

**On the Worship of the Deity Jalpeshvara in the District
of Jalpaiguri in Northern Bengal.**

By SARAT CHANDRA MITRA.

Jalpaiguri is one of the most northerly districts of the Province of Bengal. The tutelary deity of this district is Jalpeshvara or 'The Lord of Jalpesh'. The Deity's shrine is situated in the village of Jalpesh, which is situated about 12 miles to the east of the Jalpaiguri town. Hearing about the great

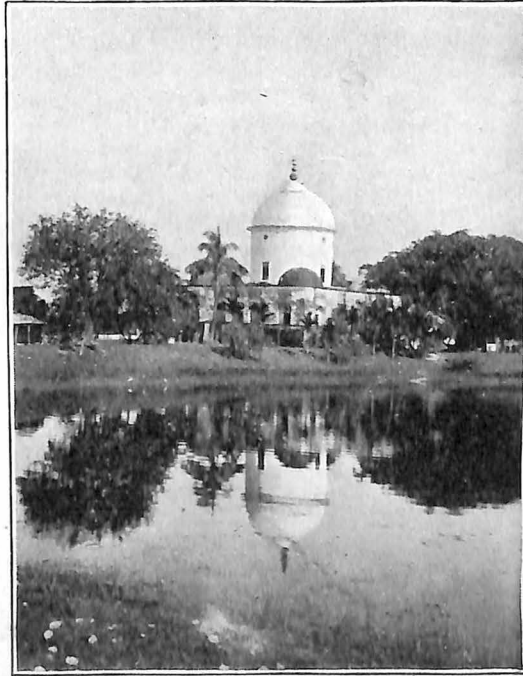


FIG. 1.—The Jalpeshvara Temple as seen from outside.

sanctity of this shrine and of the great veneration in which the deity Jalpeshvara is held by the people of the locality, I, accompanied by Mr. T. Mitra, Executive Engineer, P.W.D., Duars Roads Division, paid a visit to this temple on Tuesday, the 23rd



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December, 1930. This shrine or temple has a round cupola at the top and four rooms at four corners of the quadrangular basement-storey. The lower portion of the walls of the basement-storey is ancient and built with old small-sized bricks, while the upper portion of the basement-storey and the cupola are recent additions. A fine view of the temple of Jalpeshvara is represented in figure 1.

Proceeding inside the temple, we found that in the *sanctum sanctorum* was the stone worshipped as the symbol of Siva, which was placed inside a miniature well in the stone-flagged floor. As the 'dim religious light' of the interior rendered the stone-representative of Siva somewhat invisible, I felt it with my right hand and found that it was a block of (most likely) grey granite-like stone thinned at the top into the shape of a wedge, there being a ridge at the top of the wedge, while the sides sloped downwards. There are three bands on one side of the stone, as will appear from figure 2. This photograph gives



FIG. 2.—The Jalpeshvara Stone as seen from above.

an excellent top-view of the Jalpeshvara stone.
Just above the surface of the cavity in which this stone is lodged, there is a *Yoni* made of Jeypore marble which has been recently provided by a wealthy Marwari gentleman of the locality. Its shape is shown in figure 3. The letter A shows the miniature well in which the stone is placed. The well is about 1 foot deep. The Jalpeshvara stone is approximately 8 inches long and 4 inches broad. There is a local tradition to the effect that the bottom of the stone goes deep down into the earth and that the bottom cannot be reached howsoever much the surrounding earth is excavated. It may be stated here that the stone and the *Yoni* stand just below the centre of the rounded cupola which surmounts the shrine.
On enquiry from the attendant Brahman priest, I learnt



the following tradition about the evolution of the cult of this deity :—

In ancient times, there were no Hindu residents in this part of Jalpaiguri. It was inhabited by the Kochs and the

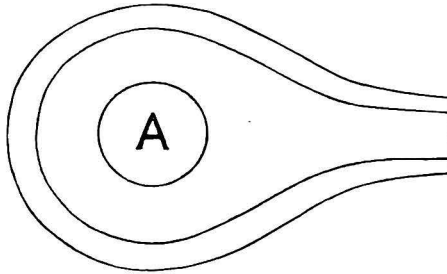


FIG. 3.—Marble Yoni.

Mechs who were the original inhabitants of this locality. Being attracted by the unusual shape of this stone, they worshipped it. It may be stated here that these Kochs and Mechs were Mongoloid tribes who had probably migrated from Burma and had settled in these parts. They gradually accepted the Hindu creed and adopted Hindu manners and customs.

About 400 or 500 years ago, Mahendra Deo Nārāyan, Raja of Cooch Behar, built a rude temple over this stone. This rude temple is the nucleus of the present splendid temple in which the deity is installed. The temple built by Raja Mahendra Deo was partially destroyed by the great earthquake of the 11th June, 1897. The present temple was built a few years back on the remains of the old temple.

This deity is worshipped by the Hindu inhabitants of Jalpaiguri for the attainment of whatever their hearts may desire. In the month of Baisakh (April-May) local women, who are desirous of having sons born to them, come to this temple and worship this deity with libations of milk which fills up the well, and pray for the boon of sons.

As this stone has now become a recognised symbol of Siva and is dubbed with the appellation of Jalpeshvara Mahādeva, a great festival is held here on the occasion of the Sivaratri festival in the month of Fālguna (February-March). A fair is also held here on that occasion.

The priest informed me further that the *mantra* or the prayer-formula with which this deity is worshipped is :—

जलपेश्वराय शिवाय नमः ॥

Translation.

I make obeisance to the (deity) Jalpeshvara Siva.

Offerings of cooked rice (4 seers), pulses (1 seer) and vegetables are presented to the deity in the morning, and pancakes locally known as *luchis*, prepared from $\frac{1}{2}$ seer of flour and fried in ghee and half a seer of milk are offered in the evening. These food-offerings are subsequently distributed to the attendant priest and the three servants of the temple.

There is a fine tank to the south of the temple. I was informed that, during the re-excavation of this tank a few years ago, several sculptured stone-slabs were found. One of these slabs with carvings in *alto relievo* has been dubbed with the title of Vasudeva and has been installed in a small temple to the east of the Jalpeshvara-shrine, while another slab, which is broken at the top and, which at present, bears no carvings on it has been given the appellation of Kuvera, King of the Yakshas. This broken slab has also been installed in a small temple which is situated to the south of the great sanctuary.

Both these minor deities, whose images are undoubtedly of Hindu origin, also appear to be worshipped, for I found offerings of flowers upon them.

Near the roots of a *peepul* tree (*Ficus religiosa*) on the south of the great temple, are to be found two or three stone slabs which have no carvings on them. They are not worshipped.

From an examination of the foregoing description of the Cult of the Deity Jalpeshvara, the following questions arise for purposes of discussion :—

- (1) Whether the Cult of Jalpeshvara was in its inception, a form of primitive or aboriginal religious belief? Whether it was, in that stage, Animism or Fetichism?
- (2) Whether there are instances on record of any nation of antiquity having worshipped stones?
- (3) Whether the Jalpeshvara-stone is of meteoric origin? If so, was it embedded in the earth and, by its fall from the sky, attracted the notice of the Mechs and Kochs and led them to worship it?
- (4) In what stage of the evolution of Hindu religious worship or polytheism does the Cult of Jalpeshvara, in its present form, stand?
- (5) Why do the local women pray to Jalpeshvara for sons?

I shall take up for discussion the questions (1), (2), and (3) together.

The ancient Hebrews, the Greeks, and the Romans worshipped stones and stone monoliths. The boulders of stones streaked with marks of vermilion, which are to be found at the roots of

banyan (*Ficus indica*) and pipal trees (*Ficus religiosa*) in almost every village in the Indian countryside are instances of stone-worship by the Hindus. The lake-goddess, who is worshipped in a shrine on an island in the Chilka Lake in Orissa, is represented by an unhewn block of stone. Similarly, I have seen, in the very heart of the town of Jalpaiguri, an instance of the worship of stones by the Hindus. Just in front of the Swiss Chalet-like bungalow occupied by the Executive Engineer, P.W.D., Duars Roads Division, and midway in the open space between the gate of the said bungalow and the western bank of the Karala River, there are two pipal trees and a block of black rough stone (like jhāmā brick). There are vermilion marks on this block stone and the ignorant Hindus of this neighbourhood are beginning to worship it. This worship is, in its present stage, a form of Fetishism because the stone is being worshipped in its own character as a symbol. It may, however, develop, in course of time, into Siva worship.

Similarly, the Cult of Jalpeshvara may have been, in its inception, an instance of stone-worship by the primitive or aboriginal Kochs and Mechs and been borrowed from them by the Hindus.

The facts of the Jalpeshvara-stone being embedded in the earth and of the existence of indentations and fissures thereon lead me to suppose that this stone is of meteoric origin. The famous black stone which is built into the wall of the Kabah or the Sanctuary at Mecca and which is kissed by every Mahomedan pilgrim to that holy shrine is believed by many to be of meteoric origin. Thus we have two instances, on record, of meteoric stones being regarded as sacred by the Hindus and the Mahomedans respectively.

Having fallen from the sky, this meteoric stone was regarded by the aboriginal Kochs and Mechs as being the dwelling-place of an invisible spirit or being and was, therefore, regarded by them as sacred and was consequently worshipped. The Kolarian tribes of Chota Nagpore call the neolithic celts *ther-diri* or 'thunder-stones' and believe them to have fallen from the sky. They, therefore, regard them as sacred and possessed of curative properties. Occasionally, they worship these stones. In the view that the Jalpeshvara-stone is of meteoric origin, the Cult of Jalpeshvara is a form of Animism.

If the Jalpeshvara-stone is of volcanic origin, the Cult of Jalpeshvara is a form of Fetishism, because the aboriginal Kochs and Mechs worshipped the stone in its own character as a symbol and not as the dwelling-place of an invisible spirit. They worshipped it on account of its curious shape. But this view about its volcanic origin is untenable, if we take into consideration the two important facts, (1) that the Jalpeshvara-stone is embedded in the earth which is quite contrary to the universal procedure of placing *Siva-lingams* above the ground,

and (2) that the stone bears indentations on its sides, the origin of which can only be explained by the fact that while passing through the denser atmosphere of the earth, the sides became by friction with air indented and the top assumed the shape of a wedge.

As regards the foregoing Question No. (4), it may be said that the Cult of Jalpeshvara, in its present form, is in the third stage of the evolution of Hindu religious beliefs, which has been designated by the Folklore Society of London as being ' Heterogeneous Polytheism with Idolatry ', as this deity has now been installed as a member of the Higher Pantheon of the Hindus and has been dubbed with the title of Jalpeshvara Siva or an incarnation of Mahādeva. There is no trace of this deity having passed through the second stage and of having acted as *dvāra-pāla* (warder) of a higher God, nor of having passed through the first stage and of having been worshipped as a third-class godling presiding over a *devadekhi*-temple.

As regards Question No. (5) *supra*, its answer is easy to give for the phallus or *Siva-linga* and the surrounding *Yoni* are symbols of the procreative energy. Therefore, I am inclined to think that the local womenfolk worship the deity Jalpeshvara for obtaining the boon of having sons born to them. In many parts of Bengal, Hindu women worship various other incarnations of Siva for obtaining similar boons.



PORCELAIN IN PREHISTORIC INDIA

By M. SEN GUPTA

In ancient India, when its civilization attained such eminence, known as the 'Indus Valley culture', it had grown to an extent that almost every necessity was met from within their easy reach. In olden days, there was no trace of furniture, but pottery was the most essential object required for every household. Other antiquities of human necessities giving the evidence of the highest order of civilization have also been found. It appears that the people of that age were very skilful and possessed high technical qualities. They made their pottery with a high class of slips and paints, evidently of ceramic colour composition, an account of which has already been published in an article, 'A New Era in Archaeology', in the November issue of *Modern Review*, 1955, by the present writer. Descriptions of some of the cruder types of porcelain-ware, existing during that time, have also been given.

During the Hun dynasty (Ref. Bibliography—4 and 9) the first porcelain was recorded between 185 B.C. to 80 B.C. but the porcelain discussed here was much older than the Hun dynasty and it was brought into use probably from the chalcolithic period of the Indus Valley culture. Most of the antiquities recorded here are from Mohenjodaro and Harappa. Some of the specimens from Mohenjodaro and Harappa, dating from 3250 B.C., which were taken as green faience are probably 'some types of porcelain'. The word 'faience' comes from France and has been taken from the word *Faenza*, the name of an Italian town. In France, it is taken to be a kind of porous ware covered with glaze. There is no such word in English or German which may be compared with that. In Italy, the ware made in Faenza and all ware which are taken as faience are termed as 'Majolica'. 'Staingut' is another word which also denotes fine white faience. In England, faience ware is taken to be a porous body, colour being greyish brown or brown having a white opaque glaze. In Germany, 'stain' means something made out of stone. The bangle fragments, vase fragments and other similar objects which are taken to be green faience from Mohenjodaro and Harappa are recognized as Jaspideous rock or Glauconite by some geologists, because of their colour and of the composition being of a silicate of iron, which gives a green colour to some of the beds of greensand strata. In France, this name was probably given to some of the porous ware as they resembled the Jaspideous rock found from Faenza, rocks brought from the Alps. They took it to be a kind of porous earthenware. These two objects, i.e. Jaspideous rock and porous earthenware, resemble so much that it is very difficult to distinguish them. Notwithstanding all these differences, an attempt has been made in this article to deal with such evidences which go to prove the presence of porcelain and ceramic ware in ancient India.

This so-called faience found from Mohenjodaro and Harappa has a composition similar to that of porcelain. High percentage of hydrated silica with aluminium admixture with some proportion of clay formed part of its composition similar to that of porcelain, though a little cruder in form than the present-day porcelain. Some of the specimens are of a little different composition. This has been detected as a compound of

silica and cryolite with oxide of zinc, which also go into the composition of fusible porcelain. These specimens termed as faience have already been recorded in Sir John Marshall's Mohenjodaro, Vol. III (Plate No. Ci CLVII).

Dr. Ernst Rosenthal, the famous ceramic expert who came to India some three years back, under whose inspiration and valuable suggestions this little work has been taken up, is of the opinion that the term 'Ceramic' is implied to a material made of clay or similar substance found in a plastic state and then dried and fired at a temperature high enough to give the necessary strength. The word 'Ceramic' is of Greek origin. In ancient Hellas, the potter was called 'Kerameus' and 'Keramos' meaning both the product of the potter, as also the raw plastic clay material used in pottery. Nowadays 'Ceramic' is understood to be not only the manufacture of pottery articles, but also the manufacture of all sorts of clay or similar plastic raw material. The ceramic industry nowadays supplies the various domestic requirements in porcelain, China and earthenware. In the production of artware, practically all types of ceramic materials are used from terra-cotta to fine China or kaolin.

Porcelain-ware has a white translucent body. It is dense, vitrified and impermeable to water. The translucency distinguishes it from white stone-ware; the density and impermeability distinguishes it from terra-cotta, faience and earthenware. It was originally used to denote objects manufactured of mother-of-pearl from shell called porcelain (in Portuguese, Porcellena). Later in the eighteenth century porcelain came to mean the brilliant white translucent ceramic table-ware which in England and in the United States was known as China and China-ware. In course of time, all sorts of porcelain or China-ware have been developed in various countries. The differences are, of course, mainly due to two factors: (1) Raw materials employed and proportions used; (2) Manufacturing methods.

All porcelain and China bodies are vitrified, that is to say, they are fired to a point where, to all intents and purposes, all the pores in the body are filled with a glassy bond. Under the circumstances, the fired body has practically no absorption and porosity is so slight that the translucency of the body is not affected. The semi-vitreous China has an absorption of 4% to 10% and that of fine earthenware are from 10% to 15%.

Raw materials for white burning bodies used for porcelain or China-ware are generally as follows:—

- (1) Kaolin (China clay); (2) White burning ball clays; (3) Flint or quartz; (4) Felspar or minerals containing felspar, Cornish stone and pegmatite.

Kaolin or China clays used for making porcelain and China-ware are much less plastic than ball clays. The white clay or kaolin found in many parts of India and in the Manchar Lake group is more plastic than other kaolin or China clays. It is also presumed that the potters of Mohenjodaro and Harappa used to collect their raw materials from the neighbouring parts of the country. A better type of kaolin deposit, pegmatite, felspar and quartz or flint is available in the Manchar Lake area, which is about 20 miles from Mohenjodaro. Some of the specimens of these types may be seen in the Sind group of Geological galleries of the Indian Museum. Almost all kinds of these objects are also found from the excavations of Mohenjodaro and Harappa about which mention has been made in the latter part of this article. It is not always possible to obtain the natural raw material absolutely free from impurities and

sometimes they are found to contain a little amount of iron oxide which gives the ware a yellowish tinge when it is fired under oxidizing conditions. This yellow colour is generally eliminated by adding a little cobalt oxide to the body when the colour becomes white to bluish white according to the amount of cobalt oxide added to it. In the case of the specimens from Mohenjodaro and Harappa as green faience, they seem to be of the same nature of porcelain, cruder in type. Greenish or bluish colours are present due to the presence of cobalt oxide, copper oxide, etc., and porosity in these articles in some cases is as little as 2% to 4%. It is also noted that a high percentage of hydrated silica with aluminium makes the bodies non-porous but in the case of faience, which should be a porous body, absorption is 10% to 15% as in the case of earthenware. The pieces in question are generally found in the forms of bangle fragments, lids and some fragment of vase (exhibited in the Indian Museum, Serial Nos. 5, 6, 15 to 22, Plate Nos. I & II). Probably they were used for special types of wearing apparel and of casket type. They were probably made out of small furnaces of blasting type, which produced more heat than ordinary kilns. There were many types of gold ornaments, viz. necklace, etc., found in the excavations of Mohenjodaro and Harappa which indicate the presence of goldsmiths who always used the bellow type blasting for making ornaments; so it is probable that blasting was known to them. They also used the blasting type of smaller furnace to produce more heat for making these smaller objects. They were not abundantly found like ordinary earthenware vessels as there were perhaps some manufacturing difficulties and only skilful and efficient workers could possibly turn out these objects. Nowadays as things have improved in various ways, the production of porcelain has become easier and table-wares are introduced in the ceramic industries over the whole world.

There are other types of crude porcelain, some of them brownish white (Sl. Nos. 5, 6, Pl. I—5 & 6), some greyish white (Sl. Nos. 15 & 16) but in the bangle fragments, it is noticed that the greenish colour varies from whitish to greenish or bluish colour (Sl. Nos. 17 to 22, Pl. I—4 & Pl. II—7, 7A). It may therefore be assumed that they used cobalt oxide for eliminating the brownish colour which occurs in cruder porcelain due to the impurities in the natural kaolin. It shows that the potters in those days tried this process and they were able to produce better and whiter types of porcelain, which of course are a few in number (also found in the excavations of Mohenjodaro and Harappa). The bangle fragments, some other ring fragments, etc., are bluish or greenish-white type of porcelain. They are all dense, vitrified, impermeable to water and translucency can also be detected in some cases. The glazes are also found in many cases and generally can be seen inside the incised portion of the decoration. It shows that the specimens were rubbed out and due to probable decomposition, the glazes or the flux coating over them was not found in every case and therefore some percentage of porosity (about 4% to 6%) was present in these wares. Even if we exclude the cases of the cruder type of porcelain, there are other evidences in the better and whiter types of porcelain found from there in the same level (Nos. 1, 2, 3, Pl. I—1 & Pl. II—6). These are perfectly white and may compare well with the porcelain of the modern times. Sir John Marshall has mentioned about some of the faience objects and the analytical reports which have been published show clearly that the objects are silicated hydroxide with aluminium; the presence of iron and copper have also been detected (Sir John Marshall's Mohenjodaro, Vol. II, page 689). The cruder porcelain is also found to be of similar properties as the natural source

of clay contains these impurities and is regulated after eliminating them. However, there are some points for taking these objects as cruder porcelain. The definition of porcelain and faience has already been stated and these objects most probably are not examined from the points of their physical properties. The physical property for comparing faience with that of porcelain is more important than that of the chemical analysis. The body of the faience is not dense, not perfectly vitrified and porous whereas in the case of porcelain it is dense, perfectly vitrified and impermeable to water.

The physical tests are made in the following forms. For testing the vitrification the objects under investigation are tried by a penknife to see whether they get scratched or not, because in case of full vitrification, the object must not get scratched. The scratches are formed on glasses also in some cases, if they are highly vitrified. The porosity is tested by putting the objects in water after weighing them. They are taken out of water after 48 hours, reweighed and then porosity is recorded. The translucency is tested in a dark room. A powerful light is placed inside a carefully closed light-tight box containing only a small hole. Each object should be placed against the hole and tested to ascertain the translucency. Now the inference may also be made that the faience found in other parts of the world, as for instance from the excavations of Ur and some other places, is of different kinds. The so-called green faience was not found in those places but different types which were porous in nature were found. Moreover, the white type of these objects is not mentioned anywhere. These white types of porcelain pieces (Sl. Nos. 2, 7 to 13, 15 to 27) which were mentioned by Sir John Marshall and other eminent archaeologists as faience and also in some cases of pictographic seals as steatite stones will now need new orientation, in the light of evidences adduced above.

Evidences of the materials, which they used for the manufacture of these articles, have also been found after a thorough search and examination of the antiquities from those sites. The ball clay (Sl. Nos. 28 & 29) which is one of the most important factors for the resources of raw material for the production of porcelain and other equipments such as polishers, pestle-mortars and stone rings, as used even now by many of the modern ceramists for grinding, crushing and polishing, has been found from there (Sl. No. 30). Hence from the evidences at our disposal, it may safely be concluded that ancient India produced porcelain long before China did, which dates back to the chalcolithic period, sometime in 3000 B.C. Up till now, it has been considered that porcelain was first made in China and after that it was introduced in Europe and Persia.

The ceramic industry is based on the mixture of clays with other materials by the action of heat. When fired at high temperature the ceramic product becomes durable. The methods of firing have been improved a lot in the course of centuries. With the advance of science and engineering, ceramic research has produced better objects than those of its earlier counterparts. The objects referred to in this article are generally glost fired at a temperature which is 200°C. lower than the 'bisque' temperature. If the ware is slightly under-fired it is highly porous and tends to cause 'crazing'. Judging from all these points the little porosity and less translucency which are found in those materials may be ignored from the rigid specifications of modern porcelain and it would be advisable that these are viewed in the perspective of the primitive age, in which they were made.

In the time of Hun dynasty between 185 B.C. and 80 B.C. a kind of stone-ware with brown, bluish green and cream-coloured glazes, described

as the first porcelain articles made, in which case Chinese porcelain was sixteen centuries ahead of European porcelain. These pieces were something between stone-ware and porcelain, since they are not white and translucent enough to be termed porcelain.' [Ref. Ernst Rosenthal's *Pottery and Ceramics* (1925), page 22.] All the above types have been mentioned in this article below. Moreover some pieces from Mohenjodaro and Harappa are found perfectly white and the glaze-coat is also prominent in them (Specimen Sl. No. 1, Pl. I—1). The translucency cannot properly be detected in some of them as they are very thick and decomposition to some extent has probably taken place as they were buried under earth for a long time. However, the translucency does not make any difference as they are dense, vitrified and impermeable to water.

One beautiful specimen of a white type of porcelain showing the miniature seated ram figure from Harappa (Sl. No. 1, Pl. I—1) is very rich in quality. The presence of glaze-coat or flux on it shows the perfect development onwards in the period. Some of the pictographic seals are also found to be of the same grade of white type and the glaze-coat is also present in them. A typical ornamented white porcelain (Sl. No. 2, Pl. II—6) of heavier grade is found from Mohenjodaro, the decoration of which is very much like that in the famous Yogi figure wearing a shawl in a series of three circles forming a triangle spread over it. Hence an attempt at dating of these antiquities will have to be made afresh in the light of the facts given in this article.

The antiquities referred to here are shown in the collection of the Indian Museum. The details of their specification with description are noted here for the purpose of evidences at our disposal:—

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|-----------|-----|--|
| Sl. No. 1 | ... | No. 11120 is an excellent specimen of a seated ram figure, size 1" × $\frac{3}{8}$ " × $\frac{3}{8}$ ", from Harappa with a hole in the middle. It is a perfectly white type of porcelain with a flux-coat. The quality of it may be compared in some respects to that of the modern porcelain (Plate I—1). |
| Sl. No. 2 | ... | N.S. 5177 (size 1 $\frac{3}{4}$ " × 1 $\frac{3}{8}$ ") is another piece of white porcelain from Mohenjodaro, though the glaze-coat is not present, which may probably have been decomposed due to saline effect of the soil as the porcelain was buried under earth for such a long period. The decoration is almost similar to that of the famous Yogi figure from Mohenjodaro, which is recorded as steatite. It was not possible to examine this piece properly as this object is kept elsewhere (Marshall's Mohenjodaro, Vol. III, Plate XCVIII). There was a decoration showing three circles in a triangular form, spread over it on the entire outer surface of this piece. It is vitrified and almost non-porous (Plate II—6). |
| Sl. No. 3 | ... | 10499 (size 1.1" × 9") is also from Mohenjodaro, the same type as Sl. No. 2. This is a vase fragment with two holes and is of thin ware resembling a table-ware type. Vitrification is also perfect. |
| Sl. No. 4 | ... | N.S. 5929 (size—ht. 1 $\frac{3}{8}$ " × dia. $\frac{3}{4}$ ") a pale blue chess-man of a little cruder type. The absorption is as slight as 2%. The glaze is present. |

- Sl. No. 5 ... N.S. 5922—a cream white type of cruder series with a porosity of 4% to 5%. It is a fragment of a lid with a lotus design on top. It may be compared with the first porcelain discovered in China in the Hun dynasty between 185 B.C. to 80 B.C. (Plate I—6).
- Sl. No. 6 ... N.S. 6134 is also a lid fragment. The colour is of slight brownish to white with incised petal design around and rope pattern in relief on the edge of the lid. Holes are also found along the margin (Plate I—5). Traces of white glaze-coat are present in the incised portion which indicates that the absence of glaze on the other portions is due to the rubbing of the surface.
- Sl. No. 7 ... 10382 is a pictographic seal, stated by Sir John Marshall and others as steatite. This is a fine specimen to show the texture and quality of the white type of porcelain with regular flux-coat on it. A standing elephant is depicted with the pictographic scripts above. The seals of this type are always made in a negative form. As the glaze-coat is very prominent, it is unjustified to classify it as steatite. All the seals of this type are vitrified and porosity is also as little as 4% (Plate II—4).
- Sl. No. 8 ... 10379 is another seal of a little smaller size and (viz. 0.9" square) of the same quality as above. The design shows a unicorn, a typical type of animal found in the Indus Valley culture. The flux-coat is present and it is now a little brownish in colour (Plate II—2).
- Sl. No. 9 ... 10378 is another seal of the same size and same type in all respects as above, but the glaze-coat is found white in it (Plate II—1).
- Sl. No. 10 ... N.S. 5733 is another seal which is a little bigger in size (1.15" square of the same type) but the glaze-coat has become cream white in colour.
- Sl. Nos. 11 & 12 ... N.S. 6046-7 are two other seals which are 1" square of the same type with a regular white glaze-coat in them.
- Sl. No. 13 ... N.S. 6044 is a fragmentary piece of bigger type of seal measuring 1.85" × 8" × 4" and showing the top portion of seal with the bull's horn and pictographic scripts above. This is also a fine white type porcelain.
- Sl. No. 14 ... 10387 is a red type of coloured porcelain and it may be compared with Dwight's red porcelain, with designs of a tiger hunt on one side and on the reverse a series of pictographic scripts. This is a fine specimen which represents a coloured porcelain in those days. It is perfectly vitrified and porosity is almost nil. The grains are also very fine, and the surface is very smooth. Under the circumstances it cannot be taken to be stone-ware. It is mentioned as terra-cotta because of its colour (Plate I—8, 8A).
- Sl. Nos. 15 & 16 ... 10503-4 are two pieces of vase fragments of a little crude type. The colour is grey white. Slight

- porosity is present and vitrification in these objects is not also perfect.
- Sl. No. 17 ... 10498 is also a vase fragment. The colour of the texture is pale green with a whitish glaze-coat on it and it may be compared with all types of porcelain.
- Sl. No. 18 ... 11115 is a miniature vase with a pointed base and three lined band incised in the middle showing a typical type of Indus culture. The texture is of pale green colour with white glaze. Inside the vase there is an impression of linen or cloth which is an evidence of its plasticity in the primary stage. This fact is already described in the 'New Era in Archaeology' in November 1955 issue of *Modern Review*. It can also be taken as coloured porcelain (size—ht. $1\frac{1}{2}$ " \times dia. $1\frac{1}{8}$ ", Plate II—7, 7A).
- Sl. No. 19 ... 11117 is another piece of vase fragment of similar type as above (size $1\frac{1}{2}$ " \times $\frac{7}{8}$ " \times $\frac{1}{2}$ ").
- Sl. No. 20 ... 11118 is a lid fragment of a vase of the same type as above, the size being $1\frac{1}{8}$ " dia. \times $\frac{3}{4}$ " ht., with a big hole in the centre with three incised bands on top of neck (Plate I—4).
- Sl. No. 21 ... N.S. 4537 is a vase fragment of pale green colour. There is a distinct mark of joining two portions together into one with a cement lining. This shows that the parts were made separately and then joined together. The impression of linen or cloth inside is also present in this case. The body became homogeneous after firing and shows the full vitrification. The glaze is also present and it is also impermeable to water. The specimen is already discussed in the previous article, see ref. Sl. No. 18.
- Sl. No. 22 ... 10496 is a typical bangle fragment with three ridges on the outer face and bevelled on the inner face— $1\frac{3}{4}$ " dia. and section 1 " \times $\frac{1}{4}$ ". The texture is of cream white colour with white glaze. It is fully vitrified and perfectly non-porous.
- Sl. No. 23 ... 10508 is a button or stud with a lozenge pattern inside a circle and rope design on the outer border of the bottom portion, size $\frac{3}{4}$ " dia. \times $\frac{1}{2}$ " ht. This is of the same type as No. 22.
- Sl. No. 24 ... 11108 is also another stud which is almost the same in all respects as No. 23, except that it is a little greyish in colour.
- Sl. No. 25 ... 11105 is a bangle fragment with deeply indented pattern, pale blue coloured porcelain, translucent, fully vitrified and non-porous. This is a coloured porcelain with all perfection—size $\frac{3}{4}$ " dia. of a section \times $2\frac{1}{2}$ " dia. It may stand all tests of the modern porcelain.
- Sl. No. 26 ... 10494 is also a bangle fragment, cream white in colour of the texture with traces of greenish glaze. This specimen is not perfect as there is a little porosity about 4% to 5%. Its present size is $1\frac{1}{4}$ " dia. \times section $\frac{1}{4}$ " dia.

- Sl. No. 27 ... 11106 and 11107 are fragments of finger ring having a size 1" dia. with rope pattern design, pale blue in colour. The glaze is present. They are also almost perfect in all points of porcelain.
- Sl. Nos. 28 & 29 ... N.S. 5543 are two specimens of ball clay and pegmatite. There are also other pieces representing flint or quartz which were the sources of raw materials for the manufacture of porcelain.
- Sl. No. 30 ... N.S. 5965 and N.S. 5981 are some fragments of stone polishers probably used for filing and making the surface even before applying the glaze-coat.
- Sl. No. 31 ... 10458 and No. nil are two ring stones, used for grinding, sharpening and smoothing, etc., for the manufacturing process.
- Sl. No. 32 ... 10463 and N.S. 5497 are two specimens representing pestle and mortar required for multifarious work for the manufacturing purpose.
- Sl. No. 33 ... N.S. 5197 is a portion of a very big bevel-rounded ring stone used for crushing and grinding clay balls, pegmatite, etc.

Serial Nos. 1, 18 to 20, 24, 25 and 27 are found from the excavations of Harappa and the rest are from Mohenjodaro.

POSTSCRIPT

Professor V. Gordon Childe, Director, Institute of Archaeology, University of London, during his recent visit to the Indian Museum, Calcutta, in January, 1957, came across the objects of the Harappa culture referred to in this article. After minutely examining the objects termed as steatites, faience, etc., he was highly impressed with the arguments adduced in favour of a new terminology proposed for them.

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