

INFLUENCE OF CERTAIN HARAPPAN ARCHITECTURAL  
FEATURES ON SOME TEXTS OF EARLY-HISTORIC  
PERIOD\*

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It is now becoming increasingly evident that after the fall of their settlements in the Indus plains, the Harappans had spread themselves in various directions of the country and came into contact with different stocks of people. In the process they lost their identity but some elements of their culture survived, at Rangpur in particular transmutation of the Harappan culture into that of a Lustrous Red Ware culture has been reported. In the same manner certain Harappan architectural features appear to have survived and recorded which are discernible in some texts of the early-historic period. In this short paper references from the *Cullavagga* and *Mahāvagga* of the *Vinaya* texts have been quoted to show the similarity between the disposition of the various parts of the hot-bath called *gantāghara* and the Great Bath of Mohenjo-daro. The texts also indicate about the usage of the Bath. Besides, there are other similarities in details like the application of a bituminous mortar for waterproofing walls, use of hollowed tree-trunk for conveying water, use of a windlass with a catch on the dentate wheel for drawing water from well, etc.

It is fairly well known that building materials such as wood, mud and stone have remained in use by man from the earliest times. But the mere continuance of their use does not mean much. It is in the form, shape and use to which these materials were put that a pattern and meaning are to be sought in order to find any likely relationship among the various ancient cultures. After their dispersal from the Indus Valley, the Harappans, as it is now becoming increasingly evident, had spread themselves in various directions of the country and came into contact with different stocks of people in the long run to lose their identity. The results of recent archaeological investigations tend to prove that cultural assemblages of the proto- and early-historic periods, found in various parts of the country, indicate the survival of some elements of the Harappa culture.<sup>1</sup> At Rangpur the transmutation of the Harappa culture into that of a Lustrous Red Ware culture of a much later date is a pointer in that direction. Again in the sphere of religion the influence of certain Harappan deities on some of those of the Hindus of later days is too well known to be recounted. Against this background certain Harappan structural features when compared with constructional methods enjoined in the literature of the early-historic period appear to be quite interesting.

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In the Buddhist *Vinaya* and *Nikāya* texts, attributable to third or second century B.C., there are references to construction of buildings of sorts. The *Cullavagga* and *Mahāvagga* of the *Vinaya* texts refer to Buddha's allowing the *bhikkhus* to construct a pool or tank for taking bath. Near the tank is also indicated a place for hot-bath called *gantāghara* (*ŚK. yantragrha*) which was to have a number of rooms such as a room without window (*udaka koṭṭhaka*) for storage of water, a cooling-room (*pariveṇa*) to be used after the hot-bath, a hall and a well-house (*udapāna-sālā*).<sup>2</sup> The tank and hot-bath with the above-mentioned rooms accompanying it at once remind one of the Great Bath at Mohenjo-daro<sup>3</sup> which had also similar arrangements. For a better understanding of the nature of these rooms their function may be stated in brief. A *gantāghara* would mean a bathing-place for hot sitting bath or steam bath.<sup>4</sup> The procedure to be followed was that a *bhikṣu* desirous of taking a hot-bath would first smear his face with moistened clay to protect it from the heat, and apply *cunam*<sup>5</sup> over the body. Being so prepared he would take a chair set around the fire lit on the floor, have his hot-bath and thereafter move into the cooling-room to cool down. The process ended with a bath in the cold water of the nearby tank.

Within the enclosure of the Great Bath and along the three sides of the central tank were found a number of rooms of various dimensions. Some of them provided with drains obviously were used as bath-room<sup>6</sup> and those without any window must have been used for steam or hot-bath<sup>7</sup>, while others could have been used for dressing, shampooing<sup>8</sup>, anointing<sup>9</sup>, etc. The hall behind the tank with its walls fenestrated (some of the fenestrations were later closed probably to restrict circulation of air considered excessive), served as a ventilated waiting hall for one to cool down before taking a plunge into the cold water of the tank to wash off the perspiration caused by the hot-bath.

The pool or tank, according to the *Cullavagga*,<sup>10</sup> should be within an enclosure, have side walls, flooring, flights of steps to get into it and pipes both to fill in with water and for drainage. The side walls, flooring as well as the steps could be faced either with brick or stone or wood. The Great Bath of brick work had all these essential features. Besides, its brick steps at the ends had wooden treads set in bituminous mortar. To render the walls of the tank watertight, bituminous mortar was also applied on their exterior surface. We find in the *Cullavagga*<sup>11</sup> that to make the walls of daub and reed damp-proof, the use of slime of trees and astringent liquid obtained from *āmalakī* (emblic *myrobalan*) and *haritakī* (yellow *myrobalan*) were enjoined. The slime of trees happens to be a kind of gum which depending on the degree of distillation becomes dammar, wood-tar and wood-tar pitch. The astringent liquid on the other hand would be, on distillation, vegetable fat and the two kinds of materials when processed together would make a sort of waterproof

bituminous mortar. The weather resistance property of dammar or wood-tar is improved by adding to it a fatty-acid and heating them together at a fusing-point. The percentage of saponifiable constituents present in the fatty-acid is a criterion of its quality, the larger the percentage the better will it be weather resistant. In the *Brhaisaṃhitā*<sup>12</sup> the mortar called *vajralepa* is in effect a bituminous mortar obtained from wood-tar fused with vegetable fat. The former is to be obtained from the exudation of coniferous trees like *srivāsaka* (resin of *pinus longifolia*) *guggula* (resin of *amyris gallochum*), *sarjarasa* (resin of *vatica robusta*), etc., while for the latter unripe fruit of *tinduka* (*diospyros embryopteris*), etc., are recommended. It may not be out of place to mention here that at Bamiyan in Afghanistan, the surface of walls and ceilings of the Buddhist rock-cut shrines were treated<sup>13</sup> with bituminous mortar before preparing the ground for painting. The organic resinous matter found to have been used in the mortar was probably obtained from the pine wood available locally in plenty. Again the famous sculptures in the rock-cut caves of Elephanta, which is on the sea, were found to have been coated with a bituminous mortar, obviously applied as a measure of protection against the deleterious actions of the sea-salts and humid atmosphere. In the case of Bamiyan the rock being tertiary conglomerate is susceptible to actions of water, so the painters instead of taking any chance with the carrier had put a protective coat over it.

The water-pipes extant at Mohenjo-daro were all of terracotta, while those of wood had perished. In house VIII of section A in HR area in the wall between the well-room and the bath-room there was an aperture, which according to Marshall<sup>14</sup> was possibly provided with a wooden conduit for carrying the well-water direct into the bath-room. But at Kalibangan was found recently a hollowed tree trunk, semi-circular in section, used for drainage. In the *Āṅguttara Nikāy*<sup>15</sup> there is a reference to hollowed tree trunks being used as water pipes. Such trees as would emit an empty sound, when struck with an axe-handle, were to be selected, cut at both the ends and the inside cleaned to be used for supply of water, maybe from a well to a cistern or pool.

The foot-marks on the coping of the wall of a well at Harappa suggest that water was used to be drawn by standing on it probably using a windlass fixed to a wooden plank, as a cast bronze catch<sup>16</sup> for dentate wheel would indicate. The curved end of the catch is bifurcated and was called *karakaṭaka* in the *Cullavagga*.<sup>17</sup>

At Kulli, Nundara<sup>18</sup> and Mohenjo-daro store-rooms were found without any window or door so that access to them was to be gained from the top. The first two sites in south Baluchistan, it may be said, according to archaeological evidences, had much to do with the Indus Valley in its heyday. The term '*Koṭṭhaka*' mentioned in the *Cullavagga*<sup>19</sup> and other Buddhist texts also

mean a store-room without a window. Again Kauṭilya in his *Arthasāstra*<sup>20</sup> prescribed the construction of an underground store-house which reminds one of the cellar with wooden flooring found at Kulli.

These are but a few instances to show the continuance of earlier traditions in buildings; further researches should reveal more evidences.

## REFERENCES

- <sup>1</sup> Lal, B. B., 'From the Megalithic to Harappa' in the *Ancient India* No. 16, p. 21.
- <sup>2</sup> *Cullavagga*, V, 14, 3 to V, 18, 1.
- <sup>3</sup> Marshall, J., *Mohenjo-daro and Indus Civilization* Vol. 1, pl. VIII.
- <sup>4</sup> For another kind of steam-bath see *Mahāvagga*, VI.14.3.
- <sup>5</sup> Obviously shell-lime was used as is done even now. Chank was used at Mohenjo-daro for various purposes such as ornaments, inlay pieces, as ointment boxes, palettes, etc. From chamber 44, which was a bath-room, in block I of L area were obtained 35 chank-shells. These could as well have come from the chank-cutter's workshop found nearby.  
The use of *cunam* in the bath was especially prescribed for those suffering from itch, boils, scabs or having a discharge or ill-smelling body. But those in good health and *Bhikṣunīs* were prescribed clay and red powder obtained from rice husks (*kukkusam*). See *Mahāvagga*, VI.9.2.  
For application of *cunam* over the body the use of *Kurubindaka sutti* is mentioned in the *Cullavagga*. The *sutti* is a string in which beads of ruby-coloured stone are strung. At Mohenjo-daro was found a long bead of plano-convex shape and made of light red paste mixed with lime and sand. Mackay (*Further Excavations at Mohenjo-daro*, Vol. 1, p. 273) observed that the bath-room floors were covered with a coating of lime and brick-dust. But no such plaster was used on floors. Obviously the lime was *cunam* used in the bath and the brick-dust came from the brick floor.
- <sup>6</sup> Hot-bath could be with hot-water and also with medicinal herbs steeped in the hot-water. See *Mahāvagga*, VI.14.3.
- <sup>7</sup> In this connection Mackay's (Op. cit. Vol. I, p. 166) remarks are interesting. The coating of red patina and polish on some bath room floors, he observed, could be due to perspiration from the bare feet.
- <sup>8</sup> Shampooing before the bath would naturally include application of clay, *cunam*, colouring matter, etc., as indicated above.
- <sup>9</sup> Inside the chamber 18 of the Great Bath was found a slate palette with traces of red pigment, probably haematite used in cosmetics. Shell dish and neatly shaped flat pebbles were also put to similar use. At Nal (*Memoire of the Archaeological Survey of India*, No. 35) a cockle-shell was used for keeping red ochre.  
In the *Mahāvagga* VI.11.2 different types of collyrium are mentioned. At Mohenjo-daro (Marshall, *Op. cit.*, Vol. III, p. 691) a small alabaster pot with galena inside it was found.
- <sup>10</sup> *Cullavagga*., VI, 3, 2.
- <sup>11</sup> *Ibid.*, V, 14, 3.
- <sup>12</sup> *Bṛhatsamhitā*, LVII, 1-3.
- <sup>13</sup> Sengupta, R., Use of dammar as a waterproofing medium for painting at Bamiyan, *Indo Asian Culture*, Vol. 17, No. 4, pp. 39-47.
- <sup>14</sup> Marshall, J., *Op. cit.* Vol. 1, p. 18.
- <sup>15</sup> *Aṅguttara Nikāya*, Text IV.170.
- <sup>16</sup> Vats, M. S., *Excavations at Harappa*, pl. CXXII, 28 and 33.
- <sup>17</sup> *Cullavagga*, V, 16, 2.
- <sup>18</sup> Piggot, Stuart *Prehistoric India*, p. 98.
- <sup>19</sup> *Cullavagga*, V, 14, 4.
- <sup>20</sup> *Arthasāstra*, Translated by R. Sharma Shastri, pp. 55-56.