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Zahr–Muhra: Soapstone–Cutting in Contemporary Baluchistan and Sind

1. Introductory note

This paper represents an introduction to the work of a contemporary soapstone–cutter living and working between Baluchistan and Sindh. Our interest in his person and profession ultimately resulted from the involvment of both the authors since 1982 in the Surface Evaluation Program carried out at Moenjodaro by the IsMEO–RWTH archaeological team (Jansen and Urban 1984). One of the main aims of the surface recording of the site was to produce a general distribution map of all the Craft Activity Areas visible across the undisturbed portions of the compound (Bondioli et al. 1984; Pracchia et al. 1984; Vidale 1984). Among the various localizations so far detected, some areas are distinguished by assemblages indicating steatite–working (Vidale 1984a). Steatite was one of the favourite materiale for Harappan ornaments, leisure items and administrative media such as stamp seals; a more proper understanding of soapstone–cutting technology appeared to be a necessary prerequisite for a correct evaluation of one of the most important craft industries in the urban context of Moenjodaro.

Although the techniques we could observe were relatively simple, and therefore hardly comparable with the image nowadays available for Harappan steatite–working, we have been able to reconstruct a preliminary systemic framework of reference for the analysis of soapstone bead making sequences. Moreover, our documentation work suddenly became urgent when we were informed that the artisan was going to adopt, in a very short time, mechanical wheels shortening and simplifying his work, but deeply affecting some of the manufacturing stages of interest for us. The work gave us the opportunity to sketch some aspects of the craftsman's individual history and personality, useful, we think, to give a more integrate view of his social position and professional attitude. The paper will offer, to a large extent, the image the craftsman

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wanted to give us of himself and his work, only rarely presentig critical remarks from the observer's viewpoint. The information results from about four days of questions and actual observation of the manufacturing sequences, during which we exploited Ashiq Hussain patience, good will and friendship; at the end of the work, we had a slide projection in which we discussed the steatite wasters from the surface of Moenjodaro with him.

2. How to become a soapstone–cutter

Faquir Ashiq Hussain Nabi Bux is about 40 years old. He is married, with two children, and lives not far from the center of Kairpur Mirs (Sindh). He belongs to a Shia familiy from Jammu, Kashmir, India. During partition times, his father, a farmer, was killed in Hindu–Muslim clashes; the widow emigrated to Pakistan with seven children. Part of the family moved to Punjab, where some of the brothers now own some land; the others, with the mother, came to Khairpur, Sindh, where they now live and work. Some of Ashiq's brothers are now working in factories, some are on service.

Ashiq Hussain, too, worked for several years in textiles and matches factories. But, being a rather unquiet nature and not so ready to accept the authoritarian rules of the factories' organization and being fundamentally attracted by mysticism, he changed job more than once, looking around for something more compatible to his character. He attended a religious school near Shadi Shahid, in the Rohri Hills region few km. north of Khairpur, and travelled across the country. He nowadays qualify himself as a *faqīr*, follower of Pir Irani Shah in Faqīr ka Peru, Hyderabad, and as a member of *Qādiriyya*. When asked about his caste, he says to belong to Hashmi Qureshi caste, apparently somehow connected to Sadat Sayed, the holiest, higher caste of the direct descendents of the Prophet, to which all *Pirs* and *Ṣūfīs* traditionally refer.

In the meantime, frequenting the *faqīirs* of the Khairpur Bazaar, he started taking interest in semiprecious stones and their powers. In short, abandoning the subordinate life of the hired labour, he became one of the *janharīs* of Khairpur. The *janharīs*, professional sellers of semiprecious stones, are easily identified in Pakistan by their wooden showcase filled with rings, beads, bangles and other articles of cheap jewellery, usually in agate (*aqīq*), glass, brass, copper. According to Ashiq Hussain, they recognize themeselves as a professional group, bound with relationships of reciprocal solidarity and friendship. Some *janharīs* are travelling sellers, while others (more rarely) are resident in the market's towns. In occasion of the big Festivals (*melā*) all *janharīis* from different regions join together, paying commonly a fee to form an unbroken row of showcases.

About seven years ago, Faqir Ashiq Hussain met at the great *melā* of

Shah Nurani, close to Turbat in Makran district, Baluchistan, a Punjabi–speaking soapstone cutter, named Gulzar Ahmed. Gulzar was also deeply concerned with mysticism and religion, and follower of Saheli Sarcar; he taught Ashiq Hussain to work soapstones. Actually, the training of Ashiq Hussain took no more than 20 days of continuous practical applications at Shah Nurani; but, he explained to us, these 20 days were preceeded by periods of observation, and, later, whenever the apprentice had a particular problem, he could learn how to solve it during his recurrent visits to the teacher. At the end of the training the teacher sold to Ashiq Hussain, for half of their price, the tools he is still nowadays using.

The place–name Shah Nurani continuously occurr in Ashiq Hussain sentences. The area of Shah Nurani, not far from the prehistoric site of Shahi–Tump, appears to be under control of Mengals tribes, which are considered as Brahui, even though they often call themselves Beloch or, sometimes, Kurd. The great *melā* held at Shah Nurani in late spring attracts people from all parts of the subcontinent and abroad. The place is of such a beauty, says Ashiq Hussain, that, once we see it, we shall never wish to leave it. Besides the grave of Shah Nurani, the sanctity of the place is demonstrated by the fact that Šahbāz Qalandar and Shah Laṭīf went there to pray and fasten. It is a place full of wonders, and many miracles still happen there. Not far from Shah Nurani is Lahoot la Makan, favourite meeting place for *faqīrs*, coming here to collect sacred water. In the hill of Lahoot la Makan a 2 miles deep cave opens, with a stone staircase, hiding the bowl and the grinding stone of Fatma; turned into stone, the soap used by the family of Ḥaẓrat ʿAlī is conserved here. On the walls there are camels, goats, lions and lionesses, and giants turned into stone. A giant is still living there, together with the Paris, the feminine angels which helped Ḥaẓrat ʿAlī to take possess of the region. Faqīr Ashiq Hussain also told us the story of a sacred well whose waters, under the power of the name of Ḥaẓrat ʿAlī, start bubbling and boiling. The place, according to Faqir Ashiq, is sacred to Hindus as well, as indicated by the story of the Brahamans Hussaini, which tried to protect Hussain from the hate of Yazid, as well as well as by the Hindu settlements, shops and temples on the way to and in the sorroundings of Shah Nurani.

This land is also the land of *zahr–muhra* (antidote), the name given to soapstones. The material worked by Ashiq Hussain is generally characterized by dark shadows, ranging from green to gray and black; very often the stone presents blackish impurities which are exploited to produce attractive chromatic contrasts in the larger pieces, particularly in *dilpāk* beads (cfr. Figs. 12, 13). All the varieties are identified by Ashiq Hussain as *zahr–muhra* and distinguished into 6–7 groups after their chromatic features. The stone has a supernatural origin: as told by Shah Latif in his Hasan and Hussain *sura*, the evil Yazid induced one of Hasan's wives to poison the husband. In the act of drinking,

says Ashiq Hussein, Ḥaẓrat Hasan was informed, by divine ammonition, that the beverage was poisonous, and that, once poured into the ground, it would have been deadly to every living creature on the earth. He drunk, and vomited, reverting the poison in zahr–muhra, antidote.

The powers of the stone, when eaten, or, sometimes, simply worn in form of ornaments, are countless. The list given by Ashiq Hussain closely corresponds with the one reported in Humāyūn Mirzā Lakhna'vī's "Kirišhma–i Qudrat" (Miracle of Nature), a popular Urdu book, costantly kept by our *janharī* on his desk in the bazaar (Fig. 6). The short account given in the book on *zahr-muhra* is also copied on a hand–written board for advertizing purposes. The stone is an antidote for any type of poison; if mixed with water and sprinkled around, with its smell it will keep snakes and any other poisonous animal away. It will fight diarrhea, and protect the respiratory apparatus; if worn as a necklace, particularly by children, it will save them from heart diseases; it will be a precious help for sexual power, resulting also useful against forms of melancholy.

The stone is brought with camels to Shah Nurani by Mengal sellers; more rarely, the soapstone–cutters go directly to the extraction areas, 2 or 3 days far from the *melā*'s place. The blocks, 4 to 5 kg, in weight, are sold to a price of 5 rs. per kg. Faqīr Ashiq Hussain goes to Shah Nurani once a year, on occasion of the *melā*. Here he buys 50–60 kg. of soapstone, which he carries home, not without a substantial effort, travelling by buses and *tangas*. The trip to Baluchistan costs him 200 rs, and 200 rs on the return; the total investment wavers therefore around 700 rs. per year. Sometimes he stops in Shah Nurani to turn the stone into beads directly there, to minimize the load.

According to his evaluations, while *aqīq*, imported already worked from Khambhat via Karachi or Lahore, gives him a profit of no more than 10–20% of the retail price, with his soapstone products the income is relatively much higher. His activity of stone–cutting daily takes place together with the selling of semiprecious stones, in a very relaxed way. He calculates that, with no more than 10 days of full–time cutting, he would exhaust all his material. Within his cutting schedules, this happens only two or three months before the Shah Nurani *melā*. Only half of the total amount of worked stone, he says, is turned into finished product, the remaining manufacturig waste being recycled in form of powder as homeopathic (a very popular word in Pakistan) substance. Every day, the powder is collected in a large plastic bag, out of which he fills small folded bags containing 50 to 70 gr. of material, which are sold for 5 rs. each. When we visited his working–selling desk in the bazaar, in Urdu *sandalī* or *taxt*, it contained a full bag of white powder, demonstrating hence that the powder he collects is much more than the powder he is able to sell. Also the manufacturing wasters are regularly collected and stored in a separate bag, to be sold to people wishing to grind the stone themselves (Figs. 9, 10).

Soapstone powder is therefore only one of the materials Faqīr Ashiq sells as natural medicines, the other being rock crystal, antimony and mushrooms (these two last materials are ground by him with the stone quern and pestle stored in the *sandalī*: see Fig. 10). Moreover, his selling activity includes parfumes. By selling *ʿaqīq*, soapstone ornaments, jewellery, medicines, parfumes (Fig. 6:13) and by providing astrological consultations in relationships to the stone varieties, he says to be able to earn from 30 to 100 rs. (in lucky cases) per day. Such an income become much higher in occasion of the festivals he regularly follows in various towns of Pakistan. It is a common opinion that the income of a *janharī*, being substantially equal to the amount of money daily spent by a family for subsistence, would place this profession within a middle–lower economic context, not far from the position of a hired worker.

3. The Sandalī: a suspended atelier

Faqir Ashiq Hussain is a resident, settled *janharī*. He occupies a very favourable position in the Khairpur Bazaar, at its very beginning, just close to the town's main cross, between a kohl maker's desk and a fruit– shop (Figs. 1, 2).

From 9.00 AM to about 4–5.00 PM he may be seen sitting on his wooden *sandalī* or *taxt* (Figs. 3, 4). It is a plank–constructed infrastructure, about 0.70 m. high and about 1 × 1.30 m large. A door opens on the front side and two parallel stakes, rising to an height of about 2.30 m., support a third transversal stick (Fig. 5). This latter superstructure is sometimes used to hang display necklaces on. The plane of the *sandalī* is used both as shop and as manufacturing area for soapstone cutting; the interior space is a small store where the byproducts to be recycled are kept, together with some rarely used items or occasional materials; every day he brings his cutting tools, stones and show–case (*kabat*) from his house. The space required by the *sandalī* actually represents the only element of interaction between the *janharī* and the Municipality, to which he pays a fixed rent of 30 rs. per month. Faqīr Ashiq acquired the *sandalī*, he says, for the rather honest price of 500 rs. from a friend, formerly working there as a baker; he moreover had to pay an additional registration fee to the Municipality. Before this acquisition, he used to work in the street in the immediate neighbourhood.

The *sandalī* (Fig. 6) is covered with a red plastic cloth. The *janharī* occupies a corner of the rectangular area. Including the space occupied by the artisan when cutting the stone, the total amount of the *sandalī* plane allocated to activity area is less than one half. He works keeping in front his wooden tablet and one or two concentrations of soapstone pieces (Fig. 7) poured from as many plastic bags, depending upon the current stages of manufacture. At the time

of our visit, having exhausted the large lumps of soapstone, was recycling pieces taken from these stores. He considers the pieces visible in Fig. 7 "unfinished" (*na–mukammal*). They are apparently slightly defective, but still usable, and are discarded and stored during the year. He always arranges, close to the soapstone concentrations, a large bag full of rock crystal (*pukhraj*) (Fig. 8), containing some rarer piece of macro–crystalline calcite. Needless to say, the crystals come from Shah Nurani. Although he knows that, with proper techniques, they can be turned into beads, he keeps this stuff only because it is attractive to him and the public; only rarely some pieces are sold as curiosities or as a medicine (he doesn't grind them into powder). His tools are usually arranged around the perimeter of the *sandalī's* plane (Fig. 6). The part of the desk facing the lane shows, in a well ordered display, the whole of his articles, including the *kabat*, a series of small squared plates with brass and copper rings, kohl spoonlets, glass cabochons, copper bangles in Baluch style and a second glass–covered wooden box containing parfumes. Beyond such an arrangement, soapstone is moved and worked in a space never larger than 50 × 50 cm.. Raw material comes either from the inner space of the *sandalī*, either from home stores; at the end of the day, all the debitage is carefully collected, subdivided in powder and fragments (defective semifinished items are often placed in the *na–mukammal* group, together with other semifinished products still useful for further processing) and conserved in separate bags. This process of removal is strictly connected with the use of plastic to cover the *sandalī*'s plane (1). Powder and useless fragments are then moved to the interior of the *sandalī* (Figs. 9, 10) where they remain awaiting the occasion of being sold as medicine, or a *melā* in which 5 to 10 bags may be required. The whole process is highly controlled, and hardly some pieces escape it, falling into the surrounding street surface. These traces of soapstone cutting are regularly removed, early in the morning, by the Municipality bazaar sweepers; few fragments are trapped under the *sandalī* space or against its legs. It should be observed that, being soapstone cutting a substantially public, socializing activity, the careful recollection of the debitage assumes the nature of an ideological statement: one could hardly claim the wonders of a material daily wasted and dumped on the way. When Ashiq Hussain came to work where we were staying, in the private space of G.M. Shar's house in Khairpur, an almost symbolic grabbing handprint remained over a small, but still substantial, heap of powder and chips.

4. Market and products of soapstone cutting

Faqīr Ashiq says he personally knows all the soapstone–cutters of Pakistan. As far as he knows, there is no production in Punjab; the market, being

centered for the raw material source on Shah Nurani, is limited to Sindh and Baluchistan. 4 or 5 cutters are active at Shah Nurani, 2 or 3 at Hyderabad, 1 or 2 in Karachi, and only one in Khairpur. He says that the products manufactured in the various centers are essentially very similar. In all the statements of Ashiq Hussain a great emphasis is costantly given to the festivals as main moments of distribution. The list of soapstone articles he usually manufactures is not very long: it includes, above all, heavy nacklaces (*kaṇṭha*) of large beads (*kaṇṭhe kā dāna*) (Fig. 12; see also Fig. 37.13, 14). These necklaces seem to be specially designed for *faqīrs*, and only rarely are they bought by common buyers. Ashiq Hussain also sells them to other *janharīs*. The beads of *kaṇṭha* are generally of the *pahlūdār* type (in Faqir Ashiq's words, they have corners like a crystal). Sometimes, some isolated bead is bought to be worn as an amulet against heart diseases. Another type of large soapstone bead is rounded, barrel–shaped (Fig.14, upper row). This beads are particularly fashionable among the Makranis living in Karachi; they buy isolated pieces to be worn flanked by smaller round beads.

A second favourite article is the *tasbīḥ* (Fig. 11), the 35 beads necklace used as a rosary to recitate the name of Allah. A larger bead, at the joint, ensure the multiplication × 3 of the rosary. After the rosary, *tasbīḥ* may be worn as a normal necklace by *faqīrs, mullahs* and also by women.

The inventory, then, includes the heart–shaped *dilpāk* beads (Fig. 13; see also Fig. 37.20–23). Large *dilpāks* appear in the *kaṇṭha*; smaller pieces are specially manufactured for children, who, wearing a single *dilpāk* with a string at the neck, will be protected, again, from heart diseases.

Lastly, a fourth favourite type is represented by oval–shaped finger–ring stones (*angoṭhī kā nagīna*) (Fig. 14, lower row). For the production of these items Ashiq Hussain uses very particular hard veins occurring in the Shah Nurani soapstones, that he deems, at least in finished form, as highly valuable. Such veins, greenish in colour, have a compact structure and attractive, marble–like inner mottlings.

Ashiq Hussain, on request, may also manufacture drop–like stones for earrings, small pots and ashtrays, small fruits like mangos, and other shapes too, but the main demand is limited to the above mentioned four articles.

5. A preliminary description of soapstone beads manufacturing sequences

The following notes contain a preliminary description of some aspects of the stone cutting techniques adopted by Ashiq Hussain seen through the filter of beads manufacturing sequences. The information here provided is the result of two days of observation and enquiry, during which Ashiq Hussain worked with his materials in the garden of G.M. Sher's house, in Khair-

pur. At the moment of our visit, which took place between March 19 and 22, 1986, he had already finished the stock of larger blocks suitable for the manufactures we were interested in; in a couple of months, the Shah Nurani *melā* would offer him the opportunity to renovate his stores. This circumstance represented a major problem for us, as it prevented us from observing one of the aspects we deemed as primary, i.e. the relationships between the dimensional parameters of the raw material and the planning of the production activities. Moreover, we have been compelled to observe the first stages of separation on small stone lumps he previously had discarted as non suitable, mainly due to their exceeding hardness and unhomogeneous texture. As a matter of facts, these lumps, conserved by Ashiq Hussain in a separate plastic bag, often exhibited the hard, compact veins he usually uses for the production of finger–ring stones. Our description, therefore, will emphasize more the inner structural aspects of the transformational sequence than the organizational aspects relative to the production sphere. Similarly, we avoided, in this preliminary phase, to take into account the whole system of physical variables affecting the stone cutting sequences, which definetly would represent a very stimulating field of research.

Whenever possible, we tried to record the artisan's own view and definitions of the various steps, in the attemptive to understand and formalize his cognitive structure of the manufacturing sequences. It was not surprising to see that, generally, such structure turned out to be rather vaguely expressed, the steps being, as a rule, defined by the actual technique–tool used.

A major word of warning should be spent on this last aspect, as to understand properly these last aspects we should have spent long times of indirect observation. Given the time costraints and the particularity of the research, we were compelled to ask names for the different stages, the way we understood them, so somehow suggesting the same structure we wanted to understand; on the other hand, the stone working technology we could observe was generally of such simplicity that these difficulties could be considered as tempered.

The choice of concentrating our attention on the bead–making sequences, obviously, enough, was due to the general ethno–archaeological relevance of this topic. The analystical criteria of segmentation and definition of the transformational sequence here adopted have been thoroughly discussed in other works (Vidale 1983; Buson and Vidale 1983; Vidale 1986). Leaving aside the extraction and transport activities – "Procurement" systemic sphere in Schiffer's (1972) terms – the transformational sequences we could observe may be considered as belonging to a single Forming and Finishing Process, internally subdivided in Operations and Phases. The most complex sequence is the *tasbīh* beads one, which we selected as a guide for the following description, as the manufacturing stages of the larger beads are anyhow included.

SOAPSTONE TASBEH BEADS FORMING AND FINISHING PROCESS

Operations	*Phases*	
A: Block Making	A1:	Examination
	A2:	Positioning
	A3:	Cutting
	A4...An:	Iterative Sequences Positioning–Cutting
B: Blank Separation	B1:	Positioning
	B2...Bn:	Orthogonal Barrett Cutting
	Bn...Bn1:	Orthogonal Blank Cutting
C: Blank Shaping	C1...C6:	Primary Blank Shaping
	C7...C10:	Secodary Blank Shaping
	C11...Cn:	Distal Blank Shaping
D: Perforation and Bead Rounding	D1:	Positioning
	D2:	Pole Perforation
	D3:	Pole Perforation
	D4:	Fastening
	D5:	Turning
	D6...Dn:	Iterative Sequences Fastening–Turning
E: Finishing	E1:	Smoothing
	E2:	Polishing
	E3:	Coating

5.1. *Operation A: Block Making*

We were informed by Ashiq Hussain that every soapstone cutting sequence, generically defined *kaṭa'ī*, cutting, must start from a squared lump, that he rather vaguely defines *block, cauras* (square) or *dāna* (grain, bead). Alternatively, lumps may be cut into parallel thick slices, from which the romboid blanks for *dilpāk* beads are cut out (Fig. 37.20–23). These blanks are typologically much more defined by Ashiq Hussain, who costantly refer to them as *taxtī* (tablet). Sometimes, given the minor thickness required by *taxtī*, this type of blank is simply a byproduct of bead block making. Phase A1, Examination, is done by carefully observating the stone features by leaking it (Fig. 16) rendering the lump's surface shining and lucid. The lump is then positioned (Phase A2) over a raw, thick wooden tablet cut away from a plank, bearing an irregular row of iron nails. The plank is simply called *lakṛī* (wood) (Fig. 36), and, while cutting, is kept still by the artisan's foot (Figs. 17–23). The lump is placed against the nails and kept in place, during the cutting movments, just by hand pressure (Fig. 17). The irregular disposition of the nails

on *lakṛī* might allow different solutions for lumps of different shape and sizes, but the cutting traces actually show that one of the spaces between the nails was preferentially used by Ashiq Hussain. Depending upon its shape, the soapstone pieces could fit in the right corner formed by the couple of nails and the tablet's plane, or simply be secured over them by hand pressure.

Once fastened the piece, Cutting (Phase A3) is effected with an iron saw with a toothed blade 0.95 mm. thick (Figs. 17–23). According to our observations, the artisan followed two different procedures: when the piece was too thin (and this was often the case, due to the nature of the available material) it was cut into parallel slices to be furtherly processed as a flat blocklet with irregular contours (Figs. 17–21); when the piece had the proper volume, it was cut by an Iterative Sequence of Positioning–Cutting episodes (Phases A4...An), in which every produced plane worked as an inferior cutting platform for a subsequent orthogonal cutting, with the final result of obtaining a squared blocklet (Fig. 22). In absence of larger pieces of soapstone, these observations should be considered somehow biased; but apparently the second procedure corresponded more closely to the technique normally used by the craftsman.

5.2. *Operation B: Blank Separation*

The term of *kaṭa'ī* applies to our Operation B as well as to A. The squared blocklet is easily positioned over the wooden tablet (Phase B1); it is then orthogonally cut into series of square–sectioned bars (Fig. 37.1–3) (Phases B2...Bn) to be subdivided, in turn, into squared blanks (Figs. 22–23; Fig. 37.4–7). This sequence involves some kind of planning about the size–number relationships between block and blanks; the planning is usually materially expressed by rows of guide traces cut on the surface of the blocks or bars (Fig. 23). When the subsequent actual cutting follows a scheme different from the one previously planned, the blanks may retain some cutting marks (Fig. 37.6).

The cutting operations are effected with particular care, as, particularly with the hard pieces we have been compelled to employ, the danger to break the blocks appeared to be very serious. As a rule, sawing is directed from a single side of the piece; after the separation the pieces retain, at the base of the newly cut surface, an irregular protruding edge produced by the breaking of the last millimiters of material (Fig. 37.1–7).

5.3 *Operation C: Blank Shaping*

Bead blanks are shaped by a progressive smoothing (*ragṛā'ī*) carried out with a common iron file (*ratī*), used in a negative direction (i.e., the blank is moved against the file, simply held oblique by the artisan: see Figs. 24–26). More rarely, and particularly in the final stages of blank shaping, the technique is reverted, and the file is normally operated to correct some minor feature of the blanks (Fig. 27). Primary Blank Shaping (Phases C1...C6) is effected moving the blank's six planes onto the file, so producing a smooth regular parallelepiped (Fig. 25; see also Fig. 36.8). The number of movements, in this Phases, ranges from a minimum of 2–3 to a maximum of 12–15, according to the blank's size, hardness, and particular features. These Phases are followed by the sequence C7...C10, in which the four main corners of the parallelepiped are abraded with 2–6 precise strokes onto the file, making a rough sub–cyclindrical shape (Fig. 26; Fig. 36.9). Finally, the shaping sequences are concluded by Phases C11...Cn, a sequence rather variable for the frequency of movements and quantity of abraded material, in which the peripheral portions of the blanks' distal extremities are abraded to allow and prepare the introduction of the following Operation.

5.4. *Operation D: Perforation and Bead Rounding*

Operation D is for Ashiq Hussain simply drilling (*sūrāh karnā*). The drill (*barmā*) employed by the artisan is a common wood–working manual drill operated horizontally. In the first stages of Operation D the drill is used as a perforator (Fig. 28–30) to be subsequently used as a lathe to turn the beads giving them a rounded contour (Figs. 31–32). The drill point is a steel bit from an umbrella stick section, that the artisan himself cuts and modifies into a leaf–shaped functional extremity. The use of umbrella sticks for drill points making is closely analogous to the drill making technique currently adopted by the lapidaries of Khambhat in Gujarat (cfr. Vidale 1984b).

According to Ashiq Hussain, his technique is an adaptation from the horizontal bow–drills still used by some soapstone–cutters in Baluchistan. In Phase D1, the drill's handle is secured by the artisan with the right foot, while the tool is ready to be operated with the right hand. With the left one he places one end of the blank against the drill's tip (Fig. 29) and begins the perforation (Phase D2). When approximately one half of the blank is been perforated, the piece is reverted and the opposite drilling (Phase D3) may start. The breaking of the blank during perforation is not unusual at all, and, in such cases, the steel point may hurt the finger. When the opposite perforation channels meet (Fig. 31) the turning stages start. They are preceeded by Phase D4, in which the bead is pulled towards the point's base, till the piece is firmly fastened. If the hole is already too large and the bead is not secured, a wax match may be inserted between the channel and the point. This often causes an excentric inner pressure which, again, may result in immediate splitting of the beads.

The bead is turned on the same file used for shaping the blank (Phase D5; Figs. 31, 32; Fig. 36.15, 16), held, suspended, by the left hand. One of

the effects of turning is of centering the perforation channel within the bead. The dimensional reduction of the turned piece is substantial. After one end of the bead has been rounded, the element is reverted and refastened; this complex of movements has been labelled as Phases D6...Dn, Iterative Sequences Fastening–Turning. We could count an amount of 80–120 turning revolutions for each extremity of *tasbīh* beads, subdivided into a discontinous series interrupted by 10–15 fastening stages.

Ashiq Hussain evaluates that not less than 30 to 40% of the beads break during Operation D; he thinks that with the horizontal bow drill the percentage of losses is about the same. He therefore requires 50 to 60 blanks to get the 35 beads he needs for a rosary.

5.5. *Operation E: Finishing*

Smoothing (Phase E1) is usually carried out employing some particular types of stones the artisan brings from Makran, but during our visit he couldn't show us any specimen. He said the same effect could be obtained with a careful smoothing on the thin–grained cement of the hand pump platform (Fig. 33), with abundant use of water. The smoothing of every bead took no more than a few minutes. Polishing (Phase E2) was effected over a small leather piece, for approximately the same time (Fig. 34). Finally, the beads are coated with a wash of sarsoon oil (see the bottle in Fig. 34), long not less than 3 hours, which renders them greasy and rather stinky but shiny and lustruous (some finished examples are reproduced in Fig. 35.16–18).

(G.M.S., M.V.)

6. Some comments

As stated in 1., this paper is largely descriptive in character, ultimately representing more an ethnographic contribution than an ethnoarchaeological study. Nevertheless, this last section contains a series of preliminary remarks part of which have a direct relevance to our archaelogical work at Moenjodaro.

Our enquiry showed the strong ideological value the artisan places on the meaning of the stone and its areas of provenience in Makran. This ideological sphere was strongly emphasized by the artisan in direct connection with his social role and public image. While it is not surprising at all to see how such a distinctive material is charged with supernatural meanings and powers, we have to keep in mind that such an emphasis is an indirect result of the heavy social stress undergone by Ashiq Hussain and his family in partition times. It is definetly possible that steatite, given its unique features and its generalized use in Harappan craft production, had analogous ideological characterization in Harappan society. For example, one might wonder if the recurrent presence of steatite manufacturing debitage within structural fillings at Moenjodaro could represent a case of "ingestion" of the stone by the house, parallel to the forms of consumption of the soapstone powder described by Ashiq Hussain. But to evaluate this and other possibilities one should investigate the possible existance of forms of cultural continuity in time, with a specific philological–historical research. Incidentally, we may here observe that, given the widespread application of pyrotechnological treatments in Harappan steatite working, the hypothesized aspects of ideological continuity should be expected to emphasize the role of fire and firing. When we asked Ashiq Hussain what happens when soapstone is put on fire, he answered that it dissolves into powder. This is simply untrue; such an answer might suggest that experiments with fire are rarely attempted by contemporary soapstone–cutters.

The ideological characterization of soapstone–cutting is intimately connected to some formation dynamics of the archaeological record, such as the recollection of the debitage to be recycled as a medicine, the consequent high standards of control on the debitage itself (at least in public), and, less directly, the mentioned association of soapstone with pieces of rock crystal and other materials having no functional relationship at all with stone–cutting. In general, these ideological attitudes have a "sponge effect" on the residual evidence of the transformational chain. The same social background explaining the extreme specialization (at the regional level!) of soapstone–cutting and its restricted spatial localization in the bazaar determines effective trends of obliteration of its material evidence in archaeological terms. In other words, specialization and segregation appear so extreme that they cause a real *implosion of the material evidence* of the craft activity in the archaeological record.

The observation of the Khairpur soapstone–cutter could so provide one ore more brilliant case–studies for the contemporary contextualist trends of the "new" ethnoarchaeology, offering the occasion of questioning the validity of archaeological inferences across one of the more materialistic playgrounds one could think of, the physical context of craft production. My point, in this regard, is that, by limiting the aim of the research to the expression of one more "cautionary tale and warning", as sometimes appears from their currant production (see some contributions in Hodder 1982) some collegues loose the occasion to construct as many "positive" interpretative models.

The recycling of the stone as a medicine is closely analogous to the consumption of *'aqīq*, burned agate powder, rather common in Pakistan (cfr. Shar and Vidale 1984), or to the consumption with similar purposes of the residues left by turning ivory bangles in India (J.M. Kenoyer, personal communication). Once assumed that we should be aware of the theoretical possibility that a series of industries in a protohistoric system could be so affected

or cancelled from the archaeological record, we should try to develop the proper analytical tools to calibrate our interpretative models. Arguments *ex absentia* are traditionally difficult to handle in archaeology; anyhow, if our target is a quantitative evaluation of the distribution of craft indicators across a site, a careful recording of all the cultural habits potentially affecting the record could be useful in establishing some gross parameters of correction.

At Moenjodaro, apparently, substantial amount of steatite debitage were embedded in structural fillings within the houses, or, possibly, left near the working areas or dumped within and ovar decayed structures. On the other hand, we know that the stone was recycled for specialized forms of bead making (Vidale 1985; 1986a). We expect that the debitage left by steatite–cutting at Moenjodaro was handled, collected or dumped according to a complex cultural pattern. In the attempt of defining part of the dynamics of formation, removal or suspension (for this latter category see Vidale 1985a) of the debitage across floors and dumps (see Balista and Vidale 1987) sets of micro–sedimentological indicators may be developed and tested within the sub–surface contexts generating the surface spreadings (Balista and Leonardi 1985; Balista and Vidale 1987; Vidale 1987; for the formalization of highly specific micro–sedimentological indicators in a different context see Balista and Leonardi 1985a).

The model of a small suspended activity area derived from the observation of the *sandalī* is remarkable. If the early excavators of Moenjodaro were right in their interpretations, along some streets of the city rows of solid platforms, having no direct functional relationship with the houses against which they were constructed, closely recalled the arrangement of a modern bazaar (Marshall 1931: 240; Mackay 1938: 27–29, 30, 32, 74, 76, 82). In this context, the role of ethnoarchaeology in providing models of vertical and gravitational movements of the craft indicators and their behaviour at the edge of the platforms could harldy be overestimated. Generally speaking, one would expect rarefied rows of small indicators along the bases of the raised blocks, possibly together with sedimentological positive–negative micro–indicators of brushing. In the case of suspended wooden installations, one would expect rare sparse items together with more positive (additive) evidence of brushing. As these points are largely the fruit of later reflections, I did'nt check this latter class of evidence under Ashiq Hussain's *sandalī*: the presence of few fragments around and under the installation had been anyhow noticed by G.M. Shar.

The concurrence of artefacts not connected by direct technological–functional relationships would represent another easy exercise of "contextualist warning". A warning is doubless necessary, but how to deal with the danger, in similar cases, of constructing fake correlations? Similar types of "interferences" within protohistorical assemblages indicating craft activities could be hypothesized after a careful evaluation of other systemic aspects. Wear

traces, in the first place, are a class of evidence that, particularly through the interpretative feedback provided by experimentation, may validate or dismiss the proposed functional associations. Absence of wear, or very light wear, on the pestle and mortar would indicate their use for grinding soft organic materials; on the tools' remains, the absence of wear traces left by materials with an hardness of 7 would dismiss the hypothesis of rock crystal working, and so on. It should be stressed that, given a particular context, sediments, negative interfaces in the archaeological record, wear traces and remains of the worked materials on the employed tools may be deemed as a single, integrated system of positive–negative interfaces produced by addition–subtraction events to be systematically investigated (cf. Leonardi 1982). In a wider quantitative perspective, given a suitable body of data, these forms of interferences could be recognized as cultural habits through the identification of systematic anomalies in the network of functional interrelationships progressively reconstructed among the indicators. I refer here to the "network of coherence" formed by "patterned associations" described by South (1979: 213–216).

To conclude (?) I would say that, if we are grateful to some collegues for explaining us the complexity of the real world and teaching us what we cannot understand, we would be much more grateful if the would start the (probably much more difficult and time–consuming) work of teaching us how and what can we understand of the archaeological record we are condemned to use.

(M.V.)

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CAPTIONS TO FIGURES

Fig. 1: Khairpur Mirs, March 1986. The entrance to the bazaar at one of the main crosses of the town's center.

Fig. 2: Khairpur Mirs, March 1986. Ashiq Hussain's *sandali* near the entrance of the bazaar.

Figs. 3, 4: Ashiq Hussain at work on the *sandali*. Note the showcase, the display area and the limited size of the space allocated to activity area. Note also the balance not appearing in Fig. 6.

Fig. 5: The *sandali* of Ashiq Hussain, front view. For the scale see the text.

Fig. 6: The *sandali* of Ashiq Hussain. Sketch of the display and soapstone–cutting area. 1: advertizing board with quotation from the book n. 6; 2: iron files; 3: drill; 4: saw; 5: wooden tablet with nails (*lakrī*); 6: book "*Kirišma–i Qudrat*" (see text); 7: Cloth bag; 8 keys of the showcase; 9: concentration of soapstone unfinished or unexhausted pieces; 10: concentration of rock crystal pieces; 11: copper bangles in Baluch style; 12: glass coloured cabochons, rings, kohl spoonlets displayed on plastic dishes; 13: second showcase containing perfumes and cotton flocks; 14: other rings stored in plastic bags; 15: jewellery showcase.

Fig. 7: Concentration of unfinished or unexhausted pieces of soapstone (cfr. Fig. 6:9) on the *sandalī* plane.

Fig. 8: Concentration of rock crystal pieces (cfr. Fig. 6:10) on the *sandalī* plane.

Fig. 9: The interior of the *sandalī*. Note the plastic bags full of soapstone debitage, the shoes, the bag used to transport daily part of the aritisan's stuff. The stone mortar and pestle are used, sometimes, to grind mushrooms for making medicines; apparently these tools are not connected with soapstone–cutting.

Fig. 10: The interior of the *sandalī*. Close–up of the bag containing several kilos of soapstone sawdust; the nearby bag contains other debitage to be recycled by grinding.

Fig. 11: *Tasbīh*, manufactured by Ashiq Hussain.

Fig. 12: Large *kantha* with *dilpāk* beads manufactured by Ashiq Hussain.

Fig. 13: Examples of *dilpak* heart–shaped beads (see Fig. 12; Fig. 37.20–23). The decoration is incised by sawing; the circlets are drawn with the drill, employing a three–pointed head manufactured, as the normal drill–heads, out of an umbrella stick (all the beads are manufactured by Ashiq Hussain).

Fig. 14: Large barrel–shaped beads (upper row) and finger–ring stones (lower row) manufactured by Ashiq Hussain.

Fig. 15: Phase A3, Cutting the lump with an iron saw.

Fig. 16: Phase A3, Cutting the lump with an iron saw.

Fig. 17: Phase A4... An, Cutting the lump according to normal planes.

Fig. 18: Blank Separation (cfr. Phases B2...Bn, Bn...Bn1) starting from a soapstone slice.

Fig. 19: Blank Separation (cfr. Phases B2...Bn, Bn...Bn1), starting from a soapstone slice. Note, under the right foot of the artisan, a *taxtī* with the romboid contour of a *dilpāk* bead blank.

Fig. 20: Phase B2, Orthogonal Cutting of a squared blocklet into bars.

Fig. 21: Phase Bn, Orthogonal Cutting of a barret into separated blanks. Note the parallel saw marks of the cutting scheme.

Fig. 22: Phases C1...C6, Primary Blank Shaping. All the surface irregularities are abraded away and the parallelepiped is transformed into a smooth blank (cfr. Fig. 37.8).

Fig. 23: Phases C7...C10, Secondary Blank Shaping. The corners of the long sides of the blank are abraded away transforming the parallelepiped into a sub–cylindrical element (cfr. Fig. 37.9–12).

Fig. 24: Use of an iron file in a "positive" direction, with the aim of correcting minor irregularities of the blanks after phases C11...Cn.

Fig. 25: Phase D1, Positioning.

Fig. 26: Phases D2, D3, Poles Perforation.

Fig. 27: Phase A1, Examination of the lump by leaking.

Fig. 28: The artisan's position during Operation D (Phases D1...D11).

Fig. 29: The artisan's position during Blank Shaping Operation (Phases C1...Cn).

Fig. 30: Phase E1, Smoothing the beads with water on the hand pump's cement platform. This phase removes from the beads' surface the parallel traces left by turning (see Fig. 37.15, 16).

Fig. 31: Phase D4, Fastening the bead for the introduction of Phases D5...Dn.

Fig. 32: Phases D5...Dn, Turning (cfr. Fig. 37.15, 16). After the turning of the outer distal extremity (cfr. Fig. 32), the file is moved towards the drill's point, shaping the opposite part of the bead. The piece is then extracted and reverted on the point to turn the opposite extremity like the former one.

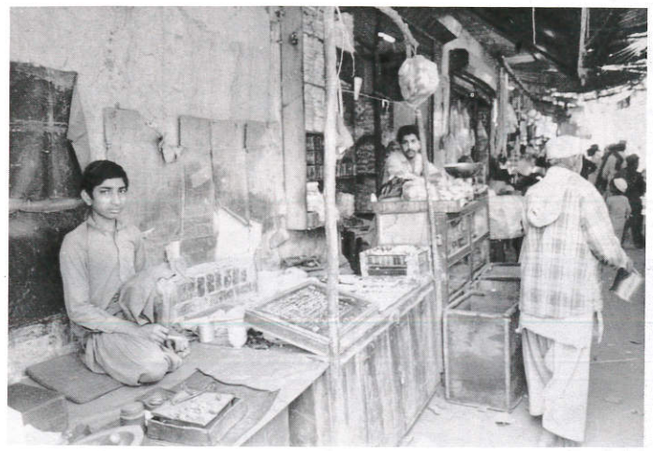
Fig. 33: Phases D5...Dn, Turning (cfr. Fig. 37.15, 16).

Fig. 34: Phase E2, Polishing the bead on a leather piece. Close to the finished items is the bottle with the sarsoon oil in which the beads are kept for some hours after the end of the manufacturing cycle.

Fig. 35: Drawing of the wooden tablet (*taxtī*) used in Cutting phases.

Fig. 36: Unfinished and finished soapstone products. 1–3: fragmentary soapstone bars prepared for Blank Separation. Note the breaking edges at the corners of 1 and 2 (cfr. also 4–7); 4–7: separated blanks ready for Shaping. Note the residual evidence of an aborted cutting scheme on 6; 8: smoothed blank at the end of Phases C1...C6 (Primary Blank Shaping); 9: smoothed sub–cylindrical blank at the end of Phases C7...C10 (Secondary Blank Shaping); 10–12: smoothed sub–cylindrical blanks at the end of Phases C11...Cn (Distal Blank Shaping); 13, 14: smoothed blanks for *pahlūdār* beads (cfr. Fig. 12). 15, 16: turned unpolished *tasbīh* beads; 17–19: finished polished *tasbīh* beads (cfr. Fig. 11). Note the effects of the irregular pressure applied in Turning in the carinated contour of beads 17 and 19; 20–23: pieces illustrating the manufacturing stages of *dilpāk* beads (but Perforation). The romboid blanks 21 are cut out of stone slices, sometimes representing a by– product of beads' *cauras* making (cfr. Figs. 18–21. The apex of the blank is then marked by shaping it into the edges of the iron file, as shown by 22. The same technique is then used to smooth the sides and the edges of the piece giving it the distinctive heart shape of 23. The circlets are drawn with a special three–pointed drill head, manufactured, like the ones normally employed in perforation, from an umbrella stick.

Fig. 1



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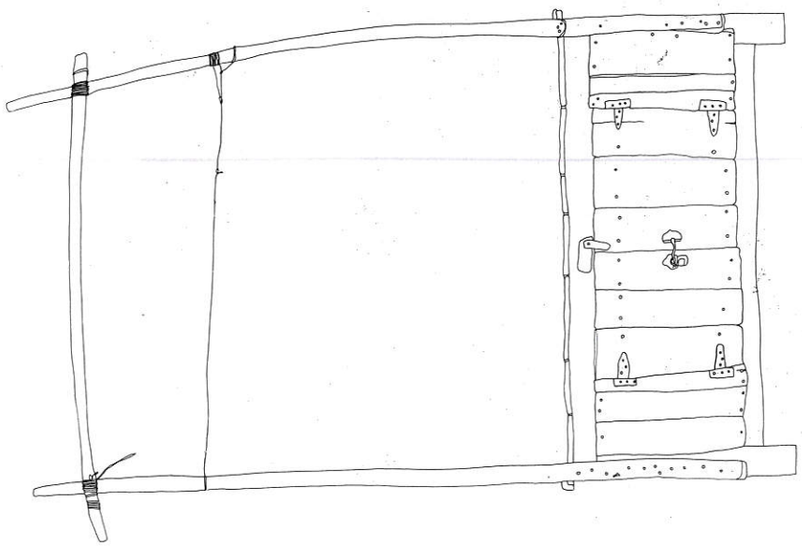

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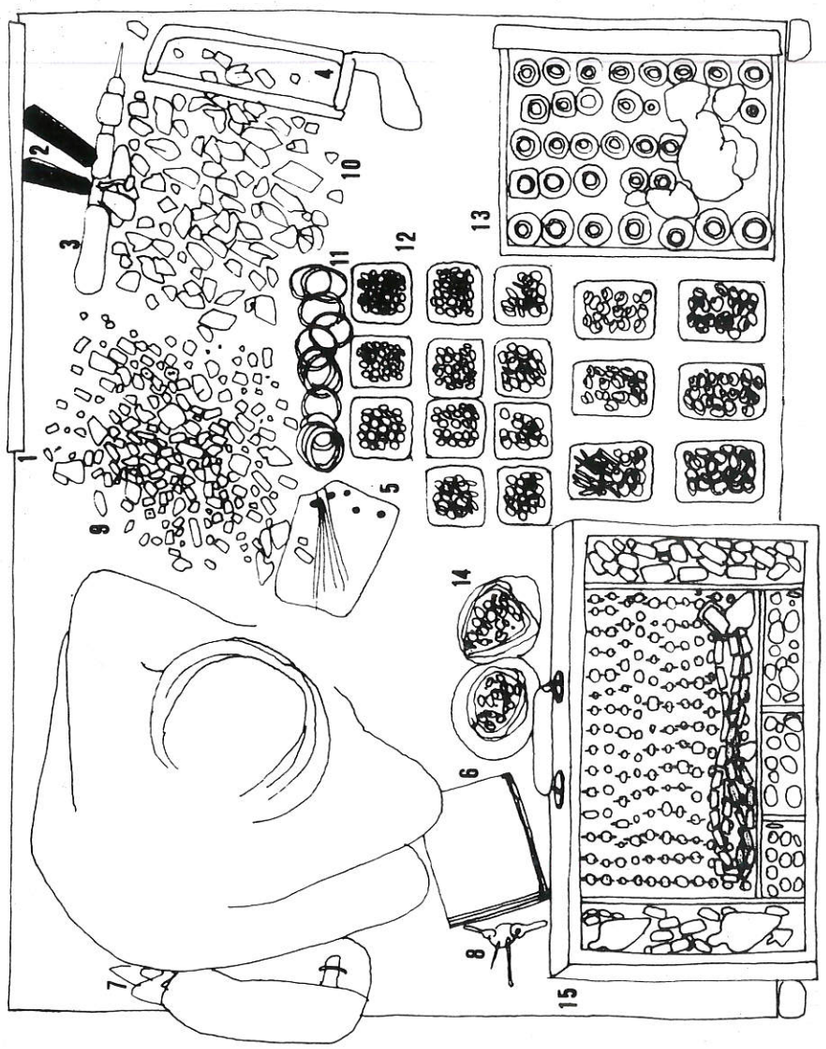

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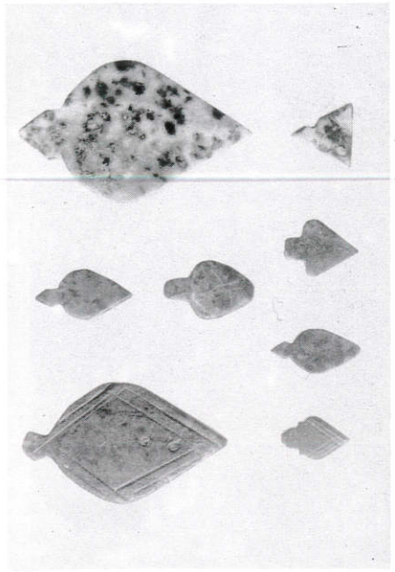
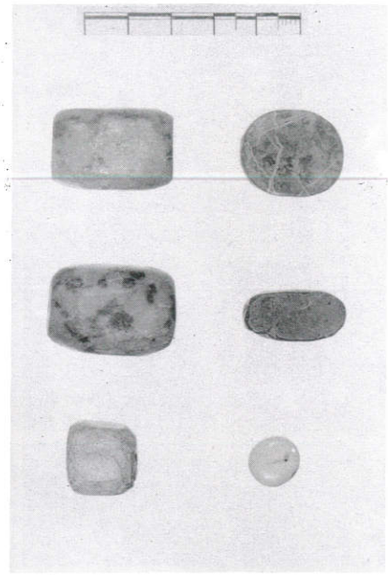


Fig. 13



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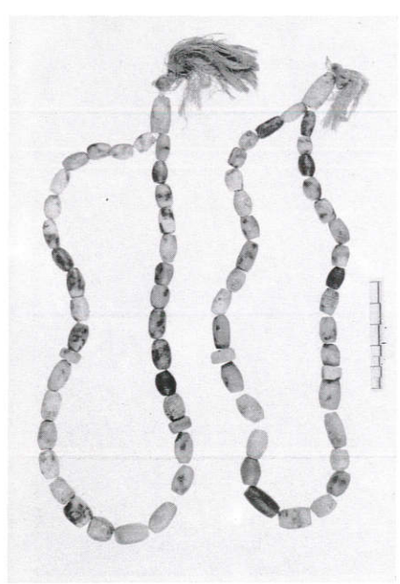

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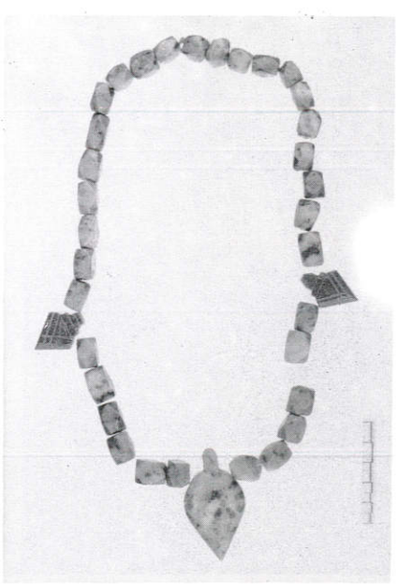

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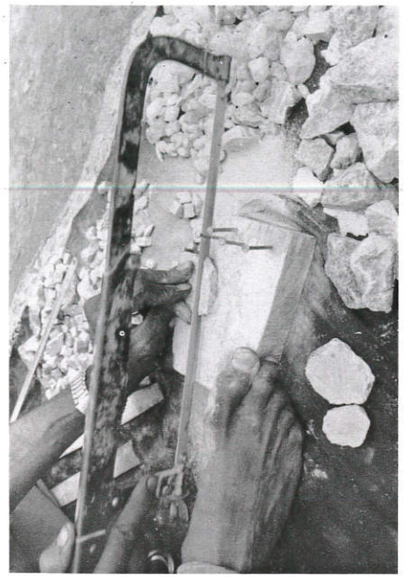

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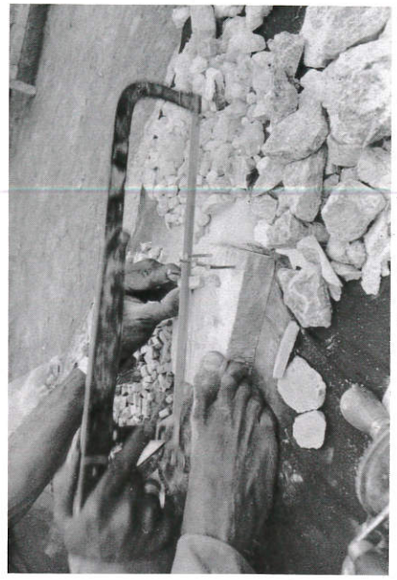

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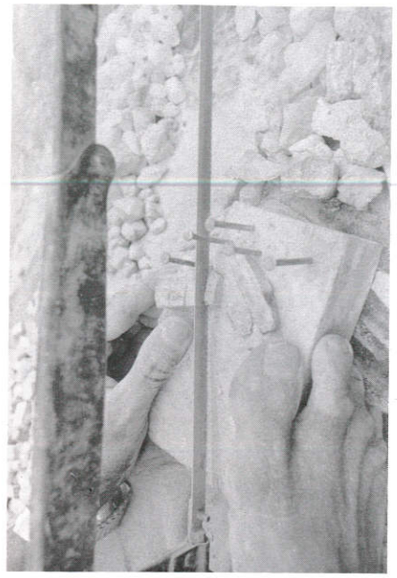

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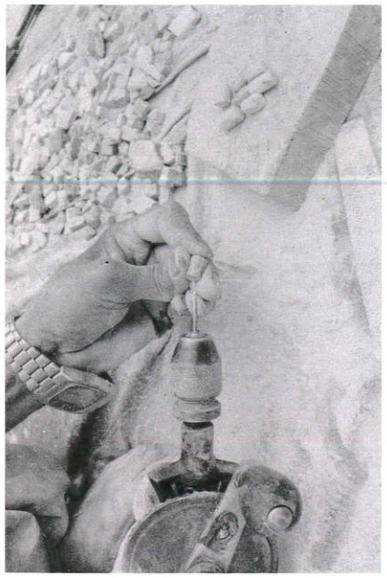

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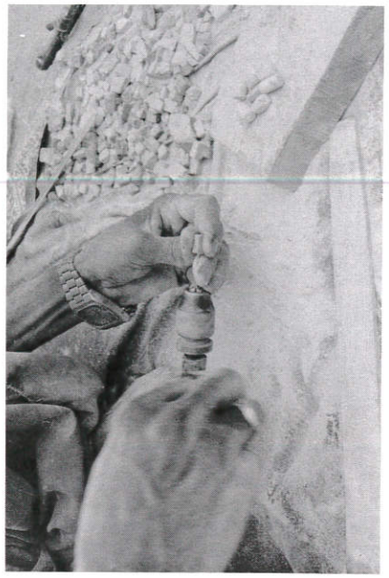

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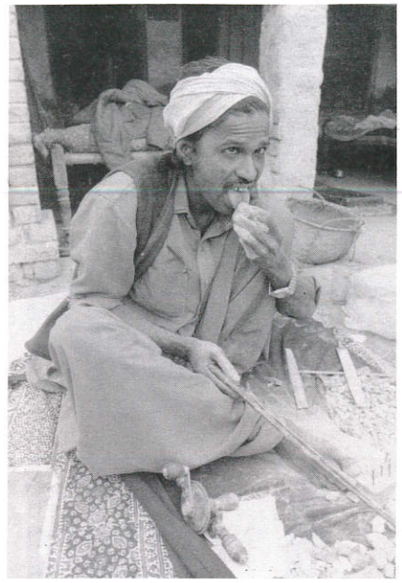

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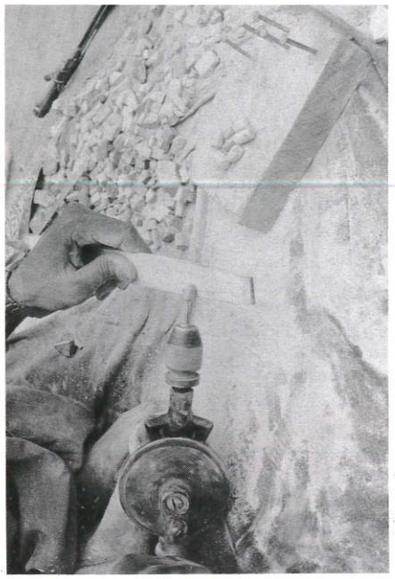
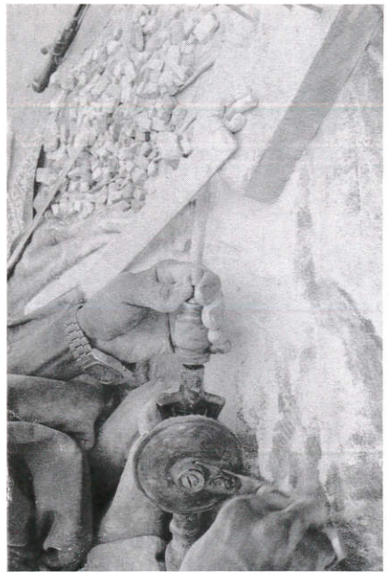


Fig. 33

Fig. 34



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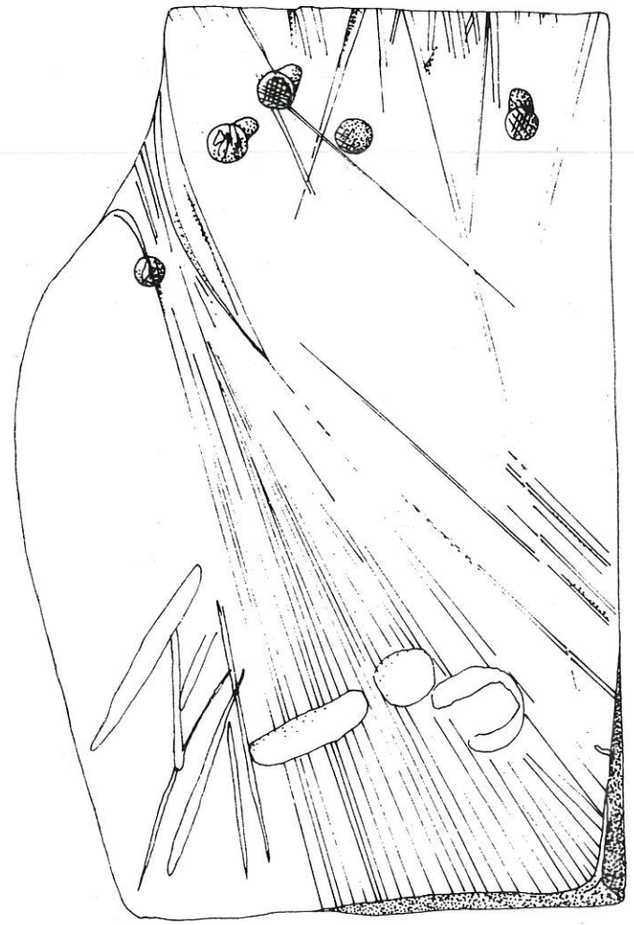

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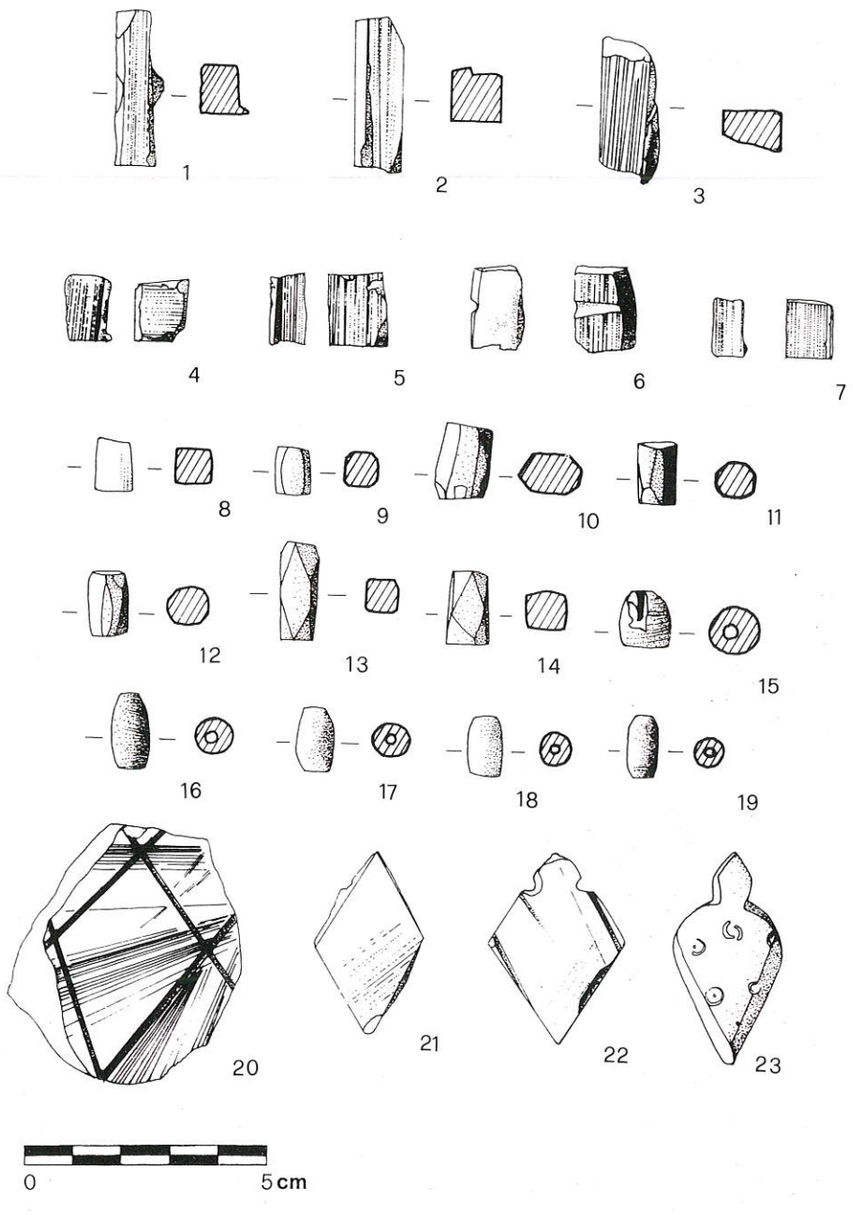

Fig. 36