BULLETIN

OF THE

MADRAS GOVERNMENT MUSEUM

EDITED BY THE SUPERINTENDENT

AN OUTLINE OF INDIAN TEMPLE ARCHITECTURE

BY

F. H. GRAVELY, D.SC., F.R.A.S.B.

Government Museum, Madras

NEW SERIES—*General Section, Vol. III, Pt. 2*

MADRAS

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS

1936

PRICE, 12 *annas*]

PRICE LIST OF
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(*Published October 1936*)

AN OUTLINE OF INDIAN TEMPLE ARCHITECTURE

By F. H. GRAVELY, D.SC., F.A.S.B., Superintendent, Government Museum, Madras.

Since the foundations of the modern study of Indian architecture were laid over half a century ago by the publication of Fergusson's "History of Indian and Eastern Architecture" a vast amount of fresh information has become available; and the time now seems ripe for a revision and simplification of his treatment of the styles adopted in the construction of temples. I have already had occasion to make suggestions in this direction in a paper by Mr. T. N. Ramachandran and myself on "The Three Main Styles of Temple Architecture recognized by the Silpa-Sastras" published as part I of Volume III of the *Bulletin of the Madras Government Museum* (1934). The objects of the present paper are to develop this theme in such a way as to provide, if possible, a unified framework as a basis for further study, that will satisfactorily interpret the facts so far as they are known; and to suggest a terminology reasonably free from controversial implications.

It has long been recognized that Fergusson's separation from one another of Buddhist, Jain and Hindu architecture is unsound. Buddhism and Jainism as we know them to-day sprang out of Hinduism, and there is every reason to believe that their temples have had a similar history. In any case it is clear that they are closely related and cannot be fully understood independently of one another. Among surviving monuments those relating to Buddhism naturally belong mainly to the early times when Buddhism was most widely prevalent in India; and as Hindu buildings were evidently then still being made exclusively (or almost so) of materials of comparatively low durability, surviving Hindu monuments mostly belong to subsequent times. It has therefore been found convenient to refer to the former as the Buddhist architectural period, even though when taken literally this name may be considered misleading, since Hinduism preceded Buddhism in India and continued contemporaneously with it, as well as surviving it to the present day. The difference between surviving Buddhist and Hindu monuments is thus mainly chronological, and no essential architectural difference seems to exist between them and Jain monuments.

Buildings in different architectural styles may differ from one another either in external form, or in decorative detail, or in both. Careful study of the forms and evolution of decorative detail in the temples of the Tamil country has already led Jouveau-Dubreuil to regard these temples as belonging to a style distinct from that of the superficially similar temples of the Kanarese country[1] with which they are usually identified, a conclusion since confirmed by Ramachandran and myself from a study of external form.[2] But as practically nothing seems to have been worked out regarding the characteristics and evolution of the forms of decorative detail found in temples outside the Tamil country, decorative detail cannot yet be utilized in formulating any general system of classification ; for which therefore, for the present, external form alone remains. The production of workable hypotheses that would render intelligible the various forms of pillars, corbels, niches, etc., in temples outside the Tamil country is, indeed, long overdue and would probably do more than could anything else, both to facilitate the correct dating of buildings without inscriptional record of their history, and to make possible an intelligent popular interest in the archæology of Indian temples.

The *Vimāna* or shrine is the part of a temple the external form of which has, from as long ago as the time of compilation of the early Silpa-Sastras, been found to be of most help in distinguishing between different styles. As a rule, moreover, it is the most conspicuous part, though in the finest temples of the Tamil country built subsequent to about 1100 A.D. it is usually small, often quite insignificant, and dominated by immense *gopura* towers over the gateways. A gopura is always much broader than it is deep, but a vimana is usually square or more or less rounded in plan. In the two chief forms of Indian temple, characteristic respectively of the north and south of the Peninsula, the towers consist of a vertical-sided *body* containing the *cella* of the vimana or the gateway of the gopura, surmounted by a tapering portion which may conveniently be designated the *spire*. This terminates, above a somewhat narrow neck, in a bulbous structure bearing the *finial*. Fergusson[3] calls the bulbous structure the "crowning member," and as its correct technical designation is not yet finally settled, I propose to refer to it here as the *crown*.[4]

[1] Jouveau-Dubreuil, "Archéologie du Sud de l'Inde, I, Architecture." *Ann Mus Guimet* XXVI (Paris, 1914) ppendix, pages 172-182, especially page 179.

[2] Gravely and Ramachandran, "The Three Main Styles of Temple Architecture Recognized by the Silpa-Sastras." *Bull. Madras Govt. Mus.* (N.S., Gen. Sec.) III part I (Madras, 1934), page 23.

[3] See, for instance, the quotation on page 15 below.

[4] In my joint paper with Mr. Ramachandran (*loc. cit.*) we considered this to be the *sikhara*. As, however, Prof. Pisharoti and Mr. Balakrishna Nayar have since pointed out to me that this involves difficulties in the interpretation of certain texts relating to vimanas it seems best to avoid it at present. In any case the term *sikhara* relates to a structure forming part of the tower (*vimana*) in all the three styles of temple—*nāgara, vēsara and drāvida*—recognized by the Silpa-Sastras, and cannot rightly be used as a distinctive designation for the tower characteristic of the northern form, as it has been by some authors.

Temples having different types of external form seem to have originated independently in different parts of India, either direct from earlier structures built of more or less perishable materials, or from small flat-roofed temples of which a few survive from the Gupta period.[1] Over a vast area, extending from the base of the Himalayas southwards to the Krishna river and its tributary the Malprabha, vimanas are characterized by the predominance of their

FIG. 1.

Temple of Northern form (from Gravely and Ramachandran, after Cousens ; finial restored).

vertical over their horizontal lines, and by the resemblance of their crowns to an *amalaka*[2] fruit, the star-gooseberry or myrobalan (genus *Phillanthus*), a motif that is often repeated at regular intervals all the way up, especially on the corner elements (fig. 1). South of the Krishna several distinct forms of temple are found, but one of them—which overlaps the area of the Northern form of temple in the basin of the Malprabha—is so much more

1 For references see Gravely and Ramachandran, *loc. cit.* page 10, footnote 3.

2 Concerning *Amalaka* see Pisharoti, *Calcutta Oriental Journal*, I, pages 189–196.

widely distributed than any other that it has come to be regarded as the form typical of the southern part of the Peninsula.[1] In this form of temple the vimana consists of a series of successively smaller and smaller tiers of miniature pavilions, horizontal lines thus predominating over vertical, capped by a cupola-like crown (figs. 2 and 3). Such appear to be the most easily defined characteristics of the two principal forms of Indian temple which, from their geographical distribution, may conveniently be termed the Northern and Southern forms respectively.

The Northern form of temple has undergone considerable modification in different districts, and no doubt also at different times, and may not improbably prove to be characteristic of a number of distinct styles, all presumably (though not necessarily) with a common origin. Unfortunately my knowledge of such temples is not sufficiently intimate to permit of the expression of any opinion either on the vexed question of the origin of this form or on the apparently almost untouched question of its subsequent evolution.[2] It was called Northern or Indo-Aryan by Fergusson, and of these terms the former is geographically correct and, unlike the latter, is free from further implications. Because this form of temple is northern it has also been identified by some authors with the *Nāgara* style of the Silpa-Sastras, but the correctness of this identification is very doubtful (see Gravely and Ramachandran, *loc. cit.*).

[1] On page 13 of our paper already mentioned, Mr. Ramachandran and I call attention to a temple, the ruins of which are recorded by Führer as found at Ramnagar in the Bareli district of the United Provinces, which suggested to us that temples of stories diminishing in size from below upwards, each surrounded by cells, were at one time in use in northern India—and that much earlier than those known in the south. Having subsequently learned of the unreliability of many of Führer's records, we wrote to Mr. K. N. Dikshit of the Archæological Survey for further particulars. He tells us that "None of the photographs and drawings relating to this temple have been published, nor has any other archæologist visited the place during the last 43 years. . . The diminishing stories which you infer from the description seem to me quite impossible, inasmuch as the total height of the mound was not much and it is very likely that the so-called stories are but buildings connected with successive periods of occupation." There is therefore no evidence that temples of Southern form ever occurred in the north, and in the absence of such evidence there is no reason to suppose it.

[2] Nirmal Kumar Bose in his "Canons of Orissan Architecture" (Calcutta, 1932) has studied the temples of Orissa in the light of local manuscripts, written comparatively recently, of which he considers that "it is certain that the tradition recorded in them has been handed down from very ancient times" (page 5). Four main types are recognized in these manuscripts, the *Rekha, Bhadra, Khākhāra and Gouḍiya* (pages 78-80 and pl. opposite pages 20 and 40) and each type is subdivided into four classes (page 81). The *Gouḍiya* type, which as its name implies is identical with the Bengal leaf-hut form of temple (see below, page 11), is a recent introduction of which only two examples are known (page 78). The *Rekha* type is a vimana tower of Northern form. The *Bhadra* type and the *Rekha* "are joined to each other in a very intimate manner," the former forming the *mukhaśālā* (page 154) or vestibule to the latter which is the typical form of vimana in Orissa. In the famous temple at Konarak, however, the vimana appears to be of the *Bhadra* type, which bears an obvious resemblance to the vimanas of Kadamba temples (see below, page 9). The main characteristic of the *Khākhāra* type seems to be its rectangular instead of square plan. In form, though not in use, it thus bears much the same sort of relation to the typical Orissan vimana as the Tamilian gopura does to the Tamilian vimana. Its end walls are sometimes straight (pl. opposite page 33) as in the Tamilian gopura, sometimes curved (pl. opposite page 37). When the Northern form of temple has been similarly studied in other areas it is not unlikely that it may reveal a similar diversity among its buildings elsewhere.

Several early temples of Northern form are considered in Ch. VIII "Temples and Architecture" of R. D. Banerji's "Eastern Indian School of Mediæval Sculpture" (*Arch. Surv. Ind., New Imp. Ser.* XLVII, Delhi, 1933).

The Southern form of temple has been regarded by Fergusson and most subsequent authors as associated with a single style, to which the name Dravidian has generally been applied. Actually, however, two different styles have in this way been confused, styles which were already differentiated from one another by the time their earliest surviving examples

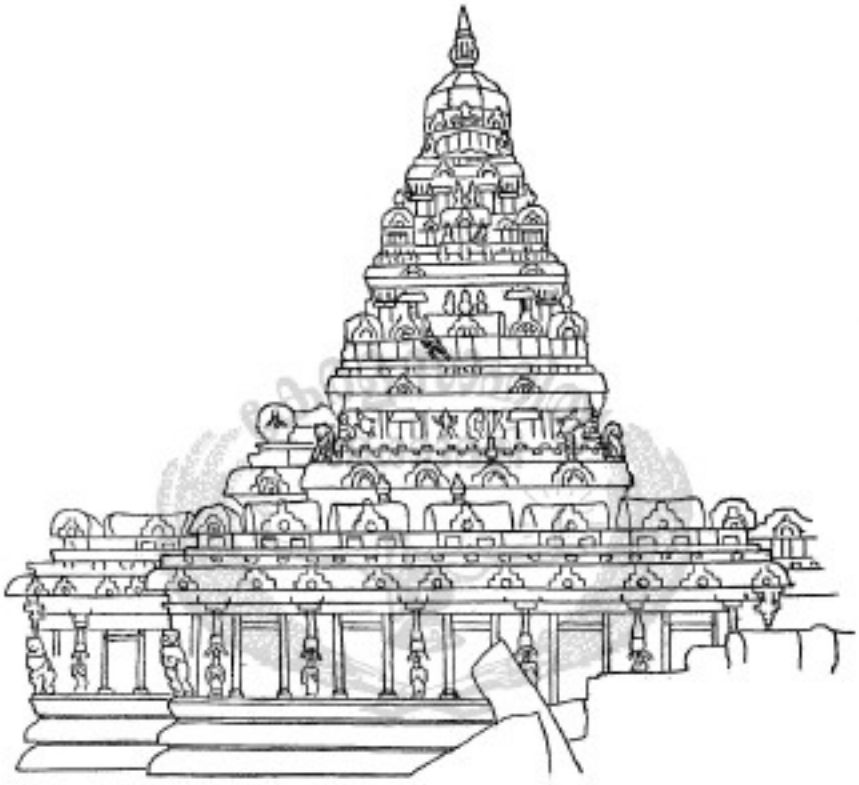

FIG. 2.

Temple of Southern form, Tamilian style (from Gravely and Ramachandran).

were produced, and subsequently diverged still more widely, following different lines of evolution as regards both external form and decorative detail (see Gravely and Ramachandran, *loc. cit.*, pages 23-25, etc.). One of these styles (fig. 3, of the Virupaksha Temple at Pattadakal) was developed side by side with temples of Northern form in the Kanarese country, to which it seems to be confined ; the other (fig. 2, of the Shore Temple at Mahabalipuram) belongs with equal definiteness to the Tamil country, though from about the time of the Vijayanagar Empire onwards it spread over a much wider area. The latter has been studied in detail by Jouveau-Dubreuil in his " Archéologie du Sud de l'Inde " (Paris, 1914) and

in his much shorter "Dravidian Architecture" (Madras, 1917), where he so restricts the meaning of the term Dravidian—as applied to architecture—as to confine it to this latter style alone. As the vimanas of this style seem to fit the Silpa-Sastra definition of the Dravida style some form of this word may perhaps be retained for it—in which case, in view of the linguistic and cultural significance of the word Dravidian, misunderstanding will probably be minimized if Dravida is used in connexion with architecture. As, however, there is still much difference of opinion as to the correct interpretation of the Silpa-Sastra definitions of architectural styles, and as it may further perhaps be argued that the term Dravida, if it does apply, should continue to be taken to include both styles of the Southern form of temple, I propose in this paper to use the term Tamilian instead.

FIG. 3.

Temple of Southern form, Early Chalukyan style (after Cousens). The gable in front of the spire is absent in the earliest examples.

The Tamilian style differs from that of the Kanarese type of Southern temple chiefly in its decorative detail (see Jouveau-Dubreuil, "Archéologie de Sud de l'Inde" I, pages 171-182); but there are distinctive differences between the two in external form as well. For instance, though the crown of the vimana is octagonal in the earliest surviving temples of both, it has a window ornament on each face in the Tamilian style but only on alternate faces in the Kanarese (Gravely and Ramachandran, *loc. cit.* pl. II, fig. 1); and whereas

it mostly retains this original octagonal shape in later Tamilian temples, it is square in all later Kanarese ones (*loc. cit.*, pl. II, figs. 2–4) except the Mallikarjuna at Pattadakal in which it is round. In the latter style, moreover, a decorative gable is added to the front of the spire at a comparatively early date (*loc. cit.*, pl. II, figs. 3–4), a feature not found in Tamilian temples.[1] And there are other differences also, concerning which see Gravely and Ramachandran, *loc. cit.*, page 16. As these Kanarese temples were erected by the Chalukyas,[2] of which dynasty they are the earliest surviving monuments, they may conveniently be designated Early Chalukyan. This term is not only historically correct for the earliest Chalukyan buildings that survive, but will further help to avoid their confusion with later temples derived from them (see below, pages 16–19) to which the general term Chalukyan was applied—in a geographical and not a dynastic sense [3]—by Fergusson, though the most celebrated of them are now known to have been the work of a different dynasty, the Hoysalas. Whether Early Chalukyan architecture should be so defined as to include temples of Northern

[1] A somewhat similar structure is found in the Early Chola temples at Tanjore and Gangaikondacolapuram, but quite low in proportion to the immense height of the vimanas. The principal vimana of the temple at Sri Rangam seems at first sight to be another exception. But the resemblance is clearly superficial. I know of no means by which its date can be fixed, and the site is of course a very ancient one. Its window ornaments prove, however, that in its present condition the building must be much less ancient. Its unusual form has apparently been arrived at by the widening, to permit of its containing a sufficiently large image of the reclining Ranganatha, of the inner end of the apsidal form of shrine mentioned on page 12 below.

[2] On pages 62-63 of his "Chalukyan Architecture of the Kanarese districts" (*Arch. Surv. Ind.* New Imp. Ser. XLII, Calcutta, 1926) Cousens points to the remarkable similarity existing between the Virupaksha temple of one of the queens of the Chalukyan King Vikramaditya II at Pattadakal and the Kailasa temple of the conqueror of the Chalukyas (or his son), Krishna I of the Rashtrakuta dynasty, at Elura (see Fleet's "Dynasties of the Kanarese districts . . . " in "Gazetteer of the Bombay Presidency", 1896, page 391). Though the decorative detail of the Elura temples, like that of the Pattadakal ones, has been shown by Jouveau-Dubreuil ("Archéologie du Sud de l'Inde" I, pages 171–182, pl. lvii-lxiv) to be in a very different style from that of the temples of the Tamil country, the Elura temples differ from typical Chalukyan ones and resemble those of the Tamil country in their use of the octagonal form of crown long after it had been abandoned by the Chalukyas in favour of the square form, and in the presence of small gopuras—very like those of the Kailasanatha temple at Conjeeveram—as well as in "the number of repetitions of the lion" commented on by Cousens. In my joint paper with Mr. Ramachandran already referred to we said that in view of the apparently clear inscriptional evidence that the architect of the Virupaksha temple was from the Tamil country we were surprised to be unable to find anything distinctively Tamilian about it. I now see that in this temple and in the Mallikarjuna from the same reign, alone so far as I know among Chalukyan temples, there are small gopuras. These are, however, situated, as they are also in the Kailasa temple at Elura, over the temple doorways behind the porches (see Burgess "The Ancient Monuments, Temples and Sculptures of India, II, Mediaeval Monuments", pl. 277; and Hürlimann "Picturesque India", pl. 100) instead of over the gateways of one or more outer courts as in Tamilian temples.

Mr. Ramachandran has called my attention to the fact that direct Tamilian influence in the Elura temples is quite possible in view of the recorded alliance, at about the time when they were made, between the Rashtrakutas and certain members of the Pallava royal family against their common foe the Chalukyas. (See Anant Sadashiv Altekar, "The Rashtrakutas and Their Times", *Poona Oriental Series*, No. 36, pages 37–38; also Ramachandran, *Journ. Univ. Bombay*, History, Economics and Sociology I, pages 240-41.) I have to thank Mr. Ramachandran for his ready help in all matters about which I had occasion to consult him in connection with this paper.

[3] See page 41 of his "Architectural Memoir" in "Architecture in Dharwar and Mysore" photographed by Dr. Pigou, A. C. B. Neill and Col. Meadows Taylor, with an Historical and Descriptive Memoir by Col. Meadows Taylor and Architectural Notes by ames Fergusson (London, 1866).

form built by the same kings, or whether these latter temples resembled other Northern temples in their decorative detail as well as in their outward form, and thus are not to be regarded as belonging to any distinctively Chalukyan style, are unfortunately questions that cannot be answered until the characteristics and development of decorative detail have been more fully worked out for both forms of temple in the Chalukyan country, and for the Northern form generally. Nor is it possible to say whether Chalukyan and Hoysala can most conveniently be regarded as distinct styles or as two periods of a single style.

FIG. 4.

Kadamba type of temple (from Gravely and Ramachandran). An early example before the addition of the gable in front of the spire. Crown also absent.

The Northern form of temple apparently dominates the whole of the extensive area of which it is characteristic; but the Southern form seems to have been confined, till the rise of the Vijayanagar Empire, to the Chalukyan and Tamil kingdoms. Except for a few cave temples and the early apsidal temple at Chezarla, practically nothing seems yet to be known of the archæology of the Telegu country, subsequent to the decline of the Buddhist centres in the lower part of the Kistna basin [1]; and such scanty evidence as I have seen points to a distinctive style existing there. History suggests the likelihood of its being derived from Early Chalukyan temples and this seems to be supported by sculpture, but I know of no published evidence one way or the other. In the west, however, two styles are found which appear to be independent in origin from any of those described above, one characteristic of the ancient Kadamba kingdom of the Kanarese country, the other of the Malabar Coast.

[1] Concerning the small square shrines of the northern part of this country see below, page 12.

In a Kadamba temple (fig. 4) the vimana is square in plan, with its tower pyramidal and composed of a series of horizontal step-like stages, each of which is usually decorated marginally with a uniform series of quadrangular vertical projections—a kind of roof, it must be noted, which is also found covering vestibules attached to vimanas of Northern form in Orissa, at Bhuvanesvar and elsewhere.[1] The stages are more numerous and less elevated than in temples of Southern form, and are devoid of pavilion ornamentation. The crown, when present, is square.

In a West Coast or Malabar temple (fig. 5) the walls resemble a wooden railing in

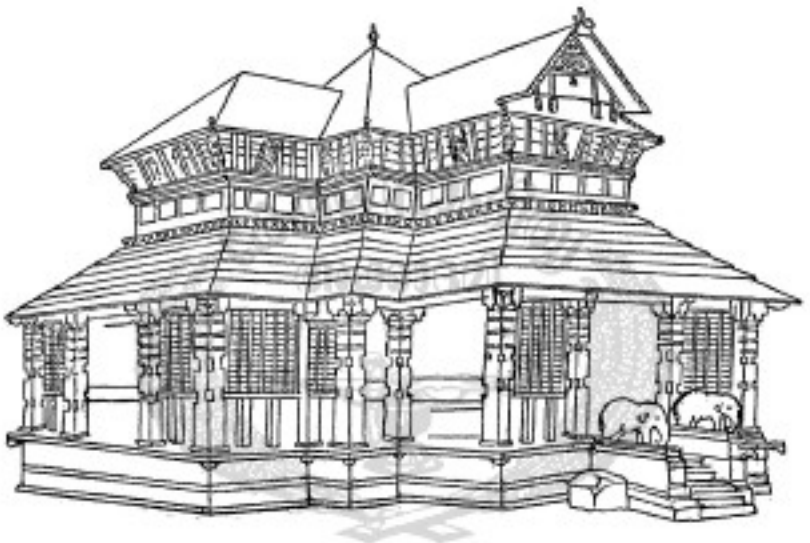

FIG. 5.

Malabar type of temple (after Fergusson).

structure and are as a rule still made of wood to-day, though stone copies from about the time of the Vijayanagar Empire also exist (see Cousens' "Chalukyan Architecture," pages 134–137, Pl. cxliii, cxliv, cxlvi and cxlviii). Such temples may have either a simple pitched roof of overlapping slabs, or they may have a series of pitched roofs one above another (fig. 5), which bear an obvious resemblance to the multiple pitched roofs of Chinese and Nepalese temples (fig. 6). In the first edition of his "History of Indian and Eastern Architecture" (1899, page 308—omitted in the 1910 edition revised by Burgess), Fergusson refers to the well known anthropological similarity between the Nayars of Malabar and the Newars of Nepal, especially as regards their custom of polyandry. If the similarity between these two

[1] Concerning small square vimanas with similar spires in Ganjam see below, page 12. See also above, page 4 footnote 2, concerning the large vimana of this type at Konarak.

now widely separated peoples should prove to be due to their both representing an ancient stock, formerly of more general distribution, which has been split into two and driven to shelter in the mountains of the north and behind those of the south-west, these multiple roofed temples would presumably represent an older style of architecture than the Northern and Southern forms now occupying the wide area between them. But it must not be forgotten, on the other hand, that the West Coast has from very early times been in direct contact with China by sea, a fact to which the Chinese fishing nets of the Cochin and Travancore backwaters still bear testimony. Temples that seem to show a more or less definite affinity to those of Malabar do, however, exist here and there in other parts of

FIG. 6.

Nepal type of temple (after Fergusson).

the Peninsula also. The Nataraja shrine of the Chidambaram temple, for instance, has wooden walls of peculiar construction somewhat reminiscent of those of a Malabar temple, though the shape of the building as a whole, with its golden roof, is clearly connected, through the Durga temple (the so-called Draupadi Ratha) at Mahabalipuram, with that of square thatched huts illustrated in Buddhist sculptures from Amaravati. The temple in true Malabar style at Harpanahalle, Bellary district, shown in Pl. lxxiv and lxxv of Meadows Taylor and Fergusson's "Architecture in Dharwar and Mysore" is probably due to some direct connexion between those who built it and the Kanarese West Coast; but I know of no confirmatory evidence of this, nor whether any other such temples occur in the Deccan.

In the Kashmir valley of the Western Himalayas multiple roofs are found in yet another style of temple (fig. 7). According to Fergusson these temples bear two or three roofs " which are obviously copied from the usual wooden roofs common to most buildings in Kashmir, where the upper pyramid covers the central part of the building, and the lower a veranda, separated from the centre either by walls or merely by a range of pillars. In the wooden examples the interval between the two roofs seems to have been left open for light and air ; in the stone buildings it is closed with ornaments. Besides this, however, all these roofs are relieved by dormer windows, of a pattern very silmilar to those found in mediaeval buildings in Europe ; and the same steep, sloping lines are used also to cover

FIG. 7.

FIG. 8.

Fig. 7. Kashmir type of temple (after Fergusson).
Fig. 8. Bengal leaf-hut type of temple (after Gangoly).

doorways and porches, these being virtually a section of the main roof itself, and evidently a copy of the same wooden construction. The pillars which support the porticoes . . . are by far the most striking peculiarity of this style, their shafts being so distinctly like those of the Grecian Doric, and unlike anything of the class found in other parts of India." [1]

Lastly, mention must be made of the form of temple illustrated in fig. 8. This, as has been pointed out by Gangoly on pages 23–24 of his " Indian Architecture " (*Little Books on Asiatic Art*, Vol. III), is " evidently borrowed from leaf-huts very common in Bengal," the region to which it belongs. In this form of temple with curved eaves we also find the same tendency to a multiplication of roofs one above another.

[1] See also chapter iii " Architectural Styles " in Ram Chandra Kak's " Ancient Monuments of Kashmir " (India Society, London, 1933).

Multiplication of roofs is thus a feature of the different forms of temple typical respectively of Malabar, Bengal, and the Eastern and Western Himalayas. Should any or all of these four styles be grouped together as belonging to a single form? The answer to this must depend on whether or not they can be shown to have a common origin, independent of the Northern and Southern forms of temple characteristic of the rest of the country. At present this cannot be done, and to attempt any such grouping would be to prejudge the issue. But the different kinds of Indian temple known to me—there may of course be others that have escaped my notice—all either belong or seem to have been derived from the above mentioned fundamental types, which are as follows: temples of Northern form, whether comprising one or several styles it is not yet possible to say; temples of Southern form in two distinct styles, the Early Chalukyan and the Tamilian; and temples in five apparently independent styles of more restricted range, namely those of the ancient Kadamba kingdom, Malabar, Bengal, Nepal and Kashmir. To this list of prototypes must be added apsidal temples, based on the Buddhist chaitya hall, and square temples, based on a square thatched hut with simple roof, and straight eaves, which occur sporadically in the style of their locality as regards detail, in various places such as Mahabalipuram (the so-called Sahadeva and Draupadi Rathas respectively), Chezarla, Aihole (the so-called Durga) and Chidambaram (the Nataraja shrine).

Small square plain shrines based on a square hut with simple roof and straight eaves occur in many places and should perhaps be regarded as an independent type, though when decoration is added it naturally follows the local style. These temples are, however, so insignificant that little or no attention seems yet to have been paid to them. When travelling recently by train from Calcutta to Madras, I noticed that such temples seemed to be the principal, if not the only, form of temple in Ganjam and the northern part of the Telugu country. In Ganjam the pyramidal roof is marked by a series of horizontal courses which, in at least one example a little to the south of the Chilka Lake, have the form of low step-like stages decorated with quadrangular vertical projections as in the vestibules of some of the temples of the adjoining province of Orissa and in the shrines of Kadamba temples. The crown, however, is unlike that of either being, so far as I could observe, round but neither clearly separated from the pyramidal spire by a distinct neck nor ribbed like an amalaka. In some, crown and finial seem to be merged into one another to form an octagonal column. Further south all trace of the crown disappears and the horizontal courses become less marked and less numerous till near Vizagapatam they are often entirely absent. Almost immediately to the south of Vizagapatam, however, horizontal courses reappear in many such shrines in the form of deep steps, suggestive of the terraced spire of the Southern form of temple, though without its decoration. In the Madura district also, round about Kodaikanal Road station, there are many small square shrines, but they differ from those just described in that their spire is curvilinear and is much smaller at its base than is the body of the shrine from which it rises. It may be either square or circular in plan, in the latter case being more or

less hemispherical instead of pyramidal ; and sometimes ornamentation of Tamilian type is added. Evidently these little shrines differ considerably in form from one part of the country to another and deserve more attention than their simplicity would seem to indicate.

It is unlikely that any of the above mentioned styles, except perhaps the last if it is to be regarded as distinct, have remained unchanged throughout the ages during which they have been in existence ; and the more complex of the temples of Bengal, such as the Dakshineswara temple near Calcutta figured on pl. 126 of Hurlimann's "Picturesque India," have evidently arisen from a combination of the Northern form of tower with the Bengal leaf-hut form of temple,[1] two prototypes which belong to contiguous areas. More investigation seems, however, to be needed before the evolution of any of the styles found north of the Krishna can be made clear ; and this seems to be the position with regard to the Malabar style also.

The evolution of the Tamilian style has been worked out by Jouveau-Dubreuil, whose results are embodied in the two books mentioned on pages 5–6 above. He divides the time from the making of its earliest surviving examples by the Pallava king Mahendravarman I, early in the seventh century A.D., to the commencement of its Modern period about 1600 A.D., into four periods of approximately 250 years each. The first is the period of Pallava temples (fig. 2, p. 5), ending with the final subjection of the Pallava dynasty of Conjeeveram by the Cholas from further south in about 850 A.D. It seems likely that in their original kingdom the Cholas already practiced an allied—but in certain respects distinct—style of their own, presumably in perishable material ; for with their supremacy marked changes in certain details make their appearance somewhat abruptly in surviving buildings. The supremacy of the Cholas lasted for about 500 years ; and throughout that time a gradual evolution took place, resulting in such great differences between the buildings of its beginning and end that it is convenient to divide it into an Early and a Later Chola period of 250 years each. This gradual evolution continued through the 250-year period of the Vijayanagar Empire by which the Later Chola period was followed, and so on into the Modern Period.

The Pallavas made cave, free-standing monolithic and structural temples, never of very large size, and either without gopuras or with these smaller than the vimana. Their largest surviving temple is the Kailasanatha at Conjeeveram, but most of their finest sculpture is at Mahabalipuram. The Early Cholas built larger temples in which the vimana still dominated the gopuras, being in some instances indeed, as at Tanjore, of immense size.[2] The Later Cholas seem probably to have enlarged existing temples, the shrines of

[1] Concerning other forms taken by temples in Bengal see N. R. Bhattasali "Iconography of Buddhist and Brahminical sculptures in the Dacca Museum" (Dacca 1929), pp. xii—xvii, pl. lxxxi—lxxxii, "8. An idea of the temples that were erected over these images" and S. K. Saraswati "The Begunia Group of Temples" *Journ. Ind. Soc. Oriental Art.* I (Calcutta, 1933) pages 124-128, pl. xxxvi and "Temples of Bengal" *Journ. Ind. Soc. Oriental Art.* II (Calcutta, 1934), pages 130-140, pl. xlv, 3 text-figs. See also "Bengali Temples and their General Characteristics" by Monmohan Chakravarti *Journ. Asiatic Soc. Bengal*, N. S. V, 1909 (1910) pp. 141–162, 13 figs.

[2] For an account of the Early Chola temples of Koranganatha at Srinivasanalur, Trichinopoly district, and at Gangaikondacolapuram, see Percy Brown "Two Cola Temples" *Journ. Ind. Soc. Oriental Art.* II (Calcutta, 1934), pages 2-6, pl. ii-vi, 1 text-fig.

which were considered too sacred to touch, in preference to constructing new ones ; for their vimanas are as a rule insignificant and their gopuras immense as, for instance at Tiruvannamalai and Chidambaram. And the tradition thus established has remained in fashion ever since. The Vijayanagar kings, though they continued the building of immense gopuras, concentrated attention on the mandapas or pillared halls, marvellously developing the carving of their many rows of monolithic pillars, as may be well seen at Conjeeveram and Vellore. Only with the coming of the Modern period in about 1600 A.D. does the custom seem to have been commenced of making mandapas in the more convenient form of spacious halls or corridors, such as are found at Madura and Rameswaram, as well as in many earlier temples where they form additions or reconstructions, to enable large numbers of people to obtain an unobstructed view of any ceremonies performed. The successive periods thus differentiated are equally well characterized by successive developments in decorative motifs, the

FIG. 9.

Evolution of corbel, Tamilian style (slightly modified from Jouveau-Dubreuil).
A. Pallava. B. Early Chola. C. Later Chola. D. Vijayanagar.
E. Modern. Transitional forms develop in the later parts
of all these periods except the first.

pillars, corbels (see fig. 9), niches, etc., all showing a gradually increasing degree of elaboration, though many of the earlier and simpler forms, being comparatively cheap and easy of execution, have persisted and are still in use to-day. Details will be found in Jouveau-Dubreuil's two books already mentioned.

The course of evolution, especially of decorative motif, in the Kadamba and Early Chalukyan styles is as yet much less clearly understood ; but in the former style it has been studied in ch. viii " Architecture " of pt. vii " Internal History " of Moraes' " The Kadamba Kula, a History of Ancient and Mediaeval Karnataka " (Bombay, 1931) and the broad outlines of the obviously parallel development in external form of these two geographically contiguous styles have been indicated in the paper by Mr. Ramachandran and myself already referred to. The Kadamba type of vimana (fig. 4, p. 8) seems to have developed from a flat-roofed temple by the addition of a series of successively smaller and smaller horizontal rooflike stages, a square cupola-like crown being often, but in early times at least not invariably, inserted between the pyramid thus formed and the finial. The builders of the Early Chalukyan temples, as already mentioned above, used both the Northern and the Southern

(fig. 3, p. 6) form of tower. For over a century both forms of temple seem to have been built in one and the same locality, each without apparent effect upon the other. But whether they differed from one another in decorative detail as well as in form, and if so whether and to what extent they influenced one another in respect of it, never seems to have been investigated and can only be decided by further field study of the buildings, nore of which unfor tunately I have ever seen.

There can be little doubt that the Southern form of vimana has been derived from a pyramidal Buddhist monastery or vihara of successively smaller and smaller stories, each consisting of a central mandapa surrounded by monks' cells ; for as Fergusson has pointed out (*loc. cit.*, 1899 edition, pages 135–136, figs. 66–67 ; 1910 edition, I, pages 171–173, figs. 89–90) it appears to be practically a reproduction in miniature of such a vihara. This use of tiers of pilasters and miniature cells as a mode of decoration had, moreover, probably begun to be applied to buildings of various shapes—elongate, whether rectangular or apsidal, as well as square—at some period antecedent to that of the earliest surviving examples, among which all these shapes are already included at Mahabalipuram.

The origin of the Northern form of vimana is much more obscure. Fergusson (*loc. cit.*, 1899 edition, pages 438–439 ; 1910 edition, II, page 119) with reference to the tower of the Huchchimalligudi temple at Aihole says "It will also be observed in this tower that every third course has on the angle a form which has been described as an amalaka in speaking of the crowning members of northern temples. Here it looks as if the two intermediate courses simulated roofs, or a roof in two stories, and then this crowning member was introduced, and the same thing repeated over and over again till the requisite height was obtained." This does not, however, account for another characteristic of the Northern form of tower, namely, the setting forward of the middle portion of each face, which seems to be an equally marked feature particularly of simple and presumably early examples. Other investigators have, therefore, suggested its evolution from a stupa raised, as was often the case, on a series of terraces, each of them set forward in the middle of each side to accommodate flights of steps from the one below, the whole being surmounted by a series of umbrellas one above another, of which the lowest has become enlarged and developed into the amalaka—a mode of evolution that receives strong support from the series of votive stupas of various forms that have been set up round the Mahabodhi temple at Buddh Gaya and elsewhere.

Whatever its origin, the Northern form of tower, found side by side with Early Chalukyan examples of the Southern form, is taller than the latter in proportion to its breadth and, though its spire is composed of a series of horizontal courses, the lines of these are subordinate to the stronger vertical lines resulting from the setting forward of the middle portion

of each face ; while the Southern and Kadamba forms of tower both have a pyramidal spire consisting of a series of strongly marked horizontal courses, which in the former are deeper and less numerous than in the latter and decorated with miniature pavilions.

In the two or three earliest surviving Early Chalukyan temples of Southern form (Gravely and Ramachandran, *loc. cit.*, pl. ii, fig. 1) the crown is octagonal as in the Tamilian style from which, however, as I have already explained elsewhere (*loc. cit.*, page 16) these temples differ in other features which place them at the base of the Early Chalukyan series and exclude them from the Tamilian series. In all other temples of the Early Chalukyan series the crown is square (*loc. cit.*, pl. ii, fig. 2), except in the Mallikarjuna at Pattadakal, which seems to be unique among temples with cupola-like crown in having it round. In Kadamba temples the crown is not always present, at any rate among those of simple and presumably early construction ; but when there is one it is always square. In both the Early Chalukyan and Kadamba series the next development is the addition of a projecting gable to the front of the spire (*loc. cit.*, pl. ii, g. fi3), a form of ornament never found in the Tamilian style.[1] In Chalukyan temples it is first seen in those of Mallikarjuna and Virupaksha (see fig. 3, page 6 above), erected by the queens of Vikramaditya II (733–746 A.D.), and it presumably appeared in Kadamba temples at about the same time.

The first attempt to combine into a single Chalukyan building elements from both the Northern and Southern forms of temple probably occurs in the Papanatha temple at Pattadakal, which is believed to be if anything a little earlier than the Virupaksha. But this is essentially a temple of Northern form to the body of which miniature pavilions from the southern form have been added, and on these lines no further developments seem to have followed.

At Kukkanur we find, however, in the Navalinga and Kallesvara temples, a type of combination that proved to have much greater possibilities. In these temples the tower is essentially of Southern form, but it has the middle portion of each face set forward as in the Northern form, the strong vertical lines of which thus come to be superimposed upon the strong horizontal lines of the Southern form. The Navalinga temple departs comparatively little from the typical Southern form, but the Kallesvara shows a more extensive incorporation of Northern elements, and its miniature pavilions are already subordinated to the lines of the courses from which they spring.

Neither of these temples seems to bear any inscription giving a clue to its date, nor do dates seem as yet to be determinable for the stages by which the composite style that they

[1] Concerning the curious shrine of the Srirangam temple see above, page 7, footnote 1.

initiated developed into the style of the Hoysala dynasty. What those stages probably were may, however, be briefly indicated by reference to two or three temples selected for the purpose. Whether such transitional temples should be called Later Chalukyan or Chalukya-Hoysala Transitional, or whether—as I am inclined to suspect—they belong to two successive periods, of which the first is characterized by comparative restraint and the second by a profusion of external decoration, is not yet clear. The large Jain temple at Lakkundi figured by Cousens in pl. lxi of his "Chalukyan Architecture" affords a good example a little more advanced than the Kallesvara temple at Kukkanur but with the decoration under restraint, while the temples of Tarakesvara at Hangal (Cousens, *loc. cit.*, pl. lxxxvi) and of Santesvara a Tilivalli (Cousens, *loc. cit.*, pl. c.) may be taken as representatives of the more unrestrainted transitional type of building.

In the two temples last mentioned the shrines have begun to lose the square plan of an Early Chalukyan shrine and to assume the star-shaped plan of a typical Hoysala one. The crown is reported by Cousens to be modern in the Tarakesvara temple, but that of the Santesvara shows unmistakable evidence of its derivation from a square crown of Southern cupola-like shape ; while up the middle of each side of the spire of both there is a series of plaques suggestive of the Northern form of tower. Cousens (*loc. cit.*, page 92) says, moreover, of the former temple "The little *sikkharas* on the shrine walls are of the Chalukyan type while those round the low wall of the open hall are of the northern."

The tower of the Mahadeva temple at Ittagi (Cousens, *loc. cit.*, pl. ci) and a sculptural miniature of a very similar tower (pl. i) from over a niche in a temple of the Bellary district and now preserved in the Madras Museum, show a slightly different combination of elements from the Northern and Southern forms of temple, a combination in which the ends of pavilions from the latter are clearly recognizable projecting on either side from behind the central series of decorative plaques from the former.

As in the Virupaksha (fig. 3. p. 6) and Mallikarjuna at Pattadakal, among Early Chalukyan temples, the hall in front of the shrine of the Tarakesvara temple at Hangal (fig. 10. B. p. 18) has an entrance on either side, each with a large porch, in addition to the median entrance at the eastern end. This median entrance is the one corresponding to the single entrance which alone is found in Early Chalukyan temples other than the two just mentioned ; but in the Tarakesvara temple, instead of opening direct to the exterior, it is connected by a covered way with a large star-shaped mandapa, and this covered way has on each side a small flight of steps forming additional entrances. The plan of the Mahadeva temple at Ittagi is on similar lines. Cousens gives no plan of the Santesvara temple at Tilivalli, but mentions that it has three porches.

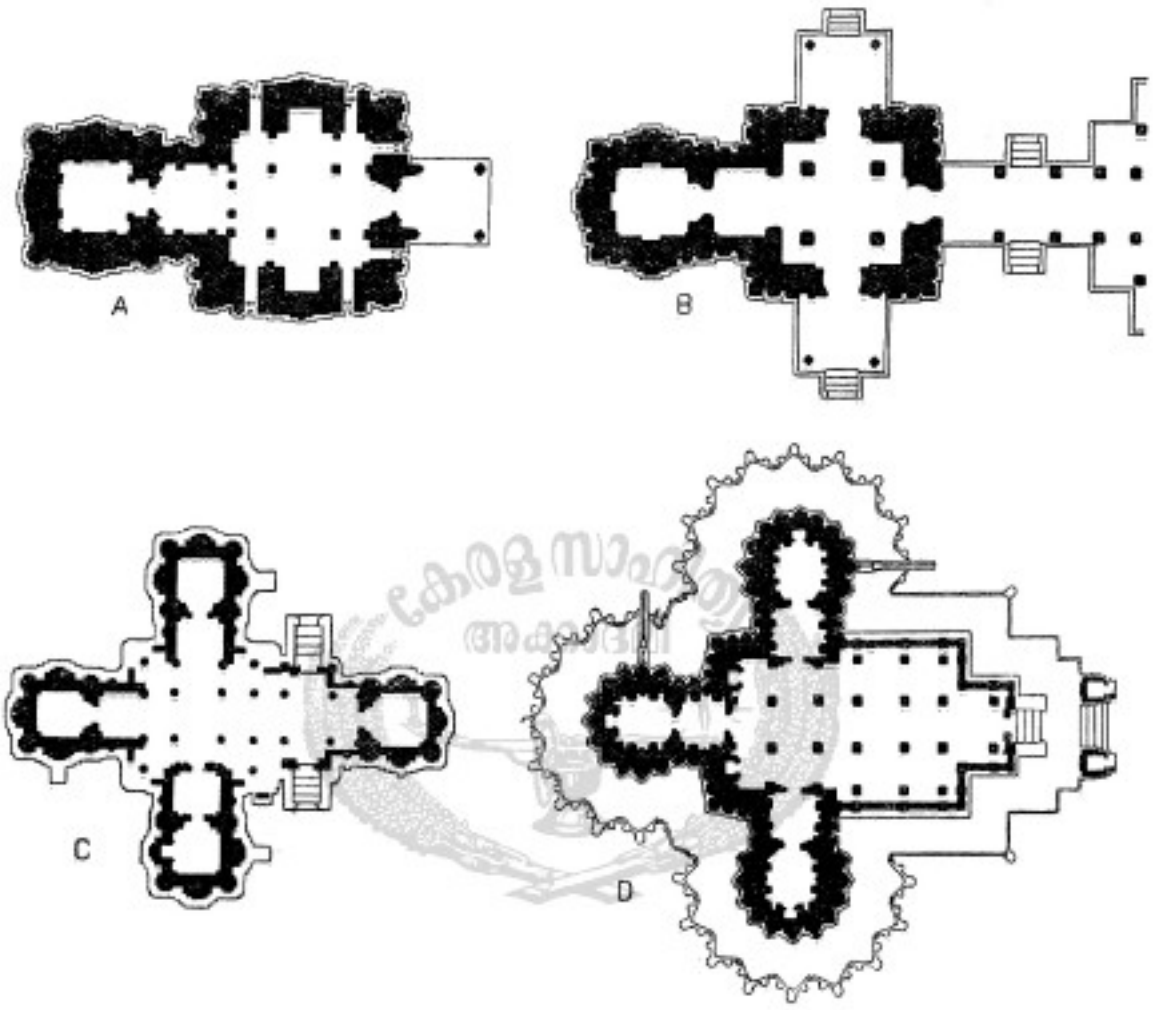

FIG. 10.

Plans illustrating the development of the Hoysala type of temple from the Early Chalukyan type—
A. Kallesvara Temple, Kukkanur (after Cousens).
B. Tarakesvara Temple, Hangal (after Cousens).
C. Lakshmidevi Temple, Dodda Goddavalli (after Narasimhachar).
D. Kesava Temple, Somnathpur (after Narasimhachar).

In the Kesava temple built in 1268 A.D. at Somnathpur (Narasimhachar " The Kesava Temple at Somnathpur " *Mysore Arch. Ser.*, Architecture and Sculpture in Mysore I, pl. i), which may be taken as an example of the fully developed style of the Hoysala period, developments already seen in the temples just described have been carried further, the porches to north and south of the hall are replaced by vimanas of the same size and form as the median

one,[1] all of them being definitely star-shaped (fig. 10 D.) and the whole temple is raised on a platform.

The Hoysala style must thus be regarded as the final outcome of the union of the two forms of temple adopted by the Chalukyan dynasty; but it seems to have absorbed the Kadamba style also. As has already been pointed out above, the evolution of Kadamba and Early Chalukyan temples followed parallel courses. As the predominating lines of the Kadamba spire were horizontal, the superimposing of the vertical lines of the Northern form of tower upon it would have much the same effect as it had in the case of the spire of the Southern form of vimana. And in the Lakshmidevi temple at Dodda Gaddavalli, built in 1113 A.D. (Narasimhachar "The Lakshmidevi Temple at Dodda Gaddavalli" *Mysore Arch. Ser.*, Architecture and Sculpture in Mysore III) there are unmistakable signs of the use of Kadamba as well as of Chalukyan models.

This temple was built about a century and a half before the Kesava temple at Somnathpur and its shrines are still fundamentally square in plan (fig. 10 C), nor is the temple raised on a platform. It has, however, four vimanas, the fourth one replacing the large mandapa found at the eastern end of the Tarakesvara temple at Hangal, the only entrances being, consequently, the pair immediately in front of this fourth shrine. Of these four shrines that of Lakshmidevi (Narasimhachar, *loc. cit.*, pl. viii) faces east and has been selected for special ornamentation in a manner related to that of the composite transitional vimanas of the Tarakesvara and Santesvara temples described above, though its crown is of scarcely more advanced type than that of the Kallesvara temple at Kukkanur at the base of the transitional series, and less so than that of the Varaha-Narasimha temple at Halsi in Kadamba style (Moraes, "The Kadamba Kula", fig. 32, opposite page 289). The other three shrines of the main temple, and also apparently all the five additional shrines in the temple enclosure, have towers of the Kadamba type (*loc. cit.*, pl. i and ix). Though the Lakshmidevi shrine faces east, it is situated not at the end but on one side of the central hall, the main axis of the temple extending north and south instead of east and west.

This completes the summary of the various types of building from which the temples of different parts of India have been derived, so far as these are known to me, and of the merging of three of these styles to produce the composite Hoysala type of temple. Underlying all of them it will be seen that there is at least one common feature—the production of towers by a process of vertical repetition instead by increasing the height of any single structure. In some towers there appears to be a repetition of roofs, in others a repetition of terraces. But vertical repetition of some kind is present in all forms, though in the Northern the resulting horizontal lines are dominated by stronger vertical ones. May not this deeply rooted tendency to vertical repetition indicate some sort of fundamental unity underlying all the various styles of Indian temple architecture?

[1] Vimanas grouped round a common hall (or series of halls) are found in the Navalinga temple at Kukkanur, which forms the commencement of the transitional series (see above, page 16). Cousens says, however (*loc. cit.* page 74), "It needs but a glance at the plan to see that this collection of shrines and halls is not the result of a premeditated design or it would have been more symmetrical."

കേരള സാഹിത്യ
അക്കാദമി

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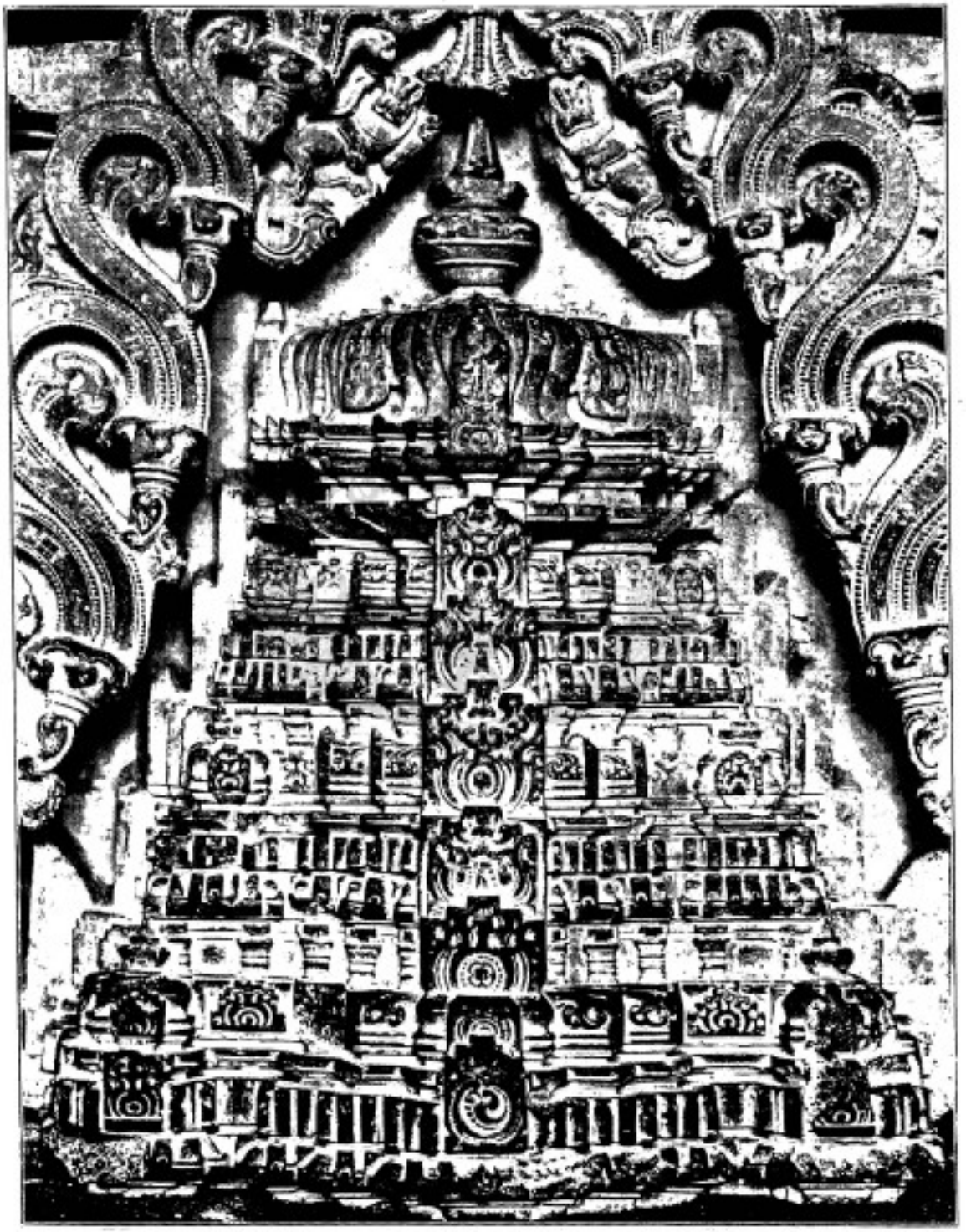

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