



<https://publications.dainst.org>

iDAI.publications

DIGITALE PUBLIKATIONEN DES
DEUTSCHEN ARCHÄOLOGISCHEN INSTITUTS

Das ist eine digitale Ausgabe von / This is a digital edition of

Petrie, Cameron

Ceramic Production and Distribution in the Late 1st and Early 2nd Millennia AD Akra, Bannu Basin, NWFP.

in: Franke-Vogt, Ute – Weisshaar, H.-J (Hrsg.), South Asian archaeology 2003: proceedings of the Seventeenth International Conference of the European Association of South Asian Archaeologists, 7–11 July 2003, Bonn 533–540.

DOI: <https://doi.org/10.34780/mvc3-3u6b>

Herausgebende Institution / Publisher:

Deutsches Archäologisches Institut

Copyright (Digital Edition) © 2022 Deutsches Archäologisches Institut

Deutsches Archäologisches Institut, Zentrale, Podbielskiallee 69–71, 14195 Berlin, Tel: +49 30 187711-0

Email: info@dainst.de | Web: <https://www.dainst.org>

Nutzungsbedingungen: Mit dem Herunterladen erkennen Sie die Nutzungsbedingungen (<https://publications.dainst.org/terms-of-use>) von iDAI.publications an. Sofern in dem Dokument nichts anderes ausdrücklich vermerkt ist, gelten folgende Nutzungsbedingungen: Die Nutzung der Inhalte ist ausschließlich privaten Nutzerinnen / Nutzern für den eigenen wissenschaftlichen und sonstigen privaten Gebrauch gestattet. Sämtliche Texte, Bilder und sonstige Inhalte in diesem Dokument unterliegen dem Schutz des Urheberrechts gemäß dem Urheberrechtsgesetz der Bundesrepublik Deutschland. Die Inhalte können von Ihnen nur dann genutzt und vervielfältigt werden, wenn Ihnen dies im Einzelfall durch den Rechteinhaber oder die Schrankenregelungen des Urheberrechts gestattet ist. Jede Art der Nutzung zu gewerblichen Zwecken ist untersagt. Zu den Möglichkeiten einer Lizenzierung von Nutzungsrechten wenden Sie sich bitte direkt an die verantwortlichen Herausgeberinnen/Herausgeber der entsprechenden Publikationsorgane oder an die Online-Redaktion des Deutschen Archäologischen Instituts (info@dainst.de). Etwaige davon abweichende Lizenzbedingungen sind im Abbildungsnachweis vermerkt.

Terms of use: By downloading you accept the terms of use (<https://publications.dainst.org/terms-of-use>) of iDAI.publications. Unless otherwise stated in the document, the following terms of use are applicable: All materials including texts, articles, images and other content contained in this document are subject to the German copyright. The contents are for personal use only and may only be reproduced or made accessible to third parties if you have gained permission from the copyright owner. Any form of commercial use is expressly prohibited. When seeking the granting of licenses of use or permission to reproduce any kind of material please contact the responsible editors of the publications or contact the Deutsches Archäologisches Institut (info@dainst.de). Any deviating terms of use are indicated in the credits.

C. A. Petrie

Ceramic Production and Distribution in the Late 1st and Early 2nd Millennia AD Akra, Bannu Basin, NWFP

INTRODUCTION

Our knowledge of the archaeology of the late 1st and early 2nd millennia AD in South Asia is limited in contrast to the relative proliferation of work that has been conducted on the Prehistoric and Early Historic periods. There have only been a limited number of excavations carried out at sites with occupation dating after AD 500, and most were carried out in the 1950's or 1960's. The deposits and materials from these previously excavated sites have been dated primarily using relative numismatic and ceramic indicators and in the process of interpretation, scholars have looked for correlates with the historic record, rather than investigating the archaeological material on its own merits. The excavations conducted by the Bannu Archaeological Project at the Hussaini Boi Ziarat Dherai (hereafter HBZD) at Akra in 2000 have provided an opportunity to investigate the production and distribution of ceramic material in the Bannu region during the late 1st and early 2nd millennia AD.

BANNU REGION – GEOGRAPHY AND HISTORY

The Bannu region lies in the borderlands between South and Central Asia. The proximity of the Kurram and Tochi Passes has meant that Bannu lay directly on the trade routes between the major Historic period cities of the Punjab, such as Tulamba and Bhira, and those of the highlands to the west, such as Gardez and Ghazni, which provided access to Kabul, Kandahar and Central and Western Asia (Verma 1978, 100–2; Thomas/Knox 1994, 94).

Preserved today across an area of c. 80 ha, the site of Akra is the largest Early and Middle Historic archaeological site in the Bannu region, and is one of only two to have been excavated (Khan et al. 2000a, 81–114; 2000b, 105–136). The extant historical records give us relatively little information about either the Bannu basin or Akra. The Chinese Buddhist pilgrims Faxian and Xuan-

zang visited this region, and both refer to it as a kingdom in its own right (*Poh-nā* – Legge 1886, ch. XV, 40–1; *Fa-la-na* – Beal 1906, II, 281–2). Xuanzang noted that the Bannu region was under the overall control of the king of Kapisa in the Kabul Valley, but his descriptions of the other kingdoms controlled by Kapisa emphasise that the areas to the north of Bannu around Peshawar, and those of the Punjab to the east had a flourishing Buddhist heritage (e.g. Beal 1906, I, 116–8; II, 283–5). While Xuanzang observed the co-existence of Buddhist and Hindu practitioners in *Fa-la-na*, thus far no Buddhist monuments have been identified (Khan et al. 2000a, 49), and the discovery of Hindu sculptures at Wanda Shehab Khel (Khan 1992, 1993), and the proximity of the Hindu temple complexes of Kafir Kot (Cunningham 1871, 72; Stein 1905, 6) suggests that the region had an important Hindu heritage in the later 1st millennium AD. Therefore, there may have been socio-cultural differences between the regions of northwest South Asia at this time.

The Bannu region was one of two areas of South Asia to be invaded by the Muslim forces during the 7th century AD (*Futūh-al-Buldān* – Rashid 1963, 28–9; Fatimi 1963, 37–8). Although this initial thrust was unsuccessful, it marked the beginning of four centuries of direct and indirect conflict between the areas of Hindu/Buddhist control to the east, and the regions controlled by the Muslim governors of the Caliph to the west. The relevant historical records suggest that the Bannu region would have been a component of both the Turki-Shahi and Hindu-Shahi kingdoms and this is supported by numismatic finds (Khan et al. 2000a, 23), but we know very little about the political organisation of these kingdoms.

The 10th century AD saw the rise of a dynasty of kings in the city of Ghazni, to the west of Bannu. First Subuktigin, and then his son Mahmud of Ghazni set about crushing the armies of the Hindu Shahi kings. There is a historical reference to Mahmud's capture of many forts on the frontier around AD 1000 (Gardizi, 175; Rehman 1979,

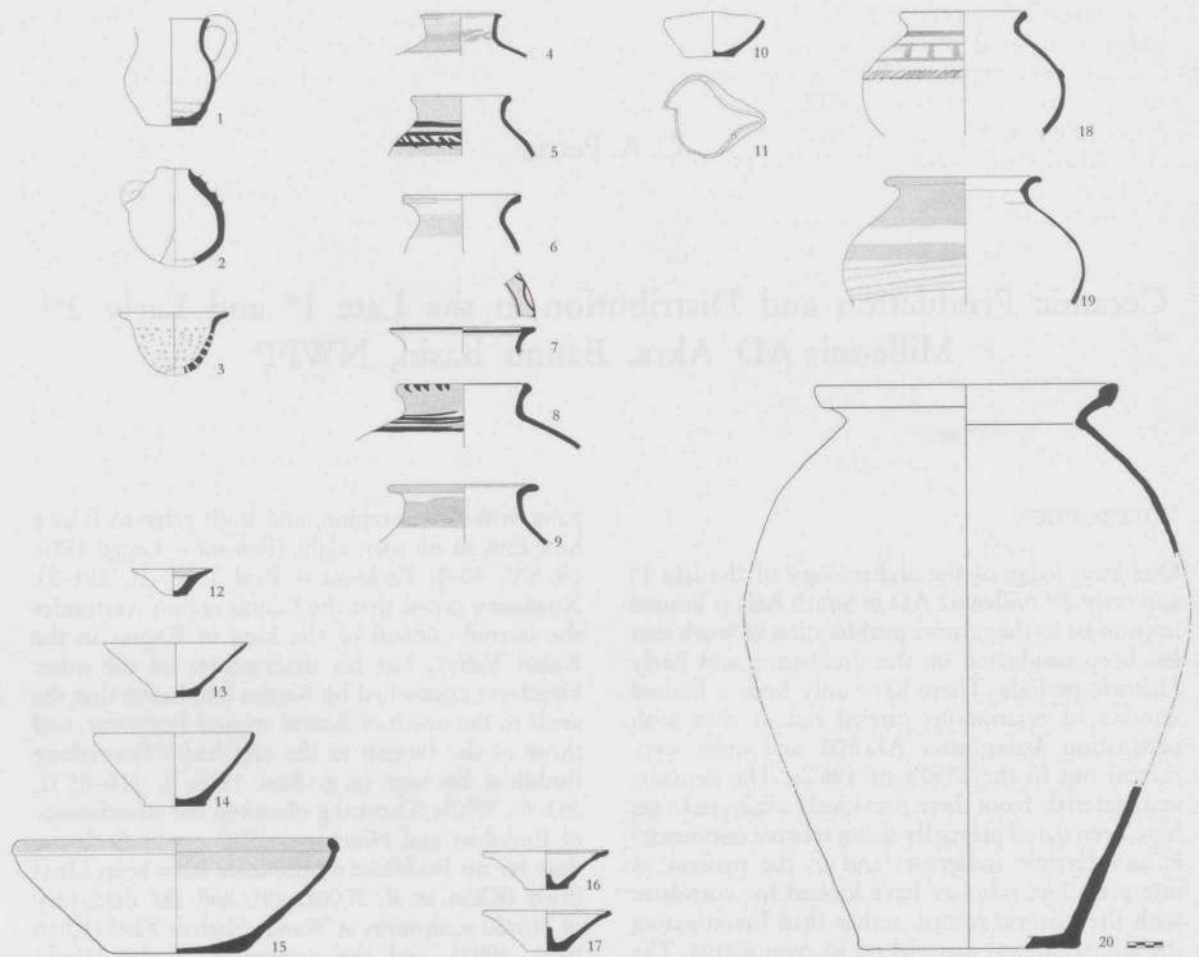


Fig. 1. Locally made HBZD assemblage, showing typical open and closed shapes.

141), and traditionally it has been proposed that the site of Akra was destroyed, abandoned or both at this time (e. g. Gazetteer 1883–4, 26; Khan, S. M. 1894, 266; Stein 1905, 9). However, the historical evidence is less than convincing. Irrespective of whether or not Mahmud destroyed Akra, it is likely that the region was subdued by AD 1004, as Mahmud used the Kurram pass in that year in order to campaign into the Punjab (Verma 1978, 122). The discovery of Ghaznavid and later period coins on the surface at Akra suggest that the site may not have been abandoned (Khan et al. 2000a, no. 17).

HBZD EXCAVATIONS

Excavations were commenced at Akra in 1996, and four seasons of excavation and survey have been undertaken (see Khan et al. 2000a, 101–127; 2000b, 105–136). The excavations carried out on the HBZD mound in 2000 revealed evidence for two major architectural phases. The initial phase comprises a 5 m-diameter bastion and 1.5 m wide wall,

both made using river stones and mud, and the second phase, a rebuild of the wall and the construction of a series of mudbrick structures in the interior of the enclosure. Between these two structural phases, a phase represented by a sealed pit filled ceramic vessels was exposed (Khan et al. 2000b, 109–110; Petrie 2002).

CHRONOLOGY

These structures and the associated deposits have been dated by six AMS radiocarbon determinations, which have been used in co-ordination with numismatic and relative ceramic indicators. The probability ranges of the AMS determinations suggest that the HBZD occupation falls within a date range between AD 980 and 1200 (Petrie 2002). There are a number of sites with occupation that have been dated to this period using either relative ceramic indicators or the small number of coins discovered in association with the stratified deposits. These include the Bala Hissar at Chārsada (upper phases), Damkoç (period V), Bir-koç-

ghwandai (period IX) and Tulamba (period III). In addition, the recalibration of a solitary radiocarbon date suggests that Sarai Khola period IV may also have been contemporaneous. Interestingly, the major Ghaznavid phases of occupation identified at Lashkari Bazar (Gardin 1963, 133–137) also fall within the probability range for the HBZD radiocarbon samples.

HBZD CERAMICS

The systematic analysis of the ceramics from the HBZD that has been conducted aimed to characterise the assemblage, and to gain some perspective about the organisation of production and distribution of the material, providing insight into the socio-economic context of the Bannu basin in this period (Petrie 2002).

In the initial instance, the assemblage was categorised according to a morphological typology, and statistical measures were used to establish the range of variation in the size of the rims of each vessel type. Following this, petrographic and compositional analyses were also carried out to characterise the raw materials that were used, and the production and distribution processes that were evident. In all, 5376 diagnostic ceramic fragments were registered, and measurements of their extant proportions indicate that at least 314 open vessels and 104 closed vessels were recovered. Many of these forms are typologically similar to forms present in other contemporaneous assemblages, but there are specific a number of morphological differences in vessel form and decoration.

Open vessels (fig. 1)

The most abundant vessel type was the bowl with simple everted rim. There were 1469 fragments of this vessel type, and while only 7 complete vessels were recovered, there were 288 base fragments preserved to more than 180°. This is the most easily recognisable type fossil in the assemblages from the other sites in the Peshawar region, the Punjab, and even as far to the east as the Ganges Valley¹. Callieri has identified this as a Hindu-Shahi bowl form, which he dates to the Hindu-Shahi and Early Muslim periods (Callieri 1990, 688–689, fig. 11.4), and it has been suggested that it was disposable (Khan, pers. comm.). However, there have been no previous attempts to say anything further about the production of these vessels.

An analysis of the dimensions of the HBZD material showed that they are highly standardised. They all show signs of having been thrown quickly and string-cut from the wheel, suggesting that they were mass-produced and “thrown from the hump”. In many cases little care was taken in their production, and tears made in the vessel wall during the throwing process were roughly repaired

before the vessel was sent for firing. There also appears to have been little care with the firing process, with many vessels showing signs of spalling and an over fired green and/or purple fabric. It is possible that this type was designed to be a one-use item that was easily disposed, and this is reinforced by the fact that the sealed pit exposed between the two structural phases contained 65 of these bowls. Their use may have been subject to Hindu concepts of contamination, and it is possible that they were made to be used once and then discarded.

The other open shapes show a lower degree of standardisation and mass production. The examples of the large bowl with thickened rim are much more irregular in their dimensions and also in the precise details of the rim morphology. Similar types of large bowls are known from Peshawar and the Punjab².

Closed Vessels (fig. 1)

The closed vessel types recovered from the HBZD deposits are not a-typical for storage vessels, and they are similar to types from other South Asian sites. The most common jar form has a rounded projecting rim and a noticeable carination at the narrowest point of the aperture (Jar Type A). A similar vessel type without the interior carination was also common (Jar Type E). Morphologically, these vessel forms have parallels at Chārsada, Damkoṭ, and Tulamba³. Jars with a rounded and slightly bilaterally projecting rim, and a groove that runs around the inner lip of the rim (Jar Type B) are similar to vessels from Damkoṭ and Tulamba⁴. Vessels with virtually identical rims are commonly used today in the Bannu region for storing and carrying water. Jars with an upright neck and a very distinctive projecting rim (Jar Type C) are similar to examples from Chārsada, and Tulamba⁵, but are not reported from either Damkoṭ or Bir-koṭ-ghwandai. There was only one type of large storage jar found in the HBZD deposits (Jar Type J), with a complex bilateral projecting rim and a noticeable out-flaring neck, which extends from the shoulder of the vessel. This vessel has only one rim type, which appears in different diameters, and is morphologically different to the large jar forms from Chārsada, Damkoṭ

¹ e. g. Wheeler 1962 figs. 36–38; Mughal 1967, 27, 90–91, 94–95; Ghosh/Panigrahi 1946, 50.

² e. g. Rahman 1968–9, 212 fig. 38 no. 396; Mughal 1967 no. 17: 20.

³ e. g. Wheeler 1962 figs. 37, 38 nos. 342, 343, 350; Rahman 1968–9, 211 no. 363; Mughal 1967 nos. 21, 4, 8; 22, 4, 5, 7, 22.

⁴ Rahman 1968–9, 211 nos. 366, 367, 370; Mughal 1967, 90 fig. 28 no. 23.

⁵ Wheeler 1962 fig. 36 no. 28: 19 nos. 327, 330; Mughal 1967.



Fig. 2. Examples of wet clay slurry and intentionally scraped applied sand.

and Sarai Khola. The smaller jar types in particular appear to have been made to standard sizes.

THE HBZD ASSEMBLAGE AND EVIDENCE OF CERAMIC PRODUCTION AND DISTRIBUTION

When the evidence for the stratigraphy and the chronology of the HBZD deposits is taken into account it is apparent that the ceramic material represents a homogenous assemblage, comprised of a number of bowl types made in different sizes, and a range of jar types with differential rim, aperture and girth sizes, and other less common forms. It is likely that the bowl with simple everted rim and a number of the jar types were the result of specialised production, and show indications of having been produced in standardised dimensions. It is however, notable that there is considerable variety in the rim morphology for individual jar types. This may well be the result of non-centralised production.

Petrographic mineralogical and compositional analysis showed that four major fabrics and three minor fabrics made from locally available raw materials appear with some frequency in the assemblage. Each of the major fabrics was used to manufacture different forms, and individual forms were produced in different fabrics, although not all of the fabrics were used to produce all of the types. The mineralogical differences between the major and minor fabric groups appear to represent the use of distinct clay preparation techniques, which in turn are likely to be indicative of multiple production events. However, the differences in the mineralogy between each of the major and minor fabrics are not decisive enough to indicate whether they reflect variation in the fabrics produced by one production community, or whether each fabric group was the product of a different production community. The elemental analysis, however, has shown that there are two distinct compositional groupings within the major and minor fabric groups. This suggests that two distinct raw material source areas were being exploited to manufacture most of the HBZD ceramics. Although the

likely distance between these source areas cannot be demonstrated, the research of Arnold/Neff/Glascock (2000) has shown that these sources might have been more than 3 kms apart. Distinct production communities may have been using the material from different source areas, or pottery from one production community may have exploited more than one source area.

When they visited the Bannu region in the 1960's, Rye and Evans noted that individual potters were working independently in dispersed locations, but that they were operating as part of a regional distribution system, where the capital city was acting as a collection and redistribution centre for material made throughout the basin (Rye/Evans 1976, 43). It is possible to speculate that a similar system was in operation in the Bannu basin in the 10th–12th centuries AD, where ceramics were being produced from raw materials collected in distinct resource areas, and were then being transported to a central place such as Akra, before being either consumed there or redistributed.

Distinctive Ceramic Decoration (fig. 2)

The HBZD material appears to have distinctive types of surface decoration. The diagnostic rim and body fragments of most of the large bowls and storage vessels typically display red and/or black painted bands, which often have elaborate designs located inside banded registers, and also include banded, looped or tooth motifs on the vessel rims. There are also a number of examples of applied surface finishes, including:

- Scalloping visible around the neck of a number of vessels.
- Wet clay slurry either left as is, or scraped to provide a decorative patterning.
- The application of a layer of sand that was intentionally scraped into regular patterns.

The variety in painted decoration and surface finishes attested on the fragments from the HBZD deposits is not paralleled at Chārsada or other sites

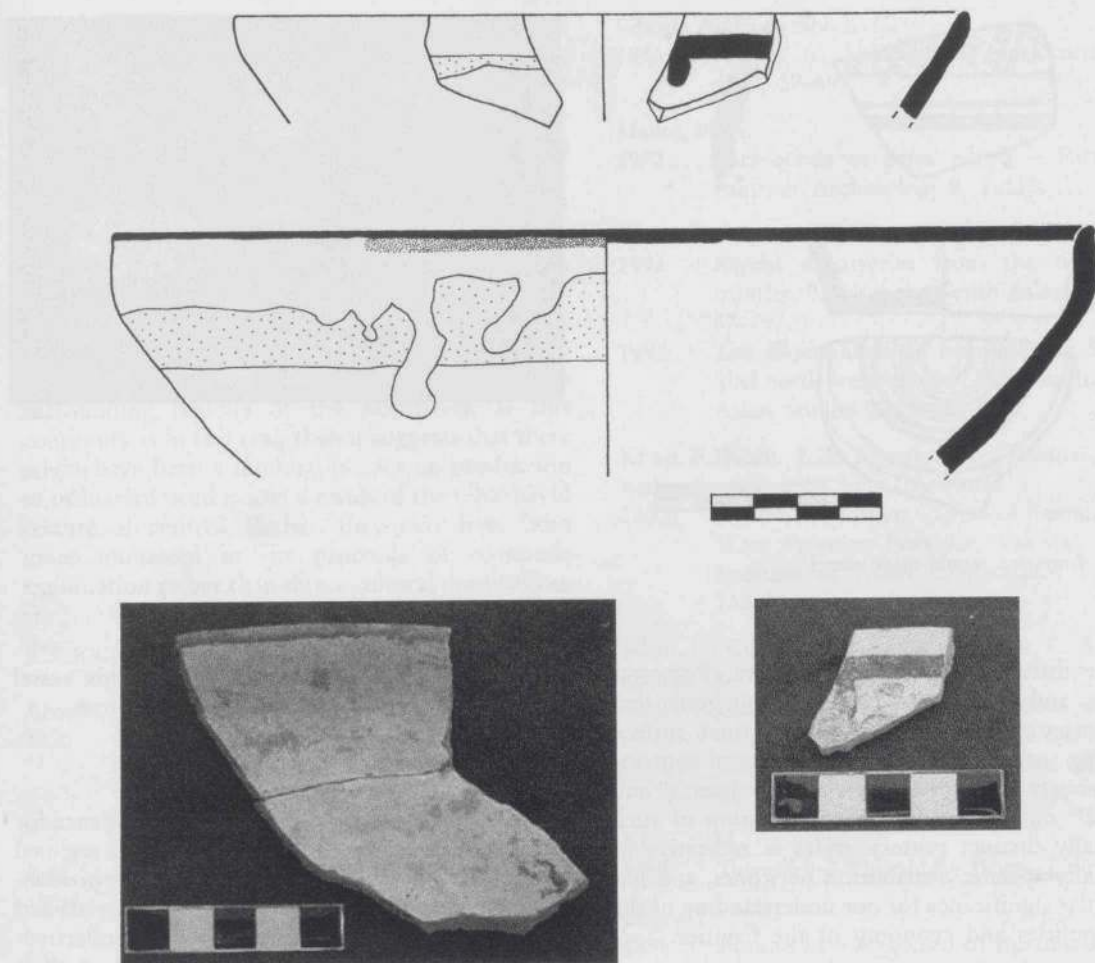


Fig. 3. Imported Glaze slip-painted vessel.

in the Peshawar region. Wheeler noted that simple black and white horizontal bands appeared in Bala Hissar layers 1-6 (Wheeler 1962, 80-85). Excavations at Damkoṭ also revealed sherds decorated with alternating bands in white (Rahman 1968-9, 119), black and white bands were also found at Bir-koṭ-ghwandai (Callieri 1990, 689), and white painted bands on storage jars are present at Sarai Khola, show that this decoration was also present in the Taxila Valley (Halim 1972, 101). Callieri has suggested that white and black painted decoration might act as a distinctive marker for Historic Period painted pottery from Chārsada and the greater Peshawar Valley, and proposed that it be considered the key-ware of the period (Callieri 1990, 689). It is notable that only one vessel that could be described as having buff-white decoration was found in the HBZD deposits. The motifs and colours used on the HBZD example are also different to the white painted vessels from the north, and the absence of vessels with white and black painted decoration at Akra suggests that they were neither manufactured in nor imported into

the basin. Of the distinctive surface decoration types, "muddy bands" below the shoulder have only been described at Sarai Khola (Halim 1972, 104, 108 fig. 31 no. 228).

Tulamba is the only major Middle Historic period site to have been excavated in the Punjab. Mughal noted that the painted pottery included parallel bands, triangles, loops, crosshatching and zigzag lines, which were commonly painted in black paint, applied over a red slip (Mughal 1967, 89). There are some motifs at Tulamba that are similar to some of those seen at Akra, but the colours used at the two sites are different. In addition to the painted pottery, Mughal also defined "Tulamba Stamped Ware", which displays a variety of stamped designs, consisting of volutes, squares, diamonds, wheels, circles, eyes, ducks, human faces and elliptical and wavy designs. "Tulamba Stamped Ware" also appears in combination with black paint on a red slip (Mughal 1967, 89-91), and although it is so distinctively visible in the Multan/Tulamba area, there were no examples found at Akra.

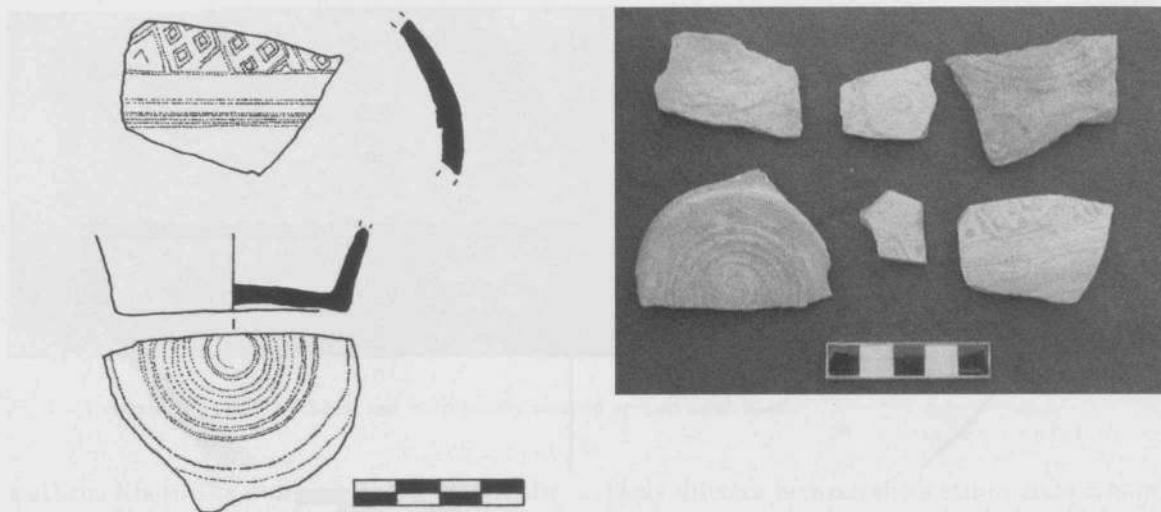


Fig. 4. Imported mould-made vessel.

The differences between the Akra, Peshawar Valley, and Tulamba assemblages suggests that there were distinct colours and distinct surface finishing techniques that were being used contemporaneously to decorate vessels in the later 1st and early 2nd millennia AD. The distribution of such regionally distinct pottery styles is indicative of regionally specific distribution networks, and has particular significance for our understanding of the socio-politics and economy of the frontier.

Imported Ceramic Vessels (figs. 3–4)

While there does not appear to have been extensive trade in utilitarian ceramics between the regions of the frontier, there is certainly evidence that there was importation of specific types of ceramic vessels from outside into the Bannu region. Fragments of two glazed slip-painted bowls were recovered from the HBZD deposits (see fig. 3), which have parallels from both Lashkari Bāzār and Nishapur dating to the 10th–11th centuries AD (Gardin 1963, pls. II, XIII; Morgan 1994b, 88–105). The petrography of the fabric used to make these vessels bears similarities to that of ceramic vessels from Nishapur (Mason 1995, 313), and it is notable that this type of glazed ware has only been found at urban centres (Morgan 1994a, 55).

Six fragments of a mould-made vessel with raised decoration were also recovered (see fig. 4). The base displays raised concentric circles, the three fragments at the top display a register of smaller circles, while the two other fragments display large diamonds containing four smaller diamonds. This is reminiscent of a number of the decorative motifs seen on vessels produced at Lashkari Bāzār (e. g. Gardin 1963, pls. V no. 33, VI no. 41). The fabric of the HBZD vessel is unique in the assemblage and bears no similarity to the

other fabrics, making it possible that this vessel originally came from southern Afghanistan.

Ceramic Production and Regionality

The HBZD ceramic material provides evidence for organised production and distribution in a regional framework, involving different workshops producing standard forms using distinct raw materials and preparation practices. When it is viewed collectively, the HBZD assemblage has no direct parallels anywhere else in South Asia. A number of the forms bear similarities to vessels excavated at Chārsada, Damkot, Bir-koṭ-ghwaṇḍai, Sarai Khola and Tulamba, suggesting that there are broad similarities in the vessel types that were being used contemporaneously with the HBZD material in other areas. However, there were regionally distinct varieties in form and most particularly in the decorative styles that were being used.

The fact that there are distinctive decorative styles being used in different regions is significant, and might be attributed to a number of socio-political and economic factors that were in operation from the mid-1st millennium AD onwards in the NWFP and the Punjab. Although any conclusions are constrained by the small number of sites that have been excavated, it is noteworthy that this distribution of material relates to specific geographical areas, and also to the distribution of a number of the regional kingdoms that are attested in the historical record. This suggests that political boundaries are reflected in the material culture. This trend appears first in the later prehistoric period, and continues through the Early Historic to the Middle Historic period. This indicates that these regional differences in material might also reflect the existence of ethnic differences between the populations of these regions.

Beyond the fact that these regional kingdoms existed in the late 1st and early 2nd millennia AD, very little was previously known about the way that they were manifested, or precisely how they related to the central authority of the numerous empires that controlled them. Mughal had previously suggested that there was a lack of Muslim impact on the indigenous culture of the Tulamba region in the 8th and 11th centuries AD. Similarly, the HBZD assemblage seems to indicate a degree of continuity in the ceramic forms from the past, as it displays similar shapes to those that have been dated to the 9th and 10th centuries AD in the surrounding regions of the northwest. If this continuity is in fact real, then it suggests that there might have been a minimal impact on production of utilitarian products as a result of the Ghaznavid seizure of control. Rather, they may have been more interested in the proceeds of economic exploitation rather than direct cultural domination.

BIBLIOGRAPHY

- Arnold, D. E./Neff, H./Glascock, M. D.
2000 Testing assumptions of Neutron Activation Analysis: communities, workshops and paste preparation in Yucatán, Mexico. In: *Archaeometry* 42/2, 301–316.
- Beal, S.
1906 *Si-yu-ki – Buddhist records of the western world: translated from the Chinese of Hiuen Tsiang (A.D. 629)*. London.
- Callieri, P.
1990 Archaeological activities at Bir-kot-ghwandai, Swat: a contribution to the study of pottery of historic age from the NWFP. In: Taddei, M. (ed), *South Asian Archaeology 1987*. Rome, 675–692.
- Cunningham, A.
1871 *The Ancient Geography of India, I: the Buddhist Period, including the campaigns of Alexander, and the travels of Hwen-Thsang*. Delhi.
- Fatimi, S. Q.
1963 First Muslim invasion of the N.W. Frontier of the Indo-Pakistan Subcontinent 44 AH (AD 664–5). In: *Journal of the Asiatic Society of Pakistan*, vol. VIII/1 (June), 37–45.
- Gardin, J.-C.
1963 *Lashkari Bazar: une résidence royale Ghaznévide, II les Trouvailles, Céramiques et Monnaies de Lashkari Bazar et de Bust*. Paris.
- Gazetteer of the Bannu District
1883–84 Punjab Government, reprinted. Lahore.
- Ghosh, A./Panigrahi, K. C.
1946 Pottery of Ahichchhatra. In: *Ancient India* 1, 37–59.
- Halim, M. A.
1972 Excavations at Sarai Khola – Part 2. In: *Pakistan Archaeology* 8, 1–112.
- Khan, F.
1992 Recent discoveries from the north-west frontier, Pakistan. In: *South Asian Studies* 8, 67–79.
1993 The Ekamukhalinga from Wanda Shahab-khel north west frontier, Pakistan. In: *South Asian Studies* 9, 87–91.
- Khan, F./Knox, J. R./Magee, P. G./Thomas, K. D., with a contribution by C. A. Petrie
2000a Akra: The Ancient Capital of Bannu, North West Frontier Province, Pakistan. *Taxila Institute of Asian Civilisations, Pakistan*, 132–135.
- Khan, F./Knox, J. R./Magee, P./Petrie, C. A./Thomas, K. D.
2000b Preliminary report on the fourth season of excavation at Akra, North-West Frontier Province, Pakistan. In: *Journal of Asian Civilisations* XXIII (2), 105–136.
- Khan, S. M.
1894 *Tawarikh-e-Khurshid-e-Jahan*. Lahore.
- Legge, J.
1886 *Fo-kuo-ki – A Record of Buddhistic Kingdoms*. Delhi.
- Mason, R. B.
1995 Criteria for the petrographic characterisation of stonepaste ceramics. In: *Archaeometry* 37, 307–321.
- Morgan, P.
1994a Samanid pottery. Types and techniques. In: Grube, E. J./Bayani, M./Kennet, D./Morgan, P./Nassar, N./Northedge, A./Tonghini, C., *Cobalt and Lustre: the first centuries of Islamic pottery*. London, 55–113.
1994b Sgraffiato. Types and Distribution. In: Grube, E. J./Bayani, M./Kennet, D./Morgan, P./Nassar, N./Northedge, A./Tonghini, C., *Cobalt and Lustre: the first centuries of Islamic pottery*. London, 119–133.
- Mughal, M. R.
1967 Excavations at Tulamba, West Pakistan. In: *Pakistan Archaeology* 4, 11–152.
- Petrie, C. A.
2002 Regional economy in the late 1st and early 2nd millennia AD: – Akra, NWFP, Pakistan. Unpublished PhD Thesis, University of Sydney.

- Rahman, A.
1968-69 Excavation at Damkot. In: *Ancient Pakistan IV*, 103-250.
- Rashid, K. A.
1963 The First Muslim Invasion of the Indo-Pakistan Subcontinent 44 AH/AD 664-5. In: *Journal of the Asiatic Society of Pakistan VIII (2) (December)*, 25-32.
- Rehman, A.
1979 The last two dynasties of the Śāhis: an analysis of their history, archaeology, coinage and palaeography. Islamabad.
- Rye, O. S./Evans, C.
1976 Traditional pottery techniques of Pakistan: field and laboratory studies. *Smithsonian Contributions to Anthropology no. 21*. Washington D.C.
- Stein, M. A.
1905 Report of archaeological survey work in the North-West Frontier Province and Baluchistan, for the period from January 2nd, 1904 to March 31, 1905. Peshawar.
- Thomas, K. D./Knox, J. R.
1994 Routes of passage: later pre-historic settlement and exploitation of a frontier region in north-western Pakistan. In: *Bulletin of the Institute of Archaeology, University College London*, no. 31, 89-104.
- Verma, H. C.
1978 Medieval routes to India: Baghdad to Delhi. A study of trade and military routes. Calcutta.
- Wheeler, R. E. M.
1962 Chārsada: a metropolis of the North West Frontier. London.