Rámâyana or Mahâbhârata, which the immigrants either brought with them, or, as the Siamese annals say, received from Índia in the 4th or 5th century; these, Pathammasurivong, the founder of the city, caused to be translated into Cambodian, with considerable variations, and here they are sculptured almost in extenso.¹

One bas-relief, however, is occupied by a different subject—popularly supposed to represent heaven, earth, and hell. Above is a procession so closely resembling those in Egyptian temples as to be startling. The king is borne in a palanquin very like those seen in the sculptures on the banks of the Nile, and accompanied by standards and emblems which go far to complete the illusion. In the middle row sits a judge, with a numerous body of assessors, and the condemned are thrown down to a lower region, where they are represented as tortured in all the modes which Eastern ingenuity has devised. One subject alone can be called mythological, and it wears an old familiar face; it represents the second Avatar of Vishnu, the world-supporting tortoise, and the churning of the ocean with the great snake Nâga. No legend in Hindu mythology could be more appropriate for a snake-temple; but, notwithstanding this, it is out of place, and I cannot help fancying that it was his choice of this subject that gave rise to the tradition that the king was afflicted with leprosy because he had deserted the faith of his forefathers. This relief is evidently the last attempted, and still remains unfinished.

The only other temples that I am aware of where sculpture is used in anything like the same profusion are those at Boro-Budur in Jâva and that at Halebíd, described above (vol. i. p. 446). In the Indian example, however, the principles on which it is employed are diametrically opposed to those in vogue in Cambodia. There all the sculptures are in high relief, many of the figures standing free, and all are essential parts of the architecture—are, in fact, the architecture itself. Here, however, the two arts are kept quite distinct and independent, each mutually aiding the other, but each perfect by itself, and separate in its aim. The Gothic architects attempted to incorporate their sculpture with the architecture in the same manner as the Indian architects. The Greeks, on the contrary,

Bastian, loc. cit. vol. i. p. 402.
kept them distinct; they provided a plain wall outside the cella of the temple for their paintings and sculpture, and protected it by screens of columns precisely as the Cambodians did; and it is difficult to say which was the best principle. A critic imbued with the feelings of mediæval art would side with the Indians;
but if the Greeks were correct in their principle, so certainly were the Cambodians.

Leaving these outer peristyles for the present, and entering by the west door, we found ourselves in an ante-naos measuring 180 ft. by 150 ft., supported by more than 100 piers, and lighted by four small courts open to the sky above. The whole of this part is arranged most artistically, so as to obtain the most varied and picturesque effects, and is as well worthy of study as any part of the temple. Beyond this, on either hand, is a detached temple, similar in plan to those that stand on either side of the causeway (Fig. 2, Woodcut No. 459), half-way between the entrance and the temple.

Ascending from this we enter the middle court, in the centre of which stands what may be considered as the temple itself. It measures 200 ft. by 213 ft., and is crowned by five towers or spires, one on each angle, and one, taller than the others, in the centre, rising to a height of 180 ft. The central tower has four cells, one facing the central hall from each side. The general appearance of these towers may be gathered from the elevation (Woodcut No. 460), and from Woodcut No. 464. They are very Indian in character and outline, but, when looked closely into, are unlike anything known in that country. The building which resembles the inner temple most, so far as at present known, is that at Rânpur (Woodcut No. 288). Its dimensions are nearly the same, 200 ft. by 225 ft.; like this, it has five spires similarly disposed, and four open courts; and at Rânpur, as here, there are a certain number of snake-figures, which might suggest a connection between the two. But there the similarity ceases. The extraordinary amount of richness and exuberance of detail in the Cambodian temple far surpasses that of the Indian example; and the courts at Angkor Vät are not courts but water-tanks. How far the lower courts were also capable of being flooded is not clear, nor whether the whole
area, 1,100 yds. square, in which the temple stands, was not also capable of being turned into a lake. If it were, it is difficult to conceive a more fairy-like scene than this temple would have presented, rising from the lake which reflected its forms in the calm stillness of a tropical sunset.

One of the most curious circumstances connected with the architecture of this temple is, that all the piers are as essentially of the Roman Doric order, as those of Kashmir are of the Grecian Doric. Even if this is disputed, one thing at least is certain, that no such piers occur anywhere in India. At Angkor Vat there is not a single bracket-capital nor an Indian base, and although there are intersecting vaults and ingenious roofing contrivances of all sorts, there is no dome, and no hint that the architects were aware of the existence of such a form. On the contrary, take such a pier as that shown in Woodcut No. 465: the proportion of diameter to height; the proportion between the upper and lower

1 Mr. Thomson was informed that during the rains the whole was flooded, in which case the temple could only be reached in boats.
2 Outside the temple the sides of the causeways are in places supported on dwarf columns of circular form. They seem to simulate a bundle of eight reeds, and have tall capitals.
diameter; the capital with its abacus; the base with its plinth; the architrave, etc., are so like the Roman order that it is difficult to conceive the likeness being accidental.

But whoever gave the design for these piers—and, according to M. Mouhot, there are 1532 of them in this single building—we have abundant evidence to show that the people for whom it was erected were of Turanian blood. Without insisting on other facts, there are in every part of the building groups of female figures in alto-rilievo. They are sometimes in niches or in pairs, as in the Woodcut No. 466, attached to pilasters, or in groups of four or more. There are a hundred or more in various parts of the building, and all have the thick lips and the flat noses of true Tartars, their eyes forming an angle with one another like those of the Egyptians, or any other of the true building-races of the world. Unfortunately, no statues of men are so attached, though there are several free-standing figures which tell the same tale. The bas-reliefs do not help in the enquiry, as the artist has taken pains to distinguish carefully the ethnographic peculiarities of all the nations represented, and, till the inscriptions are read, and we know who are intended for Indians or who for Chinese or Cambodians, we cannot use the evidence they supply.

It is a well-known fact that, wherever Serpent-worship prevailed in any part of the world, it was the custom to devote the most beautiful young girls to the service of the temple, and this may account for the numerous female statues. Though the god is gone, and the Buddhists have taken possession of the temple, every angle of every roof is adorned with an image of the seven-headed snake, and there are hundreds of them; every cornice is composed of snakes’ heads; every convolution of the roofs, and there are thousands, terminates in a five or seven-headed snake. The balustrades are snakes, and the ridge of every roof was apparently adorned with gilt dragons. These being in metal, have disappeared, but the holes into which they were fixed can still be seen on every ridge.

This temple, now in French hands, has been taken possession of by Siamese bonzes, who have dedicated it to the worship of Buddha. They have introduced images of him into the sanctuaries and other places, and, with the usual incuriousness of people of their class, assert that it was always so. If, however, there is one thing more certain than another in this history, it is that Angkor Vät was not originally erected by Buddhists or for Buddhist purposes. In the first place, there is no sign of a dâgâba or of a vihâra, or of a chaitya hall in the whole building, nor anything that can be called a reminiscence of any feature of Buddhist architecture. More than this, there is no trace
of Buddha, of any scene from his life, or from the jātakas to be found among the sculptures. In former days it might be excusable to doubt this; but it is not so now that any man may make himself familiar with the sculptures at Bharaut, at Sānchi, or Amarāvatī, or with those from the Gandhāra monasteries or at Boro-Budur. It is just as easy to recognise a Buddhist scene or legend in these representations, as it is to identify a Christian scene in the Arena chapel at Padua, or at Monreale near Palermo. What may hereafter turn up I do not know, but meanwhile I must unhesitatingly assert that there is not a trace of Buddhism in any of the bas-reliefs yet brought to light from Angkor Vât, nor an integral statue of Buddha or of any Buddhist saint about the place.

I am, of course, aware that there are traditions of Asoka having sent missionaries there, and of Buddhaghosha having visited the place,¹ but they are the merest of traditions, imported apparently from Siam, and resting on no authenticated basis. Had Buddhists ever come here en masse, or the country ever been converted to that religion, it seems impossible the fact should not be observable in the buildings. But there seems no trace of it there. There is no Eastern country, in fact, where that religion seems to have been so little known in ancient times. The testimony of the Chinese traveller, who visited the country in A.D. 1295,² is sufficient to prove it did exist in his time; but, like his predecessors Fah Hian and Hiuen Tsiang, he saw his own faith everywhere, and, with true Chinese superciliousness, saw no other religion anywhere.

So far as can be at present ascertained, it seems as if the migrations of the Indians to Java and to Cambodia took place about the same time and from the same quarter; but with this remarkable difference: they went en masse to Java, and found a tabula rasa—a people, it may be, numerous, but without arts or religion, and they implanted there their own with very slight modifications. In Cambodia the country must have been more civilised, and had a religion, if not an art. The Indians seem slowly, and only to a limited extent, to have been able to modify their religion towards Hinduism, probably because it was identical, or at least sympathetic; but they certainly endowed the Cambodians with an art which we have no reason to suppose they before possessed. Now that we know to what an extent classical art prevailed in

¹ Garnier, loc. cit., vol. i. p. 120.
² Bastian, vol. i. pp. 400, 415, 438, etc.

In the extracts from the 'Chinese Annals,' translated by Abel Remusat, in the first volume of the 'Nouveaux Mêlanges Asiatiques,' he finds the earliest mention of the Cambodian kingdom in A.D. 616. From that period the accounts are tolerably consecutive to A.D. 1295, but before that nothing.
the country these Indians are reputed to have come from, and to how late a date that art continued to be practised in the north-west, we are no longer puzzled to understand the prevalence of classical details in this temple; but to work out the connection in all its variations is one of the most interesting problems that remain to exercise the ingenuity of future explorers.

**Bayon.**

The great temple of Bayon, within the city walls of Angkor Thom, is supposed to have been founded by the first king of the dynasty, Jayavarman II., and consecrated by Yasovarman about 900 A.D. This temple belongs to the third class, where, in consequence of the height of the two great platforms on which it is built and of the central sanctuary, a pyramidal contour is given to the structure. It is regarded as the *chef d'œuvre* of Cambodian architecture, not only on account of the splendour and vigour of its sculptured decorations, but for the magnificence of its plan (Woodcut No. 467). The principal difference between it and Angkor Vât is found in the second platform, and the great importance given to the sanctuary. Instead of having a third enclosure, the four angles of the second enclosure are filled with smaller courts, so as to leave sufficient space for the great entrance porches on the north, south and west sides, and for the entrance porch vestibule and two other halls preceding the sanctuary on the east side. Supplementary porches and halls are placed on the diagonal lines, with a double peristyle enclosing the whole, which must have formed a group of exceptional magnificence.

In consequence of the terrible ruin which pervades the whole structure, owing to the forest of trees which has invaded it, there is no general view of it to be obtained, and its appearance can only be gathered by imagining the effect of Angkor Vât with fifty towers instead of nine, the whole more richly and elaborately ornamented than even that temple; to this must be added the increase of the pyramidal composition, owing to the closer grouping of all the towers and their decoration with the four great masks of Brahmâ on each face, masks which, in their fine modelling and expression, are only approached by the great Egyptian Sphinx. Woodcut No. 468, representing one of the inner towers about 50 ft. high, gives some idea of the still greater examples—that over the sanctuary being calculated as 130 ft. high. Half way up the tower were eight projecting frontispieces, each carved with the head of Brahmâ and giving greater importance to the sanctuary tower.

Bayon is the only temple, according to Delaporte, which has
467. Plan of the Temple of Bayon. (From Tissandier's 'Cambodge et Java.')
a double enclosure of sculptured corridors, the aggregate length

of which has been calculated to be over 36,000 ft., or nearly twice that of Angkor Vât.

**Beng Méaleâ.**

The third great example is that of the temple of Beng Méaleâ (Woodcut No. 469), about 20 miles east of Angkor Thom. This temple belongs to the first class, all the enclosures being more or less on the same level. No inscriptions of any kind have been found on the structure, but according to Aymonier, who judges by the general design and decoration, it probably belongs to the 9th century. There is an exceptional feature in it; in the first enclosure on the south or left hand side are two groups of buildings which are assumed to
have been the palaces of the King and Queen respectively. The lower or eastern one (P), of which the great central hall, with

a portion of its vault, still exists in situ, is supposed to have been the Queen's Palace, this hall being lighted from four courts; the absence of any smaller apartments in this and the western block (V) render its appropriation doubtful, but the great hall with its side aisles would seem to have been built as a throne or state reception room. All the outer courts were filled with
water, forming huge tanks (śrās), but they are too small to have served for nautical displays. The conjectural restoration, as shown in the bird’s-eye view of Beng Méaleā in Woodcut No. 470, gives a very good impression of the architectural composi-

![Conjectural Restoration of the Temple of Beng Méaleā](image)

(Room "Le Cambodge": tome I. "Le Royaume Actuel" par Etienne Aymonier.)

tion of the Cambodian temples, which, with their smaller corridors and great halls, seem to be more appropriate as palaces. All the corridors and halls were vaulted in stone, a type of construction which was employed only in religious structures. The walls of the corridors here were not carved as those of Angkor Vāt and Bayon, the decoration being confined to the entrance portals and the towers. One of the cruciform terraces carried on circular piers, to which reference has been made, is shown in this view, without, however, the serpent balustrades or flights of steps down to the lower level, as found at Angkor Vāt.

**OTHER TEMPLES.**

On the east side of Angkor Thom, distant respectively half a mile and a mile from the same, are two temples, Ta Prohm and Bântëal Kedei, which are richly decorated with
fine sculpture. The two inner enclosures are surrounded with corridors, of which the outer one consists of a central and side aisle, as at Angkor Vât, the wall being on the inner side. On the gopuras of the four enclosures, the angles of the larger inner enclosure, the sanctuary, and other structures, there are said to have been as many as twenty-eight towers, nine of which were carved with the four faces of Brahmâ. The temple of Bântêai Kedi is said to have been originally dedicated to Buddha, but as the faces of Brahmâ decorate the towers of the east and west gopuras, this is doubtful. The plan of the two structures in the inner enclosure differs from any other examples, the larger one—which from its position should be the sanctuary, consists, according to Aymonier,1 of a series of four corridors, running north and south and east and west, crossing one another and carrying corbelled domes at their intersection.

In the temple of Phnom Chisor (Prov. Bâti) the corridor of the single enclosure is subdivided by a number of cross walls forming separate compartments, four of which have entrance doors, a flight of steps leading to the park outside, and to the internal court. All the rooms are lighted by baluster windows, those on the east or entrance side looking outwards, the others on to the court. The same disposition of windows is found in the temple of Prah-khan (Prov. Kompong Svay), but here the corridor is not subdivided by cross walls. Parts of that temple, of which two illustrations are given, are well preserved (Plate XLV.), showing the baluster windows and the universal doorway, which is found in all the temples, varying only in the sculptured decoration of the architrave and the tympanum of the gable. The octagonal shafts which flank the entrance doors of all the Cambodian temples are gone in this instance at Prah-khan, but Woodcut No. 471, at Bassak, may be taken as a typical example of the usual doorway.

The courses of masonry of the temples are always horizontal, and those above the doorway are carried far back into the wall, so that the octagonal shafts on each side are only decorative features. The architecture above the door is always richly carved with varying designs, the gable being enshrined with two serpents with Nâga head terminations, which respond to the antefixæ of Greek temples; outside the serpents' bodies are flames which take the place of crockets, and the tympana are carved with figures. The same illustration (Plate XLV.) shows the rectangular windows with balustrades, the panel decoration between them with female figures representing the Thevadas or

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goddesses, the richly sculptured cornices with cresting, and the roofs carved in imitation of tile construction, though all built in stone in horizontal courses. Some idea may also be conceived,

![Carved Lintel of the Temple at Bassak.](image)

as shown in Plate XLV., of the terrible ruin which is overtaking all the Cambodian temples owing to the overgrowth of the trees. The preservation of this building, constructed nearly nine centuries ago, is very remarkable, and this is borne out better in Plate XLIV., where, owing to the magnificent construction, the tower still stands erect, having lost only its two upper storeys and lotus cresting.

**Pyramid Temples.**

The finest example of the pyramid temples is that of Bapuon, immediately south of the palace in Angkor Thom. It bears considerable resemblance to the temple of Bayon, but the height of the second and third platforms is much greater than in the latter; thus whilst the first and second platforms of Bayon are respectively 10 and 26 ft. in height, those of Bapuon are 21 and 37, and the third platform is 48 ft. high. The Brahmā masks were not carved on the twenty-eight towers of Bapuon, nor are the walls of the corridor enriched with the bas-relief sculpture of Bayon and Angkor Vât. The richness in beauty of the carving, however, is quite as fine as that of Bayon, and the arabesque scrolls of the architrave at Bassak (Woodcut No. 471), and of the pilasters—and vertical panels elsewhere bear much resemblance to 13th century work French Gothic. The Chinese traveller of the 13th century already
referred to, after mentioning the central tower of Bayon, refers to a second example surmounted by a tower of gold copper, much higher than that first named, and adds: “in the palace enclosure is another golden tower, which can only be that of Phiméanakas, the pyramid temple,” in the centre of the palace enclosure in Angkor Thom. The lower platform of this temple measures 131 ft. by 82 ft., and is 8 ft. high, the second is 23 ft. high, and the third 20 ft.; the upper platform is surrounded by a vaulted corridor barely 4 ft. wide inside, with rectangular windows on each side; only the lofty substructure of the sanctuary remains, which it is thought may have carried a lofty tower in wood covered with copper and gilded.

Of simpler types of the pyramidal temple, the example on the hill of Bakheng, south of Angkor Thom, is interesting, owing to the small towers, thirty-six in number, built within the first enclosure and outside the central pyramid; constructed originally to locate a statue, such as remain are utilised now as columbaria in which the ashes of parents are deposited. The pyramid consists of five platforms, on each of which are small circular turrets about 15 ft. high; on the upper platform was a cruciform sanctuary of importance, but now in such a state of ruin that its plan cannot be well determined. In the temple of Ta Kéo, east of Angkor Thom, there are two enclosures, the inner one with corridor and tower on each side of the entrance gopura, and in the centre a pyramid of three storeys with a lofty sanctuary and four other towers. The symmetrical arrangement of the towers in this temple and in those at Bakheng and the similarity of design show that all date from the same period, and that they were probably built as memorial structures.

PALACES.

Whether any of the immense structures already described were ever occupied as residences by the Cambodian monarchs is not known, but the latest writer on the subject, General de Beylié, assumes, and he is followed to a certain extent by some other French authorities, that some of the temples were built as palaces for the King and occupied by him, his family, and courtiers, though in a Brahmanic state this is hardly probable. It should be pointed out, however, that in the outer court of Beng Méalea are two groups of structures which have been described as numerous students and pandits, and were liberally supported by royal bounties. These great structures may in many cases have been such collegiate Mathas.—Conf. Lajonquière 'Inventaire Descriptif,' tome ii. introd. p. 29.

1 Page 373.
2 It should be borne in mind that in earlier times the monasteries or Mathas of the Brähmans, being also colleges for sacred studies, must have been extensive to provide accommodation for the
the palaces of the King and Queen respectively, whereas if the
temple had been built for a palace, they would be found in the
central enclosure. On the west side of Phimeanakas, and within
the palace enclosure of Angkor Thom, are the foundations of
buildings, which are supposed to have been the residences of
the King and his family; the women's quarters occupying the
whole width of the enclosure against the west wall, in which there
is no entrance gate. At Vât Phu, near Bassak, on either side
of the causeway leading to the temple, is a structure of about
150 ft. frontage with a rectangular court at the back and
surrounded with a corridor vaulted like those in the temples:
and those are considered to be palaces, though they may have
been occupied only by the Kings of Bassak, who were subject
to the Cambodian monarch. Again at Phnom Chisor, to which
reference has been made, on the north side of the court the
sills of the windows are 6 ft. from the ground, so that the
corridor they lighted may have been occupied by women.
But in all these cases the accommodation would barely be
sufficient for a hunting box, and for a monarch like the King
of Cambodia, whose retinue consisted of hundreds if not
thousands, the temples of Angkor Vât and Beng Méaleâ, Ta
Prohm and Prah-khan, are the only structures which could
possibly hold them. As regard Bayon, situated within the
city of Angkor Thom and in proximity to the palace, that may
have been occupied by the priests only, but in Angkor Vât and
Beng Méaleâ the series of magnificent halls which figure in
the enclosures would seem to have been provided for the needs
of a great court; this, however, is a subject which requires further
investigation, on which it is hoped that other inscriptions found,
when deciphered, may perhaps throw more light. The temple
and the King's palace were the only buildings in Cambodia
where permanence was obtained by vaulting them over in stone.
As this, according to the Cambodian system of construction,
could only be effected by horizontal courses of stone corbelled
out, the dimensions of the galleries and halls were extremely
limited in their width, and increased accommodation could
only be met by their extension in length—thus the outer
corridor of Angkor Vât was 2,400 ft. in length, the cross halls
in front of the second enclosure and those of the latter measure
1,800 ft., and the inner enclosure, including the passages leading
to the sanctuary, about 900 ft. more, or altogether about 4,300 ft.
of corridor, of which 3,300 ft., with the double aisles, was only
about 18 ft. wide, and the remainder 10 ft. wide or less. Halls
of greater width must have had roofs of timber covered with
tiles, which have all disappeared long ago, and can never have
had a long existence, as the termites or white ants in Cambodia
rendered timber an ephemeral construction, teak being the only wood they are unable to destroy. One or two bas-reliefs give representations of small structures in front of which are groups of figures supposed to represent the King and his family, and these in design are identical with the gopuras which form the entrances to all the temples.

CIVIL ARCHITECTURE.

The principal remains existing are those of the great enclosure walls and the gates of Angkor Thom the capital, founded by Jayavarman II., the first king, but not completed or occupied till the reign of Yasovarman, the fourth king. The city measured close upon 10,000 ft. from east to west, and 9,600 ft. from north to south, giving a perimeter of 7½ miles to the enclosure walls. Those walls, about 22 ft. high, were surrounded by a moat 300 ft. wide and entered through five gates, one on the north, south and west sides, and two on the east, the most important, called the Gâte of Victory, leading to the palace. Its plan, like those of the gopuras to which reference has been made, was cruciform, consisting of a central gateway 52 ft. square, with recessed angles and side wings. Three towers, the upper portions of which were sculptured on all four sides with the Brahmâ mask in stone similar to those in Woodcut No. 468, rose above the central gateway and the side wings. On each side of the gateway and in the recessed angles elephants’ heads and trunks were carved, and above them numerous figures of Nâgas and other subjects. This is probably the entrance gateway described by the Chinese visitor in 1295, as he refers\(^1\) to the great heads in stone above the gateways which he thought to be those of Buddha, to the figures of elephants on each side of the entrance gateway, and to the great bridge over the moat in front, on each side of which were fifty-four statues in stone of great height carrying a serpent with nine heads. The trunk of the serpent’s body in this case formed the balustrade and at the entrance to the bridge were immense Nâga heads similar to those shown in Plate XLIV., Fig. 2. Portions of these figures still exist, as also traces of those in front of the other gates. Similar parapets have also been found at Bântêai Prah-khan, north of Angkor Thom. The other eastern gate led to the temple of Bayon, already referred to. The palace enclosure, situated nearly in the centre of the city, measured about 2,000 ft. by 800 ft., and was

\(^1\) ‘Description du Royaume de Cambodge par un voyageur Chinois qui a visité cette contrée à la fin du xiii\textsuperscript{e} siècle,’ traduit du Chinois par M. Abel Remélat, 1817.
surrounded by a double wall, with moat between. The western portion of the enclosure was probably occupied by the King and his family, and with the exception of the pyramidal temple of Phiméanakas, a few towers and many stone banks, no architectural remains have been found. In front of the palace enclosure was a great terrace over 800 ft. long by 45 ft. wide, and 15 ft. high, the walls of which were sculptured with elephants; no traces of walls of any description have been found in front of this terrace, suggesting that it formed an open space where reviews took place before the King and his courtiers on the terrace. At the north end of this square is a cruciform structure about 30 ft. wide and 60 ft. long, richly decorated, with six bands of sculptured figures, and it was on the top of this that the French explorers found the supposed statue of the leprous king to whom the monument was ascribed.

The walls of the cities were also of very great extent, and of dimensions commensurate with their importance. They seem generally to have been constructed of a coarse ferruginous stone in large blocks, and only the gates and ornamental parts were of the fine-grained sandstone of which the temples and palaces are built. Wonderful as these temples and palaces are, the circumstance that, perhaps, after all gives the highest idea of the civilisation of these ancient Cambodians is the perfection of their roads and bridges. One great trunk road seems to have stretched for 300 miles across the country from Korat, in a south-easterly direction, to the Me-kong river. It was a raised causeway, paved throughout like a Roman road, and every stream that it crossed was spanned by a bridge, many of which remain perfect to the present day. Dr. Bastian describes two of these: one, 400 ft. in length, and 50 ft. in breadth, richly ornamented by balustrades and cornices, and representations of snakes and the Snake king. The extraordinary thing is, that it is constructed without radiating arches, but like every structure in the place, by a system of bracketing or horizontal arches, and without cement. Yet it has withstood, for five centuries at least, the violence of the tropical torrent which it spans.

Even if no vestiges of these roads or bridges remained, the sculptures of Angkor Vat are sufficient to prove the state of perfection which the art of transport had reached in this community. In these there are numerous representations of chariots, all with wheels from 3 ft. or 5 ft. in height, and with sixteen spokes, which must be of metal, for no London coachmaker at the present day could frame anything so delicate.

1 'Journal of the Royal Geographical Society,' vol. xxxv. p. 75.
in wood. The rims, too, are in metal, and, apparently, the wheel turns on the axle. Those who are aware how difficult a problem it is to make a perfect wheel will appreciate how much is involved in such a perfect solution of the problem as is here found. But it requires a knowledge of the clumsiness of the Romans and our mediæval forefathers in this respect, and the utter barbarism of the wheels represented in Indian sculptures and still used in India, to feel fully its importance as an index of high civilisation.

If, however, the Cambodians were the only people who before the 13th century made such wheels as these, it is also probably true that their architects were the only ones who had sufficient mechanical skill to construct their roofs wholly of hewn stone, without the aid either of wood or concrete, and who could dovetail and join them so beautifully that they remain watertight and perfect after five centuries of neglect in a tropical climate. Nothing can exceed the skill and ingenuity with which the stones of the roofs are joggled and fitted into one another, unless it is the skill with which the joints of their plain walls are so polished and so evenly laid without cement of any kind. It is difficult to detect their joints even in a sun-picture, which generally reveals flaws not to be detected by the eye. Except in the works of the old pyramid-building Egyptians, I know of nothing to compare with it.

When we put all these things together, it is difficult to decide whether we ought most to admire the mechanical skill which the Cambodian architects displayed in construction or the largeness of conception and artistic merit which pervades every part of their designs. These alone ought to be more than sufficient to recommend their study to every architect. To the historian of art the wonder is to find temples with such a singular combination of styles in such a locality—Indian temples constructed with pillars almost purely classical in design, and ornamented with bas-reliefs so strangely Egyptian in character. To the ethnologist they are almost equally interesting, in consequence of the religion to which they are dedicated. Taken together, their circumstances render their complete investigation of the utmost importance.
CHAPTER III.

SIAM.

CONTENTS.

Structures in the temple enclosures—Temples at Sukhodaya, Phra Pathom, Sajjanalaya, Ayuthia, Lophaburi, Sangkalok and Bangkok—Hall of Audience at Bangkok.

ALTHOUGH the architecture of Siam is much less important than that of Burma on the one hand, or Cambodia on the other, it is still sufficiently so to prevent its being passed over in a general summary of styles. Its worst feature, as we now know it, is, that it is so extremely modern. In the 10th century the Thaï, a people from Sayam-dera on the north, began to press southwards against the earlier Brahmanical state of Cambodia, and founded a new kingdom. Up to the 14th century the capital of this country was Sukhothai, or Sukhodaya, a city on the Me-nam, 250 miles from the sea in a direct line, and situated close to the hills.¹ About the year 1350 the Thai, now known as Siamese, were successful in their wars with the Cambodians, and eventually succeeded in capturing their capital, Dwâravatî, which, under the name of Ayuthia, became the capital of the new empire, and practically they annexed all the western provinces of Cambodia to their dominion. They brought in Buddhism, which proved fatal to the Brahmanical civilisation, and architecture with the other arts degenerated.

Having accomplished this, they moved their capital down to Ayuthia, a little more than 50 miles from the sea; and three centuries afterwards Bangkok succeeded it, and is now

¹ This city was visited by the late M. Lucien Fournecoe, who was sent by the French Government in 1891 on an archæological mission to Siam. The results of his researches are published in two quarto volumes with admirably drawn plans of numerous temples and photographures of their remains. The second volume appeared after the author’s death in 1906, and contains plans of the older temples at Sangkalok, Phitsanulok, Lophaburi and Ayuthia, but unfortunately without descriptions.—‘Le Siam Ancien : Archéologie—Epigraphie — Géographie’ (‘Annales du Musée Guimet,’ tome xxvii. part 1, and xxxi. part 2), 1905 and 1906.
the capital. It is by no means certain whether this migration downwards was caused by political events and increasing commerce, or from the country gradually becoming drier and more fit for human habitation. Judging from what happened in Bengal in historical times, I should fancy it was the latter.

In India we find civilised nations first established in the Panjáb and on the watershed between the Satlaj and the Jamnâ. Between 2000 and 3000 years B.C. Oudh seems to have become dry enough for human habitation, and Ayodhyâ (from which the Siamese capital took its name) became the chief city. Between 1000 and 500 B.C. Jânakpur on the north, and Râjagriha on the south, were the capital cities of Bengal; but both being situated on the hills, it was not till Asoka's time (250 B.C.) that Patna on the Són and Vaisálì on the Ganges, became capitals; and still another 1000 years elapsed before Gaur and Dacca became important, while Murshídâbâd, Hugâ, and Calcutta, are cities of yesterday.¹ The same phenomenon seems to have occurred in Siam, and, what is of still more interest, as we shall presently see, in Cambodia.

As Ayuthiâ was for three centuries the flourishing capital of one of the great building races of the world, we should, of course, look for considerable magnificence having been displayed in its architecture. From the accounts of the early Portuguese and Dutch travellers who visited it in the

¹ For the particulars of this desiccation of the Valley of the Ganges, see the 'Journal of the Geological Society,' April, 1863.
days of its glory, it seems to have merited the title they bestowed upon it of the "Venice of the East," and the remains justify their eulogiums. Some of the buildings, however, seem to have been constructed of brick and wood; and as the city has now been practically deserted for more than a century, the wild fig-trees have everywhere inserted their roots into the masonry, and decay has progressed rapidly among the wooden erections. As described by recent visitors, nothing can be more wildly picturesque than this once splendid city, now overgrown with jungle; but such a stage of decay is, of all conditions, the least favourable to the researches of the antiquary. Fournerneau, however, was able not only to measure and work out the plans of some twenty temples, which are illustrated in his work already referred to, but to classify and describe the various constructions found in the enclosures of the temple, giving them the local names, and thus throwing an entirely new light on Siamese architecture.

Vât is the name given to the outer enclosure of a temple, which was always rectangular, and generally of greater length than width. The enclosure walls were as a rule about 3 ft. thick, and from 12 to 14 ft. high. The most important building in the Vât was the Bot—the sacred temple—and usually the first built. This would seem to correspond with the Burmese Thein, or ordination hall for priests,¹ but in Siam it was always included in the temple enclosures, where it stood opposite the principal

entrance. In Burma it seems sometimes to have been built in a separate enclosure of its own. The Bot was rectangular on plan, and was divided into central and side aisles by columns in stone, carrying open timber roofs covered with glazed tiles in bright colours. The illustration of the Bot of the Vat Jai at Sukhodaya (Woodcut No. 473) shows that in section it resembled that of an early Christian church with nave and side aisles. The roofs over the side aisles were at a lower level than that of the central aisle, leaving space for a clerestory, which consisted of pierced terra-cotta slabs. Similar perforated screens were built in between the outer columns of the aisles. In important temples the Bot had double aisles on each side. The system of tenoning beams into the columns is similar to that which is found in Chinese temples and halls, but here in Siam the columns are sometimes crowned with capitals carved with lotus leaves, the main beams and plates resting on the top of the capitals, the transverse beams across the aisles, and the beams carrying the clerestory being tenoned into the columns.

The principal feature in the Bot, admission to which was confined to the priests, was the great altar carrying a gilded statue of Buddha, which was always placed in the central aisle, in the last bay but one. The Bot, which was always preceded by a porch, as a rule stood opposite the east entrance of the enclosure.

In its rear was the principal Phra, or stūpa, of the temple, of which there were two types of design (Plate XLVI.), the Phra-Prang and the Phra-Chedi. The former is of a type peculiar to Siam; about half-way up is the cell, with its entrance door on the eastern side, access to which was obtained by a steep flight of steps, and recessed niches on the three other sides; the form which it takes differs in many essential respects from those we find either in India or Burma. The top, or upper part (Woodcut No. 472), has a domical shape, which we can easily fancy to be derived from the stūpa, but the upright part looks more like the Sikhara of a Hindu temple than anything Buddhist.

The Phra-Chedi is based apparently on the stūpas of India, the cell containing the relics of Buddha, however, being placed underground, and reached in the larger examples by secret passages in the thickness of the walls. There is also sometimes one characteristic Siamese feature not found in India or Cambodia, in the lower storey of the annulet spire, round which a series of detached columns or piers are built, giving the aspect of a classic peristyle; this exists in one of the Phra-Chedis of Vat Jai, at Sukhodaya, and in the great example at Phra Pathom. The enormous structure now existing of the
Pathom Chedi is the second enclosure or envelope of the original Chedi, and rises to the height of 344 ft. It is surrounded by a triple gallery with numerous pavilions, the roofs of which were in the last rebuilding of 1862 copied from those of Angkor Vât in Cambodia.

Among other buildings cited by Fournereau are the Vihâns (Vihâras) and Kamburiens, similar in design to the Bot, but of smaller dimensions, where the people assembled to offer up prayers and listen to sermons.

Of the exceptional buildings found only in the Royal temples are the Chattamukk† and the Mondob (Mandapa) or Mora-dob. The former, cruciform in plan, was originally built to shelter a statue of the four-faced Brahmâ; this has been destroyed, and its place taken by four niches, placed back to back, each with a statue of Buddha facing the cardinal points. The finest example is found in the Vât Mondob Si Nà at Sajjanâlaya, where the plan is that of a Greek cross, nearly 100 ft. in its extreme dimensions, with central and side aisles to each arm. The Mondob is usually a rectangular building, containing a statue of Buddha. In the Vât Si Jum at Sukhodaya, it measured 57 ft. wide by 70 ft. deep, and sheltered an immense statue of Buddha, nearly 50 ft. high, which was constructed in brick, coated with stucco and gilded. The walls of the Mondob were also built in brick, and they carried a lofty roof or tower of the same material; at a height of 32 ft. from the ground the brick courses commenced to project one in front of the other, till they met at the top, thus forming in section an inverted pyramid. Both externally and internally, the brick walls and roof were coated with stucco. The roof has now fallen in, but the structure when built was probably over 100 ft. high. Smaller Mondobs or pavilions were built to hold the Buddha-pâda, the mythical representation of the sacred foot of Buddha. Two other buildings are quoted by Fournereau, the Ho’ Rakhang, or belfry, and the Ho’ Trai, or sacred library, the latter found only in the Royal temples. The sacred tank in the enclosures was known as the Sa, equivalent to the Cambodian Sva.

Of some of these structures many examples would be found in the same enclosure, thus in the Vât Jaï at Sukhodaya, the most important temple illustrated by Fournereau, there was one great Phra-Chedi and its annexes, two Bots, six Vihâns, three Kamburiens, one Mondob, ten small pavilions, five Phra-Prang, and over a hundred Phra-Chedi, most of these being

† Sanskrit, Chaturmukha; these are analogues of the Jaina Chaumukhs. Brahmâ is styled Chaturmukha and Chaturvaktra—having four heads.

‡ Called the Phrahat. — Alabaster, ‘Wheel of the Law,’ pp. 283 ff., and plate. The most famous Phrahat in Siam is about 12 miles from Lophaburi.
erected by private persons as funeral monuments and memorials—altogether nearly two hundred structures, all of which are shown on Fournereau’s plan; the photographs published in his work show the great extent of the remains still existing of the Vat Jai at Sukhodaya. The principal Phra differs slightly in design from those already described—the upper part being partly Chedi and partly Prang, it is raised on a platform and surrounded by eight smaller towers, consisting of a lower storey, with niche on each side containing a statue of Buddha, with a superstructure recalling the entrance doorways of Cambodia and Java, though the sculpture is very inferior. Above the architrave, carried by rectangular piers with moulded capitals, is a pediment enclosed with richly carved moulding, with dragons’ heads on each side, and in the tympanum, which forms a niche, is a figure of Buddha in the Nirvana posture, with other figures much mutilated below. Above there is a second storey with a repetition of the pediment and niche to a smaller scale, and there may have been a third storey, rising about 25 feet in height, the great Phra in the centre being 80 to 90 ft. high. Three towers of a similar kind, placed side by side, exist in the Vat Sisavaï, also at Sukhodaya (Plate XLVII.), where they take the place of the Phra. Above a plain ground storey, with three angle projections, are other storeys, of which six still exist in the western tower on the right, and on each face is a niche with trefoil head and Naga terminations enclosing a statue and, on the angle projections, antefixae carved with heads of Garudas and other deities. The upper storeys are only slightly set back one behind the other, so that they may be the prototypes of the Phra-Prang already described.

No description is given by Fournereau of the temples in Ayuthia and Lophaburi, nor are there any views of the ruins, but his plans suggest a close resemblance to those of Cambodia. Thus in the Vat Tha Sao, at Ayuthia, the central court, with the great Phra in the centre, is more or less identical with those of Beng Mealea and Angkor Vat. The galleries round it and the towers at the angles and in the centre of each front are evidently derived from Cambodia, and may have been carried out by Cambodian architects. The plan of the Phra-Prang in the centre is similar to that of the Cambodian and Javanese temples, with long flights of steps to the entrance porch, and the three small cells or recesses on the three other sides, instead of the one steep flight, as in Siam. The Bot in this temple measures 228 ft. long by 49 ft. wide, and is one of the largest examples in Siam. In the Vat Phu Tai, also at Ayuthia, the inner court has galleries round it, the entrance to the same being flanked by
The Great Tower of the Pagoda Vat-ching at Bangkok. (From Mouhot.)
two Vihâns, one on either side, the Bot being here transferred to the rear, or the west side, with a western entrance.¹ In the Vât na Phra-Thât at Lopaburi (Plate XLVIII.), the plan is more complicated, there being an outer and inner galleried court, united by the Bot, in front of which is a porch of unusual dimensions, preceded by what seemed to be a triumphal entrance gate. Numerous Phras and other structures are shown in the outer galleried court, such as exist in all the plans drawn by Fournereau. A view of the central temple is given in P. A. Thompson's 'Lotus-Land' (p. 240), its tower bears considerable resemblance to one of the Vât Sisavaï towers (Plate XLVII.). The gallery is shown also on the plans of two temples at Sangkalok and in the Vât Xang Phuek at Sajjanâlaya. An exceptional Vihân is found in the Vât Phra-nôn, also at Sajjanâlaya, where the roof is carried by sixteen square piers, four rows of piers with four in each row.

The influence of Cambodia is shown also in the Vât Phra Prang Sam Yôt at Lopaburi, which consists of three sanctuaries, cruciform on plan, side by side, with corridors between them. Above each of these sanctuaries is a lofty tower with five receding storeys, enriched with sculptured features, similar to those of the Vât Sisavaï at Sukhodaya (Plate XLVII.).

The design of the Phra-Prang is found in the crowning members of the pagodas of Bangkok, but they are covered with an elaboration of detail and exuberance of coloured ornament that has seldom been surpassed, nor is it desirable it should be, for it is here carried to an extent truly barbarous (Woodcut No. 474).

Notwithstanding the bad taste which they display, these Bangkok pagodas are interesting in the history of architecture as exemplifying the instinctive mode in which some races build, and the innate and irrepressible love of architecture they display. But it also shows how easily these higher aspirations degenerate into something very like vulgarity, when exercised by a people in so low a stage of civilisation as the modern Siamese.

The same remarks apply to their civic buildings: palaces and porticos, and even dwelling-houses, are all as rich as carving and gilding and painting can make them; but, as in the pagodas, it is overdone and fails to please, because it verges on vulgarity.

The typical design of all these halls and minor buildings will be understood from the following woodcut (No. 475), representing the Hall of Audience at Bangkok. Like all the others, it

¹ The Bot can usually be distinguished from the Vihân by the Phra-Sems, or boundary stones which are set up round it; these are shown on many of Fournereau's plans, and on the plan of Vât Phu Tai round the western structure.
has two roofs intersecting one another at right angles, and a
spire of greater or less elevation on the intersection. Sometimes one, two, or three smaller gables are placed in front of the first, each lower than the one behind it, so as to give a pyramidal effect to the whole. Generally, the subordinate gables are of the same width as those in the centre; but sometimes the outer one is smaller, forming a porch. In the audience hall just quoted there are three gables each way. These may be seen on the right and left of the central spire in the view, but the first and second towards the front are hidden by the outer gable. The point of sight being taken exactly in front, it looks in the view as if there were only one in that direction.

The Burmese adopt the same arrangement in their civil buildings, and in Siam and Burma the varieties are infinite, from the simple pavilion with four gables, supported on four columns, to those with twelve and sixteen gables, combined with a greater complication of walls and columns for their support.

As the Siamese are certainly advancing in civilisation, it may be asked, Will not their architecture be improved and purified by the process? The answer is, unfortunately, too easy. The new civilisation is not indigenous, but an importation. The men of progress wear hats, the ladies French gowns, and they build palaces with Corinthian porticos and sash-windows. It is the sort of civilisation that is found in the Bâzâr in Calcutta, and it is not desirable, in an architectural point of view, at all events, if, indeed, it is so in any other respect.