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A Survey of Works Relating to Kerala Architecture

S. A. S. Sarma

General Introduction

It is a matter of common knowledge that Sanskrit in addition to its well known and vast literature on poetry, drama, religion and philosophy, has a vast store of writings on technical subjects like astronomy, medicine, architecture, music, dance, law, polity and even horticulture and cosmetics. But while a good amount of the first part of the literature had seen the light, a lot of information still remains in manuscripts on the technical literature, which needs attention.

The Sanskrit literature dealing with architecture and iconography is voluminous and in addition to that, it is matched by a vernacular literature only known in the regions where it is produced.

An idea of advances reached during the Vedic times itself, in different disciplines can be visualised if one is aware of the several technical and semi-technical professions practiced during those days as mentioned in different contexts in Vedic literature. Among these professions are those of the carpenter [*lakṣan*], *Rgveda* (RV) 9.112.1] smith [*karmakāra*], (RV) 10.72.2), one who smelted metal in fire (*dhūmāyī*, Atharvaveda 3.5.6), plough-man (*kṛṣī*) (RV) 1.177.4; 4.17.5) etc.

Kerala has had, from early times, a continuous and comparatively rich tradition of scientific and technical advances, as evidenced by the volume of literature on these disciplines presently available to us, mostly

in the form of palm leaf manuscripts. Kerala, a land of temples, has produced a good amount of technical literature, especially on architecture and astronomy. There is no doubt that the architects of Kerala were well learned in the field of *vāstuśāstra* and gifted with this art, such as the famous Ujjivannūr Peruntaccan.

Tradition in Kerala architecture

There are four sorts of builders mentioned in the texts on architecture: *Shapati*, *Sūtragrāhin*, *Vardhaki* and *Takṣaka*. The *Shapati* should be fit to direct or instruct the construction and should be well-versed in all the traditional lores and must have crossed the ocean of the science of architecture. *Sūtragrāhin* is the disciple or the son of the architect who follows the directions of the latter. He must be equipped with the knowledge to make the rod and the rope fly and also should know how to measure length, height and proportions like horizontal and vertical. The *Takṣaka* is so called because he cuts of portions of stone, wood, bricks. He should be an expert in working in clay - a molder. The *Vardhaki* assembles and correctly erects the pieces cut by the *Takṣaka*. He works under the *Sūtragrāhin*.¹

Ujjivannūr Peruntaccan, the schools of Rāmanallūr, Tāmaranellūr² are some of the known artisans of Kerala. The family of Kānippayūr should be mentioned here towards their contribution in the field. Their publications on the subject of Kerala architecture, with the translation in Malayalam should be noted in this regard. The *Tantrasamuccaya*, *Manusyālayacandrikā*, *Gṛhanimāṇapaddhati*, *Keṭṭitaṅgal*, *Śīpabhāṣā* etc. are some of their well known titles. Recently this family had started a Research Institute in Kunnankulam to encourage the study on Kerala *Tantra* and *Vāstuvidyā*. The *Tantravidyāpīṭha* of Aluva is also to be pointed out here.

Sanskrit Texts on Kerala architecture

Pratyogamañjarī (PM) of Ravi³

PM written by a Namputiri brahmin Ravi could be one of the earlier text among the tāntric texts produced in Kerala. His date has

been assigned between 10th and 11th century A. D.⁴ The work is also known as *Śaivāgamasādhāntasāra*. The author gives the intention of the work, in the following stanza.

*durjāyēyāni bahūni mandamaitibhis tantrāni gaurīpater
udgīrṇāni mukhāmbujād avikalās tv ekatra teṣāni kṛtyāḥ /
nokāś tena śivāgamāiś ca sakalān udvīkṣya tās tāḥ kṛtyāḥ
saukṣipyā pravadaṁi yāśca vīhītā lingapratiśāhāvidhau //*

Many *Tantras* preached by the lotus face of Śiva are hardly understandable by the dull-witted. Also their practices are not said in a place in their entirety. Therefore having consulted all the Śivāgama texts, I shall teach in brief various rites as well as those found prescribed in the texts on the consecration of Linga.

The text is divided into 21 *paṭalas* on different topics, among which certain *paṭalas* are devoted to subjects relating to temple construction. The second *paṭala* begins with the following verse:

*ācāryaḥ śivamandirāni sukuśalāih sauprārthitaiḥ kāryet
kartā śūpibhīrādāreṇa vāhivacchāstroktamārgānvitam /
pūrvāni tatra parīkṣya bhūmimasakṛt kṛṣṭāū tu tāū rodhayet
saukṣepena vadāmi lakṣaṇamahau bhūmeśca śāstrotitiam //*

The Ācārya, the performer (of the examination) will get constructed the required temple of Śiva by skilled artisans with devotion following the methods prescribed in the scriptures (of architecture). First of all, after examining the ploughed land many times, he will get it fenced. I will say briefly the qualities of the land prescribed in the scriptures (in detail).

It gives in detail the qualities of the land required for the construction and the purification for the same. In the third *paṭala* it deals with the *vāstuyāga* to be performed before the construction and gives the story of the *iṣṭakānyāsa*, *garbhādhāna*, *prāsādalaakṣaṇa*, *śilālakṣaṇa*, *Liṅgalakṣaṇa*, *dīkṣa*, *ankurārpaṇa*, *jalādhivāsana*, *rakṣoghnahoma*,

*Lingaśuddhi, pratiṣṭhā, paramēśvarapūjā, catuṛthadivāsasnapana, utsava, tīrthasānāvidhi, snapana and jīrṇoddhāra*vidhi.

The *Pradyota*, a detailed commentary on *PM*, of Trivikrama (15th A. D.), son of Nārāyana is of great value in understanding the *PM* properly. The authoritativeness of the *PM* can be noticed from references to it in the later works like *ĪGP*. The *Pradyota* are still in manuscript form and an edition of the same is a desideratum.

Mayamata⁵

Along with the *Mānasāra* the *Mayamata* forms one of the earliest works exclusively devoted to Indian architecture.⁶ It is assumed that the work could have been produced between the 11th and 12th century A. D. In 36 chapters, containing about 3000 verses, the work deals, in detail, with various aspects of architecture, including house-building, construction of villages, planning of palaces, towns and cities, laying of roads, construction of vehicles and furniture and the installation of images of deities in temples. As such, it forms a comprehensive treatise on the subject.

Dagens, who had brought out the critical edition of the text, observes that the *Mayamata* occupies a fairly well defined place. It is a general treatise, a *vastuśāstra*, written in Sanskrit but originating from Dravidian India, most probably from the Tamil area; it is part of the aivite āgamic literature without the connection being underlined by any pronounced sectarianism and its drafting must have been done during the Cola period, at the time when the architecture it describes had reached the peak of its maturity.⁷

Regarding the place of the work there is little doubt that *Mayamata*, has been composed in Tamilnadu or Kerala as attested by several considerations, such as its popularity with the local indigenous architects (*Sthapati-s*), the availability of its manuscripts only in South India in South Indian scripts, the geographical latitude as worked out from the section on *Apacchāyā* (ch. 6) being 11 North, which falls in Tamilnadu and Kerala and, last but not least, the occurrence of Tamil and Malayalam words in the verses.⁸ In any case the South Indian

origin of the text cannot be questioned.

The *Mayamata* has been used as an authority in many works, such as the *Īśānagurudevapaddhati*, which quotes it extensively when dealing with architecture, and in the *Śilparatna*, whose author has borrowed heavily from it. The *Kāmkāgama* the most famous *śaivāgama* text devotes its first part (*pūrvakāmkāgama*) mainly to architecture and one could see many common verses, and sometimes even entire passages, which are to be found in the *Mayamata*. However it is difficult to find evidence of the direction of borrowing.

One could very well include this text in the *aivasiddhānta* texts as it gives a leading place to the *iva* temples and because of the speculations on the nature of the *Li ga* which it contains and the pantheon described in chapter 36 of the text. The text stands as a rare and fairly good example of a mediaeval technical text, which could be used as a reference work on Indian architecture of its period and place.

Īśānagurudevapaddhati (ĪGP)

The *ĪGP* also known as *Tantrapaddhati* is an elaborate treatise dealing with different aspects of *Tantra*, including the construction of the temple and related matters, by Īśānagurudeva (11th A. D.)⁹. The work consists of nearly 18000 stanzas in various meters and distributed into a total of 119 *paṭalas* of varying length.¹⁰ The work is divided into four parts namely (i) *Sāmānyapāda* (ii) *Mantrapāda* (iii) *Kriyāpāda* and (iv) *Yogapāda*. The subject dealt with include the hymns on the various deities; *Japa*; *Homa* and other religious rites to be carried out to please them and derive benefits; the means of their attainment; their application for averting the evil effects of poison; malicious plants and diseases; the use of medicines; the properties of medicinal herbs; the science of magic; the construction of temples; consecrations of idols; modes of worship; details of festivals and other allied topics.¹¹

In the *Kriyāpāda paṭalas* 23rd to 43 deal with the construction of the temple and idols. This includes the selection of the land, the orientation (*dikpariccheda*), the measurements, the location of the temple, *vāstupujā*, the description and enumeration of the residences

of gods and men, the classification of the temples, description of the different parts of the temple, the materials for the construction of temples and palaces, selection of the architect, renovation, different types of idols and their measurements etc.

It has been argued by several scholars¹² that the Īśānagurudeva belongs to Kerala on the ground that the occurrence of the word 'timila'¹³ and its reference to the Nārāyaṇīya¹⁴ and *Prayogamañjarī*. It could be added here that the enormous quotations and the references given from *Mayamata* make the view stronger. It is to be noted that many of the early Śaivasiddhāntas (upto 1157 A.D., the floruit of Aghoraśiva) when they quote a Maya, they refer not to the *Mayamata* but to a different treatise called the *Mayasaṅgraha*. ĪGP, however, while it quotes several *saiddhāntikas* in different parts of the text refers to the *Mayamata* and not the *Mayasa gṛaha* as in other Śaivasiddhānta texts of other parts of India. So if we could agree the authorship of *Mayamata* to a Keralaite as N. P. Unni states, The *Mayamata* attributed to Maya, the celestial architect was popular in Kerala and formed a source book on architecture for many Kerala writers like Nīlakaṇṭha the author of *Manuśyālayacandrikā*. It is possible that some Kerala authors might have composed the work ascribing it to the celestial architect,¹⁵ then this provides one more argument for assuring the ĪGP to have been written in Kerala.

It is very much needed a critical edition of this text¹⁶ and its translation to enable one to know more about the Kerala *Tantra* school.

Tantassamuccaya¹⁷

Nārāyaṇa (born A. D. 1428),¹⁸ a Namboodiri brahmin of the Cennās family in Kerala, and who flourished as one of the 'eighteen and a half' (*paṭineṭṭarakavikal*) poets in the court of the Zamorins of Calicut during the fifteenth century, is the author of this work on Kerala *Tantra*. The *Tantassamuccaya*, an elaborate treatise in twelve *paṭalas*, is a standard work on temple architecture and worship, widely popular in Kerala. It deals with the rituals connected with seven important deities, viz. Viṣṇu, Śiva, Śankaranārāyaṇa, Durgā, Subramaṅya,

Gaṇapati and Śāstā. The subjects related to architecture are given in *paṭala* one (the selection of the site for the construction of the temple, *vāstūbali*, the depositing ceremony of the *Nidhikalasā*, laying of the bricks, the placing of the foundation stones and the selection of suitable granite for the construction), *paṭala* two (characteristics of the temple, its measurements, the details of the construction, the characteristics of the idol and its seat, types of idols and its measurements, *balipiṭhas* - the oblation stones and the measurements of the five fold fortifications), *paṭala* three (purification of the site, sowing of the seeds in the site to test its fertility, preparation of the idol etc.) and *paṭala* six (the installation of the *Mahābalipiṭha* and the flag staff).

There are two commentaries on this treatise, viz. the *Vimarśinī* of Śankara and the *Vivaraṇa* of Nārāyaṇaśiṣya.

The study by N. V. Mallayya *Studies in Sanskrit Texts on Temple Architecture with special reference to the Tantassamuccaya* (Annamalai University, 1949) is noteworthy here. In the first part of his study the author gives a general introduction to the subject of Indian architecture. Part two contains the stanzas from the *TS* bearing on temple architecture with a rendering in English. Part three gives the critical and expository notes and discussions on the subject of architecture and the interpretations of architectural terminology.

Devālayacandrikā

Nārāyaṇa (1428 A. D), of the Cennās family in Kerala, is well known by his master work the *Tantassamuccaya*. His one more work the *Manuśyālayacandrikā* on the construction of human residences also is well known. But there is a third one too ascribed to him named the *Devālayacandrikā*. As in the case of *Manuśyālayacandrikā*, the author does not give any details about him in the work. The work should be assigned to him on the basis of the evidences available in the detailed Malayalam commentary on the text.¹⁹

Manuscripts of the text are yet to be discovered. The above-mentioned commentary contains a few verses of the text and also several verses can be identified by the introductory sentence prefixed to its

commentary. The subject dealt with in the *Devālayacandrikā* is the construction of temples and images of gods for worship. After the introductory verse, instructions are given for the selection of a proper site for the temple (vv. 2-6). The selected spot is then measured and consecrated (7-9). Detailed instructions follow for the actual building (10ff.) The outer walls, pillars, sanctum sanctorum, drain, doorways, decorations on the walls, etc., roofing, spires, halls, etc. are dealt with one after the other. The manuscript ends abruptly with verse 171, the last subject treated being the *śivaliṅga*.²⁰ Credit goes to K. V. Sarma, who brought out this information towards the scholars through his article *The Devālayacandrikā* published in the *Adyar Library Bulletin* (vol. 25, 1961, pp. 582-586).

Manuṣyālayacandrikā of Cennās

Nārāyaṇa, the author of *Tantrasamuccaya*, has written this text on domestic architecture. It is also known as *Mānavavāstulakṣaṇam*. An anonymous commentator²¹ of this work explains that the author has composed this text extracting appropriate verses from his *Tantrasamuccaya* and adding forty-four fresh verses to suit the subject treated. In the work itself, the *Tantrasamuccaya* verses are incorporated as an integral portion and not as extraneous quotations.

Some of the topics dealt with in this text²² are the qualifications of the land, orientation, *vithīkalpana*, *vāstumāṇḍala*, *grhalakṣaṇa*, the height of the buildings, measurements, different types of dwellings, the special features of the palace etc. As a work of a great author of Kerala, the work needs to be critically edited and translated.

Manuṣyālayacandrikā of Nīlakaṇṭha²³

This is a well-known work written by *Nīlakaṇṭha* of Tiruma gala, who flourished after the period of the *Tantrasamuccaya*, i.e. after the early 15th century A. D. The work is used as a reference manual by traditional carpenters of Kerala. There are seven chapters in this text and each chapter contains twenty to fifty verses in different metres, altogether 225 verses. In verses seven and eight of the first chapter he lists a number of texts he had consulted to compile his work.²⁴ Among

these he uses the term *Mayamatayugalam*. As Ullūr says 'even though the author mentions two *Mayamatas*, only one *Mayamata* is known to us'. I would like to bring your attention towards a work called *Mayasaṅgraha* in this regard.

The *Mayasaṅgraha*²⁵ (sometimes simply the *Maya*, e.g. *Tantrālokaiviveka* ad 28:151-6b) is to be distinguished from the published *Mayamata*. From the opening prose of the commentary it is evident that it is a tantric work in which the same *Maya*, architect of the asuras, instructs sages in what he was himself taught by *Svayambhū*, on the top of the Himavat mountain. Sanderson of the Oxford University has been able to identify a number of early quotations of the work in the sole surviving incomplete palm-leaf manuscript of the *Mayasaṅgraha* in Kathmandu (National Archives of Kathmandu, Ms No. 1-1537). *Maya* is cited as an authority by *Nārāyaṇakaṇṭha* in the *Migendraytti* on the *Kriyāpāda* (pp. 31, 69, 74, 81 etc.); by *Kṣemarāja* ad *Stavacinātāmaṇi* (87. p.96); by *Jayaratha* in the *Tantrālokaiviveka* (ad 8:32c-35b); by *Bhaṭṭopala* (ad *Bṛhatsaṅghā* 52:41); by *Hemādri* in the *Yatākhaṇḍa* of his *Caturvargacinātāmaṇi* (Vol.II, Part I, p. 138); and by *Somaśambhu* (*Karmakāṇḍaramāvālī* 1278-1299). References in the *ĪCP*, however are to the later *Mayamata*. It is likely that *Nīlakaṇṭha* may have been referring this ancient work on architecture.

MC deals with the boundaries of a compound, the site for house building, the length and breadth of a house, different types of halls, the courtyard, the height of the basement, the pillars, the rafters, the underground cellar, cowsheds, the bath room, the kitchen, the rest house all these are discussed in great detail. The methods of fixing rafters, arranging tiles on the roofing, placing door frames and window frames, are among other matters dealt with briefly and clearly. Expositions on the village, town and city testify to the deep knowledge and wide experience of the author.

MC also contains the directions regarding the base to be made for the pillar to rest upon. It could be either in granite or in wood and be a square, a circle, or one with 8 or even 16 facets. One shape in which

it could be made is that of the petals of the lotus flower. It should necessarily be built on the floor of the house. Planting the pillar on the base, the girth and height on the pillars, their salient features, methods for ornamentation - all these are minutely described in the relevant portion of the treatise.

It gives expositions of the methods of constructing houses and their annexes succinctly and clearly. In the passage on land suitable for house building he specifies some trees, the planting of which are believed to bring fortune and misfortune to the family.

The work concludes with a benediction to the house builder with the words 'may he live long and happily in his new home!'²⁶

Like other texts on this subject, MC too contains valuable information on measurements. One example is the *Aṅgula* which, in MC is as follows:

Width of 8 seeds of

sesamum plant

8 yavodaram

12 mātrāṅgula

2 vitasti

or bhujam or doss or muṣṭi)

25 mātrāṅgula

26 mātrāṅgula

27 mātrāṅgula

28 mātrāṅgula

29 mātrāṅgula

30 mātrāṅgula

31 mātrāṅgula

= 1 yavodaram

= 1 mātrāṅgula

= 1 vitasti

= 1 karam (Or Kiṣku or aratni

)

= kol known as prajāpatya

= kol known as dhanurmuṣṭika

= kol known as dhanurgrha

= kol known as prācyā

= kol known as vaideha

= kol known as vaipulya

= kol known as prakrīṇya

It follows that there are 8 different varieties of kol, each having its specific length depending on the number of *Mātrāṅgulas* constituting it.

The following Malayalam commentaries by Vilvattat Śrī Rāghavan

Nambyaṛ, Pāloji Śrī Cōyi Vaidyan, Śrī Nīlakanthan Ācāri, Śrī Kūnezhatt Paramēśvaran etc. are worth mentioning. With its all features it is one of the most authoritative works on Kerala architecture.

*Vāstuvidyā*²⁷

The *Vāstuvidyā*, a Kerala work on household architecture by an anonymous author was published for the first time by T. Gaṇapati Sastri in the TSS in 1913. "Though indebted to *Mayamata* in a noticeable manner and to *Mānasāra* in a lesser extent the *Vāstuvidyā* has all the ingredients of an original treatise in that it is a practical manual put into use by generations of artisans engaged in house building activities."²⁸ The text is divided into 16 chapters, in 557 verses with a general picture of architecture with special reference to Kerala. Some of the topics dealt with in this text are measures, qualifications of the professionals required for the construction, characteristics of the land, orientation, doors, *Vāstumāṅḍala*, gateway, description of the courtyard and its measurements, auspicious months to start the construction, eight building houses, *pādamāna* definition and measurement, width, length and thickness of median rafter, construction of wall and allied matters, tiles etc. The making of the eleven varieties of tiles mentioned in this text needs special attention since it is perhaps for the first time the subject is treated by a Kerala author.

*Śilparatna of Śrīkumāra*²⁹

Śilparatna is an encyclopedic work by a Keralite scholar on the subject of *Śilpaśāstra*. The author of this text Śrīkumāra, son of Rāma, and who belongs to the bhārgavagotra was one of the poets in the court of Cembakaṣṣeri Pūrāḍam Tirunāl and it is said that he had written the work as per the instruction of the above mentioned king. The text contains two parts, the *pūrvabhāga* and *uttarabhāga*, with 46 chapters and 35 chapters respectively. While the first part deals with the construction of houses, villages and other allied subjects the second part deals with the iconography and kindred topics. In the end of the *pūrvabhāga* the author mentions that he had written about the construction of the city, temple and houses (*nānāgrāmādi-*

devālayanarabrahavanādy ukalākṣmaprakāśam, Śilparatna, 1.46.248).

The *Śilparatnam bhāṣā*³⁰ (also known as *aṭukku* and *Taikkāṭṭubhāṣā*) of a Namoodiri brāhmin of Taikkāṭṭillam is a well known maṇipravālam version of the *Śilparatna*, which is familiar among the traditional carpenters of Kerala.

Apart from the above mentioned major Sanskrit works there are several other less known texts on this topic produced in Kerala. K. V. Sarma's *Science texts in Sanskrit in the manuscripts repositories of Kerala and Tamilnadu* (Rashtriya Sanskrit Sansthan, New Delhi, 2002. pp. 207-215.) mentions nearly two hundred Sanskrit texts on architecture available in the different manuscript libraries of Kerala and Tamilnadu. It is worth to note that among the two hundred texts indicated only ten texts are so far edited.

Malayalam works

As we had seen above while the literature in Sanskrit on architecture produced from Kerala is vast, there is still a considerable amount of work written in the regional language Malayalam and in Maṇipravālam. While there are several commentaries and translations in Malayalam available for several Sanskrit works on the subject, the independent work, on the subject too needs special attention. We shall look into some of the modern works, prepared for the benefit of the general reader, in the last few decades.

Gṛhanimāṇapaddhati is written by Parakkal Krishna Warriar with a view to enabling the layman to have a glimpse of Kerala's great architectural heritage. This book is a welcome addition to the literature on architecture. The sketches and plans included wherever necessary are extremely useful to the reader.

Keṭṭiṅgal by the noted authority on the Kerala *Tantra* and architecture Kanippayyur Sankaran Namboodiripad is an attempt to combine as far as possible and practicable, old concepts with new trends, resulting in improvisations marked by freshness and a new vitality. Included in *Keṭṭiṅgal* are 77 ground plans of different types

of buildings conceived and prepared by the author himself. The methods of constructing foundations and walls, making doors and windows and ceilings and roofs, ensuring free air and light, beautifying the interior, are all discussed in a simple but authoritative manner. The author has taken care to acquaint his readers with various notions and beliefs that had become part and parcel of Kerala architecture in the past.

Gṛhacitrāvāli (Śilpaśāstram), Vastukaumudi, Śilparatna sammuccayam and *Śilpāla-prabodhinī* by Taṇṇimukkam V.K. Vāsu Ācāri (Vidyarambham Publications, Allapuzha); *Gaṇitaratnākaram (Śilpabhāgam- Kaikkaṇakku)* and *Bālārāmmam* by Payyannūr N. Keśavācāri (Vidyarambham Publications, Allapuzha) etc. are some of the titles available in this filed.

Edition and translation of technical texts

In editing science texts one may encounter certain peculiar difficulties such as the question of technical terms contained in the text. The editors of the scientific texts should give more attention towards the technical part of the text, and it will not be enough if the editor just tries to establish the text as written by the author. To help a modern student of the subject, the edition should contain a translation, there too wherever necessary he should give necessary notes, explanations, elucidation's, and if possible with figures and pictures.

Analysis or translation of texts dealing with architecture poses from the start a twofold vocabulary problem: defining the terms and translating them. One could retain the Sanskrit term itself but this approach is not always desirable to scholars, especially for those who want to compare the same with modern aspects.

The technical texts employ (of course other literature too) rather a large number of terms to designate a single element. As we could assume the exigencies of prosody generate such usages. So a simple and easy method should be adopted to translate these terms. Perhaps one could use a single particular English term in the translation even though the

term is indicated with different synonyms. Then a complete glossary of terms with their equivalents rendered in the translation could be appended to the edition, so that the reader will not have difficulty to follow the text, and in the meantime he will have access to all the technical terms used in the text.

Now, it may be worth mentioning some of tools for translating these technical texts, such as dictionaries in the subject. As we know, the specialized vocabulary of Sanskrit architectural treatises is rarely quoted in classical dictionaries. The effort of Ram Raz should here be mentioned, who provided an initial collection of definitions, a number of which may be considered as definitive, particularly those referring to moldings, in his *Essay on the Architecture of the Hindus* (Indological Book House, Delhi, 1834.). The revised (by P. K. Gode and C. G. Kharve) *Sanskrit-English Dictionary* by V. S. Apte contains a number of definitions on the subject. *An Encyclopedic Dictionary of Sanskrit on Historical Principles* being published by the Deccan College post-graduate and research institute, Poona, too takes the terms on this topic some extent. The Encyclopaedia of Hindu Architecture (1946) by P. K. Acharya becomes a basic reference work, as it contains a very large vocabulary from technical literature, as well as from epigraphical and classical texts. The contribution of scholars such as A. K. Coomaraswamy (Indian Architectural Terms, *JOAS*, Vol. 48, 1928, pp. 250-275), N. V. Mallaya (*Studies in Sanskrit Texts on Temple Architecture*, 1949), L. K. Sukla (*A study of Hindu Art and Architecture with special reference to terminology*, Varanasi, 1972.), Stella Kramrish³¹ etc. are to be referred in this regard. An important article by K. G. Krishnan, 'Architectural Terms in South Indian Inscriptions' (in *Studies in Indian Temple Architecture*, 1975) contains the first systematic survey of Sanskrit and Tamil architectural vocabulary as employed in inscriptions.

In his preface to the edition of the *Manusyalayācandrikā* (TSS 56) T. Ganapati Sastri says: "There are throughout this work, many technical expressions peculiar to architecture. I hope to publish a vocabulary of all such terms occurring in this work as well as in the *Mayamata*,

Silparatna and other works"³². But unfortunately the above mentioned vocabulary has not seen the light. It is necessary that a vocabulary of the technical terms occurring in the texts written in Kerala dealing with architecture should be made available to enable students who want to enter in this field of research.

The question of technical terms in translations requires some consideration. In his introduction to *the Architecture in the Ajitāgama and the Rauravāgama*³³ Bruno Dagens observes that a number of archaeologists use purely Sanskrit nomenclature in describing monuments. Such a procedure is only justified if the terms used are clearly and correctly defined, which has not always been the case. A well known example of incorrect usage is the term *vimāna*, which is used by most authors to designate the upper portion of a temple, when, in fact, it actually applies to the temple as a whole. As far as South Indian architecture is concerned, one of the few authors who seem to have used this approach properly is H. Sarkar, a reliable expert on monuments and texts who has written a monograph which, though brief, is a model of its kind, *The Kampaharesvara Temple at Tibhuvanam* (1974).³⁴

When one is working with the texts produced in a particular region, or if one is going through a commentary written for the benefit of local people then it is likely to find technical terms in the vernacular. This is especially true of works dealing with Kerala architecture. Some such terms occurring in different works and commentaries on them is given below, to show their nature.

Terms in Sanskrit	Their description
<i>Dikpariccheda</i>	determination of the cardinal points
<i>śaṅku</i>	gnomon; the pin of a dial whose shadow points to the hour; an upright rod for taking the sun's attitude by its shadow.
<i>sthānabhūmi</i>	assembly hall

<i>garbhabhūmi</i>	cellar; a niche underneath a floor
<i>daivikyāvṛti</i>	(twelve squares in the) first enclosure next to the place assigned to the brahman
<i>āvṛti</i>	enclosure in general
<i>marma</i>	crossing of lines
<i>śīra</i>	diagonal lines in sixty four squares
<i>vaṅśā</i>	the horizontal and vertical lines in sixty four squares
<i>bhinnasāīā</i>	a house in which the rooms have their own yoni, width and <i>gamana</i> and stand at four cardinal points and corners.
<i>catuśāīa</i>	a house, having one yoni for the rooms in four cardinal points and the four corner points and also for the perimeter.
<i>ekasāīa</i>	a house where the rooms at cardinal points have their own yoni and the perimeter has the first yoni.
Terms in Sanskrit Terms in Malayalam Description in English	
<i>Takṣaka</i>	<i>cettupanikkāran</i> one who cuts to size
<i>Lambakam</i>	<i>tūkkukaṭṭa</i> the suspended weight
<i>Dvāram</i>	<i>paṭipura</i> gateway to the house
<i>anyanīyam</i>	<i>kiṭappura</i> bedroom
<i>annabhūmi</i>	<i>ūṭṭupura</i> the place for feeding people
<i>garbhabhūmi</i>	<i>niḷavara</i> the underground chamber
<i>aṅkaṅam</i>	<i>naṭumuttam</i> the quadrangle
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<i>sandhi</i>	<i>iyappu</i>	joint <i>nīvalambam</i> also
<i>nīvarapaṭṭi</i>	<i>vāmaṭa</i>	a particular rafter
<i>valaya</i>	<i>vaḷa</i>	corner rafters
<i>kūṭasandhānam</i>	<i>mōṇāyam</i>	joint of the rafters
<i>paraśu</i>	<i>vāyika</i>	axe

Conclusion

The need to bring all of the works on Kerala architecture to light and publish them for the benefit of students of architecture is very much required. Valuable manuscripts might have been already lost forever in this field of study. However, it is highly probable that intensive research might unearth at least a few which have survived destruction. It will be of great benefit if editions of such texts pertaining to this field, especially the unpublished ones, are published along with their translations and available commentaries. When all this is done, a substantial body of literature on Kerala architecture will be available. A detailed history of the texts on Kerala architecture is lacking at present.

References

- 1 *Mayamata*, V. 1.3-25; *Vāstuvidyā*, I. 12-21.
- 2 These schools of Kerala artisans are mentioned in an old commentary on *Vāstuvidyā*, ed. By V. Chandrasekharan Pillai and S. Balakrishnan Asari, Oriental Research Institute and Manuscripts Library, University of Kerala, Trivandrum, 1978.
- 3 Ed. by K. Raman Nampiyar with K. Acyutapottuval, Tripunithura, 1953-54; A critical edition of this text with its commentary *Pradyota* is under preparation by Prof. N. V. P. Unithiri and S. A. S. Sarma
- 4 N. P. Unni, *Introduction to Tantarasamuccaya*, p. 23, *Kerala Sahitya Caritam*, I, p. 200.; See also: E. V. Raman Namboodiri, Introduction to *Tantarasamuccaya*, pp. 84-85, Oriental Research Institute and Manuscripts Library, Trivandrum.
- 5 Ed. By T. Ganapati Sastri, Trivandrum Sanskrit Series (TSS) 65, Trivandrum, 1919; ed. with Tamil translation by K. S. Subramanya

- Sastri, 2 Vols., Tanjore Sarasvati Mahal Series 113, 1965-1968; Critically ed. with French translation by Bruno Dagens, 2 Vols., Pondicherry 1970; and later the same translation in English version published from the Sitarani Institute of Scientific Research, Delhi, 1985.
- 6 Many earlier works treat architectural themes. Eg. Kirāṇatantra, Mayasaṅgraha, Mohacōdotara, Somaśambhu, various works of Varāhamihira etc.
- 7 Dagens, *Mayamata*, p. ii.
- 8 Dagens, *Mayamata*, p. v.
- 9 According to N. P. Unni, A general introduction to 75, p. 1.
- 10 See the introduction by N. P. Unni in the reprinted edition of *ĪGP*, Ed. T. Ganapati Sastri, published by the Bharatiya Vidya Prakashan; *Īśānagurudevapaddhati* (in 4 vols.,) Delhi, pp. 1-126. First published in the TSS Nos. 69, 72, 77 and 83, Trivandrum, 1920, 1921, 1922 and 1925.
- 11 N. P. Unni, *ĪGP*, p. 26
- 12 N. P. Unni, *ĪGP*, Vol. I, pp. 12-13; KSC, Vol. I, p. 202.
- 13 *sangītanṭavāditraih Śārikhākāhalaḡomukhahiy/ timlānakabheryādairninadadbhiraṅāratam// ĪGP*, 50.343; T. V. Gopal Iyer of the French Institute, Pondicherry informs me that the word *timila* could be seen in the Tamil literature too. Ex. A list of drums are given in the commentary of Aḡiyarkkunallār on *Śilappatikāram*, 3.27, in which the *timila* also is included.
- 14 Published under the title *Tantrasārasaṅgraha*, ed. with commentary, Madras Government Oriental Series, No. 15, Madras, 1950.; See also: *Tantrasārasaṅgraha* of Nārāyaṅa with the commentary *Mantravināśinī* by Svarttagrāma Vāsudeva. ed. N.V.P. Unithiri, Calicut University Sanskrit Series 15 & 16, Publication Division, University of Calicut, 2002.
- 15 Introduction to *Tantrasamuccaya*, p. 30.
- 16 In the available edition there are several passages left out, with +

- marks. Ex. Vol. II, p. 352, Vol. III, p. 71; Vol. IV, p. 458; see also the corrupt quotations therein from Rāmakaṅṭha's *Kiraṇavṛtti* quoted in the apparatus of the Dominic Goodall's critical edition of that text on pp. 12, 14. French Institute, Pondicherry, 1998.
- 17 Ed. T. Ganapati Sastri (TSS), Reprint with Introduction by N. P. Unni, Nag Publishers, Delhi, 1990.
- 18 N. P. Unni, Introduction to the 75, p. 34.
- 19 Mal. D. 245 of the Govt. Oriental Manuscripts Library, Madras. This is a transcript prepared in 1917-18 from an old palm-leaf manuscript belonging to Ampalakkāṭṭu Menon, Chalappuram, Calicut.
- The introductory verses of both *Manusyālayacandrikā* and *Devālayacandrikā* are the same with regard to the first three lines. While the fourth line in the *Manusyālayacandrikā* reads 'samāsato mānavavāstulakṣaṅganam' the *Devālayacandrikā* reads 'samāsya devyātanaṅāli-lakṣṅgam'.
- 20 K. V. Sarma, 'The *Devālayacandrikā*', *Adyar Library Bulletin* (1961), 25, p. 583.
- 21 Ms. No. Co. 311, *Descriptive Catalogue of Skt. Mss. in the Curator's Office*, Trivandrum, VI, pp. 2443-44; the commentator states thus; *ayai kavii 'muyā tantrasamuccaye devālayalakṣaṅgāu uktam. Manusyālayalakṣaṅgāu kurrāpi noktai ca; tasmād idānii Tantrasamuccayā katipayapadyāni yathāvākāśāu uddhṛtya, taih saha caṅṅāiśābhīh ślokaih Manusyālayalakṣaṅgāu vakṣyati [vakṣyāmi] ii nīcītya tarrādaṅ prathamena ślokena iśṭadevatānamaskāraṅ cikṛṣṭiapratiṅṅāu cāha - 'praṅṅanyā viśvashapatiiṅ pitāmaham' ii.*
- 22 The work with an old commentary, ed. by S. K. Ramanatha Sastri is published in the Madras Government Oriental Manuscripts Library Series XXI, 1950. This editor presumes that the original text must be the one composed by Nīlakaṅṭhan Mūssattu, though he is not certain with this view.
- 23 *Manusyālayacandrikā*, ed. by T. Ganapati Sastri, TSS 56, 1917.;

with Malayalam commentary, ed. by Kanippayyur Sankaran Namboodiri, Kunnankulam, 1965.

- 24 *Mayamatayugalai prayogamañja-ryapi ca nibandhanabhaskariyayugman / manumatagurudevapaddhantiśri hariyañanādimahāgamā jayanti / mārkandeyayugai parāśaramurāriproktaratnāvālī-sārān kāśyapaviśvakarmamatayugmādyam kunnārāgamam / savvākyai harisaūhitām vivarañākyai vāstuvīdyādikān dīśyivā tantrasamuccayoktamanuśryavātra saikṣipyate / Manuśyālayacandrikā* I. 7-8.
- 25 For a short description of this text see: Dominic Goodall, *Kṛiṇavṛtti*, Vol. I, French Institute, Pondicherry, 1977, pp. x-xi.
- 26 *svīyaiḥ sārḍham, svagehe suctram adhiṇaset pūñākāmāiñ sukhena, MĀ, VII. 37.*
- 27 I am thankful to V. Lalitha who was kind enough to provide her thesis *Vāstuvīdyā - A study on Kerala architecture*, submitted to the University of Kerala, 1993, to enable me to know much about this work.
- 28 V. Lalitha, p. ii
- 29 Ed. T. Ganapati Sastri, TSS 75, 1922.; See also, N. V. P. Unithiri, Śilparatna in this book.
- 30 KSC, II, p. 398.
- 31 *The Hindu Temple*, University of Calcutta, 1946.
- 32 T. Ganapati Sastri, MĀ, p. i
- 33 Sitaram Bharatiya Institute of Scientific Research, New Delhi, 1984.
- 34 Bruno Dagens, *The Architecture in the Ajitāgama and the Rauravāgama*, pp. 9-10.



Iconography and Sculpture

Balagopal T. S. Prabhu

On the (vertical) fire lines upright forms are produced. On the (horizontal) water lines forms expressing feelings are produced. On the (diagonal) wind lines fiery (energetic) forms are produced. The knowledge of the line is then to be known as all comprehensive in sculpture. (*Vāstusūtrōpaniṣad*, 2.23-26)

1. Introduction

Sculpture (śilpa) is an integral part of traditional Indian architecture, indeed the design principles of both arise from same theory. In traditional Indian architecture, the sculptural art and structural engineering are so synthesised that the separation of the art and engineering is impossible. Here the structural form is modified by sculpture beyond recognition, and simultaneously sculptural form is made out of structure. The moulding of the base, the treatment of the pillars, the decoration of the wall, the forming of the roof are all done in a manner by which the harshness of stone and timber is relieved by the smoothness of the sculpture. The building elements such as door frames, sides of wall openings, beams and rafters, ceiling joist and planks, dormer windows, steps and hand rails, water spout etc, are all artistically moulded or carved in delicate proportions. The common