

3rd

Nirmal Kumar Bose Memorial Lecture, 1997

**Professor Nirmal Kumar Bose and His Contribution
to Indian Temple Architecture**

**The Pratiṣṭhā - Lakṣaṇasamuccaya and
the Architecture of Kalinga**

by

M. A. Dhaky



**Indira Gandhi National Centre for the Arts
New Delhi**



Professor Nirmal Kumar Bose
(January 22, 1901 - October 15, 1972)

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Third (1997)**

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INDIRA GANDHI NATIONAL CENTRE FOR THE ARTS
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Contents

1. Professor Nirmal Kumar Bose and His Contribution to Indian Temple Architecture 1
2. The Pratiṣṭhā-Lakṣaṇasamuccaya and the Architecture of Kalinga 27

Professor Nirmal Kumar Bose and His Contribution to Indian Temple Architecture

To be invited to deliver lectures in a prestigious series such as the one commemorating the reputed scholar and researcher like Professor Nirmal Kumar Bose, and that too by India's foremost institution that deals with the history and concepts/philosophy of Indian art like the Indira Gandhi National Centre for the Arts, is a great honour. And yet, owing to many and massive commitments on hand, I had to plead inability to my friend Dr. B.N. Saraswati when he asked me to deliver two lectures at the Centre. An undertaking such as this needed sufficiently freer time for working out a well-studied, meticulously organized, and a serious write-up. Under the persuasive pressure of Dr. Saraswati, however, I ultimately had to yield and the mutually convenient dates were fixed. The lectures, chaired by Shri M.N. Deshpande, were delivered on the 1st and the 2nd of December 1997.

I

Personal Reminiscences

Prof. Bose was a multitalented man, and hence an academic of multivalent intelligence and purpose. He was veritably a 'Renaissance man' as in the West he would have been called.

A thorough bred nationalist and freedom fighter, he was the product of those times when ethics and morality, simplicity in personal style of living and high thinking besides hard conscientious work were the goal and way of life for patriotic, intelligent, and educated citizens. Serene, but not unassuming, dignified, but not unduly humble, fearless, commanding, but not overbearing, in the academia he was known both for his sterling contributions to the fields of anthropology as well as pre-medieval and medieval architecture, specifically that of Kalīngadeśa. I was indeed hesitant to draw his word-portrait, particularly owing to my own questionable eligibility to say something on the life and work of a genius who in his own times had worked in several important fields of research, was held in high esteem in India and abroad and, what is more, my acquaintance with him was limited. However, my profound reverence for him encouraged me to say something about him as I knew him through brief encounters. Also, there were two points common between him and me. Like him, I had my basic degree in geology, and second, I, too, turned toward archaeological studies with a special focus on temple architecture. However, while Prof. Bose could also switch over to anthropology—his master's was in that discipline—and next to the related discipline of social sciences, I took a different path, the one that led to the history of arts because of my strong leanings from early days toward the aesthetic aspects of all arts including architecture of the ancient and medieval world which eventually, and for long, had remained my main field of interest and investigation. And I was also deeply interested in interpreting art, profoundly fascinated as I was by the writings of Anand Coomarswamy, Stella

Kramrisch, André Malreau, Jean Bony, Herbert Read, and some other great writers on art and architecture, particularly of the Continent.

Prof. Bose of course did not despise art despite his virtually ascetic way of life: which is why he could, in those early days of the survey and assessment of Indian art and architecture, refer to the pioneering interpreters and historians of Indian art/architecture like James Ferguson, E.B. Havel, and a few others with sympathy and consideration. He also respected the conceptual investigations done against the ritualistic and textual background of ancient Indian religious and cultural traditions besides philosophy and metaphysics: which is why he could appreciate the work of Stella Kramrisch and assumably her great contribution of all time—her most famous book—*The Hindu Temple*.¹ Towards temple architecture, his own outlook was fundamentally of a scientist who endeavoured to study the ancient/medieval temple as a 'structure' in a logical and hence systematic manner and in relation to the ideas/thoughts/angles of the people of the past, in sum the traditional builders themselves who shaped them. The region he selected for this purpose was Orissa, ancient and medieval Kalingadeśa. The choice was apt and its execution in practice could be facilely done. For Orissa possessed many and largely well-preserved examples of temples rendered in one of the most awesomely powerful as well as elegant regional styles. What is more, it was easy of access from Bengal and, no less important, possessed a living tradition of medieval craftsmanship. The fruit of his efforts in those investigatory directions was his memorable book, the *Canons of Orissan Architecture*.

For long I knew him from a distance and that too from his aforementioned work alone. I had, in point of fact, no chance of working with him. Indeed, I could not have, working as I did in early fifties in the Saurāṣṭra region of the present day Gujarat State on the buildings of the Maitraka period (c. late 6th-8th cent.) and subsequently soon on those of the pre-medieval and medieval period in Gujarat as well as in Rajasthan (8th-13th cent.), for getting clues that may solve the problem of genesis of the medieval building style of western India. I was too distantly posted and much too tied to the region; hence my research activities were conditioned and controlled by the then prevailing circumstances. Even to entertain an idea of visiting Calcutta for the purpose of meeting Prof. Bose, even when I was profoundly impressed and inspired by his aforementioned book, then seemed an impossible proposition. Moreover, as I later was to learn, in the last two decades of his life, his research efforts were almost exclusively centred on socio-anthropological studies. So I did not have the barest chance of working with him which Dr. Saraswati and his colleagues in the field of anthropology had. Nonetheless, I have had two meetings² with him, the first in 1955 in Calcutta, the second in Varanasi took place in 1970.³

The two major meetings—15 years separated them—had very different origins and contrasting results. The first was prompted by a suggestion of (late) Shri Prabhāshankar O. Sompura, the designing and superintending architect of the temple of Somanātha in Prabhāsa which was then under construction. Prof. Bose, who in the course of his itinerary had visited Prabhāsa, probably late in 1954, had then

examined the plan and exterior elevation of the temple's design, but not met with Sompura who then was away from the town. Subsequently soon Prof. Bose wrote a scathing criticism of the design and sent the off-print of that article to Sompura who was visibly shaken at that condemning review. As I was scheduled to visit Calcutta in late December for attending the annual session of the Indian History Congress (1955), Sompura gave me the drawings of the longitudinal and cross-sections of the proposed design and asked me to explain the details that would clarify the situation and meet with the objections Prof. Bose had raised, as also convince him of the total practicality of the building's design as well as the validity and soundness of the engineering principles which formed the basis of the viability of the design.

In Calcutta, in the University campus, I had an audience with Prof. Bose. I explained him the actualities of the intended design and produced the drawings in support. The superincumbent weight of the massive *śikhara* of this great temple was adequately distributed, partly borne by the exterior walls and pillars in the ambulatory passage and, in larger part, by the thick inner sanctum walls on which the *mūlamanjarī* or the main or central spire, with the *kuharas* or hollow superimposed chambers within, rested; hence his apprehension that the temple superstructure looked like 'a man standing on his palms instead of feet' had no place in reality. After checking the cross-sections, he nodded understandingly but asked me one question: "Why not to construct the temple in a modern building material like the reinforced cement concrete? I clarified that the intention was

to build a structure according to the plan and elevation of the preceding original, dignified, and indeed an awe-inspiring building in stone of the grand Meru class built by the Caulukya emperor Kumārapāla in A.D. 1169. Since RCC is not amenable to dressing in sharply as well as considerably moulded and decorated surfaces, it was in the fitness of things that the temple be built in stone. Second, RCC is not a time-tested material as stone is. In point of fact, RCC constructions in the sultry climate of western Indian sea-coast come down much sooner than in dry climate. The constructions in sandstone weather well as was proven by the ruins of the older temple itself which stood at the site. He was satisfied but made a final, and serious, observation ending with a suggestion for using an alternative formal design. He averred that the clustered *śikhara*s of the Gujarat temples were constructionally weak; hence most of these had collapsed in the past. Why not, then, to follow the Orissan model and its way of structural method and engineering for the Somanātha building? Now, an answer to this question involved a bi-faceted clarification. I replied that most temples of Gujarat were devastated during the iconoclastic invasions of A.D. 1025, 1217, and 1304: and further, during the occupation period that followed the last invasion, many temples had been deliberately destroyed or severely damaged. To add to that, the early 19th century earthquake had played a havoc inasmuch as the *śikhara*s of several surviving temples either completely buckled in or were very seriously damaged. (As I recall, I next had recounted the examples of the temple where the *śikhara*s still stood intact.) As for adopting the Orissan form of building for the Somanātha temple, it would go

against the injunctions of the *vāstuśāstras* which enjoin that only the native or local regional mode (and hence style) be employed for building a temple in a given region. (This expediency must be for the sake of maintaining cultural compatibility and harmony, indeed to be in keeping with the building traditions prevailing in a particular region where hundreds of sculptors, masons, and craftsmen with the know-how of, and schooling in, a particular regional formal idiom, mode, and style were in those days available.) He pondered over it for a moment, and nodded with a smile. The initial meeting thus had gone in a friendly tenor and had ended well.

The second, and final, meeting in Varanasi was not so pleasant. It was plainly devastating. In late sixties, the American Academy of Benares, where I then was working on a project (initially concerning the *Dictionary of Indian Temple Architecture* which involved detailed studies of the morphology of the Indian temple architecture) was threatened to be closed down. Sensing this then as an imminent disaster, and feeling concerned about my future, Dr. Pramod Chandra wrote to Dr. Nihar Ranjan Ray to explore the possibility of granting me a fellowship for continuing my work at the Indian Institute of Advanced Study in Simla where Dr. Ray was then the Director. Dr. Ray apparently had requested Prof. Bose (who then was the Commissioner for Scheduled Castes and Tribes after retiring as Director, Anthropological Survey of India) to find out about the kind, level, and quality of work on the Project that was underway at the Academy. Dr. B.N. Saraswati, who in those days was working in Varanasi in pursuance of his anthropological researches under the

guidance of Prof. Bose, informed me that Prof. Bose was planning to visit Varanasi. I was very excited at the news and sent a letter to Prof. Bose on the 3rd of April 1970 in which is a reference to the *Encyclopaedia of Indian Temple Architecture*: "Enclosed, please find a draft copy of the scheme of Vol.I (Pt.1) and Vol.II (Pt.1) for your knowledge and we will welcome your criticism and suggestions". Prof. Bose in his response, from Delhi, of the 7th of April, observed: "I have gone through the papers regarding your future publication with great care. I shall indeed be with you on one of the days when I am in Varanasi....."

I was thrilled at the prospects of his promised visit, though in outcome it was to leave me shattered.

Prof. Bose visited the Academy in the company of Dr. Saraswati. I explained the schema of the Project to him and shown the drawings that were then under preparation for illustrating the Sanskrit architectural terms. The drawings in that initial lot included the various types of temple bases as described in different medieval Sanskrit manuals on architecture and the corresponding examples met with in actual medieval buildings. He was not happy with the style of the formal representation in drawings. He remarked that the Academy was following the outmoded methodology of working out the architectural drawings used in surveying the buildings in the pioneering days of General Cunningham. In drawings, according to his perception, one must also illustrate the structural peculiarities—the sizes of stones, the joints and joinery cleavages, and the methods of laying stones as was customarily done in the drawn representations of buildings in Greek architecture. Now, to my sensing, except for a few

concepts common to both, the Hellenic and the medieval Indian temples in appearance stand poles apart. While Hellenic is intensely structural in look and is easily amenable to viewing and representing from structural standpoint, the intricately moulded, richly decorated, and recessed as well as highly divided wall surfaces of medieval north Indian temples proffer a picture of a building as an intricately ornate sculpture. For what Prof. Bose had in mind, one needed much plainer and straighter walls as is the case with the *sāndhāra* Nāgara temples at Aihole in Karnataka or the Sun temples in Kinderkhedā (Saurāṣṭra) and Vasantgaḍh (Rajasthan) for a clear cut demonstration of the masonic aspects of the building. And in any case, our aim was to delineate faithfully the correct 'shapes' and show the 'order of superposition' of mouldings involved in the make ups, and to identify and designate them according to the nomenclature given in the texts as well as to delineate them according to their accurate, mutual, and proportional relationships as also their projections and recessions: in sum, to study the buildings' morphology in the context of its total, realistic, visual appearance.

His second question was concerning the basis of choice for the shapes of mouldings (and associated decorative details) we showed in our drawings. I explained that it depended on the one side on the temporal status of the texts cited and on the other by the comparable dates of the buildings selected as sources from which the mouldings were chosen for their shapes and connected details. And these, too, have to be ideal in qualitative terms besides being accurate for standardizing the forms and shapes involved, and then rendered according to the metrographical particulars given in

the textual sources. He thereupon wanted to know what the factors/considerations were upon which we determined our "ideal/standard forms and shapes". My answer was that it all depended on their frequency/constancy of occurrence and, more importantly, on the consideration of what is aesthetically the most satisfying and ideally appealing and hence authentic seeming in appearance. He seemed perturbed, indeed not happy with that reply. He remarked that the architectural evolution was in a continual flux: No steady state in reality existed for justifying or upholding standardization on such a reckoning. As I recall, to that significant observation, I had sheepishly responded that, while from the standpoint of philosophical reckoning what he perceived was true, for practical reasons we have to select a temporal cross-section where the object could be viewed as in steady state. The "qualitative excellence", then, can be a valid criterion.

As for the linguistic aspect of the terms we selected, studied, glossed, and finally standardized for descriptive purposes and research writings, he wanted to know the norms and modalities of selection we adopted. I clarified that our preference is for the Sanskrit jargon. Prof. Bose, however, expressed strong reservations on this score (and this was perhaps from the anthropological angle), since the terms one hears in mason's craftslore is what they actually use in their practical parlance/dialect, stemming as they do from the concerned regional language: why not to use those living terms and build the corpus out of that. Prof. Bose was, from his viewpoint, right.⁴ Earlier, despite Ram Raz's pioneering work that used Sanskrit terms (with spellings which today may seem odd and awkward),⁵ Jouveau Dubreuil, in his booklet,⁶ used the terms then in currency among *śilpīns*, and

these were for certain in Tamil or highly Tamilized Sanskrit. However, in Gujarat, the Sompurā *śilpīns*, while in the actuality of working do colloquially use their dialectic terms, when they wrote on the practical instructions concerning the building of a temple, copiously drew passages/verses from their ancestral medieval texts, all of which are composed in Sanskrit. The current masonic *salāṭī*-Gujarātī terms they used in the expository translation they made and glosses they gave.⁷ Returning to Tamilnadu (or for that matter, Kerala and Andhra Pradesh), all the extant medieval texts on architecture as also the known textual sources of different categories there, are invariably in Sanskrit. In central India (Mālavadeśa), the four available manuals—the *Samarāṅgaṇa-sūtradhāra* (c. A.D. 1035), the *Pramāṇamañjarī* (c. A.D. 1090), the *Jayapṛcchā* (c. late 11th cent.; unpublished) and the *Rekhārṇava* (c. A.D. 1000; unpublished) are likewise in Sanskrit. This is also true of the available several published and unpublished works in Gujarat and Rajasthan. Apart from philosophy, epistemology, dogmatics, dialectics and commentarial literature, poetics, narratives, and as in technical disciplines—music, dance, horticulture, chemistry, gemmology, and medicine—for iconography and architecture, too, there was in ancient and medieval India a very strong and all pervasive tradition of writing the treatises and manuals almost exclusively in Sanskrit.⁸ Moreover, since there is no evidence for the currency of the presently used local terms in the medieval times when most of the extant temples were built, there was justification in opting for and adopting the Sanskrit jargon of the earlier periods. The term such as the *kapotapālikā* (cyma cornice) which not only occurs in the *vāstu*-texts but also figures in the Sanskrit narrative literature, plays etc., is called

kapōdavāliyā in (Śaurasenī) Prakrit, *kaivāli* in Apabhraṃśa, and *kevāla* or *kevāḷa* in the current craftsman's parlance in western India. To be authentic and more universal on national level, then, for standardizing this term, its Sanskrit form, the *kapōtapālikā* is on all counts preferable.

Returning to southern India, and as pointed out a short while ago, all the medieval texts on architecture there are in Sanskrit. No *vāstu* text in Tamil (or for that matter in Telugu, Malayalam etc.) has so far been known. And, if in Orissa the available architectural works use Oriyā terms, they all are very, very late in origin, none in fact belonging to the medieval period.⁹ In light of all these facts it is more relevant to compile the annotated glossaries of architectural terms in their Sanskrit form, side by side suggesting, of course, the current synonymous (often derivative) terms of the late Middle Indo-Aryan languages wherever known and used by the craftsmen.

At the end of discussions, I was non-pulsed. Prof. Bose sensed the situation. He said: "I am not 'Kālā Pahāḍa' [Malik Kāfur].¹⁰ I have not come here to demolish. I am just making a few suggestions on how the work should be done." I could notice that, despite our convergence on the need for studying ancient architecture with the help of the the texts and correspondingly through intensive field studies, we had differing perceptions and views regarding the approach, methodology, and hence the actual process of working and reaching the goals.

That evening we had a simple dinner together at my home. It was a quiet meal interspersed with polite conversational phrases. But, 'icicles hang in the air' ! I was

fully aware that I had failed in the test. I did not measure up to his standards and expectations.

Prof. Bose, unfortunately for all concerned, passed away in 1972, indeed at the beginning of old age. Had he not contacted a fatal disease, he could have lived for at least a decade and a half more. How I wish he could have seen the part 1 of Vol.I of our *Encyclopaedia of Indian Temple Architecture* that had appeared in print in 1981. That would have allowed him to see the concrete results and along with it the intentions and ideation that lay behind our work which I earlier could not explain him adequately.

II

Contributions

In the field of temple architecture, Prof. Bose's singular contribution is his famous work, the *Canons of Orissan Architecture*,¹¹ which embodies the essence of the text, the *Bhuvanapradīpa*, whose original Sanskrit version is lost but the "bhāṣā" rendering in Oriyā was available through the seven manuscripts he could in those days collect for editing the work.¹² Since the phraseology in each manuscript sometimes differed, in terms also of vocabulary and in length, he developed a special method of presenting the text not according to the normally followed methodology of text-editing where variant readings are shown in the foot-notes, but by putting the relevant passages of the different manuscripts in serial order one under the other, and after that he gave the essential summary in English, sometimes with his comments, of the content and intent of the text. (This indeed was a very

practical way of solving the problem.) For comprehending the terms and the methods of construction in the living tradition, he had consulted the practicing architects and craftsmen. Also, he prepared drawings illustrating the formal ordering of mouldings as prescribed in the text and their shapes he apparently had inferred from the parallels met with in the extant medieval Orissan temples. He also included some photo-plates showing the 'generalities of Orissan temples' elevation as also of their attached halls and accessory adjuncts wherever present. This exposition covered almost the whole range of the formal building traditions (excepting for the doorframes), is exceedingly enlightening, and is equally a very useful aid for studying the components and related details of the Orissan temple. The nomenclature includes a few Sanskrit terms still surviving in Orissan living and textual tradition,¹³ but the rest of about 100 terms are all Oriyā, though for some it is possible to restore the original Sanskrit form, like *Jāṅgha* = *jaṅghā*, *kāndha* = *skandha*, *kānti* = *kaṅṭha*, *pālakā* = *phalaka*, *khapuri* = *karparī*, *rāhā* = *ratha*, and so forth.¹⁴

Rajendra Lal Mitra, who published his two volumes of *Antiquities of Orissa* (Calcutta 1875),¹⁵ employed European terminology just as stylistic divisions then in vogue in the scholarly writings on architecture in Europe. It was Mano Mohan Ganguli who for the first time used the Oriyā terms in the descriptive portion of temples in his *Orissa and her Remains* (Calcutta 1912),¹⁶ basing his knowledge on one old manuscript, plausibly of the *Bhuvanapradīpa* category. Prof. Bose took the matter much farther by presenting not only the details but also the morphology of each part and the metrography of their componental mouldings as they had

come down through a living tradition. His book, moreover, expounds the information in very simple and clear English, indeed in the logical order of the parts of the buildings, their plans, and typology. It thus deals with the details of temple's base, wall, superstructure, crowning members including the jar-finial, and the elevation of hall and the types of temples and halls envisaged in the Orissan tradition. Today, some scholars in Orissa, during informal discussions, point out that Bose had not published the whole text of the *Bhuvanapradīpa*. Also, Oriyā not being his native tongue, at places he could not grasp the connotation and together with it the intended contextual sense. My own observation is that he had selected the most useful portions from the supposedly total textual bulk and topically had reārranged them. To be fair, wherever he could not comprehend the meaning, he did consult the craftsmen; but where no one could enlighten the obscure portions or points (and such spots are not many), he so noted and left the original Oriyā *bhāṣya* without attempting its translation. He had been thus honest both in intent and exposition. Back in mid twenties and early thirties, the years when he did his field work with meagre facilities, the publication of this class, level, and significance—the *Canons of Orissan Architecture*—was an extraordinary achievement whose impact can be easily detected in the subsequent work on Orissan temples such as of Prof. S.K. Saraswati, Dr. K.C. Panigrahi, Smt. Debala Mitra, Dr. D.R. Das, and Tom Donaldson. It was in essence a Bible for several scholars and outstandingly continues to be so. It has motivated/oriented the scholars to look at the building far more closely than lending the usual superficial appraisal. The students of medieval north Indian temple architecture are inestimably

indebted to Prof. Bose for editing this valuable work. Since it is long out of print¹⁷ it should be reprinted with an erudite prologue by a competent scholar and some fresh photographs be added to that edition.

Prof. Bose's second work was posthumously published and the title given by the publishers is *Indian Temple Designs* (Calcutta 1981).¹⁸ It is his field diary prefixed by his Preface adopted from the presidential address he had delivered at the 'Anthropology and Archaeology' session of the Indian Science Congress, Allahabad 1949, which was updated by him in December 1953.

The diary-pages reproduced in the book reflect two salient facts. First, he had visited as many sites as possible in different provinces for studying the monuments whose locations and some particulars were recorded in the published Survey Reports; second, he made rough impressionistic sketches and took measurements with the help of unsophisticated and handy instruments of the buildings' parts and recorded these besides making succinct notes thereof. The dates recorded therein indicate that, after publishing the *Canons of Orissan Architecture*, he had embarked upon an ambitious plan of an all India intinerary, which he could only intermittantly implement, indeed as and when he got the freer time. With travel routes in larger part of the country as yet undeveloped and with very frugal means, and little assistance, he did it all was indeed an amazing feat. Second, his intention seemingly was to work out a chronometric system based on the Diffusion methodology developed in the field of anthropology. His cursive notings on the buildings he surveyed are recorded in the diary both in English and in

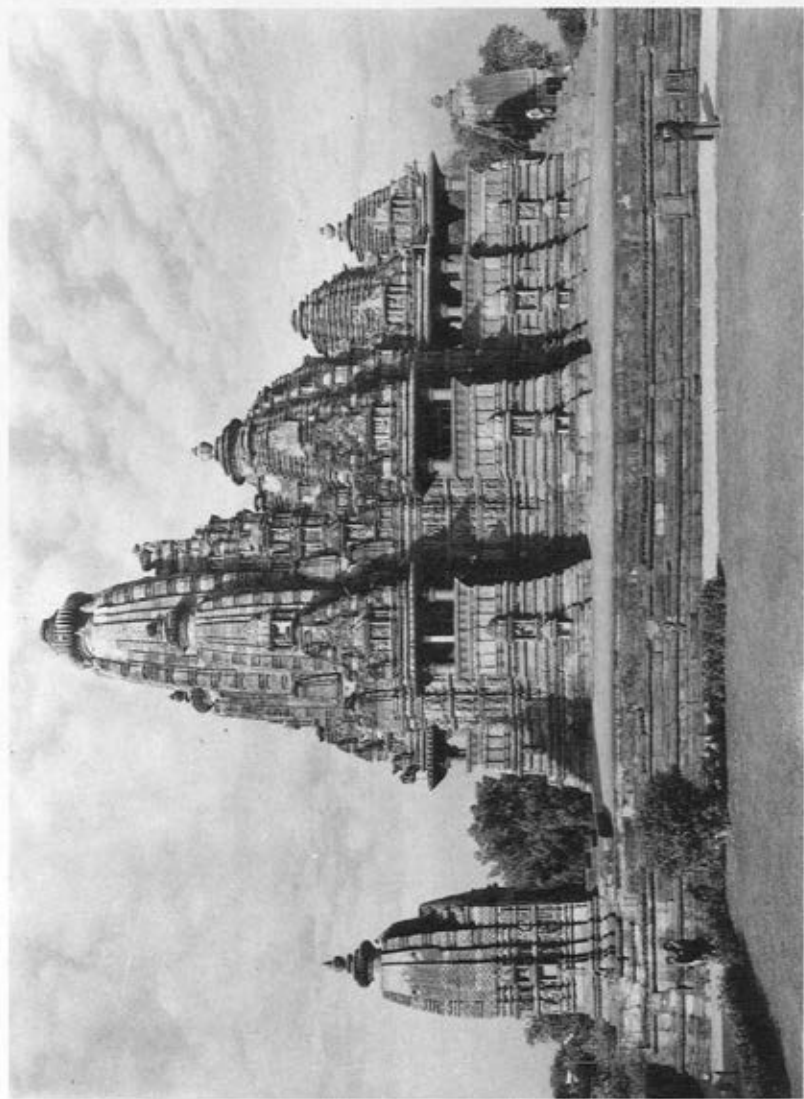


PLATE - I



PLATE - 2



PLATE - 3



PLATE - 4

Bangla.¹⁹

He started his journey from October 1939 and after a hiatus of some 15 years (when he was preoccupied with other important activities), he resumed his work in 1953, 1954, 1955 and finally in 1961. Some of the pages of the diary relating to temple sites in Madhya Pradesh, Himachal Pradesh and some other territories are without the sketches and with very succinct notes appended on the buildings located there. From north to south he zealously travelled, including the then famous sites in Andhra Pradesh, Karnataka, and Kerala. His main focus of interest was of course what the *vāstu*-texts call 'Nāgara' temples of the 'Latina' or 'Ekāṇḍaka' class. The sketches he made largely bear the measurements of the parts he took on the spot. The terms used there, however, do not follow those characteristic of the regions involved; these are all Oriyā.²⁰ Clearly, even if he were aware of the various *vāstuśāstras* published in the Trivandrum Sanskrit Series, Trivandrum, and the Gaekwad's Oriental Series, Baroda, he had not consulted these. The photographic illustrations reproduced along with the diary pages are all concerning some of the temples of Gujarat, dating from the Maitraka to post-Solaṅkī periods. He plausibly had in his future plans, perhaps after retirement or some time between, to write out a book based on his notes. His demise, sadly, has deprived the students of architecture of this benefit. Future researcher, who also knows Bangla, can make use of his notes and give a connective story of the generic relations, and work out the clues for determining the dates.

His presidential address, earlier referred to, and thoughtfully prefixed by the publishers to the book, lends us

insights into his thoughts and thinking. Surprisingly, much of what he observed there is even today relevant and valid. There he recommends to opt for the Distribution methodology then used in the field of anthropology in preference to the (evolutionary) methodology then in vogue in the field of history of art and architecture. [The dates of the examples he had cited (on the basis of the earlier writings) of course are no longer valid. But the truth, in terms of basic principle, still remains unshaken.] Observes Prof. Bose:

“One important point emerges, namely, that evolution has been multilineal instead of unilinear. The moral is that a scale set up in one province loses much of its value for purposes of dating in another.”²¹

“If we then depend on the unilinear theory of evolution, and have such poor means of checking its results, our historical reconstruction loses much of its dependable character. From anthropological evidence we know that different elements of culture do not have the same rate of diffusion. They display different ranges of variability at the same point of time, and also variable rates of differentiation and of secondary elaboration in course of time. Thus, for example, in temples ornamental elements may have followed one line of evolution. While structural elements, like the manner of increasing the height of a temple, the way in which the curvature of the *gandi* is modified, or the particular technique employed to lighten the load on walls by having acutely pointed arches over the lintel and then tying together opposite walls by means of various devices—all these may have followed completely other rates of change. Moreover, provincial genius may also be responsible for certain modifications of ornament, just as a substitution of one

building material for another may bring about consequent alterations in outline as well as in ornamentation.

If we use any or some of these elements together for purposes of preparing our scale of reference for purpose of dating, then due allowance must be made for all the factors which reduce the chronometric worth of our scale. If we lump together the whole of India, or choose such elements alone as partake of the character of secondary elaboration, and do not feel confident enough to prepare a scale of evolution on the basis of structural elements, then we do an injustice to the very subject of our body. And if there be no means, or very poor means of verification of our findings from independent sources, then our entire reconstruction of evolutionary history loses very much in value, and we also lay ourselves open to the charge of begging the question.²²

Equally pertinent are his following observations: "Where dated temples are abundant, a whole series for purposes of reference can be built up with their aid. But when most of the temples are without date, then we may try to employ the Distribution Method for converting Space into Time. But then, as we have said, this has to be corroborated by the first series, and its worth, or probability of error i.e., dependability, duly notified.

What is needed today is that, in each province of India where temples are present, workers should employ uniform means of analysis of the structural elements. When enough data are available, distribution maps of significant elements should be drawn, and inferences drawn with regard to the course of evolution followed all over India. As the nature of

changes to which Rekha temples were subjected was not uniform in different places, the evolutionary scale set up in one province would naturally have limited value in another. Therefore, in each province, the dated temple should also be employed to build up another local series. This would serve to check and to supplement the findings of the Distribution Method itself as applied to that particular locality. And when we have all these tables and detailed analysis before us, then alone shall we be able to reconstruct the story of the evolution of the Rekha Order with some amount of assurance. And in this effort, we should have also raised our science to higher levels of reliability.”²³

Prof. Bose entertained a strong bias for the Kalinga type of medieval temple and on the opposite side a bias against the western Indian and the generically related Jejakabhukti style of the temples in Khajuraho: “As the height increased, the flatness of the *pagas* become a disturbing feature. In Central India as well as Rajputana, this was made up by adding *sikhara* after *sikhara* which sprang from the base of the *gandi*. But Orissa followed a different device. Not that it did not add ornamental *sikharas*; but she tried to retain the flatness of the *pagas*, only she added to their number. And, in order to relieve the character of monotony, Orissan artists decorated the *paga* surfaces with designs which were not in very high relief. Even in the temple of Lingaraja where *sikharas* adorn the *anuratha*, they never interfere with the smooth upward movement of the curvilinear *sikhara*. They add to its grace, and by their presence keep time with the upward growth. In the temple of Rajputana, and if I am allowed to venture an opinion, even in Khajuraho, extravagant use of *sikharas* introduces an almost vulgar strain in the

movement on account of their exaggerated separateness from the main body of the temple, i.e. their independence from the prevailing plane from and on which they find their being."²⁴

Scholars working on the Indian temple types for the last few decades will have a different view. The Orissan, a strongly Latina-based type, is one formal proposition; the clustered *śikhara*s type of Khajurāho and of western India is another. This second proposition creates an image of a mountain clustered around with progressively rising peaks till the central or the highest is reached.²⁵ The Viśvanātha and the Kandariyā Mahādeva temples in Khajurāho are the best examples illustrating this form and betray perfection and harmony of the articulation of halls with the *prāsāda*, particularly as seen in the profile (plates 1 & 2). Both formal classes follow different 'aesthetic' and are rooted in the preceding Latina or single-spired type. Each has its own beauty and *raison d'être*. The Orissan, too, had tried its hand on working out the clustered type²⁶, but the examples are fewer and afterwards the preference shown there was for the Kalinga type of the Latina class.

In a third book, *Designs from Orissan Temples*, a publication collaborated by three authors, Prof. Nirmal Kumar Bose has contributed a small chapter, "Orissan Temple Architecture", in which he describes the features of the Kalinga temples using Oriyā vocabulary and discusses the influence of the Drāviḍa form, particularly on the rectangularly planned Orissan temples.²⁷

Annotations

1. Cf. his following observations:

"Fergusson was a believer in unilinear evolution. Whatever may have been said to the contrary, his work still remains the foundation on which others have reared their later buildings, except in the case of a strikingly original and very rare departure as in the case of Professor Kramrisch."

"It is my pleasure here to refer to the work of Professor Stella Kramrisch as an outstanding example of what depths can be reached in the field of interpretation of the inner symbolism of architectural forms. It is only when others follow in her wake, and rewrite the history on the basis of her structural analysis and interpretation that we shall be in a position to deal adequately with the methods of dating employed in that connections."

(See "Preface", *Indian Temple Designs*, Calcutta 1981, pp.8 and 7.)

2. In the letter I sent to him in April 1970, I had mentioned to have met him in the University guest house in Baroda in 1961. This was one more meeting. But today I have absolutely no recollection of what we may have then talked about.
3. I now cannot recall the exact month and date.
4. However, these terms cannot immediately be comprehended even if they are used. The masonic terms used in western India such as *paḍharo* (*pratiratha*), *dāsā* (*āsanapaṭṭaka*), *nikāḷo* or *nikāro* (*nirgama*) etc., do not make immediate sense, nor linguistically seem to reveal the core meaning, nor do they sound sonorous.
5. See there.
6. See G. Jouveau-Dubreuil, *Dravidian Architecture*, English version, reprinted Varanasi 1972, (original 1917).
7. See Jagannath Ambaram Sompura, *Bṛahad Śilpaśāstra*, pt.2, Ahmedabad 1933; and pt.3, Ahmedabad 1936. Also,

Narmadashankar Mooljibhai Sompura, *Śilparatnākara*,
Dhrangadhra 1939.

8. Earlier works that dealt with architecture were composed by pundits: however, the several among the medieval works apparently were authored by educated and learned practicing architects themselves; hence their versified exposition is very detailed and makes much more sense than the earlier works even when their Sanskrit is not in all cases of the commendable class. As for the use of Prakrit for technical arts and sciences, I had come across a few Prakrit verses quoted in one fifteenth century Jaina work, the *Bhuvanabhānu-Kevali-caritra*; and for architecture, there is Thakur Pheru's *Vatthusāra-payaraṇa* (A.D.1326). But these are exceptions.
9. In view of the large number of systematically and accurately built temples in a standardized style, it is clear that the corresponding *vāstu* literature in Sanskrit, at least of the 12th, and more definitely of the 13th century, must have existed in Orissa.
10. A general of Alāu'd-Din Khaljī who plundered several provinces of India including Orissa, Andhra Pradesh, and Tamilnadu. His tyranny had earned for him the nickname "Kālā Pahāḍa" or the 'dark mountain' in late medieval times.
11. Published by R. Chatterjee, Calcutta 1932. (I have a vague memory that Stella Kramrisch had preferred the term "rules" to "canons".)
12. Today it is hard to come across the manuscripts of that work, I was told by the scholars working on Orissan architecture.
13. Such as *triratha*, *pañcaratha*, *saptaratha*, *anuratha* etc.
14. But the terms such as *gaṇḍī* for śikhara's main mass, *beki* for *grīvā* or *kaṇṭha* (neck) are more typically Oriyā and not immediately intelligible to a non-Oriyā person.
15. Vols. I & II, Calcutta 1875.

16. *Orissa and Her Remains-Ancient and Medieval*, Thacker Spink & Co., Calcutta 1912.
17. In 1955, in Calcutta, on my requesting Prof. Bose to put me in touch with a book-seller from whom I can buy its copy, he had given me an address and what I got was the then last available copy of the book !
18. Published by R.N. Bose, Calcutta.
19. Judging from the notes recorded in the diary pages, it is clear that, in Orissa, outside Bhubaneshwar (and Puri and Konarak) he had not visited many buildings which, in future, Alice Boner, and more particularly Tom Donaldson was to survey and base his monumental work.
20. Probably in December 1966, when my scheme for *The Dictionary of Indian Temple Architecture* was taking shape, I had discussed the basics of the plan with Prof. S.K. Saraswati who then had visited the Center. He recommended the use of Orissan terms for describing the temples in all of northern India. I explained that, the terms relating to the hall types, pillars, ceilings, and doorframes in the temples of central and western India are absent in Oriyā textual vocabulary. Moreover, these regions still truthfully and in detail possess the medieval Sanskrit texts which reflect their building traditions. The use of Oriyā terms, in that context, would generate cultural unconformity.
21. "Preface," *Indian Temple.*, p.22.
22. *Ibid.*, pp.12-13.
23. *Ibid.*, pp.26-27.
24. *Ibid.*, p.22.
25. A third major proposition is the Bhūmija type of the Mālava and Seūṇadeśa (Maharashtra) country as represented by the Udayeśvara temple at Udayapura (A.D. 1080) and the Ambaranātha temple (A.D. 1060) near Bombay.

26. Three examples of the multi-turreted variety are there in Bhubaneshwar, a small, less ornate temple —Ekāmbareśvara— in the Liṅgarāja ensemble, the Ḍākarā Bhīmeśvara (probably an *avatāra-tīrtha*—Shrine incarnate—of the jyotirlinga temple of Ḍākulī Bhīmaśankara), and the most famous of all, the Rājārāṇī temple (Plate 3).
27. Publisher A. Goswamy, Calcutta and London 1950.

List of Plates

1. Khajurāho. Viśvanātha temple, south profile, A.D 999.
2. Khajurāho. Kandariyā Mahādeva temple, south profile, c. A.D. 1025-1050.
3. Bhubaneshwar. Rājārāṇī temple, north-west corner view, c. A.D. 1020.
4. Bhubaneshwar. Liṅgarāja temple complex, Pārvatī temple, southwest corner view, in or before A.D. 1278.

(The photo-illustrations are due to the courtesy and kindness of the American Institute of Indian Studies, Varanasi.)

The Pratiṣṭhā-Lakṣaṇasamuccaya and The Architecture of Kalinga

By the beginning of the second leg of the medieval period, the temple architecture of north India had entered into its 'High Medieval' phase, that precisely covered the bracket 11th to the 13th century. For the Kalinga architecture, these were the centuries when the temple attained its perfected, highly characteristic, and standardized form. These were also the times of high productivity. The 13th century witnessed the climax of architectural efforts when the greatest of the north Indian temples was built at Koṅārka and soon after followed more than a dozen smaller buildings in the same highly ornate and elegant style.

As it had happened in central and western India, by way of a spasmodic response to, and as its consequence, the corresponding treatises in Sanskrit that dealt with architecture must have been composed in Kalingadeśa as well. The *Śilpīpothī* included in the *Canons of Orissan Architecture*—its portion available in print exclusively deals with preparatory instructions, astrological particulars, sites and soils, and other related and relevant matters¹—is composed in lucid Sanskrit; it is a signifier attesting to the fact that there also were the texts in Kalinga that dealt with architecture proper.

Unfortunately, none has survived; at least none so far has come to light. It is in the context of this situation that the *Pratiṣṭhā-Lakṣaṇasamuccaya*—as we shall notice, was the text at least of the 13th century date which also deals with temple architecture along with the exposition of associated preliminary considerations, procedures, and rituals—becomes significant since it has some bearing upon the problem: For composed as it was in Sanskrit, it also exclusively employs Sanskrit terms. Some of these assumably were in vogue also in Kaliṅgadeśa.

The formal particulars and the special aspects of the medieval Kaliṅgan/Orissan temple may be noticed here before looking into the contents of the *Lakṣaṇasamuccaya* and the extent of its applicability in Kaliṅga context.

The medieval Kaliṅga temple possesses a *prāsāda* (sanctuary) and a *maṇḍapa*-hall, generally astylar, of the closed class (called *gūḍhamaṇḍapa* in western India). It never developed a columnar *raṅgamaṇḍapa* or semi-open type hall with *vedikā*-enclosure topped by an *āsanapaṭṭa*-seat and the *kakṣāsana*-backrest. (Such halls are met with in Mālavadeśa, Rajasthan, Gujarat, Maharashtra, and also in Karnataka). A separate, at first detached, closed hall for dancing is first met with at the Sun temple in Koṅārka (c. mid 13th cent. A.D.). From the 14th century onwards it was articulated directly with the first hall. At the same time a third hall was also added, shunted to the second, the last two are called the *naṭa-mandira* and the *bhoga-mandira* in later vocabulary. (These have roofs of progressively diminishing height.)²

The *prāsāda* sometimes stood on a low *jagatī*-platform³ (called *piṣṭa* = *pīṭha* in the *Bhuvanapradīpa*.) But, with very

few exceptions such as the Rājārāṇī temple at Bhubaneswar, true *pīṭha*-base was not in vogue in the Orissan temple building tradition. The ground plan of the temple proper shows either three—*koṇa* (angle, corner), *anuratha* (neighbouring buttress), and *ratha* or *madhya-ratha* (called *rāhā* in Oriyā: central offset). In the four division class, an *uparatha* (called *anurāhā*) follows the central *ratha* and precedes the *anuratha*. The elevation in most cases directly starts from what is called the *vedibandha* in the *Samarāṅgaṇasūtradhāra* (c. A.D. 1035) and *pābhāga* in Oriyā. The *kalaśa*-torus in the Orissan tradition possesses a shape which differs from that met with in the rest of north Indian buildings and is notable for its originality. Also, in Orissan terminology, it is called *kumbha* whereas the same term in central and western India is reserved for the moulding below the torus, which is called *khura* in Orissa.⁴

The *madhya-ratha* (*bhadra*) part shows a dwarf-pillared niche for the *parivāra-devatā* and below it, between the two slender divisions of the *vedibandha*, occurs a multi-corniced *tilaka*, a feature nowhere figuring in north Indian temples. The *jaṅghā* at the *koṇa* and at the other rathakas shelter small divinity and *apsaras* figures, often niched, a *madhyabandha* (O. *bāndhaṇā*) of the *jaṅghā* dividing it into two registers (the *tala-jaṅghā* and the *ūrdhva-jaṅghā*) the latter bearing *tilakas* (*muṇḍī*) of two types—Phaṁsa, and Karkara (O. *Khākharā*). The *jalāntara*-recesses between the rathakas shelter *vyāla* (and above them sometimes *apsaras*) figures.

Above the *jaṅghā* comes the *varaṇḍa* (O. *baraṇḍā*) made up of seven to nine thickly piled mouldings which separate the wall proper from the *śikhara*. The *varaṇḍa* provides a vibrant as well as an elegant transition toward the

śikhara. The *śikhara* is usually striated. The *koṇa*-part is demarcated by *bhūmi-āmalakas*, the *madhyaratha*, and in its lower part shows a *candraśālā* with inset figure. The *grīvā* below the *āmalasāraka* shows figures (O. *deul-cāraṇī*, or else *bekī-Bhairava*). The ultimate member is the *kalaśa* or jar-finial.

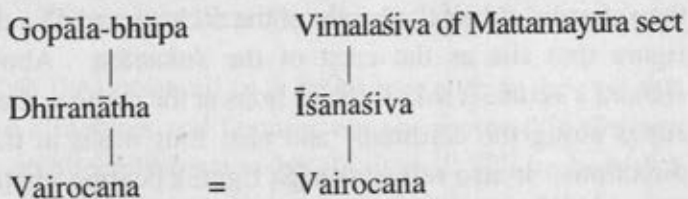
The closed hall (O. *piḍāḥ deul*, *bhadra deul*) has the same elevation except that the window with *stambha-jālaka* screen replaces here the *prāsāda*'s niche at the *madhyaratha*. And the pyramidal tiered roof, often divided into two or even three chapters (*paṭalas*), is crowned with *ghaṇṭā-kalaśa*.

II

The *Pratiṣṭhā-Lakṣaṇasamuccaya* is a medieval Śaiva āgamic work⁵ which deals with the matters related to Śiva liṅga, iconography of the Śaivaite and other deities including a notice on Caṇḍeśvara, and the details of the emblematic weapons, divinities' mounts etc. Also, it dwells on the ideal qualities of the builder, architect, priest, installation and renovation rites, and those prescribed for building halls and dwelling houses. Among the preliminary matters, it deals with the purification procedure of the ground on which the building will be built, the *vāstu-pūjā* and related matters, ground plan and elevation of the temple, the nine types of *sāndhāra prāsādas*, the metrography of the *prāsāda* in relation to the *liṅga*, the characteristics of the doorframe, halls etc., and several other connected though miscellaneous matters.

The work's colophon gives the name of Vairocana as the author. He was the disciple of Īśānaśiva and the grand disciple of Vimalaśiva of Mattamayūra lineage, i.e. of

Mattamayūra Śaiva sect which had prevalence in central India with a strong following in the Dāhaladeśa or the Cedi country. Vairocana was the son of Dhīranātha and grandson of Gopāla-bhūpa of an unknown dynasty which may have held sway somewhere over a principality bordering the north-eastern Kāliṅga, south-western Magadha, north-western Vaṅgadeśa and south-eastern Dāhaladeśa, a tentative surmise based on the architectural and related particulars laid down in the text.



While a detailed study of the text is reserved for a separate monograph, here I would only draw attention to the vocabulary traced in its exposition of different architectural parts. In chapter 26 it refers to *stambha-kumārikā* and 12 *kumārikās* which are the damsel figures meant to be stationed at the capital part of the four pillars forming the hall-nave. Among the mouldings it mentions *khurapaṭṭī*, *kumbhapattī*, *galapattī*, *haṁsapattī*, *haṁsapattīkā*, *kapōtikā*, *vedibandha*, *jaṅghikā*, *lambinī*, *muktāhāra*, *trikaṭapaṭṭī*, *varaṇḍa*, *candraśālā*, *śikharikā*, and *tilaka*. On the temple's divisions on plan and in elevation, it mentions *ratha*, *madhya-ratha*, *uparatha*, *anuratha*, *koṇa* etc. Some of these terms are related with those used in central and western Indian and a few with the surviving Sanskrit terminology in Oriyā tradition.

The chapter 28 deals with the classes of temples, the six mentioned there are Kāliṅga, Nāgara, Lāṭa, Varāta, Drāviḍa, and Gauḍa which are said to possess the *rekhā-*

batter. These are mainly regional types. The formal classes enumerated here are Latina, Kuṭṭina, Śekharī, Cakriṇa, Sāndhāra, and Bhūmija. Separately, Valabhī is also mentioned; and Phaṁsa (i.e. Phaṁsanā or Phāṁsanā) is called neuter (in contrast to Nāgara etc., which are visualized as male and Valabhī as female.)

It then dwells on the description of the *prāsādas* by their specific appellations. It also enjoins to locate the *nāsā* or the *śukanāsa* at half the height of the *śikhara*, and also the lion figure that sits as the crest of the *śukanāsa*. Above the *śikhara*'s *vedikā* it asks to place lions at the corners, the *nara-rūpas* along the cardinals, and also four *nāsās* at the four directions. It also refers to *nāga* figures bearing ghaṭa-pots. The *jaṅghā* is to show pilasters and the *grīvā* and *mastaka* (*āmalasāraka*) are to be ornamented.

The chapter 29 is likewise important; for it deals with the subject of doorframes. It refers to their jambs by named varieties, namely *daṇḍaśākhā*, *andhakārī*, *marīcī*, *mūlaśākhā* (*stambhaśākhā*), *rūpaśākhā*, *stambhaśākhikā*, *patraśākhā*, and *nāgaśākhā*, and from their combinations emerge the larger frames which possess *saptaśākhā* (seven-jambled) and *navaśākhā* (nine-jambled) types. It also refers to the *bhāra-vāhakas* (atlantān figures) and the pair of pot-bearing *nāgas*, *vyāghrapaṭṭikā* etc.

Chapter 30 mentions the variety of pillars such as Rucaka, Vajraka, Ativajraka, Manthana, and Vṛtta-manmatha. Here it also deals with *raṅgamaṇḍapa*, *mattavāraṇa* etc. The terminology laid bare here is fairly rich and helpful in describing the east Indian temples in general. However, to prepare drawings according to the descriptions given here will

in the first instance necessitate firm determination on the exact provenance within which the existing temples are met with which may show close correspondence with the text of the *Lakṣaṇasamuccaya*.

III

The larger part of the terminology from this source can be, to a fair degree, proven serviceable for describing the Kalinga temples. There are several formal meeting points here.

At the outset, all such terms met with in the text that relate to structures and features not encountered in Orissan temple architecture have to be eliminated. Those here that correspond with the actualities and are also paralleled in the Oriyā tradition (but generally not met with in the central and western Indian tradition) confirm the connection of the tradition of this text with the Orissan medieval temple building vogues. Among these are the following:

1. Classification of the *rathaka* divisions, ground plans, *saptaratha*, *navaratha* et cetera; also *koṇa*, *anuratha*, *madhyaratha*, *uparatha*;
2. *Nāga* figures with *ghaṭa*-pots held in hands;
3. *nara-rūpa* figures above the *śikhara*'s *skandha*, placed in the *grīvā* region;
4. *lambanī*-pediment (as met with on the *jaṅghā* at the Mukteśvara temple in Bhubaneshwar).

At the same time the terms not met with in Oriyā tradition but noticed in this text, which otherwise find application in the Orissan context are, as the first glance

reveals, as follows:

Oriyā tradition

bho
pābhāga
baraṇḍa
piḍāh-deul
amalā
beki
muṇḍī

Lakṣaṇasamuccaya

candraśālā
vedibandha
varaṇḍa
Phaṁsanā-shrine/hall
āmalasāraka
grīvā
tilaka

Also, there apparently is no known nomenclature for certain decorative elements in the living tradition which otherwise are met with in actuality can also be adopted from the *Lakṣaṇasamuccaya*. For example *muktāhāra* (pearl festoon) etc. (To this may be added the term *īsāna*, implied not to be Dikpāla but as *ākāśaliṅga* or 'liṅga finial' in lieu of the 'jar-finial' atop the *prāsāda*. This element is met with in some of the Śaiva temples built between the seventh (Bhubaneshwar) and the tenth century (Gandharāḍī) in Orissa.⁶

A deeper study of the text of the *Lakṣaṇasamuccaya* and the correlation of its essential architectural context and details with the extant Orissan temples and the available textual tradition in Orissa can be a Project that may be undertaken by researchers engaged in in-depth studies of the temple architecture of Kalinga.

Annotations

1. Cf. N.K. Bose, the *Canons of Orissan Architecture*, Chapters II-VIII, Calcutta 1932, pp.9-71. Seemingly, the *Śilpī-poṭhī* had not

formed a part of the *Bhuvanapradīpa*.

2. They are generally less decorated and only serve to intensify the darkness in the first hall.
3. The instances generally come from the tenth century onwards. Also, they usually are not high.
4. *Khura* in western India represents only a *paṭṭikā* at the lower end tightly articulated with the *kumbha*.
5. Ed. Dāmodara Śarmā, *Pratiṣṭhālakṣaṇasārasamuccaya*, Nepal Government Library, pt.1. (Kāṭmaṇḍu ?) V.S.2023 (A.D.1967) and pt.2 V.S. 2025 (A.D. 1969). The published text is based on seven mns. mostly dating from the 16th/17th century A.D. The published text needs to be corrected at some places. A palmleaf manuscript of this work in the Pāṭaṇ Jaina Bhaṇḍāra in north Gujarat is palaeographically dateable to c. mid 13 cent. A.D. But in it, as gleaned from the transcript I have, the first 12 chapters are missing; and in the 12th the verses 1-37 are missing. Likewise the last two chapters—31 and 32—are absent and in chapter 30 from the 15 to the last 80, all the verses are missing.
6. Cf. my paper, "The Ākāśalinga Finial", *Artibus Asiae*, Vol. XXXVI, No.4, Ascona 1974, pp.307-315.

1st

1993

**The Heritage of Nirmal Kumar Bose
Indian Civilization : Structure and Change**

by

Surajit Chandra Sinha

2nd

1996

**Gandhi's Impact on Bose's Scholarship
Rabindranath and Gandhi : Response to Indian Reality**

by

Birendra Kumar Bhattacharya

Nirmal Kumar Bose, one of India's greatest sons, a humanist, a Gandhian and a radical anthropologist for whom social reconstruction was more important than building sociological theories - was a carry over of the nineteenth century Renaissance in Bengal. He was a great mind, a great visionary who was never confined to the conventional boundary of an academic discipline, be it anthropology, geography, geology, prehistory, archaeology, and even gandhiology (if that term may be used). Professor Bose used anthropology to demonstrate India's unity in the diversity of cultures. He possessed in his heart a precious thing - the love for his countrymen - that was much greater than his passion for anthropology. Historians of world anthropology are aware of Bose's pioneer thinking and his original contribution to the concept of culture. But, regrettably and not so regrettably, Bose could not pursue it further, because in his judgement something else was more important. That was India's national Freedom Movement. He preferred to remain in the prison rather than in the luxury of intellectual pursuit.

IGNCA Memorial Lecture Series was initiated in honour of renowned scholars who have done singular service and made path-breaking contributions in different fields of study, and whose academic approach and directions are of direct relevance to the conceptual base of the Centre. In this Memorial Lecture Series, so far included, are Hazariprasad Dwivedi (1907-1979), the great stalwart of Hindi literature, Nirmal Kumar Bose (1901-1972), an eminent anthropologist, and Suniti Kumar Chatterjee (1890-1977), a noted linguist.

M.A. Dhaky, currently Director (Emeritus) at the American Institute of Indian Studies' Center for Art and Archaeology, Varanasi, is a historian and researcher of ancient and medieval Indian art and architecture; he has also studied the available Sanskrit texts that relate to the architecture of the ancient buildings. At AIIS, he formulated the scheme of the *Encyclopaedia of Indian Temple Architecture* and has been in charge of that monumental project since last three decades. Among his publications are the short and long monographs such as *The Vyāla Figures on the Medieval Temples of India*, and *The Indian Temple Forms in Karṇāṭa Inscriptions and Architecture*; he also co-authored *The Ceilings in the Temples of Gujarat*, *The Maitraka and the Saindhava Temples of Gujarat*, and the *Riddle of the Temple of Somanātha*. He received the 'Kumāra' silver medal (Ahmedabad 1974) for his notable writings on art and architecture from the standpoint of art-interpretation. Other awards to his credit are from the Prākṛta Jñānabhāratī, Bangalore (1993), the Campbell Memorial Gold Medal of the Asiatic Society of Bombay (1994), and the Hemacandrācārya Award from Jaswanta Dharmarth Turst, Delhi (1997).