NEW LIGHT ON EARLY SINHALESE STUPA ARCHITECTURE

Since the publication of S. Paranavitana's classic work on the stupa in Sri Lanka almost four decades ago. 1 few scholars have made any significant contribution to the study of this important aspect of ancient Buddhist monastic architecture. doubt that Paranavitana had at his disposal all archaeological. historical and literary evidences that were available at the time, yet his attempt cannot claim, as he himself admits to be an exhaustive study, for he was constrained to work within certain limitations. For example, he had no opportunity to examine the interior of a ruined stupa of the early period. Most of the ruined stupas of ancient Sri Lanka, almost all of which have now been restored, had been seriously damaged by treasure-hunters. Earlier reconstruction and restoration work had also resulted in many of the important stupas growing in size and changing in shape. In fact there has not been a single stupa belonging to the early period to be seen in its original state. They have been either half destroyed or completely renovated. Paranavitana could, therefore, only conjecture about certain important details pertaining to stupa architecture, such as the nature and the function of the central pillar standing erect in the middle of a stupa (which he calls yupa following the Indian tradition), the location of the reliquary and the exact items deposited in it, and the nature of the early chatradanda which was later replaced by the spire.

The next important achievement in the annals of archaeological research on the stupa in Sri Lanka is the excavation of Kotavehera during the period 1947-1960. These excavations brought to light much valuable information relating to the construction of relic chambers². But since Kotavehera belongs to a much later period (i.e., 12th century A.D.) than that covered by the present paper, the findings at Kotavehera are of not much help to us.

The answers to a number of questions and doubts raised by Paranavitana in his work can now be gleaned from a unique work on ancient Buddhist monastic architecture and iconography discovered some years ago and now kept in the National Archives. This pre-

^{1.} S. Paranavitana, Stupa in Ceylon, Colombo (1946).

^{2.} See C.E. Godakumbura, The Kotavehera at Dedigama, Colombo (1969).

cious manuscript of a Sanskrit text in \$loka\$ metre written most probably in Sri Lanka is ascribed to Bodhisattva Mañjuśri and evidently has Mahayana associations. The text is generally corrupt, sometimes hopelessly, but it furnishes a wealth of information regarding the construction of ancient monasteries together with their various edifices and provides more detailed information on Buddhist iconography and iconometry than the Bimbamana (popularly called Sariputra) itself.

This work entitled Vastuvidyasastra in the colophons of two of its first three chapters and Citrakarmasastra in the remaining fourteen, devotes a whole chapter to stupa architecture. Despite the fact that the relevant section of the text is very corrupt, it has been possible to extract certain information on the subject, which has not so far come to light through any other source.

The object of the present paper is to inquire to what extent the description given in the Vastuvidyaśastra agrees with the actual practice as evident from the architectural remains of the ancient stupas and from the findings of archaeological excavations carried out by the Department of Archaeology of Sri Lanka. The fact that the work is written in Sanskirt and bears certain affinities with the extant Hindu \dot{silpa} texts in style and treatment has led Ruelius to believe that it is a product of South India, but textual evidence heavily favours a Sri Lankan origin. While its closeness to South Indian \dot{silpa} texts, particularly the Mayamata

This work is now being edited for the first time by the present writer, along with an English translation, and will be published shortly.

^{4.} This work (in Sanskrit verse) was first published in Sinhalese characters, along with a commentary in Sinhala, by M. Sirivimala Thera. Subsequently Hans Ruelius prepared a critical edition of Sariputra and Alekhyalaksana along with a German translation, for his Ph.D. degree of the University of Göttingen (Sariputra and Alekhyalanksana: Zwei Texte zur Proportionslehre in der indischen and ceylonesischen Kunst, Göttingen, (1974).

^{5.} Hans Ruelius, "Manjuśribhasita-citrakarma-śastra: a Mahayanistic Śilpaśastra from Sri Lanka." Buddhism in Ceylon and Studies on Religious Syncretism in Buddhist Countries, ed. By Heinz Bechert, (1978) p. 98.

and the Kasyapasilpa, written in the 10th and 11th centuries A.D. respectively, prompts us to place it about the same time or even a little later, the antiquity of the type of edifice envisaged therein suggests a much earlier date. It may be mentioned at the very outset that our text regularly uses the term caitya for the edifice and the terms stupa and stupika are used only in connexion with the crowning member of a structure shaped like a stupa, or the relic-casket or its container in the case of a caitua. Although this cannot be used as an argument for assigning a very early date to the work the architectural type of caitya described therein undoubtedly belongs to a date several centuries earlier than the Polonnaruva period. It should, however, be mentioned that the text concerns itself mainly with the interior of the monument and has shown scant regard for its external architectural details. terraced base (Sk. medhi; Sinh. pesava), the dome (Sk. anda, udara) and the square structure on the flattened top of the dome (Sk. harmika; Sinh. sivuraskotuva) the three most striking features of a stupa, are not discussed at all. Instead it gives a detailed account of the ceremonies connected with the different stages in the construction of the edifice and the arrangement of the inner chambers (Sk. garbhagara). The most startling revelation, however, is its mention of gajastambha or gajapadaka, a wooden column that stood upright through the centre of the dome in the earliest stupas. This enigmatic object, known as yupa in the Indian texts, has been found to be made of stone in all cases without exception discovered so far. is most probable that the wooden column preceded the stone pillar, and we know for certain that the Mirisavatiya Dagaba, one of the earliest stupas (1st century B.C.) built in Sri Lanka, had a yupa of stone. There is no doubt that even the Ruvanvälisäya is built round a stone yupa.

The text also gives a description of the chatradanda (known as yasti_in the Indian texts), the post or shaft which, standing above the yupa or gajastambha, supported the chatra (umbrella or parasol) or the pile of chatras (chatravali), the symbol of dignity and supremacy. The chatradanda discussed in our text is made of wood and this appears to be the earliest practice, which was abandoned in favour of stone chatradandas as early as the Anuradhapura period. Even the chatras found in the compound of the Ruvanvalisaya and believed to belong to the miniature votive stupas that existed there are made of stone. Paranavitana concludes that the practice of arecting parasols or piles of parasols above the stupas was abandoned altogether around the seventh century A.D., and was supplanted by the spire, a more permanent structure serving more or less the same purpose.

^{6.} S. Paranavitana, op.cit., p. 35, plate VI b.

^{7.} op.cit., p. 39, 44.

The type of caitya envisaged in the Vastuvidyasastra, however, is not of such huge dimensions as those of Ruvanvalisaya or Abhayagiri Dagaba, but of modest proportions and generally intended to be among the pancavasas associated with a monastery of moderate size. But, considering the fact that even small votive stupes in Anuradhapura have gajastambhas and chatradandas made of stone, there is no justification for us to assume that a perishable material like wood was used in preference to stone for these two kinds of post of a small stupa. There is also no evidence to believe that the practice of using both wood and stone side by side came down to a considerably late period. We cannot, however, expect to find archaeological evidence of the use of wood for the purpose, for, if there were any such cases, they would not have withstood the ravages of time for more than one or two centuries. Moreover, the practice of enshrining the relics in the dome of the caitya was still not in vogue. There is, therefore, nothing to prevent us from assuming that the caitya described in our text belongs to a type that existed well before the seventh century A.D.

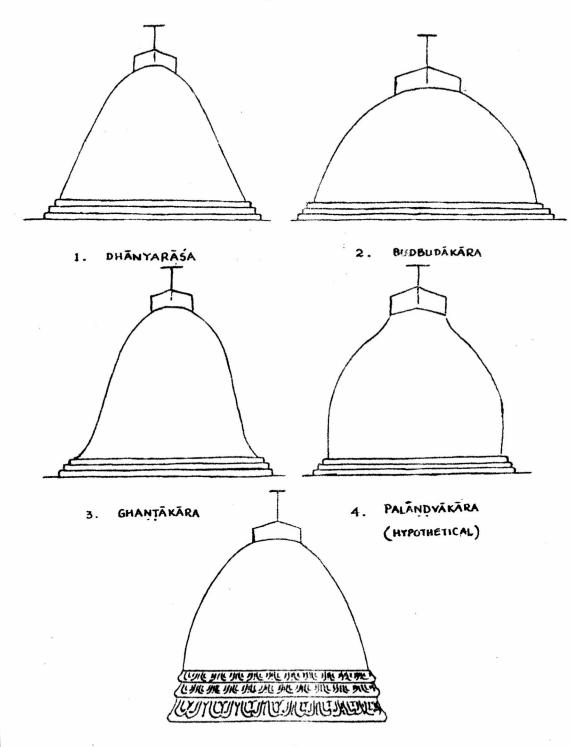
Let us now consider the account given in the Vastuvidyasastra and try to relate it, wherever possible, to the actual practice as evident from the existing monuments. The chapter opens with the specifications for the bricks to be used in caitya construction. The measurements are given in angulas or 1/24 of an ancient cubit (hasta). An angula may roughly correspond to 1.25 inches. Seven sizes of brick are given. The smallest brick is 8 angulas long, and each successive size is one angula longer than the preceding one. So the largest brick is fourteen angulas long. The width in all cases is half of the length, and the thickness half the width. Some of these lengths and widths substantially agree with the measurements given by Parker. But, as can be seen from Parker's list, the thickness of the actual bricks used for the existing stupas was less than half the width.

The Caitya Types

The text goes on to enumerate five types of caitya, four of which are among the six types given, according to Parker, in a silpa text called Vaidyantapota. But, as there seems to be some lacuna in the

^{8.} H. Parker, Ancient Ceylon: an account of the Aborigines and of Part of the Early Civilization, London (1909) p. 214.

^{9.} op.cit., p. 336.



5. PADMĀKĀRA

text, we cannot definitely say whether the list is complete. The four easily recognisable types are given as dhanyarasa (paddy-heapshaped), padmatmaka (i.e., padmakara or lotus-shaped), ghantakara (bell-shaped) and budbudakrti (bubble-shaped). The term 'pandalandakara' which denotes the fifth type is definitely a corrupt form and upsets the metre. 10 The closest term seems to be 'palandvakara' (onion or bulb-shaped); but even if the reading is accepted, the metre remains defective. However, as in the case of most other silpa texts, instances where the metre is violated are numerous here, and therefore conformity to metre is not always a reliable guide to the editing of silpa texts. The ghatakara (pot-shaped) and amalaka (myrobalan-shaped) types are not mentioned at all. Something interesting about the list given in our text is that each type seems to have been associated with a particular type, or types of monsatery. The work enumerates and describes in detail twelve types of monastery, together with their alternate types (vikranta), making a total of twenty-four, each type depending on the particular pattern in which the five kinds of major edifices (pancavasa) are located. 11 The five types of caitya are distributed only among five monastery types, to wit., palandvakara and dhanyarasa for Gokularama, and Bhujangaphanarama, padmatmaka for Hamsapaksa and Navakara and ghantakara and budbudakrti for Cakrarama. The omission of the other more important types, such as Hastyarama and Simharama, may be due to some lacuna in the text or simply because that they could accommodate any type of caitya.

The Selection of the Site.

The work mentions ten different types of ground distinguished from each other by means of vegetation, soil-structure and physical features. It is interesting to note that this is the only silpa text which recognises ten types of ground. All the other works do not mention more than three or four types, and often adopt an entirely different method of classification. The ten types of ground enumerated are anupa, jangala, sadharana, dhumraka, purna, caima, bhadraka, padma, ghatima and purima, but only the first four are briefly discus-

^{10. &#}x27;pandalandakara[n] tatha jñeya', ('jñeya' here should be read as 'jñeyam').

^{11.} The five kinds of major edifices belonging to a Buddhist monastery complex are given as caitya, bodhivesman, bimbalaya (imagehouse), prasada (residential quarters for monks) and sabha (assembly-hall).

^{12.} Cf. Mayamata, ed. by Bruno Dagens, Pondichery (1970) iii; Silparatna, ed. by T. Ganapati Sastri, Trivandrum (1922) iii,3f.

sed as they are thought to be the types suitable for caitya construction. 13 Needless to say that the ground which supports a heavy structure like a stupa needs to be very hard and firm. The kind of ground where trees like moca (cotton?) and puga (areca) grow, where beasts and bees live, which has fine sand, which is moist and has pools overgrown with kaseru (a kind of grass) and utpala (lilies) is called anupa. Jangala is hard ground with light soil and tiny pebbles, scattered with trees and creepers. The sadharana type is a mixture of anupa and jangala grounds. The kind of ground where trees such as arjuna, vedhana, priyangu, candana, asana, timisa, venu, khadira, stambhaka, nimba and salmali grow, where water is dried up and beasts and hunters live is called dhumraka. It is clear that all these four types should have a hard crust firm enough to bear the weight of the edifice.

But the architects did not depend on external features alone for proof of firmness of the ground. After selecting the site, they carried out a more reliable test to judge the suitability of the ground. A pit, measuring one, or one and a half cubits across, and deep as much, was dug towards the centre of the site or the intended southern gate. The purpose of digging this pit was twofold. was to check whether objects like human skulls, bones, ashes and stones (funerary?) were buried in the site. If such objects were found in the earth dug up, the site was forthwith abandoned. digging the pit, a shed was put up towards the south and decorated with flags and banners, a canopy and an ornamental arched doorway. In the evening the pit was filled with sandal-scented water and the architect spent the night in the shed keeping vigil over the pit. The following morning the pit was examined and, if all the water had seeped through, the ground was considered unsuitable for the purpose. If there was (sufficient) water still left, the site was accepted and construction work commenced. A similar method of testing the firmness of the ground is mentioned in the Mayamata 14 and the Silparatna15

The Laying of the Foundation.

The commencement of the work was preceded by an elaborate ceremony. First, a shed three or four cubits each way was erected in

^{13.} All these types are more fully discussed elsewhere in the text.

^{14.} op.cit. iv, 10b-18a.

^{15.} op.cit. iii, 16-20a.

the southeast region of the site. It was supported by four columns and its plinth raised up to a height of about one cubit. On the floor space was drawn the pitha or upapitha diagram, the former consisting of nine squares and the latter twenty-five squares. The pitha grid of nine squares is the one preferred here. The square in the middle was dedicated to Brahma and the eight squares around it, beginning from the northeast corner, to the eight deities Isa, Aditya, Agni, Yama, Nirrta, Varuna, Vayu and Soma respectively. Nine pitchers filled with water (purnaghatas) covered with white cloth were placed in the nine squares, beginning with Aditya in circumambulatory order, the Brahma pitcher being placed last. In the latter the nine kinds of gem were also deposited. This was the consecration ceremony of the site. During the course of the ceremony the four boundary lines were laid.

The First Chamber

Next commenced the construction of the first chamber. middle of the site an square area measuring one hasta a side was smeared with cowdung (as a purificatory rite) and the pitha plan of nine squares was drawn. The entire place was adorned with flags and streamers and other decorations. Oblations were offered to the nine deities and further ceremonies followed amidst musical sounds. the middle square dedicated to Brahma there was a heap of sati rice up to a height of seven angulas. In the remaining squares the eight kinds of auspicious symbols (astamañaala) were placed. These eight symbols, namely, the śrivatea, the two fishes, the goad, the svastika, the bhadrapitha, the pitcher, the chowries and the conch-shell were deposited in circumambulatory order beginning with Isana. 16 Early next morning, at an auspicious hour, the chief architect worshipped the deities amidst musical sounds, festivities and revelries. next circumambulated the site and started work on the garbhagrha. walls of the chamber were built most probably with bricks. 17° Once the walls were completed, the chamber was closed with stone slabs (cap-stones) and bricks. Bricks used to cover the chamber were larger than normal, their width varying from five to fourteen angulas, the length being twice the width, and the thickness half as much. work of the lower part of the dome covering the first chamber must have followed next.

^{16.} For a detailed discussion on the astamangala see T.B. Karunaratne, "Astamangala" J.R.A.S (C.B.) N.S. vol. XV, p. 48 f.; A Unique Astamangala Relief from Weligama, J.R.A.S. (C.B.), N.S. vol. XVII, p. 46 f.

^{17.} cf. S. Paranavitana op. cib. p. 20 f.

The Second Chamber

Before the work on the second garbhagrha commenced, the consecration of pitchers was again performed as in the case of the first. The layout of this chamber was that of upap $\overline{i}tha$, which consisted of twenty-five squares. We may, therefore, presume that an equal number of pitchers was taken for the consecration ceremony. The deities occupying the sixteen squares on the periphery are Isa, Mahendra, Aditya, Antariksa, Agni, Grhaksata, Yama, Mrsa, Pitr (Nirrta), Puspadanta, Varuna, Roga, Vayu, Bhallata, Soma and Aditi. Brahma occupied the centre, and the eight squares around it were occupied by Apavatsa, Arya, Savitri, Vivasvat, Indra, Mitra, Rudra and Bhumindra (Prthividhara). In this chamber, most probably in the niches on the four walls, figures of the four Divine Buddhas, Aksobhya, Vairocana, Ratnasambhava and Amitabha were deposited with their heads turned towards the east, north, west and south respectively. A figure of Tathagata Amoghasiddhi was placed above that of Amitabha. four Buddhasaktis, Tara, Locana, Prajha and Mamaki, were next placed in the four corners, beginning with Isa. Various other items worthy of veneration were also placed and the chamber was sealed by laying the top bricks.

It is, however, very unlikely that these chambers contained any relics as such. Although the text mentions the various objects to be deposited in them, it makes no mention of any relics being deposited. Moreover, the large size of the chambers suggests that they were meant for something other than enshrining relics.

The Repository of Gems.

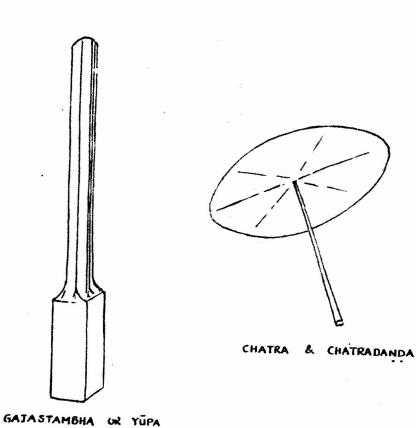
Above the top brick layer of the second chamber was placed the repository of gems which is an essential feature of the interior of any caitya. Strict specifications are given for its measurements. It had to be a perfect square measuring four to twelve angulas a side. Its width may also be in relation to the width of the outer wall or of the inner wall of the caitya. It may be half, three-fourth or equal to the width of the outer wall, or half of the width of the inner wall. This clearly shows that the terraced plinth and the bell of the caitya were built with two concentric walls differing in thickness. We have at least two examples of this method of caitya construction. The outer wall of the stapa at Ghantasala in South India is thicker than the inner wall. Paranavitana was not, however, able to say definitely whether the second and outer wall of the Mahathupa and of the Kantaka caitya (Mihintale) was part of the original plan

1. UPAPITHA PLAN

AGNI	GŖHA- KŞATA	YAMA	MŖŞA	NIRŖTA
ANTA-	3ÂWTRÎ	VIVASAAT	MOSA	Paspa-
ÁBITYA	î R X	ERAUMA	MARA	VARIONA
VJ CR3HVH	ÁPAVATSA	BHG- DHB	Rupas	ROGA
ĪŚ.NA	ADITI	VWOS	BHALL	väya.

2. PĨŢHA PLAN

MIZETA	ARUNA	SAY
YAMA	VMHOUS	AMOS
Asni	ATHEA	īśāna



and a half cubits and thirty-nine and a half cubits respectively. 26 Its width again had three sizes, i.e., twelve angulas, eighteen angulas and twenty-four angulas (i.e., one hasta). The post was fitted on to a shaft fixed to a base placed above the receptacle of gems. The lower portion, up to a height of about two hastas, was four-sided. A mortise three and a half angulas wide ran through the centre of the four-sided portion to receive the shaft. The remaining part was octagonal and had a curved top. The width at the top was one-third, one-fourth or one-fifth the width of the base. The stone pillars and their broken parts, found in the courtyards of certain caityas, strictly conform to this description. As seen from the miniature stupa at Amaravati, the gajastambha sometimes stood free, with its top projecting a few feet above the harmika, with one or two umbrellas supported by chatradandas on its sides.

The Chatradanda.

The chatradanda is known as yasti in the divyavadana. According to the Vastuvidyasastra it was, like the gajastambha, made of wood. It is said to be three hastas in length and three angulas less than the gajastambha in width. The width specified applies to its base only because it gradually diminished towards the top. A copper shaft (kila) was fitted to the tapering end of the chatradanda. Its lower end was fitted on to the lid of the relic chamber (which was most probably located in the harmika), sealing completely the hole in the lid. It was coated with plaster and supported a pile of umbrellas placed one above the other.

The Harmika.

The Vastuvidyasastra does not, however, make any mention of a harmika or hataras kotuva on the top of the dome, which would have girdled the upper part of the gajastambha and the lower part of the chatradanda. But immediately after describing the chatravali, it speaks of such decorative motifs as festoons of lotuses and rows of pearl and gems used on the caitya. Judging from the existing evidence, these appear to be the type of decorative motif generally used on the harmika and not on the dome or the chatradanda. It is very diffi-

^{26.} Cubit or hasta is a unit of 24 angulas. An angula is generally taken to be the length of the middlemost link of the middle finger of a man of average size or of the patron or the architect

^{27.} Divyavadana, ed. P.L. Vaidya, Darbhanga (1959) p. 151.

^{28.} See also Paranavitana op.cit., p. 29.

cult to form a clear picture of the details of these members as the text here is hoplessly corrupt. It is evident shat the harmika of the earliest stupa did contain the relic casket. In the case of the Great Stupa at Sanchi, it consisted of a stone cylinder measuring 5'6" in diameter and 2' high. 29 It was provided with a lid, in the centre of which there was a mortise, into which the chatradanda was fitted. 30 This harmika undoubtedly contained the relics of the Master. Cunningham too believes that the relics of the Holy Teacher were always kept in some easily accessible place for the purpose of exposition on special occasions. 31 And it is very probable that the relics were enshrined immediately below the pile of umbrellas. Paranavitana, while confessing that no relics have been found in any of the chambers examined in Sri Lanka, mentions that small reliquaries of crystal have been found among the debris of ruined stupas. 32 This may be an indication that in those stupas the relics were not deposited in the so-called relic chambers mentioned above, but at some point in the superstructure, which has now fallen on talus. It is difficult to agree with Longhurst when he says that the box-like nature of the harmika is an indication that it served as a receptacle for valuable offerings presented to the shrine by pious worshippers, 33 for it is unlikely that any objects other than the chatra were pleased above the relics.

The harmika was in fact the original home of the relics and therefore, originally the term dhatu-garbha referred to no other part of the stupa than the harmika. Later on, however, the dome in many cases became larger and larger on account of subsequent renovations and enlargements, finally enclosing the original harmika along with the relics, thus taking over the function of housing the relics and also claiming the name dhatu-garbha. Finally the whole monument came to be called dhatugarbha (dagoba or dagaba in Sinhala).34

^{29.} A Cunningham, The Bhilsa Topes; or Buddhist Monuments of Central India London (1854) p. 186.

^{30.} ibid.

^{31.} op.cit., p. 322.

^{32.} op.cit., p. 24.

^{33.} A.H. Longhurst The Story of the Stupa, Colombo (1936) p. 15.

^{34.} Anagarika Govinda Some Aspects of Stupa Symbolism Allahabad (1940) p. 18.

The present-day harmika or sivuras koţuva is a solid mass of bricks resembling the earlier box-like structure, which was hollow inside the contained the relics.

It is now evident that the vastuvidyasastra belongs to a period when the relics were still being enshrined, not in the so-called relic-chambers inside the dome, but at a higher point, most probably in the upper part of the harmika. However, the description of the reliquary comes last, giving one the impression that it was placed above the chatravali. But such a practice is unheard of in stupa architecture and it is more logical to expect the reliquary immediately below the chatra than above it.

The Relic Casket.

The relic casket took the form of a miniature stupa and was made of metal. Bronze, silver or gold may have been used for this purpose. It contained a nine-chamber reliquery four or five angulas square. The nine chambers were dedicated to the nine deities (i.e., the eight dikpalas and Brahma in the centre). In the eight outer squares, beginning from Isa, were placed the eight kinds of grain, the five kinds of metal and the eight kinds of precious stones, namely, collyrium, pirites, cinnabar, orpiment, red chalk, realgar, antarita and lapis lazuli. The relics, if there were any, were placed in the central chamber dedicated to Brahma. A mantra, inscribed on a leaf of gold, silver or copper, was also deposited in the same chamber. The mantra is in the form of an appeal to the five Tathagatas and the chamber-deities to protect the relics and other deposits from possible danger. After inscribing the mantra, the leaf was bathed in purified water and then smeared with sandalwood oinment. The receptacle was first inserted in the casket, which was then placed in the centre of the harmika.

It will now be seen that the Vastuvidyasastra, apart from the detailed description it gives of the rites and ceremonies connected with the construction of stupas, furnishes for the first time a wealth of information about the interior structure of ancient stupas, certain details of which are still subjects of scholarly discussion. Its descriptions of the relic chambers, the gem depository, double wall of the caitya dome, the gajastambha and the chatradanda leave no room for speculation and definitely relate to the actual practice, which was in vogue in Sri Lanka much earlier than the twelfth century A.D. The chatravali has not still been replaced by the spire (Sinh. kotkärälla), and wooden columns by stone pillars; the relics were

still being deposited in the harmika; and the Mahayana associations of the text tempts us to push its date well beyond the 7th century A.D. It should, however, be remembered that the type of caitya described here would hardly match the great stupas in proportion and may well be that recommended for monasteries of modest size. Whatever it may be, the information furnished by this unique work is invaluable and deserves more serious study by archaeologists and scholars of silpaśastra.

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