

Bridges in Ancient Sri Lanka with special reference to Bogoda

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Bogoda is situated about twelve kilometers west of Hali-Ela, a small town situated on the Badulla-Bandarawela main road. From Hali-Ela it is a motorable road where buses ply to Gala-Uda passing the main junction called Jangulla. To reach Bogoda one should pass Jangulla and then Amunegoda junction and travel a distance of 1.8 kilometers, where the Bo-tree of the temple is situated by the side of the road. The only building which exists by the side of the Bo-tree is the school building which has now been abandoned.

Bogoda Raja Maha Vihara became well known due to a wooden bridge which is situated by the side of the temple. Bogoda is an ancient village situated in the Badulla District. The road which has been constructed beyond Amunegoda junction is along the foot of a contour of a hill. This road is 12 to 15 feet wide and a vehicle could drive along to the nearest cluster of houses and then to the village which is nearby. As the contour of land descends to a depth of about 50 to 60 feet it is quite difficult to construct a good motorable road beyond this cluster of houses. The present road which had been tarred had been never repaired and patches of tarred portions can be still seen in many parts along this road.

About an year ago some repairs were

carried out by providing three good culverts and by levelling the road with earth cut from the hill side. Owing to small waterways flowing from the hill side across this road the road gets washed away and this road has to be repaired at least once a year.

About an year back a road had been cut behind the Bogoda temple from the motorable road to reach the *Avasa* (monk's quarters). Therefore any person coming to the temple in a vehicle could go as far as the *Avasa* to see the Bogoda bridge.

From the *Bo-maluva*, the bridge and the *Avasage* can be seen down below. A flight of steps has been constructed along a slope of 300 feet descending nearly hundred feet. The existing footpath proceeds down the flight of steps and extends as far as Mahakumbura via the ancient wooden bridge at Bogoda. Most of the people involved in paddy cultivation take their buffaloes along this wooden bridge to their paddy fields. Therefore it is clear that the Bogoda bridge is very important to the villagers for their day to day living.

The footpath leading from the road goes as far as the village with flights of steps at various places where the pedestrians find it difficult to descend the hilly slopes. The situation of the temple amongst the cluster of trees is very beautiful; one could see the building,

with the bridge by the side of it at a distance form a hillock.

The Bogoda temple is situated near a stream where water flows rapidly rolling down the rocky surface. During the rainy season the flow of water is so rapid that one can hear the sound of flowing water to some distance. The embankment where the *Avasage* of the temple has been very badly affected due to the flow of water down the stream. Earth has been washed away from the embankment and due to the erosion, the *Avasage* might collapse in time. Therefore steps should be taken at least to erect a retaining wall to avoid the erosion of the earth along the embankment.

At present there are only three Bhikkhus staying in the temple as resident Bhikkhus. These Bhikkhus are being looked after by the few families who reside around the temple. Many people visit this temple, mostly during school holidays, to see the bridge and the cave temple. Some of them used to bath in the stream at least three to four hours sceinc the enjoying beauty. Unless there are devotees to offer *poojas* at the *Devale*, the door will not be normally opened to the public. This is a usual custom in every *Devale* in Sri Lanka.

In this temple complex, the *Avasage*, the bridge and the cave temple are the main features, with the Bo-tree at a distance. On account of its architectural features the *Avasage* building can be dated, as being 250-350 years old. It has a courtyard with an outer open verandah. This is similar to courtyards in other temples in the hill country. The decorative posts are still there to support the roof above. The ancient carpentry work of the doorways of the temple still exists and the most fascinating archi-

tectural features are still to be found. Many of the religious buildings in the hill country have been demolished or new additions and alterations have been effected but the *Avasage* at Bogoda is still the same old building with no change in its ancient construction. Owing to the lack of maintenance the walls and doorways have deteriorated. The interior of the building has been blackened due to the smoke from the oil lamps lit within the building, but during the last year electricity has been provided to this temple and the building has been white washed. Eight circular brick columns supporting the roof of the outer verandah around the courtyard, are in the Dutch style. In the front verandah there still exists two wooden columns with very old carvings.

The cave temple in front of the *Avasage* is the most ancient building in this complex. The inscription inscribed on the drip-ledge of the cave indicates how old it is. In this cave temple there are three images of Lord Buddha reclining, standing and seated. By the side of the standing Buddha image there is an image of Ananda. The seated Buddha image is decorated with a *Makara Torana*. The rock surface inside the roof of the cave has been painted and among the subjects depicted are a *dagaba* and sacred relics. These two are given much prominence as religious emblems. The lotus and floral patterns with creepers are very prominent. There are also illustrations from *Dahamsonda Jataka*, *Sath Sathiya* and the *Silumini-seya* painted on the right. Among the images inside the cave temple, the statue of the god Vishnu has been placed inside a niche cut in the rock above the reclining Buddha image and a small door has been fitted to the niche to close it whenever it is necessary.

In the outer verandah, by the side of the entrance, there are two figures of Guardians and two lions in a standing position. Next to the lions there are figures of *Raja Rupa*, two on the right and one on the left. There is a moonstone carved and embossed about three inches with a lotus, and two elephants on either side, on top of a granite stone fixed at the entrance door with the date given as 1929. Most probably the extension of the verandah to the cave temple would have been done during that year. The entrance door to the verandah is very simple and on either side of it are two windows. A separate room had been constructed at the left end of this building for the purpose of a *Devale* enshrined with three gods, Vishnu, Saman and Kataragama. The entrance doorframe and the door to this *Devale* is very finely carved with Kandyan architectural details, but the whole roof including the cave temple has been thatched with modern calicut tiles. The floor of the cave temple has been paved with 4"x4" ceramic tiles while the verandah portion has been cemented.

This cave temple has been reconstructed and painted during the Kandyan period and there is evidence that it has been restored in the year 2477 A.C. of the Buddhist era. During the earlier periods the cave temple has been used as an *Avasage* for the Buddhist monks to live in and meditate. Later a separate building would have been built for the *Bhikkhus*, converting the cave into an image house.

Behind the cave temple there is a tunnel which would have existed from olden days; now it has been filled with earth reducing the entrance to a height of about 4 feet 9 inches penetrating the rock parallel to the image house. One cannot see further for about 50 feet. and

no person would wish to go inside.

The only feature that is missing at the temple at Bogoda characteristic of religious buildings is the *Dagaba* which is an essential feature of a *Vihara*. In other temples, the *Dagaba*, *Pilimage*, *Bodhitree*, *Dharmasala* and *Poyage* are part of the *Vihara* complex. The *Avasage* is built away from the *maluva* of this religious complex.

A *dagaba* enshrined with relics is the most venerated feature of a temple. In the absence of a *dagaba*, the Chief Incumbent of the temple has provided a brass reliquary inside the *Arama* for the people to worship. This reliquary consists of a pinnacle, a spire, *hataras-kotuwa*, *garbha* and *pesavas*. This is about three feet in height and the base is about 15 inches in diameter. This has been done in the Cambodian style and resembles a small *dagaba* within the sacred area. King Keirthi Sri Rajasingha (A. C. 1747-1781) has provided this temple with a copper inscription on behalf of both temples at Passara and Bogoda describing the construction of the *Vihara*.

The cave temple at Bogoda has been in existence from before the Christian era. This is evident from the inscription written in Brahmi characters near the drip-ledge of the cave. The inscription reads as follows:-

*Parumaka Tiša puta Bamadataša
lene agata*

anagata catudiša śagaša paditite

"The cave of Brahmadatta, son of the chief Tissa is established for the Sangha of the four quarters, present and absent".

The other inscription in close proximity; the only word which can be read is "*upasika*". The inscription evidently concerns a donation of a cave by a female lay devotee. (Malini Dias, Guide

Book for Badulla).

Bogoda with its exquisite wooden bridge is an important site for archaeologists, historians and the general public who admire timber architecture. This bridge has been built about 600 years ago using wooden logs and planks. The villagers make use of this bridge for the purpose of crossing the stream whenever they go out from the village to other areas. Bogoda is a hilly area with rocks and rock boulders. Therefore the villagers have no other way of going to the main bus route or to the market place other than along the footpaths they have used in the shrub jungle. People mostly in rural areas used foot paths to reach their destination. These footpaths are the shortest and the easiest way of moving from one place to another in the hilly areas. In areas of this nature it is impossible to lay out roads for people to carry goods to their houses. Unless these footpaths are maintained at least for the people to take a handcart, there is no other way of carrying goods into the village from the market. They mostly use the bicycle to go to very distant places in the area. Transportation is mostly done by bicycle. Therefore footpaths in a village of this nature are very helpful in the absence of other means of access to the villages. Most of these footpaths have been created by the people walking through the shrub jungle and across streams or large channels. Most of the modern highways which have been developed by the authorities have followed the traces of old footpaths.

In the distant past there were *Ambalams* or wayside rests built for the people. Even now there are many such wayside rests left intact in the hilly areas of the Kandyan District. Godamune Ambalama, Embekke Ambalama,

Vakirigala Ambalama are examples of some of these. In the low country the only one that is existing is Meti Ambalama at Kotte Junction. Except for Embekke Ambalama others have been conserved by the Department of Archaeology. These *am-balamas* or wayside rests have been constructed by the side of ancient footpaths so that people could rest for some time after walking along distant hills and slopes. These wayside rests are made of wooden logs laid on four stone boulders or on four stone columns about 2'0" to 2'6" in height. Godamune Ambalama has been constructed on four such stone boulders by laying four square logs as seats. Each log 15" x 15" in section is fixed at the end with half cut grooves. No nails have been used. Such timber beams are sawn only by an axe for this purpose. No smooth surface can be seen on the beams, because the wood plane has not been used in preparing these beams. At the four corners of the beams four square holes have been cut to fix the four wooden columns which carry the roof. These columns are decorated with carvings. There are four *pekadas* fixed on the top of each column decorated with carvings, mostly the lotus looking downwards. The rafters are all 5"x2", carved and fixed on to a central boss. The roof is thatched with Sinhalese flat tiles and crowned with a clay pinnacle. This *ambalama* was conserved during 1963. Panavitiya Ambalama with its carvings is another example of conservation by the Department. These wayside rests would have been repaired from time to time, specially the roof, which requires frequent repairs. The former footpaths are now motorable roads where buses ply in many directions. Handessa Ambalama, which had been conserved by the De-

partment in 1965 or so, it is being used as a shelter for a bus halting place.

It had been a practice from olden days for people to lay huge trunks of trees across the two banks of streams to cross over. These tree trunks may be single or double and provided a valuable service to the villager. Laying of double logs across the stream helped the females and small children to cross over such streams without any fear. When there are no satisfactory tree trunks, it is a habit even now to lay full length coconut tree trunks which are readily available. When these decay villagers repeatedly change them with new trunks, without thinking of a more developed means of crossing. The villagers call this kind of construction an "*Edanda*". It had many ways in which it is constructed. Sometimes a rope will be fixed from one tree to another on the opposite bank, so that the pedestrian could hold it as a hand railing and cross over without any fear. In some cases they fix a railing along one side of the *Edanda*. In remote areas where people are unable to afford it they may use local material like strong creepers or barks of trees for such purposes, instead of ropes which they are unable to buy. There are places where such *Edandas* exist even today. One such example where tree trunks have been laid over streams is at Okkampitiya close to Dematamal Vihara in the Monaragala District. Recently some of these tree trunks were removed and replaced with G. I. framed crossings.

A system of crossings had been developed by the former Department of Public Works, known as a suspension bridge. These bridges are suspended on two long wire ropes stretching from bank to bank. On these two wire ropes planks are laid "across" fixed to each

other. The two side ropes are the railings of the suspended bridge. This type of hanging bridge is still in existence at Peradeniya Botanical gardens, Nedigamwila at Tissamaharama and at Mawanella, in place of a permanent bridge with reinforced cement concrete, which will be costly and would take a long period of time to construct. A solid bridge with reinforced cement concrete needs piling, and to drive piles into the bed rock will need much time and technological skill.

The Bogoda bridge is a typical example of an ancient Sinhalese skill which has earned the admiration of future generations. The round columns of tree trunks in this bridge are picturesque in their rural setting. It seems that this particular example has generated some degree of engineering skill. Modern Engineers and Architects may sometimes not think of creating such a decorative piece of Architecture which would lie hidden in a rural area like Bogoda.

Unlike the common "*Edandas*" with double tree trunks, the Bogoda bridge is a development of such an *Edanda*. This bridge has been built on three tree trunks methodically placed across the two banks of the channel. The difference is that it has a roof above on timber columns rich with carvings. Instead of treading over the tree trunks, here in the Bogoda bridge planks have been fixed on the trunks simulating a levelled timber floor. The pedestrian does not he is crossing a bridge. He does not see the area beneath the bridge. The two sides are safe, being covered with a beeralu railing. The roof gives shelter from sun and rain. As *edandas* are exposed to the weather, during the rainy season, crossing entails some risk as there is nothing on either side to grasp or hold.

The tree trunks on the bridge are from three big trees suitably shaped, so that they sit on the beams. They are of hard timber and can last for a period of 20-30 years. The edges of the trunks have been placed on the rock surface and as the rock gets heated in the hot blazing sun, humidity is controlled. The rock also protects the base from white ant activity. As during the rainy season water splashes on to sides of the bridge, extension of the eaves would give greater protection from decay.

There are traces of bridges from the Anuradhapura period which were all constructed with stone columns and paved with stone slabs. The bridges at Asokarama in Anuradhapura, at Kandegama in Polonnaruwa District, and at Kantale are examples although there would have been wooden bridges during the Anuradhapura period. They are not mentioned in the great chronicle, *Mahavamsa*. However reference has been made in the *Mahavamsa* to the existence of wooden bridges during the 12th Century A.D.

The Bogoda wooden bridge is 50 feet $10 \frac{3}{4}$ inches in length and 3 feet 6 inches in breadth. It is mounted on round wooden columns each 12" to 13" in diameter. There is a pier at the centre of the stream consisting of two wooden columns fixed to the natural rock with concrete, which is 10 feet in height and 4 feet 6 inches in breadth on one side and tapering to a breadth of $13 \frac{1}{2}$ inches on the other. This concrete foundation is 2 feet 4 inches in height on the broadest side and 1 foot 6 inches on the tapered side. The two wooden columns have been further covered with another concrete slab to a thickness of 3 inches and it tapers on both sides with an extra space made of concrete of one foot six inches extending bothways. These two

round timber columns carry the main cross beams of the bridge at the centre.

Two pins have been cut on the top of the two columns in order to place the two cross-beams one on top of the other. Each of these cross-beams measure 1'2" in height. When these two beams were placed on the columns, about 9" appeared above the beams. As such the two pins have been cut to a length of 3'3" so that the two beams which have been placed are anchored without any nails. These two pins are rectangular, and have been cut to the required length, keeping the centre core portion after paring off the two sides of the round columns. Over these twin beams there are three round beams laid, which serve as the principal beams of the bridge, keeping the two ends of the round beams on the two banks. These three beams have been placed parallel one against the other, between the two pins mentioned earlier (Refer Plate - 02).

On the two banks of the stream, there are natural rock boulders on one side and on the other a natural rock surface. The entrance to the bridge in front of the cave temple consists of rock boulders, where the three principal beams have been placed. At the gap between the two boulders, is a triangular hole which had been filled with rubble up to the main round beams. Plaster has been used to strengthen the filled rubble work, with a key stone right at the bottom. Underneath the triangular hole there is a small crevice on the rock surface to a depth of about six feet so that it may be mistaken for a tunnel.

The stream which flows underneath the bridge is known as Bogoda Kandura which starts from the Jangulla area. As there is a gradual flow of water down the stream, the concrete footing for the piers of the bridge, cannot slip off, as it

had been laid with pointed heads, allowing for the rushing flow of water. This footing has been laid at the bottom rock surface of the stream to a height of 2 feet 7 inches. The twin beams mounted on it are 2 feet 4 inches in height and one foot five inches in diameter and carry the three principal round beams. The paving of the deck of this bridge had been done with planks of hardwood to a thickness of $2\frac{1}{4}$ inches. During conservation some of those planks which had decayed were removed and replaced with hardwood of the same thickness.

The deck of the bridge had been constructed by placing eleven 10" x 8" beams, on the three principle circular beams. Each of those cross beams had been laid at 6' 10" centres. The planks on the bridge are all connected to each other with two beams $5\frac{1}{4}$ inches in height placed lengthwise on the planks and fixed with iron nails, round in shape and $1\frac{1}{2}$ " in diameter. There are 10 such nails on each side of the bridge fixed to the beams. On these two beams there are eleven wooden columns fixed upright on each side attractively carved with a *beeralu* pattern. The base of these columns is $5\frac{1}{2}$ " x $5\frac{1}{2}$ " square and the height of the columns is 7 feet 8 inches, fixed to 5" x 5" beams mounted on the top of these columns lengthwise. Similar sized cross beams have been fixed above those beams with *sulipathkada* carved at both ends. This is a traditional carving found in most of the Kandyan buildings.

The wall plate is very different from other normal roofs. The standard size of a wall plate in a roof is 4" x 3". But in most of the ancient timber buildings, especially in Devalas the size of the wall plate differs. The wall plate which has been used for the Bogoda bridge is $2\frac{1}{2}$ " in thickness and 8" in width, laid

flat on *sulipathkada* of the cross beams. The outer edge of these wall plates are carved with mouldings and projected outwards 7" from the wooden posts of the bridge.

Most of the wooden beams used in this bridge are tabled joints with a wedge fixed at the centre of the joint. In most of the joints the wedge has been used to fix together and strengthen the two pieces of timber. For a table joint there can be two wedges to give more strength. In such cases the length of the joint may be longer than the single wedge. Normally for a single wedge the two pieces of wood will be tongued and grooved to a length of 9 inches and the square wedge, (sometimes it may be rectangular) with hardwood will be fixed at the centre. In modern times the carpenters use the dovetail joint. Almost all the joineries are done according to this system. There are many ancient wooden joints that had been done in many of the timber buildings in Sri Lanka. But except for a few they are unknown to modern wooden architecture (Refer Plate a,b,c).

The roof of the Bogoda bridge has been constructed according to ancient Sinhalese architectural practice. All rafters of 5" x 2" have been carved at the ends. The carvings is called *Gonas* in Sinhalese. Unlike the rafters of the Bogoda bridge, the carvings in Embekke Devale and in the Magul Maduva in Kandy, have the shape of a "*liyavela*". *Gonas* is an eye of a deer carved at the end of the rafter with a blunt head. But the carving which appears in the Bogoda rafter has half of a bo-leaf at the end with a *liyawela*. This carving can be compared with the one at Embekke and Magul Maduva.

It was the practice to use heavy rafters for Kandyan buildings. This is evi-

dent at the Magul Maduva, Embekke Devale or Maha Saman Devale at Ratnapura, where in olden days, many heavy beams were mounted one upon the other in constructing roofs. The grandeur of the roof has been developed by raising it above wall plates with the use of such heavy beams.

The rafters used in many ancient buildings had been fixed flat. The Padeniya Library building, which is about 600 years old, has rafters of 7"x2½" which had been fixed on to the ridge plate and wall plate flat. If we consider an ordinary house, we fix the 4"x2" rafter, with the 4" upright, so that it could take the load of the roof. There are many more ancient buildings where 2½"x3" or sometimes 4"x3" rafters have been used. Today such heavy timber cannot be used as there is a scarcity of timber in the market.

The ridge plate fixed on to the roof of the Bogoda bridge is 5"x4", on which rafters of 5"x2" have been fitted at 20" centres. All the rafters are carved similar to the carvings at Embekke and Magul Maduva and have been fixed on to the ridge plate radiating downwards to the eaves, like the ribs of a fan. There are 26 such rafters on each side, on which 2"x½" reepers have been fixed and nailed at 3" centers, so that flat tiles can be thatched. There are exceptional cases where a groove to the size of the reeper has been cut on the rafter and then the reepers have been fixed with brass nails as at Hirugal Devale at Koggala.

The ridge plate has been supported by a post 1"x6" in height beautifully carved with *sulipathkada* and fixed on to the cross beam. For thatching the roof with a decorative style the pointed and the rectangular tiles have been used. The thatching consists of six rows of

tiles on top and bottom and four rows at the middle of the roof. Each of these pointed and rectangular tiles is 9 inches in length and has a width of 5" to 5½" and has a hook made to place, the tile on the reepers so that it would not slip down as happened with half round tiles in the olden days. The eaves of the roof have been extended to 2 feet 3½ inches from the wooden posts, and have specially made eave tiles 5½ inches in length and nailed on to the end of the roof. In some of these eave tiles, a hook has been made to hang on to the eaves. As an additional measure provision has been made to fix them with two screw nails to prevent them slipping off to the ground. In roofs of this nature, the eaves are normally projected 4 to 5 feet outwards from the plinth line. This prevents rain water splashing on the wooden columns.

Most of these wooden buildings, attract white ants and beetles (boring type) and preventive methods should be taken early. We have had such problems at Vakirigala Tampita Vihara, Valallagoda Tampita Vihara, Embekke Devala and other places and the Archaeological Department has taken the necessary action. If measures can be taken to prevent buildings being exposed to wet weather, damage can be avoided. On the inner side of the bank, facing the stream, preventive methods have been taken to avoid the bank being washed off during the rainy season. A rubblework with pointed face had been done to a height of 10 feet with a concrete pad laid at the bottom to a thickness of 2 feet 6 inches increasing the full height to 12 feet 6 inches. The height from the top of the rubblework measured up to the deck is 3 feet taking into account large sized stones packed against each other and the three princi-

pal round beams.

On this bridge there are two hand railings on both sides done with beautifully carved beeralu. Each of these beeralu is 1 foot 6 inches high fixed on to the hand railing $3\frac{1}{2}$ " x $2\frac{1}{2}$ ". The railing has been fixed 15 inches away from the main wooden posts, making use of a piece of wood $2\frac{1}{2}$ " thick clipped on to the railing with the other end fixed on to the post to prevent it from moving. There are six beeralu between two columns making a total number of 96 beeralu fixed on to both sides of the bridge, which look very beautiful at a distance. In fixing these beeralu, a 3" recess has been kept between the base plate of the beeralu and the planks on the deck.

To enter the wooden bridge there are eight steps on the side of the cave temple inclusive of two landings each 9 feet 1 inch by 6 feet 7 inches. All steps are 5" to 10" in height. The length of each step is 3 feet 6 inches by 4 feet $10\frac{1}{2}$ inches at the upper level. On the other side of the bank there are five steps rising approximately 6" to 8". All the steps have been constructed with cement concrete and connected on to the edge of the last plank of the bridge at the paved level. Therefore we find that the bridge has been constructed at a level of 5 feet above the ordinary ground on the side of the *viharage* and 3 feet above on the other side of the bank. The two ends of the bridge are fixed with wire ropes on to the natural rock lest it should collapse by some mishap. We do not know whether this was done at the time the bridge was erected or at a later period.

Before the conservation of Bogoda bridge the side rail consisted of only two pieces of timber reepers 2 " x 1 " fixed on to a vertical post of 30 inches in height. The railing was 2 " x $3\frac{1}{2}$ ". This

railing had been fixed outside the column 10 inches away from the line of columns. Before the conservation of the Bogoda bridge was taken over by the Archaeological Department it had suffered vicissitudes. Many sections of the timberwork had decayed and had been replaced with ordinary planks. Otherwise the bridge would have decayed and collapsed for ever without a trace.

The local Village Committee of the area decided to undertake the conservation work with instructions given by the Archaeological Department. Plans and specifications were prepared and handed over to the Village Committee. An officer from the Department supervised this work. Three floor beams that rested on the stone had decayed and these had to be supported on a cross beam which in turn was cantilevered on a concrete platform. The side rails were replaced with baluster rails. The roof scantlings and rafters were entirely replaced. The missing tiles were replaced with tiles of the same type specially prepared for the purpose. No samples of the original eave-tiles were available and simple pointed eave-tiles were turned out and fixed to the roof edges. Reepers of 2 " x $\frac{1}{2}$ " had to be replaced as most of them were decayed and some of them broke while being removed from the roof to replace new rafters.

Some columns with carvings had to be turned out by specially trained carpenters, and used replacements. When the roofwork was completed after thatching with Sinhalese flat tiles, according to the traditional Kandyan practice two clay pinnacles should be fixed at the two ends of the ridge. But no such pinnacles had survived.

Fixing pinnacles on top of roofs was a practice in Sri Lanka from early

times. Unless there is a pinnacle adorning the top a Kandyan roofs does not appear complete. There were pinnacles on top of dagobas such as Ruvanveliseya at Anuradhapura where although the ancient *dagaba* had collapsed the pinnacle had been secured in the original position. Smithers' drawings of Ancient Anuradhapura shows how it had been fixed on to the top of the spire. There were both clay and brass pinnacles adorning Kandyan religious buildings during the past. Therefore we follow the same practice even now, with varied designs.

There is a historical reference of a bridge constructed out of timber during the reign of King Parakrama Bahu. This bridge had been built across the Kalawewa by a Captain called Deva. According to the chronicles its dimensions were 200 cubits by 20 cubits. The bridge had been constructed with timber using iron nails. (*Mahavamsa* Chapter 70 page 174).

But the information on the subject given by Ananda K. Coomaraswamy in his '*Medieval Sinhalese Art*' is quite different. He says that Captain Deva of King Parakrama Bahu constructed a bridge with timber. It was 200 cubits in length and 20 cubits in breadth. For this timber bridge iron sheets and iron pegs had been used. It was beautiful. Elephants, horses, vehicles and the soldiers could go over it (*Medieval Sinhalese Art* - Page 133).

There are many more bridges built by King Parakrama Bahu according to the great chronicle *Mahavamsa*. At the mouth of Kadohoya he had built a bridge 35 cubits in length and on the same Kadohoya another bridge 30 cubits in length. In the village of Ulpotha had been constructed a bridge with a length of 37 cubits and at Amba-gamuwa one

with a length of 34 cubits. Of these four bridges the longest one is 37 cubits in length, which is the equivalent to 55 feet. Except in the case of the Bogoda bridge, we are unable to visualise how these wooden bridge had been built. The chronicle says elephants, horses, and cattle could cross the bridge. It is also mentioned that over these bridges the king had constructed roofs and given alms to bhikkhus. These roofs had been depicted on walls and columns. (*Mahavamsa* Chapter 86 Page 319). As they had been mentioned in the *Mahavamsa*, the information could be authentic as in the case of religious buildings, which were constructed by the rulers in Sri Lanka and recorded in the *Mahavamsa*. However the bridges have not survived, as they had been done with timber. The *Mahavamsa* states that some bridges had been constructed by a Minister called Devapathiraja on instructions given by King Parakrama Bahu.

This same minister had constructed many more bridges together with way-side rests (*Ambalams*) for the king and for the people to go to *Sripada* or *Samanthakuta* (Adams Peak) to worship the sacred Foot Print on the summit of the rock. The *Mahavamsa* mentions that these bridges were so broad that not only human beings, but even elephants, horses and cattle could use them. According to this description they would have been broad and strong.

The *Mahavamsa* has referred to a bridge whose length was 86 cubits. Another in the village called Kehelsen with a length of Siyak Yati at Selgamuwa with a length of 150 cubits. The bridge at Salruk-heba was very much longer than the former bridge which had been constructed at Ulpotha. 150 cubits means 225 feet in length,

which would be a length of a bridge in modern times. Construction of a bridge of 225 feet needs efficient engineering skills. Therefore there would have been efficient and know-ledgable engineers at that time. Yati was a unit of measurement prevailing at that time, in Sri Lanka to calculate distance.

Besides the bridges described above the *Mahavamsa* has mentioned a bridge constructed at Bibile. It explains how the bridge was constructed. First the posts had been planted very deep into the ground and fixed so firmly that even elephants could not shake them. The posts were tightly jointed with very strong creepers. Then a further line of posts had been planted in the same manner. In between the two lines of posts about 30 cubits of space had been excavated to a depth of about 10 manheights. The minister had advised the people to plant pointed thorns so that enemies could not cross over from one side to the other. From this description it can be gathered that, this bridge was a false one. The stream had been excavated after planting the posts so that when enemies crossed over the bridge they would fall into the stream with thorns planted.

There is a simile which criticises human existence and compares it with a bridge. It occurs in the *Visuddhi Magga* translated by Venerable Bentara Saddhatissa in 1954. This is the Pali stanza which appeared on page 981 of that book. There it says that if a bridge has been constructed using a single length of timber, it is called "*Dandaka Sethu*" and only one person could cross at a time. If that same bridge could be constructed with many poles of timber using nails, then about four or five persons could cross at a time. This kind of bridge is called "*Jaggha Sethu*". If a

bridge can be constructed for a cart to cross over, it can be named "*Sakata Sethu*". The bridge which can be constructed for people and carts to go at the same time is called "*Maha Jaggha Magga*" and lastly if a bridge can be constructed for 20 or 30 carts to cross at the same time, it can be called "*Maha Sakata Magga*".

This describes the cycle of various births. A person would have been a beggar in his last birth. In the one before the last birth he may have been a rich person and in the present birth the same person may be a millionaire.



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