

man and climate combine to destroy it all? I am happy to know that Dr. de Azevedo has some hopes for this.

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Krishna Deva, *Temples of North India*, New Delhi: National Book Trust, India, 1969, 87 pp., 28 pls. 5.50 Rs.

J. M. Nanavati and M. A. Dhaky, *The Maitraka and the Saindhava Temples of Gujarat*, Ascona: Artibus Asiae, 1969, Artibus Asiae Supplementum xxvi, 84 pp., 36 figs., 70 pls. \$12.50.

The two books under review represent a touchstone for work done by a number of scholars and amateurs in the past two decades. Carrying on the survey work undertaken by the Archaeological Survey in the nineteenth and the early decades of this century in the field of Indian temple architecture, they hint at the success with which a few scholars have subjected the archaeological material to classification and systematic analysis. With the work of these scholars, if not yet in books published, the field of Indian Architecture has come of age, embracing a mature terminology, an ordered sense of schools, and a clear understanding of the complex logic of the temple's architectural form.

Temples of North India represents one handbook in a National Book Trust series which demands brevity, simplicity of language, and considerable condensation of complex subjects. Within such limitations, Krishna Deva has produced a readable and eminently intelligent outline of the schools of North Indian architecture. Its flaws for the layman will be that, even free from the Sanskrit terminology appropriate to Hindu architectural description (a terminology edited out by the National Book Trust), the analysis of significant detail is too unfamiliar and dense to absorb; and, lacking the admittedly enormous number of plates that would be necessary to illustrate the sites discussed, what is in fact a careful and exemplary classification seems merely a listing of names.

For the specialist the book becomes an outline for work, and like the Rosetta stone, yields up its secrets through diligent study. It is much to the credit of the author

that he has been able to condense so much that is significant from his research into so limited a format; and of great benefit to the student that the author's research has been so extensive, so perceptive, and so systematic.

The Maitraka and the Saindhava Temples of Gujarat, on the other hand, focusses like a microscope on a small region of western India, deals intensively with over a hundred small and largely unknown temples in that region, illustrates them well, and gives ground plans and drawings of moldings. In its presentation and attention to detail it more than equals the Archaeological Survey tomes of earlier days, and in its analysis and awareness of significance it far exceeds them.

The temples dealt with are not beautiful. They are chronologically early in the development of the stone temple and offer evidence for the range of forms from which the final North Indian temple evolved and was selected. Dhaky and Nanavati give the temples a classification by form. Most are curious and impotent strains already separated from the main line, but which, in their own development give evidence for that missing link in the development of the *nāgara* North Indian *śikhara* (tower) for which all historians of North Indian temple architecture have searched. They do not, in fact, serve up that missing link, but their true significance is not lost on the authors, and they contribute an excellent and extensively documented body of evidence and of analysis.

The book suffers, if at all, only from being out of date. The work was written more than twelve years ago and accepted for publication in 1962. Its publication now, even with a postscript, leaves the book well behind the author's thinking. Its material, however, remains new, its classification continues to seem accurate, and its terminology is precise though some of it might now be modified in light of more recent (and largely unpublished) work.

Specifics of subject matter are not discussed here since few Western historians of architecture understand offhand the technicalities inherent in the material. That a scientific and systematic understanding of such technical details is now emerging from the work of Indian scholars, however, may prove to be of value to scholars in the West. Indian architecture has its own logic, one which is exceedingly refined and precise in its details and in its execution, and which differs in marked

degree from Western norms of architectural conception.

That the field of scholarship concerned with these temples is moving away from the mere romantic (though perceptive) sensitivities of Fergusson, from the archaeological collections of Cunningham, Burgess, and Cousens, from the pioneering, but careless and under-researched classifications of Percy Brown, is of considerable significance. It is doing so partly under the impetus of a line of scholarship which long took architectural texts as samples of Sanskrit, to be edited, reconstructed, and discussed largely without benefit of any historical or practical knowledge of architecture. Stella Kramrisch's *The Hindu Temple* provided the first major breakthrough in bringing this textual approach back to the temples themselves. But she produced in effect a modern *vastu Shastra*, following the pattern of the ancient texts, from invocation, to foundation, to finial, and with an intentional emphasis on the ritual and metaphysical which overshadows the true contribution the work makes to an understanding of morphology and detail.

What newer Indian scholars have done is to combine the discipline of field archaeology with a study of the texts, and, rather than use the texts to reveal the buildings, have used the buildings to clarify the texts. This archaeological approach to textual studies, always returning to the buildings themselves, has transformed both the archaeological and textual study of Indian architecture and given true grounds for further architectural history.

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Wilhelm Schlink, *Zwischen Cluny und Clairvaux, Die Kathedrale von Langres und die burgundische Architektur des 12. Jahrhunderts*, Berlin: Walter de Gruyter & Co., 1970, 159 pp., 17 figs., 122 pls. DM 68.

Cluniac and Cistercian architecture arose in Burgundy. Wilhelm Schlink argues that the interaction of these two produced a third quasi "School" whose chief representative was Langres Cathedral (pp. 3, 119): thus the title *Between Cluny and Clairvaux*. This tight, well-organized book, written with few wasted words, is divided in two parts. The first part is a monograph on

Langres Cathedral; the second part is a study of Langres in the context of architectural developments in northern Burgundy from 1120–1130, when Cluny III was completed, to 1174, the dedication of Clairvaux II.

Schlink proposes solutions to many important problems of mediaeval architectural history. (1) It seems that Langres Cathedral was completed in two building campaigns, the first of which began after 1160. Thus, Schlink confirms an early date for Cluny III and a late date, nearly contemporary with Langres, for Saulieu and Beaune (Part I; Part II, Chapter 1). (2) By using Langres as a basis for comparison, Schlink asserts that the narthex of St. Bénigne at Dijon was built in 1155–1160 with rib vaults, and by noting its similarity to these two buildings, he assigns an 1170 date to the narthex of Cluny. He completes the picture of St. Bénigne by assigning its tympana the same date as the narthex; this is done on the basis of comparable sculpture at Châlons-sur-Marne which has been dated by Sauerländer to 1157. Schlink disagrees with Kerber and Quarré that the St. Bénigne sculpture was the end product of a Burgundian tradition; instead, he demonstrates that the portal sculpture of St. Denis offers the closest prototype (Appendix 1). (3) The structure of the east end of Cluny III types was partially adopted at Clairvaux II, which in turn provided the prototype for the exterior east end of Langres Cathedral. In addition to the east end, the nave of Clairvaux II was also completely rebuilt in the 1160s and early 1170s (II, 3; Appendix II).

Admittedly, these conclusions are provocative and intriguing. However, one hesitates to accept them fully because of the lack of substantial supporting evidence. Only a few buildings—Langres, Clairvaux II, Cluny III, the narthex of St. Bénigne at Dijon, Cherlieu, and Morimond—are analyzed in any depth. Unfortunately, the foundation for Schlink's ensuing arguments is Langres, the only extant building. Largely or totally destroyed, the other buildings can be reconstructed only from fragmentary or secondary evidence. Such reconstructions must be uncertain, and the uncertainty is compounded when these buildings are compared to one another; it is increased even further when Schlink derives aesthetic connections—"strands" as he calls them (p. 119)—from comparisons between groups of these buildings. The "strands" that describe the aesthetic prop-

erties of these groups of largely destroyed buildings are worth no more, and perhaps less, than the questionable accuracy of each building's reconstruction.

There is not enough evidence to reconstruct even the titular building Clairvaux II definitely. It is difficult to reconstruct the east end interior elevation and nave vault system on the basis of contradictory eighteenth-century ground plans and renderings of the exterior (for example, that the Milly plan is taken below the level of the culots explains why nave responds are not shown, but it fails to explain why responds, squared or not, are not shown on the aisle side of the nave piers). Beyond this, the assignment of a consistent aesthetic character to a reconstructed Clairvaux and its Burgundian Cistercian contemporaries approaches clairvoyance: Schlink finds in the post-Bernardine Cistercian buildings a "wish for fused space and consistent spatial lighting" ("Wunsch nach Raumverschmelzung und gleichmassiger Raumaufhellung"). Once these post-Bernardine aesthetic "strands" are sorted out, Schlink attempts to weave them into the Cluniac architectural tradition; he proposes that the "true motivating factor" for a changed Cluniac design at Langres was the will to achieve the novel lighting effects of contemporary Cistercian architecture. In this way, isolated aesthetic preferences as well as single architectural devices are handed over, so to speak, to Langres—Langres owes its broad proportions, spatial effects, and its even corona of light, its *Helligkeitskontinuum*, to the post-Bernardine Cistercian type.

Although Schlink's aim is to move beyond what he calls the "one-dimensional" scholarship based on either "School" or monastic architectural types (p. 5), he substitutes instead a dialectic of aesthetic "strands" derived from fragmentary evidence of buildings whose dates are largely unknown. It is ironic that the subtlety and finesse of his method is used in the process of establishing his own third quasi "School" of northern Burgundy. But there is an important positive side to his method. By charting fragmentary and isolated architectural elements and specific aesthetic "wishes," he establishes feedback between monastic and nonmonastic buildings of the period and so goes beyond the previous scholarship restricted to closed "School" or monastic types. This previous French scholarship poses the same questions that Viollet le Duc and Anthyme-St. Paul orig-

inated in the nineteenth century: what was the Burgundian "School," was the Burgundian "School" the same as the Cluniac "School," and finally, did the Cluniac "School" even exist? Thanks to the recent sophisticated studies of K. H. Esser and F. Bucher in the complex milieu of Cistercian architecture and now Schlink's insights into post-Cluny III problems, questions can be posed in precise terms: did the post-Bernardine Cistercian type through interaction with the post-Cluny III type produce a quasi "School" of northern Burgundy, 1170–1190? Perhaps the most important contribution of Schlink's work is that French Burgundian architecture of this period may now be seen as a *Wechselwirkung*.

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Frank D. Prager and Gustina Scaglia, *Brunelleschi. Studies of his Technology and Inventions*, Cambridge, Mass., 1970. xiii + 152 pp., 39 illus. \$10.00.

The history of architecture and the history of science and technology are converging paths on the trail to the discovery of historical reality. At their intersection is the work of art as a measurable object whose structure and mechanics may be rationally interpreted. Leonardo's life work as an artist and scientist is centered on this convergence. The cupola of Santa Maria del Fiore is an imposing example of such an object, and architects, engineers, and historians of technology, as well as architectural historians have grappled with the complexities of its structure and the history of its construction. Its ultimate elucidation will require an understanding of the great structure itself, of related drawings, and of the almost completely preserved building documents together with a more carefully measured survey than has been produced so far.

This is decidedly a job for a professional and the main author of the book under review is an admitted, albeit an inspired, amateur. Frank Prager was first attracted to a study of Brunelleschi's inventions by his interests as a practicing patent attorney. The larger part of this book is a revised version of a long article which he first published in 1950 in the journal *Osirias*. That article was based not on first-hand study of the building itself, but on the documents published by Cesare Guasti in 1857 and 1887. Since these documents, particularly