Research Article

Coline Lefrancq, Jason D. Hawkes*

Accepting Variation and Embracing Uncertainty: Creating a Regional Pottery Typology in South Asian Archaeology

<https://doi.org/10.1515/opar-2020-0112>

received December 20, 2019; accepted July 23, 2020.

Abstract: This article presents the results of the analysis of archaeological ceramics collected during landscape surveys in the Vidarbha of Maharashtra, India; and offers the first attempt at a regional pottery typology for this area. Here, as in many other parts of South Asia, the pottery from archaeological sites have been subject to considerable scrutiny. Yet, so far approaches to their study have focussed on mainly their surface colour and feel. This has resulted in overly simplistic typologies that do not (and cannot) accommodate the full range of variation that exists within a ceramic assemblage, and so limit their value as archaeological evidence. Addressing this, we apply a *chaîne opératoire*-based approach to the analysis of a ceramic assemblage that we have been developing in this region. This results in a much more complex and detailed pottery typology than has so far been achieved. Throughout this study we also identify points of comparison with familiar parallels published elsewhere. In doing so, the resulting typology, while by no means the final word on the matter, provides a valuable and flexible resource that others working in this region and neighbouring areas can use for their own analyses and research. Moreover, in shifting the bases of categorisation and classification to the ways that pottery was made, we are able to incorporate far more of the variation that exists in the material itself. Indeed, the amount of variation can be somewhat bewildering in comparison to the standard (limiting) typological categories that populate earlier reports, and forces us to question those frameworks. Yet, we argue that it is precisely this sort of uncertainty that has to be embraced if the study of archaeological ceramics for the region of the ancient Vidarbha is going to continue to develop as a meaningful area of archaeological enquiry.

Keywords: Archaeological Ceramics, Chaîne-opératoire, Material Culture, Pottery Analysis, South Asia, Typology.

1 Introduction

This article presents the first attempt at formulating a regional pottery typology for the mid-first millennium BCE to the second millennium CE (the early historic and medieval periods) in South Asia. In doing so, it is necessarily concerned with the study of archaeological ceramics in this area. Traditionally, by which we mean for the last hundred years or so, pottery in South Asia has tended to be approached primarily with a view to dating archaeological sites. Certain pottery groups that are known to date to particular centuries or periods are used as relative measures for dating the archaeological contexts in which they are found, construct chronological sequences and determine phases of activity that took place at that site. For example, if a sherd of a recognisable ware such as Red Polished Ware that is widely perceived to date from the later centuries BCE to the early centuries CE (Pinto Orton, 1991; Rao, 1966; Subbarao, 1953) is found in a stratigraphic layer, then that layer is dated to that time frame. With the aid of that temporal marker (and ideally others) the rest of the chronological sequence is then worked out. Additionally, pots have been the means by which archaeologists have identified and defined cultural groupings across the subcontinent in pre- and proto-historic

*Corresponding author: Jason D. Hawkes, Asia Department, British Museum, Great Russell Street, WC1B 3DG, London, United Kingdom, E-mail: hawkes.jason@gmail.com

Coline Lefrancq, Institut Français de Pondichéry, 11 Saint Louis Street, Pondicherry 605001, India

periods. Here, pots that share certain distinctive features—usually visually distinct and easily recognisable surface treatments and decoration—not only provide a means for relative dating, but their distribution is also taken as a marker of the distribution of a group of people who are defined by their taste for or practice of making and using these pots.¹

So far so good. There is nothing intrinsically wrong with this; and archaeologists around the world use the evidence provided by pottery in similar ways. However, in South Asia (traditionally at least), this is where the study of archaeological ceramics usually stops. Other aspects of ceramics—the composition of the clay paste, the techniques used to shape and fire the vessel, or the function(s) of that vessel—and the range of topics they can evidence tend not to be studied. This is not to ignore or discount a number of recent studies that have begun to engage with these issues (e.g. Ceccarelli & Petrie, 2018; Ford et al., 2005; Krishnan, 2002; Magee, 2004; Miller, 1985; Sinopoli, 1999). Nor is it the case that many archaeologists in South Asia are unaware of these issues (see, for example, Chakraborty, 2018; Hawkes, 2014; Kennet, 2013; Mishra, 2008; Shaw, 2007). Yet, due to various methodological, financial, institutional and bureaucratic concerns, the primary value attached to ceramics still tends to be their use as dating tools and cultural indicators. Partly because of this, archaeologists working in South Asia continue to look for only those key types of pottery that will enable them to situate the site where they are working within a standard chronological framework.

There are many consequences, both intellectual and methodological, of continuing to make recourse to the same old standard and typologies. These have been articulated elsewhere (Hawkes, 2014; Lefrancq et al., 2019). But in general terms, a focus on key fossil types means that archaeologists tend not to examine other more generic types of pottery. These invariably account for the majority of assemblages found at sites (Kennet, 2013). This same focus has also affected the way that ceramics are recorded and analysed. Due to the fact that archaeologists are used to looking for, and relying on, easily identifiable types of ceramics that are defined on the basis of their colour, surface treatment and fabric quality, these factors have frequently become the sole criteria on which potsherds are sorted on site and subsequent typologies are based. On site, potsherds are grouped according to these three variables. Once grouped in this way, only a selection of sherds that are diagnostic of the original vessel shape (usually rims and bases) are retained, and the majority of sherds are discarded and used as backfill. Post-excavation recording of the ceramics that have been retained employs the same criteria, and resulting reports are then full of references to ‘Coarse Red Wares’, ‘Fine Grey Wares’, ‘Black Slipped Wares’ and so on. With wares defined in this way, published details of them tend to be equally vague. This makes it virtually impossible to distinguish between, say, a ‘Plain Red Ware’ found at one site from another reported elsewhere without first hand examination of the artefacts. Ultimately, it is also difficult to rectify any of these perceived shortcomings through examination of the material that has been retained, because so much of the original variation was lost during the discard of sherds on site following initial sorting. All that we are left with in the material archives is a bias sample that only ever serves to replicate (and validate) the identifications made on site.

Over the last twenty to thirty years, there has been a slow but gradual awareness of these shortcomings, and some archaeologists have sought to question many traditional typologies and implement new approaches (Kennet et al., 2015; Lefrancq et al., 2019; Parikh & Petrie, 2015; Schenk, 2015; Shaw, 2007; Shete & Pawar, 2017). What these studies share in common is an appreciation of the need to examine ceramics in South Asia in new ways, and in doing so be more sensitive to all of the variation that is so obviously apparent within any assemblage. This is rarely a comfortable prospect, for as soon as we admit the possibility that there may be lots of variation in the ceramic record that has not been recorded, we are also forced to admit that we have not known how best to record it. This paper explores these issues and offers a solution to this problem by testing the applicability of a *chaîne opératoire*-based approach to the study of archaeological ceramics that we have developed in one particular region of South Asia: Vidarbha, in Central India. Doing so will not only demonstrate the applicability of this methodology, but will also stimulate further discussion about how we might best approach the study of archaeological ceramics in South Asia.

2 Background

Vidarbha is a large and geographically determined region that also appears to have been culturally defined during the early to mid-first millennium CE, when it was ruled by the Vakatakas (see Bakker, 1992, 1997; Shastri, 1997). The region is defined topographically by broad alluvial plains bordered by large hill ranges to the North, East and South. These

¹ For a review of all commonly known pottery types and wares in the study of South Asian archaeology, see Ghosh (1989).

Figure 1: Map illustrating the geographical parameters of the Vidarbha region, and the location of modern cities for reference.

plains are irrigated by a number of rivers, chief among which are the Wainganga and its major tributaries, the Wardha, Kanhan and Painganga (Fig. 1). Geologically, the entire region lies within the Deccan Traps—an igneous province of flood basalt—with large areas of lateritic rock and clay soils covering residual hills and river basins. The region has been surveyed extensively, and a number of sites have been excavated over the last few decades, most of which date to the earlier Iron Age and ‘early historic’ periods (Hawkes & Casile, 2020; Mohanty & Thakuria, 2014).² However, few investigations have been published in detail, and those that are do not provide details of the pottery from each site. Nor have there been very many attempts to compare the ceramics found at different sites. Those that have done so have focussed on the ceramics from early periods (e.g. Deo, 1973; Shete & Pawar, 2017) and ignored those from later periods. As such, and for all of the reasons mentioned above, we have a very limited understanding of the ceramics that exist across the region; and because of the bias towards the study of early periods, we are unable to date sites found during survey with much confidence beyond the late first millennium BCE.

Addressing this, we have examined the pottery that was collected during landscape surveys of different parts of the region, and sought to analyse them in new ways. Surveys were carried out as part of a wider project investigating the wider longer term societal and cultural change in region (Hawkes et al., 2016, 2020b). They took place in three

² The periodisation of South Asia’s past uses a number of terms that are unique to the region and are defined on the basis of both cultural and technological changes. While there is a great deal of regional variation within South Asia, in general terms an Iron Age (marked by the appearance of iron production) is deemed to begin at some point between the early-second and early-first millennium BCE; and an early historic period (marked by the first appearance of writing, and often synonymous with the development of urbanism) is deemed to commence during the mid-first millennium BCE. For recent surveys of South Asian archaeology, see Chakrabarti (2006) and Coningham and Young (2015). For further discussion of the periodisation of South Asia’s past, see Singh (2004).

Figure 2: Map of Vidarbha illustrating the locations of survey zones and excavated sites that have provided comparative material.

areas in different parts of the region. Two, centred on the well-known early historic settlements at Mandhal and Pauni, were in neighbouring zones that at various times appear to have been key areas of economic specialisation, religious institutions and political rule. While the other zone, centred on the site of Chamak to the west of the region, was selected in order to test whether trends identified in the presumed core area of urbanism were the same elsewhere in the region (see Fig 2). The full details and results of these surveys are published separately (Hawkes et al., 2020b). Yet, in brief, surveys resulted in the discovery of 269 sites in these three areas. The nature of these sites varied. Some were defined by displaced sculptural remains or extant monuments. For the most part they were defined by scatters of archaeological artefacts on the surface of agricultural land, outside or on the peripheries of modern villages. In a few instances, archaeological sites were identified within modern habitations, these were indicated by distinct habitation mounds with archaeological remains visible in exposures or trenches dug for modern construction. While other sites were defined on the basis of the presence of extant monumental remains, or isolated sculptures or inscriptions that appear to have been displaced from their original contexts. Wherever possible, pottery was collected systematically from each site. In practice, this meant that at sites defined by surface scatters, pottery was collected from the centre of the visible scatter within a 10x10m grid. For further details of the survey methodology employed, see Hawkes et al. (2020b). In total, 10,119 potsherds from 134 sites in 3 survey zones were collected for analyses (Table 1).

Table 1: Total counts and weights of potsherds collected during surface surveys in each survey zone.

Survey zone	Total potsherds	Total individual vessels (MNI)	Total weight (g)
Mandhal zone	4555	1883	85763.28
Pauni zone	2666	1186	48223.41
Chamak zone	2898	1555	69200.00
TOTAL	10119	4624	203186.69

3 Aims and Methods

The pottery collected from sites in our survey areas was analysed using a *chaîne opératoire*-based approach. This was informed by wider scholarship on ceramic manufacturing and production techniques (e.g. Choksi, 1998; Degoy, 2005; Gosselain, 2002; Kramer, 1997; Lemonnier, 1993; Livingstone Smith, 2001; Mahias, 1993; Orton et al., 1993; Roux, 2019; Rye & Evans, 1976); and built on a methodology that was recently piloted in the analysis of excavated assemblage from Mahurjhari in Vidarbha (Lefrancq et al., 2019). In using this approach, our aims were to develop a solid foundation for a regional pottery typology that accommodates all of the variation that exists in the pottery remains, and that would enable us to date the sites where they were found.

In having already been trialled on the study of an excavated assemblage, many details of this methodology have been published elsewhere (Lefrancq et al., 2019; Lefrancq & Hawkes, 2019a, 2019b). It is not the intention to repeat all of these details here. But in brief, what underlies this approach is the concept that every stage of pottery production leaves a trace that can be recorded, and that these signatures constitute a more meaningful basis on which to classify pots than just their colour and feel. These do not, on their own, necessarily mean very much in terms of the people that made and used them. In practical terms, this methodology consists of first recording these traces of the manufacturing process that are visible on the potsherds (with the naked eye and use of a x10 hand lens). These are recorded in the order of the different stages of their manufacture. These stages are the selection and preparation of the clay, the shaping of the vessel, the finishing and treatment of the surfaces, and the firing of the vessel. For a full and complete list of all of the variables recorded for each potsherd, together with the values used, see Lefrancq et al. (2019). Following this, the potsherds are then physically spread out across a large surface and grouped together on the basis of shared manufacturing traces. These groupings are made in broad accordance with the same hierarchical order of the manufacturing stages, with potsherds first grouped on the basis of the composition of the clay paste and the methods that were used to process it. These define our ‘Fabric Groups’. Subsequently, they are grouped on the basis of the shaping techniques, surface treatments and firing methods in order to define different ‘Classes’ of pottery. Importantly, classes of pottery defined in this way can encompass a number of different fabric groups. This is because we recognise that potters may have utilised various different fabrics when making any one particular class of pottery, and equally that they may have made different classes of pottery with a single type of fabric. Any variation that might be visible within a group of potsherds that are noted to be manufactured in the same way, but that are (perhaps) decorated using different techniques is accommodated and expressed by defining those differences as ‘variants’ within a wider class. According to this logic, our classes of pottery are defined according to the entire *chaîne opératoire* and not only on the basis of one criteria or visual characteristics such as the colour of surfaces or the texture of the paste.

It is worth noting at this point that in using this method for the analysis of pottery collected from surface surveys it did have to be adapted slightly from its original application in the analysis of excavated assemblages. When applied to excavated material it was possible to define variants within a class (hereafter ‘class-variants’) on a strictly hierarchical basis, with the initial stages of the manufacturing process being used to define the class, and variants defined on the basis of secondary or tertiary stages of decorative techniques and/or the firing environment. However, due to the incomplete nature of our survey assemblage it was often not possible to rebuild the entire manufacturing process, especially the stage of vessel-shaping. In addition, the state of preservation of the potsherds—if of small size or with eroded surfaces—can affect the classification. In such conditions, we have decided to group the sherds into classes based on the texture of the clay, the identification of temper, the shaping technique(s) when possible and, depending

on the classes, the decorative technique(s) and the firing atmosphere that were used. The last two criteria have been sometimes used to create variants of classes. In paying attention to those characteristics, we tried to understand the variations within each site from a chronological (dates of occupation) and social (choices made by the potters) points of view.

Once defined, classes and their variants were compared with other established pottery typologies from excavated sites in the region and beyond. For all that we are aware of the limitations of previous approaches that are expressed in these typologies, it is also recognised that there is still value in relating what we have in our regional corpus to them. This is because doing so enables us to incorporate those datasets into our emerging regional picture, and at the same time provide points of reference for those who might want to develop this work in the future. Priority was given to sites that have been dated with absolute methods such as radiocarbon dating, and then to sites that have been dated using relative measures (coins, other pottery types, and so on). Especially useful comparative assemblages were those from Mahurjhari (Lefrancq et al., 2019), which was excavated between 2002–2005 (Hunter, 1933; Deo, 1973; Mohanty, 1999, 2003, 2004, 2005, 2006; Thakuria & Mohanty, 2009; Vaidya & Mohanty, 2015), and Chachondi from where section scrapings were taken in 2015 (Hawkes et al., 2016, 2020). Both of these sites have recently benefitted from AMS dating of charcoal samples taken from archaeological contexts (Hawkes et al., 2020a; Mohanty et al., 2019). These dates enable us to use the ceramics from these sites as not only typological comparisons, but also as chronological markers. Other recently excavated sites such as Paithan (Kennet et al., 2015), Paturda and Bhon (Deotare, 2004–2005; Jadhav, 2006) have also provided reliable chrono-topologies. Insofar as possible, we have also consulted the reports of ‘emblematic’ sites with a long and continuous occupation excavated in Vidarbha such as Pauni (Deo & Joshi, 1972; Nath, 1998), Paunar (Deo & Dhavalikar, 1968) and Adam (Nath, 2016). A recent study of surface remains collected during surveys around these sites (Lacey, 2014, 2016) have also been used. Due to uncertainties surrounding the chronology of the wares identified in that study, these data have been used as an indicative corpus for the comparison of assemblages from our three survey areas (Chamak, Mandhal, Pauni), instead of a relative dating tool.

As far as possible, comparisons were made on the basis of first-hand examination. However, this was not without difficulties. In many instances, and for reasons that have been outlined above, few excavated assemblages survive and those that do are rarely complete. Consultation of the archives at the four main excavating institutions (the Archaeological Survey of India, the State Department of Archaeology and Museums, the Deccan College Postgraduate Research Institute, and Nagpur University) revealed that only approximately 29 gunny sacks full of potsherds survive from 31 sites in the region. Other than the recently excavated site at Nagardhan (Sontakke et al., 2016) (the final report for which is eagerly anticipated), the largest single archive of archaeological ceramics in region is the survey material collected by Lacey (2016) for doctoral research. Further, only two of the existing archives in repositories maintained by government departments and universities were freely accessible for comparative study. As a result, many comparisons can only be made on the basis of published reports, which also presents limitations. Descriptions in existing reports are often brief, subjective (one report’s ‘brown coloured’ pottery might easily be called a ‘buff ware’ if studied by another person), and rarely supported by photographs or illustrations. As such, it was not always possible to relate every single ceramic ware mentioned in the reports with examples from our survey assemblage.

4 Results: The Ceramic Classes and Variants

Analyses resulted in the definition of sixteen classes and fifty-four variants, details of which are provided below. In each case, we describe the fabric groups that were used to make them, explain the technical features that were used to define the classification, and list the types of vessel shapes that were made from that class. Complete descriptions of the fabric types, details and illustrations of the vessel shapes and tables containing sherd counts by site are provided separately as online datasets that can be consulted in conjunction with this article (see C.M. et al., 2020; Lefrancq & Hawkes, 2020a, 2020b). As far as the catalogue of vessel shapes is concerned, we have decided to employ a continuous numbering system that follows the succession of classes. The reasons for this and, for that matter, the continuous naming system that we have employed for our classes and fabric groups, have to do with the fact that our assemblage comprises material collected from widely different areas and the foundational nature of pottery studies in this region. Such are the typological lacunae and (likely) differences in ceramic material from different areas, we decided that it

made sense to account for and preserve as much variation in our typology as possible. When it can be demonstrated that certain fabric groups, classes of pottery or types of vessel shape can be merged and grouped together in consistently repeatable ways, then it will be easier to do so at that point rather than constantly having to re-divide and re-classify groups that have been merged in error.

Following the descriptions of each class and its variants, we also present and discuss the comparisons that have been made between them and published examples from excavated material elsewhere in the region. A tentative chronology of the classes defined in this study then follows their description.

4.1 Class 1

This class of pottery was made predominantly using fabric groups 1a–c and 2a (C.M. et al., 2020, pp. 2–3). The paste is fine to medium in texture and hard. Very small irregularities can be felt by touching the surface. When this class of pottery was used to make vessels with unrestricted (or ‘open’) shapes, some rim sherds exhibit clear join marks between the rim—made with the rotary kinetic energy (RKE) of a heavy and fast wheel, or a coil and the use of a slow wheel—and the shoulder of the pot. This indicates that pots of this class were made with a minimum of two shaping techniques, but it is difficult to say more than this at the moment. The surfaces of all sherds have been slightly polished. Two variants have been defined on the basis of surface finishing and decorative techniques. They all have been fired in an oxidising atmosphere. Sometimes the firing was not well achieved, which has led to a darker core.

In terms of vessel forms, we note a small number of bowls with a thinned and slightly inverted rim (type 1) and plates with a thick rim (type 2). In addition to these, the shapes of this class encompass mainly: jars with an externally flattened rim (type 3); necked jars with an externally flattened rim (type 4); necked jars with a thick and slightly elongated rim (type 5); necked jars with a thick and triangular rim (type 6); necked jars with a thick, elongated and everted rim (types 7, 8); necked jars with a thick, rectangular and slightly everted rim (type 9); necked jar with a thinned and everted rim (type 10); long-necked vessels (also known in South Asia as ‘sprinklers’) (type 11); and spouted vessels (type 12). The morphology of these long-necked jars indicates a function relating to the transport and/or pouring of liquids. The fineness of the fabric and the finishing suggests that they were used for table service or reserved for special use. For illustrations of these vessel forms, see Lefrancq and Hawkes (2020a, Plate 1, types 1 to 12).

It should be noted that for some potsherds, it is difficult to distinguish those belonging to this class from those that are attributed to Class 2 (which encompasses a variety of medium quality red wares), and Class 9 (fine red wares) due to a number of shared characteristics.

4.1.1 Class 1 Variant 1

Potsherds belonging to this class-variant display slightly eroded surfaces with very small mica specks visible on both sides. The colour of the surfaces is light pink (Munsell code 5YR-7/4 pink) (fig. 3).

4.1.2 Class 1 Variant 2

The surfaces of these sherds are less eroded than those of Class 1 variant 1, and are also characterised by the application of a red slip (10R-6/8 light red) on the external surface. Depending on the shape of the vessel, the internal surfaces can sometimes also show traces of the same red slip. Very small (<0.5mm) specks of mica are also noted on both sides (fig. 4).

4.1.3 Comparisons and Dates

Potsherds belonging to Class 1 are present in the areas surrounding Mandhal and Pauni but not in the Chamak area in the west of the region. The fineness of the clay, the presence of a variant with a red slip and the fully-oxidised firing environment have led other archaeologists to classify this ware as ‘Slipped Red Ware’ (Deo, 1967, pp. 249–286) or

Figure 3: Examples of narrow necked vessels (‘sprinklers’) identified as Class 1 variant 1.

Figure 4: External and internal surfaces of a Class 1 variant 2 necked vessel with everted rim.

‘Burnished and Slipped Red Ware’ (Kennet, 2015, pp. 133–136). In some instances, it is also easy to confuse examples of this class with those of the so-called ‘Red Polished Ware’, which constitutes Class 9 variant 1 here.

This class of pottery bears some resemblance to potsherds that have recently been defined as Class 2 variant 1 at Mahurjhari (hereafter MHR Class 2.1) (Lefrancq et al., 2019). These were also made with a fine fabric group, and date up to the eighth century CE. However, the comparison does not fit exactly. The shapes of the necked jars are similar, but as yet no sprinkler has been found in Mahurjhari. Equally, this class may correspond to examples of ‘Mica-Slipped Red Ware’ identified during earlier excavations at Mahurjhari (Deo, 1973). Details of its fabric, manufacturing techniques and surface treatment are scant, yet similarities exist in terms of vessel shapes. For instance, our vessel shape type 10 is similar to type 20A from Mahurjhari (Deo, 1973, Fig. 11, Ts. 20A) and our type 8 variant 1 is similar to its type 23 (Deo, 1973, Fig. 11, Ts. 23). The main limitation of these parallels, however, is the absence of a secure chronological framework in which to situate the results of earlier excavations at the site. The authors refer to a megalithic settlement at the site, which would indicate a broad first-millennium BCE date. Yet, their chronology is based on relative comparisons with other sites, which themselves are also dated with relative methods and is far from certain.

Broad similarities are also noted between potsherds belonging to this class, and those identified as Red Slipped Ware at Adam (Nath, 2016) Paithan (Kennet et al., 2015), Paunar (Deo & Dhavalikar, 1968) and Pauni (Deo & Joshi, 1972; Nath, 1998). However, the usefulness of this association is limited because it is impossible to distinguish much chronological variation within this ware (at least on the basis of the published reports), which is found in archaeological contexts dating from the first century BCE to the sixth century CE.

Based on these parallels, this class of pottery can be dated to the second or first century BCE to the eighth century CE. Vessel shapes allow us to refine this chronology to the first century BCE to the fourth or fifth century CE.

4.2 Class 2

This class of pottery is characterised by a paste of fine to medium texture and medium compaction and is manufactured mainly from fabric groups 2a–g and 2i (C.M. et al., 2020, pp. 3–7). The use of fabric groups 3a and 3b is also noted, but with far less frequency. Vessels belonging to this class were made with composite techniques combining the use of RKE from heavy and fast wheels for the rims, and moulds for the base and lower body. Some sherds also indicate the use of coils for some parts of the body, and the use of paddling (depending on the vessel shape) to join the different parts of the vessel together. One of the main features of this class is the presence of a red slip (10R-5/8 red, 10R-6/8 light red) on the external or internal surface depending on the shape of the vessel. Slipped surfaces are also polished. The presence of this slip makes discerning the macro-traces of the shaping process difficult. The presence of mica either as specks on the surface or in the slip is also characteristic of this class. All potsherds have been fired in an oxidising atmosphere, indicated by the colour of the fabric visible in section (10YR-8/8 yellow, 10YR-7/8 yellow, 5YR-6/8 reddish yellow). Six variants have been identified on the basis of the finishing and decorative techniques.

This class of pottery was used to make a wide variety of vessel shapes. The catalogue of shapes belonging to this class includes: plates with an elongated and everted rim (types 13, 14, 15); plates with a thicker rim (types 16, 17); plates with a thicker and slightly inverted rim (type 18, 19, 20, 21); basins with a thick and slightly inverted rim (type 22); bowls with a straight rim (type 23); bowls with a slightly inverted rim (types 24, 25); basins with a slightly thick rim and a careen on the external surface (type 26); basins with a thick and everted rim (type 28); bowls with a bifoliate rim (type 29); small cups with a bifoliate rim (type 30); pots with a straight and inverted rim (types 31, 32, 33, 34); pots with a thick and elongated rim with a ridge on the external side (type 35); pots with a very thick, round and inverted rim (types 36, 37); pots with a thick round and inverted rim (types 38 to 39); pots with a thinned and slightly everted rim (type 40); jars with an elongated, thinned and everted rim (type 41); pots with a thick and everted rim that is marked by an internal careen (type 42); pots with an elongated and complex rim (type 43); jars with a ridged rim (type 44); jars with a slightly thickened and everted rim that is marked by an external ridge (types 45, 46); necked jars with a very thick, rounded and everted rim (types 47, 48, 49); necked jars with a thin and everted rim (type 50); necked jars with a thick, externally-flattened and everted rim (type 51); necked jars with a thickened, flattened and everted rim (type 52, 53); necked jars with a thinned, elongated and slightly everted rim (types 54, 55); necked jars with a slightly thickened, elongated and everted rim with a ridge at the basis of the rim (type 56); necked jars with a slightly thickened rim that is externally-flattened and everted (type 57); necked jars with a thinned and elongated rim (type 58); necked jars with a ribbed rim

(type 59); small pots with a thinned and slightly everted rim (type 60); goblets with a thinned and slightly inverted rim (type 61); bottles with a thinned and straight rim (type 62); large jars with a very thick and slightly inverted rim (type 63); large jars with thick, round and everted rim (type 64); large jars with a thick and externally flattened rim (type 65); narrow necked jars (type 66); spouts (type 67); handles (type 68); flat bases with a slight leap between the base and the sides (type 69); and flat bases (type 70). For illustrations of these vessel forms, see Lefrancq and Hawkes (2020a, Plates 2 to 14, types 13 to 70).

Potsherds belonging to Class 1 are present in the areas surrounding Mandhal and Pauni but not in the Chamak area in the west of the region where it seems that pottery Class 14 variants 1–3 were used instead of Class 2 pots.

4.2.1 Class 2 Variant 1

Surfaces are smooth to the touch. Depending on the vessel shape, one or both surfaces are covered with a red slip (on restrictive shapes only the external surface is slipped, while both are slipped on unrestricted shapes). The slip is also soft. Very few mica specks are visible on both sides, but they are barely visible in the section. This class-variant corresponds closely to examples of MHR Class 2.1 recently identified at Mahurjhari (Lefrancq et al., 2019), which share exactly the same characteristics. At Mahurjhari, these have been dated to the fourth to the sixth and seventh centuries CE (fig. 5).

Figure 5: Examples of external and internal surfaces of Class 2 variant 1 rim sherds.

4.2.2 Class 2 Variant 2

The surfaces of Class 2 variant 2 potsherds are slightly less smooth when compared to those of Class 2 variant 1. The red slip (10R-5/8 red, 10R-6/8 light red) is still present on the external and/or internal side of the shapes but the proportion of the mica specks is higher than noted in Class 2 variant 1. A few potsherds display an impressed decoration on the

external surface of what were most likely restricted shapes. This class-variant is only evident at sites within the Mandhal survey zone. It corresponds closely to examples of MHR Class 2.3–4 that have been identified at the site of Mahurjhari (Lefrancq et al., 2019). These have been dated to the fourth to the sixth and seventh centuries CE (fig. 6).

Figure 6: External and internal surfaces of a decorated Class 2 variant 2 body sherd.

4.2.3 Class 2 Variant 3

The distinguishing feature of this class-variant is the low frequency of mica specks visible on both surfaces, and the application of a thin layer of mud slurry (5YR-6/8 reddish yellow) on the exterior surface, which gives a harsh feel to the touch. Only one bodysherd of this class-variant was identified in the corpus of Mandhal area at the site of Mandhal itself (MND01) (Hawkes et al., 2020b). The decoration applied on this class-variant has been observed at earlier excavations at the site of Mahurjhari and corresponds to MHR Class 2.6 (Lefrancq et al., 2019). This has been dated to between the fourth and the sixth or seventh centuries CE.

4.2.4 Class 2 Variant 4

The potsherds of this class-variant are characterised by smooth surfaces, a red slip (10R-5/8 red, 10R-6/8 light red) that is partly eroded, and a thin mica slip (7.5YR-8/3 pink, 10YR-8/3 very pale brown) that is applied on either the exterior or interior surface depending on the vessel shape. Impressed and incised decorations are evident on a small number of potsherds. This class-variant corresponds to MHR Class 2.2–3 identified at Mahurjhari (Lefrancq et al., 2019) (fig. 7). These date to between the fourth and sixth or seventh centuries CE.

4.2.5 Class 2 Variant 5

This class-variant comprises potsherds with smooth surfaces, a brownish-reddish slip (2.5YR-5/4 reddish brown, 5YR-6/4 light reddish brown), which looks darker than the red slip applied on the potsherds of the variants 1 to 4. Mica specks and a few mica flakes are visible on both surfaces.

Figure 7: External and internal surfaces of a decorated Class 2 variant 4 body sherd.

4.2.6 Class 2 Variant 6

This class-variant is characterised by an exclusive preference for the use of fabric groups 2c and 2f, and the application of a red slip and a medium proportion of mica specks to the outer surface of vessels (fig. 8). A red slip is also applied to the interior surface of unrestricted shapes, but only to the interior surface the rims on restricted shapes. The most distinctive feature of this class-variant is the greyish-black painted decoration (705R-5/1 reddish gray, GLEY1-3/very dark grey) that is applied on the red slip. Painted designs mainly consist of horizontal bands, groups of vertical strokes on the rim and latticed diamonds. The shapes encompass basins with a thick and slightly inverted rim (types 71 variants 1 and 2, type 72), and jars with a thick and slightly everted rim (types 73, 74). It is not always clear if a neck is present or not.

This class-variant is recorded in the archaeological literature as ‘Painted Black on Red Ware’ on the basis of the painted decoration alone, and is thus often thought of as an entirely separate ware. However, because it shares all of the other technical characteristics that define other examples of our Class 2 pottery it does not make sense to define this class-variant as a completely separate class in its own right.

4.2.7 Comparisons and Dates

As it has been noted above, potsherds defined as belonging to Class 2 variants 1–5 correspond to those recently defined as MHR Class 2.1–6/7 at Mahurjhari (Lefrancq et al., 2019), which date to between the fourth and sixth or seventh centuries CE. The vessel shapes are also similar. For comparison, see MHR Class 2.1, vessel shape types 1, 2, 5, 10 and 13; and MHR Class 2.3 (Lefrancq & Hawkes, 2019, Plates 2, 3, 6; Lefrancq et al., 2019). We can also identify similar types of carved decoration as those observed in MHR Class 2.5.

Parallels for Class 2 variants 1–5 can also be identified in other excavated assemblages. At Paithain, it appears to correspond to the group of ‘Slipped Red Ware’ and/or ‘Burnished Slipped Red Ware’ (Kennet et al., 2015, pp. 138–139). The production of both of these wares commences during Paithan period 1 (200–100 BCE), and continues to develop during the subsequent period 2 (late first century BCE to the fourth century CE). The vessel shapes of these wares at Paithan also correspond to those identified here. For comparison, see Paithan types 8, 9, 18, 25, 27, 30, 40, 43 and 47 (Kennet et al., 2015, Figs. 7.9, 7.11, 7.12, 7.13, 7.15, 7.16).

At Pauni, different kinds of Red Slipped Ware corresponding to our Class 2 variants 1–4 are recorded as dating from Pauni period 1 (sixth to fourth century BCE) to period 4 (third to sixth century CE) (Nath, 1998). However, it appears that the fabric used in the production of vessels dating to period 1 is coarse, and becomes finer in later periods. In our corpus, the fabric used to make these vessels is medium to fine in texture, and would seem to correspond most closely

Figure 8: External and internal surfaces of various Class 2 variant 6 potsherds, including one rim and five body sherds.

to examples from Pauni period 3 (first century BCE to third century CE). Carved and impressed decorations similar to those identified in our assemblage are also noted in the ‘Red Slipped Wares’ at Pauni (Nath, 1998, Fig. 19, Decorated ware, Period IV, 15, 16, 17, 18, 21, 22).

Our Class 2 variants 1–5 might also correspond to the ‘Red Slipped Ware’ described at Paunar (Deo & Dhavalikar, 1968), which dates from Paunar period 2b (first century BCE to the third century CE) and period 3 (third to eighth century CE). While at Adam (Nath, 2016), it appears to match examples of ‘Red Wares’ dating to Adam period 4 (350 to 100 BCE) and period 5 (150 BCE to 250 CE). The fabric of these wares is also medium to fine. For pots dating to Adam period 5, the authors note the presence of the same kind of carved decoration on the external surface of some sherd.

Pottery defined at Class 2 variant 6 has a number of parallels in excavated assemblages. As noted above, it is well attested at Paithan. However, here the fabric is described as being well-levigated. This is not the case for potsherds belonging to our Class 2 variant 6, which tend to be of medium coarseness and sometimes (where they are made using fabric group 2f) gritty. This difference in texture could be a chronological indicator, with our Class 2 variant 6 belonging to an earlier date.³ Unfortunately, most of the sites in Vidarbha where this sort of pottery is noted have not been radiocarbon dated. However, it would appear that the production of a painted slipped red ware with a medium quality fabric began at some point in the mid- to late-second millennium BCE and continued until the mid-first millennium BCE—what, in this region, is known as the early Iron Age (cf. Ghosh, 1989, I. p. 239; Pawar et al., 2014; Shete & Pawar, 2017). At Adam, a ‘Painted Pottery’ with black painting appears in even earlier contexts dating to Adam period 2 (1750 BCE to 1425 BCE) (Nath, 2016). In our assemblage we can identify similarities of vessel shape between our Class 2 variant 6 type 71 and examples of Black Painted Pottery type 10 dating to Adam period 2 (Nath, 2016, p. 223, Fig. 9.1, type 10). At Paunar, a Painted Black on Red Ware exists during the site’s period 1 (1000 to 800 BCE), though no similarities of vessel shape are evident. This would appear to indicate an exclusively early date for this class-variant. However, we can also identify close parallels with examples from Pauni that date to Pauni period 1 (sixth to fourth century BCE). Specifically, Class 2 variant 6 type 74 (a necked jar) is similar in all respects to Painted Pottery type 1 at Pauni (Nath, 1998, p. 28, Fig. 10, Painted pottery, Period 1, 1 and 3).

4.3 Class 3

This class of pottery shares several technical features with Class 2. They use the same fabric groups (2a–j and 3a–b), the texture of the paste is the same, both exhibit the use of mica in their production, and vessels appear to have been

³ The same difference in the quality of fabrics is often cited as the main difference between the so-called ‘Malwa Ware’ and ‘Jorwe Ware’ in the Chalcolithic of Central India (see Sankalia & Deo, 1955; Sankalia & Dikshit, 1952; Sankalia et al., 1958).

shaped using similar techniques.⁴ The shapes are also similar (see Lefrancq & Hawkes, 2020a, Plates 2 to 14, types 13–70). However, pots belonging to Class 3 are not slipped, and exhibit variations in their firing mode. In addition, the surfaces of Class 3 pots feel rougher to the touch than those belonging to Class 2, which indicates that the surfaces of Class 3 vessels were not smoothed to the same degree as others. Despite these differences, it is possible that some sherds identified as belonging to Class 3 in this study might actually belong to Class 2, but have been mis-identified due to their surfaces having been washed out. This class of pottery is only found in the Mandhal and Pauni areas, and not in the west of the region. Technical variations within this class are defined on the basis of the proportion and shape of mica used in their production, and the firing mode.

4.3.1 Class 3 Variant 1

The surfaces of this class-variant are rough to the touch. The sides are devoid of any slip but a few mica specks are visible on both sides (7.5YR-7/4 pink; 10YR-8/4,7/4 very pale brown; 5YR-7/6 reddish yellow). The firing atmosphere was oxidised but the process was not well controlled, as evidenced by the presence of reasonably thick greyish core and red margins.

4.3.2 Class 3 Variant 2

Potsherds of this class-variant have rough surfaces without slip. A low frequency of mica specks are visible on both surfaces. The main defining feature of this variant is the reduced firing atmosphere using in their manufacture. Both surfaces and the section are entirely dark grey (2.5YR-4/1 dark reddish grey).

4.3.3 Class 3 Variant 3

The surfaces of this variant are smoother in comparison to examples of Class 3 variants 1–2. Coloured slip is still absent, but mica specks are visible on both surfaces (7.5YR-7/4 pink; 10YR-8/4,7/4 very pale brown; 5YR-7/6 reddish yellow). Vessels were fired in a reasonably well-controlled oxidising atmosphere. This is evident in the reddish section and presence of a small light grey core. It should be noted that the smoother surfaces could be due to post-depositional abrasion. If this is the case, then this class-variant could be categorised as Class 3 variant 1.

4.3.4 Class 3 Variant 4

This class-variant shares many of the same features of Class 3 variant 3, though it was fired in a fully reduced environment. This has resulted in dark grey surfaces and section (2.5YR-4/1 dark reddish grey; 2Y-4/1 dark grey). Both surfaces are smooth. This class-variant could also be categorised as Class 3 variant 2 if we interpret its smoothness as being the result of abrasion. At the moment it is not possible to determine whether or not this is the case.

4.3.5 Class 3 Variant 5

The surfaces of this class-variant are rough to the touch, and are devoid of coloured slip. A thin mica slip made of very small mica specks is present on both surfaces (7.5YR-8/3 pink; 10YR-7/4,8/3 very pale brown). The firing atmosphere is oxidised.

⁴ Though this is with the caveat that the average size of potsherds is too small to fully reconstruct the shaping techniques used in their production.

4.3.6 Class 3 Variant 6

The features of this variant are similar to those of Class 3 variant 5 with the exception of the firing atmosphere, which is fully reduced (2.5YR-4/1 dark reddish grey; 2Y-4/1 dark gray).

4.3.7 Class 3 Variant 7

The surfaces of this class-variant are smoother than other variants of this class (7.5YR-7/4 pink; 10YR-8/4,7/4 very pale brown; 5YR-7/6 reddish yellow). They also exhibit a high frequency of mica specks and small (<0.5mm) whitish inclusions. Shiny and blackish very small (<0.25mm) inclusions are also visible on both surfaces. It was fired in an oxidising atmosphere.

4.3.8 Class 3 Variant 8

The sides of potsherds belonging to this class-variant have been smoothed and a high quantity of mica specks is visible on both surfaces (7.5YR-7/4 pink; 10YR-8/4,7/4 very pale brown; 5YR-7/6 reddish yellow). The potsherds have been fired in an oxidising atmosphere.

4.3.9 Comparisons and Date

As yet, there are no clear parallels for this class or its variants. However, vessel shapes are the same as those made using Class 2 variants 1–5, so we can suggest that this class dates from the third or second century BCE to around the fourth or sixth century CE—what, in this region, is referred to as the early historic period.

4.4 Class 4

This class is characterized by the high frequency of large mica flakes and specks on both surfaces and in section. This frequency of mica could be understood as mica having been used as a temper in the manufacture of this class of pottery. Vessels of this class utilised fabric group 4 (sub-types a–g) in their manufacture (see C.M. et al., 2020, pp. 10–13). Due to the average size of sherds in our assemblage it is difficult to identify the manufacturing techniques that were used. Yet, the traces of a join between the rim and the upper part of the pot suggest that a coiled-wheeled technique was used. Paddling marks can also be observed on the lower part of the pots.

Fifteen variants have been identified primarily on the basis of the surface treatment (more or less smooth), the decorative techniques (presence of coloured slip, of stamped and/or incised decoration), and the firing atmosphere.

For variants 1–10, vessel shapes comprise: plates with an elongated and everted rim (type 75); plates with a thick and everted rim (type 76); plates with a slightly thick and inverted rim (type 77); plates with a triangular slightly inverted rim (type 78); plates with a slightly thickened, elongated and slightly everted rim (type 79, 80); plates/basins with a thick, round, slightly top-flattened and inverted rim (type 81); basins with a thick and slightly elongated rim (type 82); plates with a slightly thickened and top-flattened rim (type 83); basins with an externally trifoliate rim (type 84); bowls with a slightly thin and inverted rim (type 85); bowls with a ribbed rim (type 86); basins with a slightly thick, elongated and slightly inverted rim with external ridges (type 87); pots with a thick, round and inverted rim (type 88 variant 1) or a slightly thinned and inverted rim (type 88 variant 2); pots with a thick, complex and inverted rim (type 89); pots with a slightly thickened and inverted rim (type 90); pots with a thickened, rounded and slightly everted rim (type 91); pots with thickened, top-flattened and straight rim (type 92); pots with an elongated and straight rim with external ribs (type 93); pots with a slightly thickened, top- and externally-flattened and everted rim (type 94); pots with a slightly thickened, externally-elongated (almost dropped), externally-flattened and everted rim (type 95); pots with a slightly thickened, top- and externally-flattened everted rim that is marked by an internal careen (type 96); pots with a thickened and

everted rim, with a slightly thinned lip and marked by an internal careen (type 97); pots with an elongated and everted rim marked by an internal careen (type 98); pots with a rectangular and everted rim that is internally marked by ridges and a careen (type 99); pots with a thickened, elongated and everted rim marked by an internal careen (type 100); pots with a small neck and an elongated, thinned and everted rim (type 101); pots with a neck and a thickened, rounded and slightly top-flattened rim (type 102); necked jars with a thickened and externally-flattened rim (type 104); necked jars with thickened, elongated and rectangular-shaped rim that is internally marked by a careen (type 105); necked jars with a top-ribbed straight rim (type 106); necked jars with a slightly thick and dropping rim (type 107); jars with a straight and top-flattened rim (type 108); bodies with a careen (type 109); and handles (type 110).

Variants 11-15 differ slightly from the other class-variants in the sense that they are made uniformly from a smaller range of fabric groups (4a, b, d, f and g). The range of vessel shapes made from these variants is also more limited. These are mainly large vessel shapes such as: basins with a thick and flattened rim marked by ridges on the top (type 111); basins with a slightly inverted rim (type 112); basins with an elongated, slightly dropped and everted rim (type 113); pots with a thick, elongated and inverted rim marked externally by a ledge (type 114); jars with a thickened, elongated and rectangular straight rim (type 115); pots with an elongated and everted rim (type 116); pots with a very thick, round and inverted rims (type 117); jars/basins with an elongated and everted rim marked externally by ridges (type 118); necked jars with a thick and top-flattened rim (type 119); jars with a thick and complex everted rim (type 120); necked jars with a very thick, round and everted rim (type 121); necked jars with a thick and externally-flattened rim (type 122); necked jars with a thick and externally-flattened rim marked internally by a careen (type 123); necked jars with an everted and thinned rim (type 124). For illustrations of all of these vessel forms, see Lefrancq and Hawkes (2020a, Plates 16 to 26, types 75 to 124).

4.4.1 Class 4 Variant 1

Potsherds belonging to this class-variant display a thick slip consisting of a high density of mica flakes and specks on both sides (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow). The surfaces are smooth. The firing atmosphere was oxidised.

4.4.2 Class 4 Variant 2

In this class-variant, a mica slip has been applied but there is a lower frequency of mica flakes and specks in comparison with potsherds belonging to Class 4 variant 1 (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow). Surfaces are smooth (fig. 9). The firing atmosphere was oxidised.

4.4.3 Class 4 Variant 3

The features of this class-variant are the presence of a mica slip with a lower frequency of mica flakes and specks in comparison with Class 4 variant 1, a red slip (10R-5/8 red, 6/8 light red) and smoothed surfaces (fig. 10). Potsherds have been fired in an oxidising atmosphere.

4.4.4 Class 4 Variant 4

The potsherds of this class-variant display a mica slip with a lower frequency of mica flakes and specks compared to Class 4 variant 1, but still more than observed in Class 4 variant 10. This class-variant is treated with a black slip (10YR-2/1 black, GLEY 1-4/dark gray), and has slightly smoothed surfaces. A few potsherds show impressed and/or stamped decorations on the external surface. The pattern of the decoration corresponds to a 'flower-sun' motif. The black slip indicates a reduced firing atmosphere.

Figure 9: External and internal surface of a Class 4 variant 2 potsherd.

Figure 10: External and internal surface of a Class 4 variant 3 potsherd.

It is worth noting that if this class-variant was examined purely on the basis of its surface appearance it could easily be mistaken for a variant of Class 5 pottery (specifically Class 5 variant 6). It is the technical features visible in the paste of this pottery that enable us to distinguish it from that class and instead identify it as a variant of Class 4.

4.4.5 Class 4 Variant 5

This variant shows a very high concentration of mica flakes and specks. Yet these have not been applied as a slip. The surfaces are lightly smoothed and retain a slightly rough feeling (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow). The firing atmosphere was oxidised.

4.4.6 Class 4 Variant 6

Potsherds of this class-variant are similar to those of Class 4 variant 5, and are characterised by a very high concentration of mica flakes and specks and slightly smoothed surfaces (fig. 11). Yet here, we also observe the presence of a red slip on both surfaces (10R-5/8 red, 6/8 light red). The firing atmosphere is oxidised.

Figure 11: External and internal surfaces of Class 4 variant 6 potsherds (2 rims and 1 body sherd).

4.4.7 Class 4 Variant 7

The potsherds of this class-variant have less frequent mica flakes and specks in comparison with Class 4 variant 1. The surfaces also feel slightly rough to the touch (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow). Potsherds have been fired in an oxidising atmosphere.

4.4.8 Class 4 Variant 8

Examples of this class-variant are similar to those of Class 4 variant 7. They share the lower frequency of mica flakes and specks on the surfaces, but the surfaces of this class-variant are smooth (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow). The firing atmosphere is oxidised.

4.4.9 Class 4 Variant 9

Potsherds of this class-variant display a low frequency of mica flakes and specks on the surfaces, both of which are also treated with a red slip (10R-5/8 red, 6/8 light red). The surfaces have been smoothed. The firing atmosphere is oxidised. Based on the surface appearance alone, examples of this class-variant could easily be confused with those of Class 5 variant 8, which shares many surficial characteristics but do not use mica as a temper.

4.4.10 Class 4 Variant 10

This class-variant is characterised by a low frequency of mica flakes and specks, a black slip (10YR-2/1 black, GLEY 1-4/ dark gray) and smooth surfaces (fig. 12). Potsherds have been fired in a reducing atmosphere. The firing atmosphere is oxidised. Based on the surface appearance alone, examples of this class-variant could easily be confused with those of Class 5 variant 7, which shares many surficial characteristics but do not use mica as a temper.

Figure 12: External and internal surfaces of various Class 4 variant 10 potsherds, including one decorated bodysherd.

4.4.11 Class 4 Variant 11

The texture of the fabric group used to make this class-variant is coarse with inclusions up to 1 mm visible on sides and in section. Traces of mica slip are visible but most of it seems to have been washed out. The surfaces are slightly smoothed (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow). However, some small cavities and voids (0.5 mm to 1 mm) are visible on both sides.

4.4.12 Class 4 Variant 12

Features of this class-variant are the use of a coarse fabric group with inclusions up to 1 mm visible on sides and in section, a lower concentration of mica flakes and specks in comparison to Class 4 variant 1, and rough surfaces (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow) (fig. 13).

4.4.13 Class 4 Variant 13

Potsherds of this class-variant are made using a coarse fabric group with inclusions up to 1 mm visible on both surfaces and in section, a lower concentration of mica flakes and specks when compared to Class 4 variant 1, a red slip (2.5YR-7/8 light red, 4/6 red, 4/3 reddish brown, 5YR-6/6 reddish yellow) and rough surfaces.

4.4.14 Class 4 Variant 14

This class-variant is characterised by the use of a coarse fabric group with inclusions up to 1 mm visible on both surfaces and in section, a mica slip (sometimes very poorly preserved), a red slip (2.5YR-7/8 light red, 4/6 red, 4/3 reddish brown, 5YR-6/6 reddish yellow) and slightly smooth surfaces (fig. 14).

Figure 13: External and internal surfaces of two Class 4 variant 12 potsherds, including one decorated rim.

Figure 14: External and internal surfaces of two refitting Class 4 variant 14 potsherds, with decoration on external surface.

4.4.15 Class 4 Variant 15

The potsherds of this class-variant have a coarse section with a high frequency of organic material present in the clay (see fabric group 4e). Rice husks imprints are visible in section but not on the surfaces. The pots have less concentration of mica flakes and specks when compared to Class 4 variant 1 and slightly smooth surfaces (2.5YR-7/8 light red, 2.5YR-6/4 light reddish brown, 5YR-6/6 reddish yellow). This class-variant was fired in an oxidised atmosphere, but the section shows a large grey core due the combustion of organic material and the non-well-achieved firing process.

4.4.16 Comparisons and Dates

Potsherds identified and defined here as Class 4 variants 3–4 correspond to those recently identified at Mahurjhari as MHR Class 5.2–3 respectively. These date to the seventh and eighth centuries CE. Class 4 variant 6 is the same as MHR Class 5.1, which dates from the fourth to the sixth or seventh centuries CE. And our Class 4 variant 10 pots correspond to MHR Class 5.4, which dates from the post-tenth century to the seventeenth or eighteenth centuries CE.

At Paithan (Kennet et al., 2015), the group defined as ‘Coarse Red Ware’ may correspond to our Class 4 variants 11–15. However, there is no mention in the Paithan report of ‘Micaceous Red Ware’ or ‘Micaceous Black Ware’ as it is reported at other sites. For instance, at Pauni we can identify a number of parallels in different periods. A ‘Coarse Fabric Gritty Micaceous Red Ware’ dating to Pauni period 1 (sixth to fourth centuries BCE) (Nath, 1998, Fig. 11, type 1) shares many of the same characteristics and shape as some examples of our Class 4 variant 9 (Lefrancq & Hawkes, 2020a, Plate 22, type 105). During Pauni periods 2 and 3 there are also micaceous wares that are characterised by a mica-rich slip, but not the presence of mica in the clay paste. While in contexts dating to period 4 at Pauni we again read of a ‘Coarse Fabric Gritty Micaceous Red Ware’, but there are no parallels in terms of published vessel shapes.

At Paunar, a group of Coarse Micaceous Red Ware that corresponds to many of our Class 4 variants in terms of fabric and surface treatment appears during Paunar period 2A (fourth to first centuries BCE) and continues until period 4 (eighth to sixteenth centuries CE). Yet here too, we are unable to identify parallels in terms of vessel shape. A globular pot with funnel rim is the standard shape made using this ware in periods 1 and 2 at Paunar, but is absent in our corpus. That said, few vessel shapes are published in this report. At Adam we encounter a similar situation. There are a number of ‘micaceous wares’ reported from the site (Nath, 2016), but the vessel shapes do not correspond to those recorded in our assemblage.

It is our suggestion that this lack of shape parallels is due to chronological differences between pottery assemblages. Most of the excavated settlement sites in Vidarbha do not have a very secure handle on the chronology of later phases of occupation dating from the early- to mid-first millennium CE onwards (the so-called Vakataka and post-Vakataka periods). It may be that the majority of the potsherds defined here as Class 4 date to these periods.

4.5 Class 5

This class of pottery is made with a slightly coarse fabric characterised by a grey core or fully grey section resulting from an oxydo-reducing or reducing firing atmosphere (fabric group 5; C.M. et al., 2020, pp. 13–15). All potsherds in this class, apart from those defined as variant 5, display either a red or black slip, the colour of which appears to have changed depending on the firing mode. The identification of the shaping techniques used to produce these pots is difficult to reconstruct fully due to the small size of the sherds in the assemblage. However, composite techniques including coiled-wheeled and paddling are prevalent.

Variants of this class have been defined on the basis of the colour of the slip, the presence or absence of mica on the surfaces, and the techniques used to finish the vessels (such as smoothing).

The shapes include: plates with a 'marli' rim (type 125); plates with a thick slightly inverted rim with a slightly thinned lip (type 126); bowls with a top-flattened straight rim (type 127); basins with a thick elongated rim marked externally with ridges (types 128, 129); basins with a slightly thick and straight rim (type 130); pots with a thick, elongated and inverted rim marked externally with a ledge (type 131); pots with a complex inverted rim marked externally by several ridges (type 132); pots with a thick, elongated/slightly rectangular and slightly inverted rim marked by an internal careen (type 133); pots with a thick, round and straight rim (type 134); pots with a slightly thick, square-shaped, straight rim (type 135); pots with a slightly thick, top- and externally-flattened, sometimes slightly elongated, everted rim (type 136); pots with a triangular (externally-flattened) everted rim marked by an internal careen (type 137); pots with a thinned and everted rim (type 138); pots with a rectangular everted rim marked internally by ridges and a careen, and on the top by ridges (type 139); large pots with a thick elongated and complex rim, marked externally by several ridges and incised and impressed decorations on the rim (type 140); large jars with a thick elongated rim marked externally by a ridge (type 141); large necked jars with a very thick, straight and square-shaped rim (type 142); large necked jars with a top-flattened and straight rim (type 143); large necked jars with thick and everted rim (type 144); large necked jars with a ribbed everted rim (type 145); large necked jars with a thick and slightly dropped rim (type 146); large necked jars with a thick and ribbed everted rim (type 147); and vessels with a flat base (types 148, 149). For illustrations of these vessel forms, see Lefrancq and Hawkes (2020a, Plates 27 to 32, types 125–149).

4.5.1 Class 5 Variant 1

Potsherds of this class-variant are characterised by a black slip (GLEY 1-3/very dark gray, 2.5/black) applied on the external or internal surface depending on the shape (restricted or unrestricted). A few mica specks are visible on both surfaces, and both surfaces are smoothed. Additional decorative techniques include incised lines, impressions and appliqué (fig. 15). The firing atmosphere is reduced.

4.5.2 Class 5 Variant 2

The technical features of this class-variant are similar to those of Class 5 variant 1. That is, a few mica specks on both surfaces, smoothed surfaces, a variety of decorative techniques (incisions, impressions and appliqué) (fig. 16). Yet vessels of this class-variant exhibit a red slip (10R-4/8 red, 7.5R-5/8 red, 4/8 red) indicating that they were fired in an oxydo-reducing atmosphere.

Figure 15: External and internal surfaces of various Class 5 variant 1 potsherds.

Figure 16: External and internal surfaces of Class 5 variant 2 potsherd.

Figure 17: External and internal surfaces of a Class 5 variant 3 potsherd.

4.5.3 Class 5 Variant 3

The potsherds of this class-variant display a black slip (GLEY 1-3/very dark gray, 2.5/black) on the external side and a red slip (10R-4/8 red, 7.5R-5/8 red, 4/8 red) on the internal side of the pot (or the opposite depending on the shape). A few mica specks are visible on both sides and the surfaces are smooth and, in some cases, slightly polished (fig. 17). The firing process was inverted, with pots placed in the kiln in such a way as to isolate part of the pot from supply of oxygen.

4.5.4 Class 5 Variant 4

A black slip has been applied on the sides of the potsherds of this class-variant but the slip is not well preserved (GLEY 1-3/very dark gray, 4/dark gray). We observe a few mica specks on both sides and the surfaces are slightly smooth. The decorative techniques consist of incision, impression and appliqué (fig. 18). The firing atmosphere is reduced. Potsherds belonging to this class-variant could almost be classified as examples of Class 5 variant 1. Indeed, the poor quality of the slip could be due to natural erosion.

4.5.5 Class 5 Variant 5

This variant does not exhibit a slip. This is either a purposeful absence, or it has been rubbed off the surfaces. A few mica specks are visible on both sides and the surfaces are smoothed. The decorative techniques encompass the incision, the impression and the appliqué (fig. 19). The grey colour of surfaces (GLEY 1-6/, 5/gray) indicates a reducing firing atmosphere. Like Class 5 variant 4, this variant is also similar to Class 5 variant 1.

4.5.6 Class 5 Variant 6

This class-variant shares its main characteristics with the Class 4 variant 4. A black slip (GLEY 1-3/very dark gray, 2.5/black, 10YR-2/1 black, GLEY 1-4/dark gray) has been applied on one or both surfaces along with a mica slip composed of low concentration of mica flakes and specks. The surfaces have been smoothed. The firing atmosphere was reduced. The only difference between these potsherds and those of Class 4 variant 4 is that these did not use mica flakes as temper in their paste.

Figure 18: External surfaces of various Class 5 variant 4 potsherds, each exhibiting incised and impressed decoration.

Figure 19: External surfaces of two Class 5 variant 5 potsherds, each with decoration on external surface.

4.5.7 Class 5 Variant 7

The potsherds of this class-variant are similar to those of Class 4 variant 10 other than the absence of mica in the paste. Class 5 variant 7 potsherds have a black slip (GLEY 1-3/very dark gray, 2.5/black, 10YR-2/1 black, GLEY 1-4/dark gray), a low concentration of mica flakes and specks on the surface, smooth surfaces, and were fired in a reducing atmosphere.

Figure 20: External surfaces of a Class 5 variant 7 potsherd, with decoration on external surface.

4.5.8 Class 5 Variant 8

This class-variant is characterised by a red slip (10R-5/8 red, 6/8 light red) on both sides, few mica flakes and specks and slightly smooth surfaces which feel slightly rough to the touch. Potsherds were fired in an oxidising atmosphere. They are similar to sherds of Class 4 variant 9 apart from the fact that pots belonging to this class-variant do not have mica flakes in the paste.

4.5.9 Comparisons and Dates

A number of direct parallels are noted between examples of this class and those identified at Mahurjhari. Our Class 5 variants 1–3 correspond to MHR Class 5.3, which is typical in contexts dating to the seventh and eighth centuries CE; and Class 5 variant 7 corresponds to MHR Class 5.4 or MHR Class 6.2, which both date to the post tenth century CE. At Paithan, it corresponds mainly to the general group of ‘Thick Grey Ware’ that appears during Paithan period 3 (fourth to eighth century CE) and continues into the medieval period. In terms of vessel shape, Paithan type 24 (Kennet et al., 2015, p. 128) and corresponds to our type 136 (Lefrancq & Hawkes, 2020a, Plate 29). Similarly, at Pauniar a group of ‘Drab Black Ware’ appears during Pauniar period 3 (third to eighth century CE) and increases during period 4 (eighth to sixteenth century CE). In terms of vessel shapes, our type 132 (Lefrancq & Hawkes, 2020a, Plate 28) corresponds to Pauniar type 142 (Deo & Dhavalikar, 1968, Fig. 20); and our type 136 (Lefrancq & Hawkes, 2020a, Plate 29) corresponds to Pauniar type 143 (Deo & Dhavalikar, 1968, Fig. 20). Further, Class 5 variants 1 and 3–7 correspond to the groups of ‘Later Black Ware’ and ‘Later Grey Ware’, which indicate a date of the early medieval and medieval periods. No parallels were noted at Pauni and Adam.

4.6 Class 6

This class comprises potsherds made using fabric groups that have a medium texture. The majority belong to fabric groups 2f and 2g, as well as groups 2c, 2e and 3b. For variants 3 and 4, the preference was for fabric group 9 (C.M. et al., 2020, pp. 4–6, 9, 19). The shaping techniques that were used to produce this class are composite, involving the use of both coils and a wheel. However, the size of the potsherds does not allow any further identifications to be made about these techniques. A mica slip has been applied on both sides and then smoothed. All pots were fired in an oxidising atmosphere that was not well controlled as evidenced by the brownish section. Variants of this class have been defined on the basis of the composition and presence/absence of the mica slip.

This class of pottery is found throughout the region, though the distribution of certain variants is restricted to particular areas. Class 6 variants 3 and 4 are only found within the Chamak zone. But they share similar shapes as those made using Class 6 variants 1 and 2.

Amongst the shapes encountered, we have identified: small cups with thick sides and a featureless rim (type 150); plates with a slightly thick, top-flattened and slightly everted rim marked externally by a careen (type 151); plates with a top-flattened rim (type 152); plates with a bifoliate, elongated and inverted rim (type 153); pots with an elongated and sometimes slightly thinned everted rim (type 154); pots with a thick and everted rim (type 155); pots with a short neck and an elongated, thinned, everted rim that is sometimes marked by an internal careen (type 156); pots with an elongated, thinned and slightly everted rim marked by an internal careen (type 157); pots with a neck marked externally by ridges and finished with a slightly thick, top-flattened and everted rim (type 158); pots with a ribbed rim (type 159); pots with a neck and a dropped everted rim (type 160); small pots with an elongated and slightly thinned everted rim (type 161); large jars with a thick and top flattened and slightly everted rim (type 162); large jars with a thick and slightly inverted rim (type 163). For illustrations of vessel forms, see Lefrancq and Hawkes (2020a, Plate 33 to 35, types 150–163).

4.6.1 Class 6 Variant 1

The mica slip applied on the potsherds of this class-variant is composed mainly of mica specks, with very infrequent mica flakes (2.5YR-7/8 light red, 5YR-6/6 reddish yellow, 2.5YR-3/4 dark reddish brown) (fig. 21).

4.6.2 Class 6 Variant 2

The mica slip applied on potsherds of this class-variant is composed exclusively of mica specks and exhibits a golden shine (10YR-7/6 yellow, 6/4 light yellowish brown) (fig. 22).

4.6.3 Class 6 Variant 3

The potsherds of this class-variant are made from a specific fabric group characterised by white grits (0.5 mm) that are visible in section and very well fired. The potsherds display a mica slip composed of mainly specks and few flakes (2.5YR-7/8 light red, 7/4 light reddish brown, 5YR-6/6 reddish yellow, 7/4 pink).

4.6.4 Class 6 Variant 4

This class-variant is characterised by the use of a specific fabric group characterised by white grits (0.5 mm) that are visible in section and very well fired. We also note the presence of a mica slip consisting of mica specks and few small flakes along with a reddish-pinkish slip on both sides (5YR-6/6 reddish yellow, 7/4 pink) (fig. 23).

Figure 21: External surfaces of two Class 6 variant 1 potsherds.

Figure 22: External surfaces of a Class 6 variant 2 potsherd.

Figure 23: External surfaces of two Class 6 variant 4 potsherds.

4.6.5 Comparisons and Dates

Close parallels for Class 6 variants 1 and 2 can be identified at Mahurjhari, where MHR Class 3.2 potsherds are identical. These date to the seventh and eighth centuries CE. However, no parallels exist within the excavated assemblage from the site for Class 6 variants 3 and 4.

At Paithan, no comparable potsherds with a mica slip were identified. While at Pauni, there are a number of examples attributed to their period 4 (first century BCE to the third century CE) that correspond to both the description and shapes of pottery defined here as Class 6. For example, the ‘Mica-Slipped Medium Fabric Red Ware’ types 1, 2, 19 and 20 (Nath, 1998, p. 38, Fig. 15) correspond to our types 154, 156 and 157 (Lefrancq & Hawkes, 2020a, Plates 33–34).

At Paunar, this class of pottery could correspond to a group of pottery defined as ‘Fine Micaceous Ware’ or ‘Ware with Micaceous Coating’. This appears during Paunar period 2B (first century BCE to the third century CE) and increases during period 3 (third century to the eighth century CE). However, a number of the published vessel shapes do not correspond to those evident in our survey collection. Further, the basis of the difference between this fine variety and another coarse variety of pottery that is similar to our Class 4 is not clear.

We encounter similar difficulties at Adam where the general group of ‘Coarse Fabric Micaceous Ware’ may include a great deal of variation that is not detailed in the publication. Moreover, at Adam no parallels of vessel shape could be identified. At Paturda, we note the presence of a ‘Red Ware’ with a mica wash, which could correspond to our Class 6 variants 3–4. Yet equally, the description of this ware could also correspond to our Class 15.

4.7 Class 7

This class is characterised by the use of fabric groups with a fine to medium texture with small (<0.5mm) inclusions that are barely visible in section. The main fabric groups are 2h and 2j (C.M. et al., 2020, pp. 7–8). Surfaces are very regular, which might indicate the use of RKE for the shaping. Yet, shaping methods are difficult to discern due to the surface treatment, which obscures the macro-traces that we would typically expect to see. In such conditions, we should not rule out the possibility that coiling combined with the action of a slow wheel may have been used instead. The thickness of the body sherds is thin (c. 3–4 mm). A slip has been applied to one or both surfaces, and the surfaces have been polished or burnished to a gloss shine. Variants are determined on the basis of the colour of the slip, the finishing and the firing modes.

The shapes encompass plates with a ‘marli’ rim (type 164); bowls with a slightly thick and inverted rim (type 165); plates with a slightly thinned and inverted rim (type 166); bowls with a thinned and inverted rim (type 167); bowls with a top-flattened, almost triangular-shaped, inverted rim (type 168); bowls with a thinned and straight or slightly everted rim (type 169); bowls with a slightly elongated and thinned rim with an ‘S’-shaped profile (types 170–171); plates with a slightly thinned and straight rim (type 172); bowls/goblets with a slightly thinned and straight or gently everted rim (type 173); goblets with a top-flattened and straight or slightly inverted rim (type 174), pots with a very slightly elongated and inverted rim (type 175); goblets/jars with an elongated, thinned and slightly everted rim (type 176); jars with an elongated and everted rim (type 177); necked jars with a slightly thick and everted dropping rim (type 178); jars with a thick, round and slightly everted rim (type 179); and flat bases (type 180). For illustrations of vessel forms, see Lefrancq and Hawkes (2020a, Plates 36 to 39, types 164–180).

4.7.1 Class 7 Variant 1

Potsherds of this class-variant display an external surface with the upper half of the pot bearing a black slip (2.5YR-2.5/1 reddish black, GLEY 1-2.5/black) and the lower half a red slip (10R-5/8 red, 5/4 weak red) (fig. 24). An external careen marks the demarcation between the black and the red slip. The internal side shows a black slip. In a few cases, a red slip also appears on the interior surface. Both surfaces are polished or burnished. As for the firing process, the pots may have been piled in such a way that the black surfaces have been deprived from oxygen. The firing mode was reduced with a post-firing oxidised.

4.7.2 Class 7 Variant 2

The characteristic feature of this class-variant is that both the interior and exterior surfaces display a black slip (2.5YR-2.5/1 reddish black, GLEY 1-2.5/black). Both surfaces have been burnished (fig. 25). The firing atmosphere was reduced. Due to the small size of the potsherds, this class-variant could easily be mistaken for Class 7 variant 1.

4.7.3 Class 7 Variant 3

Both of the surfaces of this class-variant exhibit a red slip (10R-5/8 red, 5/4 weak red, 4/8 red), which has been burnished (fig. 26). The firing atmosphere was oxidised.

4.7.4 Class 7 Variant 4

This variant is characterised by the presence of a black burnished slip (2.5YR-2.5/1 reddish black, GLEY 1-2.5/black) on the exterior surface. The fabric used to make this class-variant is also slightly coarser than those used to make other variants in this class, and contains infrequent well-sorted large (up to 1mm) inclusions. A low frequency of mica specks are visible on both surfaces. The internal surface has been smoothed. The firing atmosphere was reduced.

Figure 24: External and internal surfaces of three Class 7 variant 1 potsherds.

Figure 25: External and internal surfaces of four Class 7 variant 2 potsherds.

Figure 26: External surface of a Class 7 variant 3 potsherd, with burnished red slip.

4.7.5 Class 7 Variant 5

In many respects, this class-variant resembles Class 7 variant 1 due to the presence of both a black (2.5YR-2.5/1 reddish black, GLEY 1-2.5/black) and red slip (10R-5/8 red, 5/4 weak red) on the exterior surface and a black slip on the interior surface. However, in this class-variant, the surfaces have been smoothed instead of burnished. The thickness of the sides of vessels is also slightly thinner.

4.7.6 Comparisons and Dates

In the existing literature, this class of pottery is recorded using a number of different terms. Class 7 variants 1–5 are frequently labelled as ‘Black and Red Ware’. Class 7 variant 2 is usually recorded as ‘Black Burnished Ware’, and variant 4 is known as a coarser variety of ‘Black Burnished Ware’. All of these variants are included within the same class of pottery here because other than the specifics of their surface treatment there is very little difference between them in terms of how they were made. Indeed, when examining small bodysherds, there is often no way to discern whether fragments identified here as variants 2 or 4 might in fact be part of a vessel that would otherwise be known as ‘Black and Red Ware’. Much as this is a well-known (and frequently used) term, the appellation ‘Black and Red Ware’ does not have very much meaning as a label for an entire class or ware. This is because it refers only to a single manufacturing technique—specifically, the firing process—rather than any of the other technological and morphological characteristics that might also be evident. It is thus perhaps not surprising that within the broad family of ‘Black and Red Ware’ in the published literature there exists a great deal of variety of fabrics and shapes from the early first millennium BCE to the mid-first millennium CE.

This class of pottery is absent from the excavated assemblage from Mahujhari. At Paithan, Class 7 variants 1–5 correspond to the ‘Black and Red Ware’, and variants 2–4 correspond to the ‘Black Burnished Ware’ reported at the site. In terms of vessel shapes, Paithan type 10 (Kennet et al., 2015, p. 141) corresponds to our types 172 and 173 (Lefrancq & Hawkes, 2020a, Plate 38); Paithan type 29 (Kennet et al., 2015, p. 150) corresponds to our type 177 (Lefrancq & Hawkes, 2020a, Plate 39); and Paithan type 38 (Kennet et al., 2015, p. 152) corresponds to our type 169 (Lefrancq & Hawkes, 2020a, Plate 37). These examples date from Paithan period 1 (200–100 BCE), and occur in smaller quantities in period 2 (the late first century BCE to the fourth century CE).

At Pauni, ‘Black and Red Ware’ occurs during period 3 (second to first century BCE), but does not appear to have been produced during successive periods. A number of shapes correspond to those encountered in our study, for example: Pauni types 18–21 (Nath, 1998, p. 34, Fig. 13) are similar to our types 166 and 171 (Lefrancq & Hawkes, 2020a, Plate 38). At Paunar, ‘Black and Red Ware’ appears during Paunar period 1 (1000 to 800 BCE), and continues until period 3 and the eighth century CE. Three different varieties of ‘Black and Red Ware’ are reported from the site during this time. These are distinguished on the basis of the thickness of the potsherds and their relative fineness or coarseness. But it is impossible to reconstruct the precise differences between these varieties as the definitions for each of these varieties do not change from period to period. Notwithstanding these limitations, vessel shapes from Paunar period 2 (Deo & Dhavalikar, 1968, Figs. 7–8) correspond to those identified here.

At Adam, ‘Black and Red Ware’ is recorded from period 4 (350–100 BCE), and these match the majority of those recorded in this study.

4.8 Class 8

Only two potsherds (one found in the Mandhal area and another in the Chamak area) belong to this category, which is characterised by the use of a specific fabric group made of kaolin clay (fabric group 6a and 6b; C.M. et al., 2020, pp. 15–16). Potsherds are too small to identify the shaping techniques. Two variants have been defined on the basis of differences in the surface treatment applied to each vessel. Both were fired in an oxidised atmosphere.

Only one rim—thick and slightly rounded (see Lefrancq & Hawkes, 2020a, Plate 40, type 181)—has been identified. The small size of the rimsherd does not enable us to define the shape of the vessel.

4.8.1 Class 8 Variant 1

This class-variant corresponds to the general description of the class, and does not have any additional surface treatment except a light smoothing of both surfaces (2.5Y-1/9.5 white, 2.5Y-8/1 white) (fig. 27).

Figure 27: External and internal surfaces of a Class 8 variant 1 potsherd.

4.8.2 Class 8 Variant 2

This class-variant has a red slip (5YR-7/8 reddish yellow) on both surfaces which have been slightly smoothed.

4.8.3 Comparisons and Dates

No comparisons have been found in the literature. We cannot exclude the possibility that this class of pottery is modern.

4.9 Class 9

This class of pottery is characterised by the use of fabric groups that have a very fine texture (fabric groups 7a–c; C.M. et al., 2020, pp. 16–18). Inclusions are not visible to the naked eye. It is possible that pots have been wheel made (with RKE), yet due to the surface finish traces of the shaping method are difficult to identify. A coloured slip has been applied and surfaces have been smoothed. The sides are thin (c. 2 mm). Variants are defined on the basis of the colour of the slip, the firing atmosphere and the surface treatment.

The shapes encountered are plates with a slightly thinned and inverted rim (type 182); bowls with a top-flattened and slightly inverted rim (type 183); plates with a beaked and slightly inverted rim (type 184); jars with a triangular-shaped rim marked by an internal careen (type 185); jars with a slightly thinned and everted rim (type 186); jars with a slightly elongated and dropping rim (type 187); pots with an elongated and everted rim (type 188); base-pedestals (type 189); and small, almost conical, flat bases (type 190). For illustrations of vessel forms, see Lefrancq and Hawkes (2020a, Plate 40, types 182–190).

4.9.1 Class 9 Variant 1

The potsherds of this class-variant display a thin red slip (10R-6/8 light red, 2.5YR-7/6 light red) on the exterior surface, but both surfaces have been smoothed and polished to a lustrous finish (fig. 28). The firing atmosphere was oxidised. Only twenty-five potsherds have been identified in the survey assemblage, mostly in the Mandhal and Pauni areas. Only one potsherd was collected from Chamak area, at the site of Taular Walni Bujurg (TLR02) (Hawkes et al., 2020b).

Figure 28: External and internal surfaces of various Class 9 variant 1 potsherds.

4.9.2 Class 9 Variant 2

The characteristic features of this class-variant are the presence of a red slip (10R-7/8 light red, 5/8 red) on the exterior surface, and a black slip (GLEY 1-3/very dark gray) on the interior surface (fig. 29). The slip on both surfaces appears to be slightly washed out. Both surfaces are smoothed and sometimes polished. This apparent variation in finishing techniques could also be due to different depositional environments. The firing atmosphere was oxidised but the pots have been piled in such a way that part of the vessel has been deprived of oxygen. Only one rim-sherd has been collected. This was found at the site of Shivni, Khurre Reethi (SHV01) (Hawkes et al., 2020) located in the Mandhal area.

4.9.3 Class 9 Variant 3

This class-variant has a black slip (GLEY 1-3/very dark gray) on both surfaces, which have been slightly polished to give a glossy appearance (fig. 30). The firing atmosphere was reduced. Only thirteen potsherds belonging to this class-variant have been collected from all three survey areas.

4.9.4 Comparisons and Dates

Comparisons for this class of pottery are deceptively easy to identity because they correlate with three well-known wares that are distributed across large parts of the subcontinent. Class 9 variant 1 is frequently identified as ‘Red Polished Ware’; Class 9 variant 2 has been identified as ‘Rouletted Ware’; and Class 9 variant 3 pottery is also known as ‘Fine Black Slipped Ware’. Yet these identifications are problematic. This is because the pottery types they refer to are not necessarily as standardised and homogenous as they have traditionally been perceived to be. Partly because of the standard approach to the identification of wares solely on the basis of quality, colour and finish (as discussed above), and partly because a main aim in excavations is to find examples of these key fossil-types to date sites, the names of these wares have been applied to pottery groups across the subcontinent without any real understanding of them or the ways they relate to each other. Each of these wares (and others like them) in fact encompass a great deal of

Figure 29: External and internal surface of a Class 9 variant 2 potsherd.

Figure 30: External and internal surfaces of three Class 9 variant 3 potsherds.

variation. Red Polished Ware, which originated in western India with core area of production in Gujarat (Pinto Orton, 1991; Subbarao, 1953), has been identified at sites across the subcontinent. Usually dated to the third to first century BCE to the fifth century CE (Pinto Orton, 1991), it is taken a classic marker of early historic phases of occupation at settlements. However, and as it is becoming increasingly clear, there are two functional groups of Red Polished Ware within its core production area that are made using different manufacturing processes (Schenk, 2015).⁵ In addition, upon examination pottery identified as Red Polished Ware that is distributed throughout South Asia (and even as far as Arabia and Southeast Asia) has been found to contain a great deal of variation in terms of how they are made (Kennet et al., 2015; Schenk, 2015). Complicating matters even further, some of these versions of Red Polished Ware have been found in archaeological contexts that date up to the tenth and eleventh centuries CE—far beyond the normally accepted time frame for this ware.

Similarly, we now know that Rouletted Ware, which was first identified at Arikadmedu in South India (Wheeler et al., 1946) and distributed along the East coast, is not a single and coherent group as previously thought. Provisionally dated to between the third century BCE and the third or fourth century CE, this ware was traditionally characterised by slipped vessels made from fine levigated clay and decorated with a specific type of impressed decoration on the flat base of plates from which the ware takes its name. Yet recent analyses on the corpus from Arikamedu (Begley, 1983, 1996; Begley et al., 2004) and comparative syntheses of examples from other sites (Schenk, 2006) have shown that different varieties of ‘Rouletted Ware’ co-existed. While at the same time, at sites as far away as Bengal in the northeast of South Asia, other types of fine black slipped pottery have been shown to be the same in Rouletted Ware in every respect save the rouletted decoration (Lefrancq, 2016).⁶

Notwithstanding these complexities, it is possible to identify clear parallels for our Class 9 pottery in excavated assemblages. For Class 9 variant 1, we note examples of Red Polished Ware found at Paithan in layers belonging to the site’s Period 2—the late first century BCE to the fourth century CE. (Kennet et al., 2015, p. 126, Fig. 7.2.). At Pauni, we can see a similar vessel shape in ‘Fine Fabric Polished Red Ware’ that has been identified in layers attributed to the site’s Period 4—from the first century BCE to the third century CE (Nath, 1998, p. 40, Fig. 16, vessel 8). Parallels for our Class 9 variant 3 are abundant, and can be found at sites even as far away as Bangladesh. At Mahasthangarh, examples of Fine Black Slipped Ware corresponding to our Class 9 variant 3 that are locally made are noted in archaeological contexts dating from the fourth to the second or first century BCE, with residual potsherds continuing to occur until the

⁵ Specifically, a specialised type characterised by high necked vessels and spouted jars, and domestic vessels such as cooking pots (Schenk, 2006).

⁶ The origin of this ware is still debated and, after a long period during which we thought that it was manufactured in the Ganges Valley, a recent study tends to prove an origin from Tamil Nadu (Das et al., 2017).

first century CE. (Salles, 2007, 2015). They appear to be part of a similar language of ceramic production and use found across large parts of the subcontinent at this time.

4.10 Class 10

This class of pottery is characterised by fabric groups that are universally coarser than those used to make the other classes (fabric groups 3a–c, 2c–d, 2f; C.M. et al., 2020, pp. 4–6, 8–9). The main feature of vessels in this class is the presence of organic fibre impressions that are visible on both surfaces. The shaping techniques are difficult to reconstruct due to the size of sherds, but paddling was certainly part of the shaping process and was probably combined with other techniques. All potsherds have been fired in an oxidising atmosphere. However, this process was often not well achieved as evidenced by the presence of a grey core and red margins visible in section. Variants have been defined on the basis of the presence or absence of a slip and the nature of surface finishing.

This class is anecdotal at sites located in the Mandhal survey area. In the area surrounding Pauni, only one site—Sindpuri (SDP01)—yielded a large number of potsherds belonging to this class. This class is found most frequently at sites in the Chamak area.

Shapes consist of: plates with an elongated and dropping everted rim (type 191); plates with a slightly thick and slightly everted rim (type 192); small plates with a thick, elongated and top-flattened straight or slightly everted rim (type 193); plates with a thick, elongated and top-flattened straight or slightly everted rim (type 194); plates with a thick elongated and everted rim marked by an internal careen (type 195); plates with a thick, round and slightly everted rim (type 196); plates with a thick and inverted rim with thinned lip (type 197); plates with a slightly thick and inverted rim (type 198); large plates with a thick rim marked by an internal careen (type 199); large jars/plates with a thick and top-flattened rim that is sometimes marked with incised decorations on the top of the rim (type 200); bowls with a top-flattened and inverted rim (type 201); pots with a slightly thick and round inverted rim (type 202); pots with a bifoliate and inverted rim (type 203); jars with a thick, rectangular, elongated everted rim (type 204); pots with an elongated, externally flattened rim marked by an internal careen (type 205); pots with a thick, slightly elongated or slightly rectangular and slightly inverted rim marked by an internal careen (type 206); pots with an elongated straight ribbed rim (type 207); pots with a thick and round rim (type 208); small pots with a slightly thick everted rim (type 209); necked jars with a rectangular, dropping and everted rim (type 210); necked jars with a thick and top-flattened rim (type 211); unidentified shapes with an appliqué decoration (types 212 and 222); necked jars with a straight and top-flattened rim (type 213); small jars with a slightly elongated inverted rim (type 214); small pots with a slightly elongated and everted rim (type 215); bases (type 216); tops of sprinklers? (type 217); large jars with a thick, rectangular, top-flattened, slightly everted rim (type 218); large jars with an elongated, externally-flattened rim (type 219); flat bases (type 220); knobs of lids (type 221); and perforated bodsherds (type 223). For illustrations of vessel forms, see Lefrancq and Hawkes (2020a, Plates 41 to 45, types 191–223).

4.10.1 Class 10 Variant 1

This class-variant corresponds to the main description of the class. Well-sorted tiny specks of mica are visible on both surfaces. Surfaces are slightly rough to the touch (7.5YR-6/6 reddish yellow) (fig. 31).

4.10.2 Class 10 Variant 2

A thin red slip (2.5YR-4/6 red) has been applied on the exterior surface of the potsherds belonging to this class-variant. Tiny mica specks are visible on both surfaces, which are also slightly smoothed (fig. 32).

Figure 31: External and internal surfaces of four Class 10 variant 1 potsherds, including one perforated body sherd.

Figure 32: External and internal surfaces of five Class 10 variant 2 potsherds.

4.10.3 Class 10 Variant 3

This class-variant shares the same features as those of Class 10 variant 1, but are distinguished by a higher concentration of mica specks and a few flakes visible on both surfaces (7.5YR-6/6 reddish yellow).

4.10.4 Class 10 Variant 4

This class-variant is similar to Class 10 variant 2. The only difference is the application of a thin mica slip on both surfaces in addition to the red slip (2.5YR-4/6 red). Though, it should be noted that what we identify as a thin mica slip here could also be a high concentration of mica specks and a few flakes in the paste that have been smoothed (fig. 33).

Figure 33: External and internal surfaces of four Class 10 variant 4 potsherds.

4.10.5 Comparisons and Dates

It is difficult to find clear parallels for this class of pottery in published reports. At Mahurjhari, our Class 10 variant 1 corresponds to MHR Class 10; yet (perhaps unsurprisingly) more variants of this class have been identified within our survey assemblage than at that site. Other excavated sites in the area contain various ‘Red Wares’ that may correspond to this class. However, details are so scant as to make firm comparisons rather difficult. At Paithan, this class may correspond to the general corpus of ‘Red Ware’ reported from the site, but a lack of details makes this uncertain. Similarly, at Pauni there is a group of ‘Coarse Fabric Red Slipped Red Ware’ that dates from the fourth to the second century BCE. Some of the vessel shapes of this ware, especially the plates (Nath, 1998, p. 34, Fig. 13, type 4), correspond to some of the shapes made in this class (e.g. Lefrancq & Hawkes, 2020a, Plate 41, type 194). Yet again, due to the limited information about these red wares it is not possible to confirm whether they are the same class of pottery.

At Paunar, parallels may exist with the ‘Coarse Red Ware’ reported from period 1 (1000 to 800 BCE), as well as the ‘Red Slipped Ware’ with clay mixed with grass flakes and fine sand reported from period 2A (fourth to the first centuries BCE). Indeed, one vessel shape made from this ware (Deo & Dhavalikar, 1968, Fig. 9, type 49A) corresponds with one example of this class (Lefrancq & Hawkes, 2020a, Plate 42, type 196).

At Adam, it is not possible to identify any exact parallels. Yet, there is mention of a ‘Perforated Ware’ that occurs during Adam periods 3B, 4 and 5 (c. late second millennium BCE to the second century CE). This is reported to be made with medium to coarse sandy micaceous fabric in Red Ware. One bodysherd (Adam type 14; Nath, 2016, p. 305, Fig. 9.35) corresponds with our Class 10 type 223 (see Lefrancq & Hawkes, 2020a, Plate 45). However, we cannot say any more than this.

4.11 Class 11

This class of pottery is made using fabric group 3, which is characterised by a medium texture and a slightly sandy matrix. The vessels are probably shaped with a fast wheel (use of RKE) as evidenced by the prominent ring cut marks on the base and striation marks on both surfaces. Mud slurry has been applied over the exterior surface which creates small lumps of clay over the surface and gives a rough and irregular surface feel (10R-6/4 pale red, 5YR-5/6 yellowish red). Patches of mica are visible on both surfaces.

One unrestricted shape is associated with this class. This is a bowl with corrugated body, tapering sides and footed base. Rims are more or less straight or slightly inverted. For illustrations of these forms, see Lefrancq and Hawkes (2020a, Plate 46, types 224–227) (fig. 34).

Figure 34: External surfaces (profile and base) of a Class 11 vessel.

4.11.1 Comparisons and Dates

At Mahurjhari, parallels can be identified with MHR Class 1, which dates from the fourth to the sixth or seventh century CE, and continues to be produced in smaller numbers up to the eighth century CE. In terms of shapes, there are parallels with a single shape (a cup) that exhibits slight variations in terms of rim form. At Paithan, this same typical shape is recorded in the group of 'Coarse Red Ware'. It is found in high proportion during period 1 (200–100 BCE) and period 2 (late-first century BCE to the late-first to fourth century CE), and in lower numbers during periods 3 (fourth or fifth century to the eighth century CE) and period 4 (fourteenth or fifteenth century to the seventeenth century CE). At Pauni,

Paunar and Adam, this class might correspond to a subset of their reported ‘Red Wares’, but it is not possible to provide any more details at this stage.

4.12 Class 12

This class of pottery is associated with a specific fabric group, 6b. The main characteristic feature of this class is the presence of a monochrome glaze on both surfaces (fig. 35). Only nine potsherds exist in our survey assemblage, five of which were collected from sites in the Chamak area. It is most likely that these potsherds belong to the late medieval or modern periods.

As for the shapes, we have: one plate with a slightly thinned rim (type 228); one plate/bowl with an internally beaked and thinned rim (type 229); and one necked jar with an externally beaked rim (type 230). For illustrations of these forms, see Lefrancq and Hawkes (2020a, Plate 46, types 228–230).

4.12.1 Comparisons and Dates

Glazed vessels made with a kaolin paste are usually dated to the medieval period. Yet, because of the size of the potsherds and the small number of them, it is difficult to be more precise about their chronology here.

Figure 35: Examples of Class 12 body sherds.

4.13 Class 13

This class of pottery is characterised by the use of a very fine kaolin clay (fabric group 6b; C.M. et al., 2020, p. 16), which has been fired at a high temperature in an oxidising atmosphere. White and blue glazes have been applied on both sides (fig. 36). The blue glaze, made with cobalt oxide, has been used to make designs. Only one small sherd was found amongst the entire assemblage and it comes from the site of Kuhi Reethi (KHI01), in the Mandhal area.

Figure 36: External and internal surfaces of a Class 13 potsherd.

4.13.1 Comparisons and Dates

This class has been recorded in the archaeological literature as ‘Blue and White Porcelain’ or as ‘Glazed Blue Porcelain’. This is an imported ceramic from China. The overseas export of these wares started in the eighth and ninth centuries CE. We do not currently have enough examples in our assemblage to conclusively distinguish it from the ‘Blue and White Frit Ware’ that was produced in the Near East from the fourteenth century until about the nineteenth century CE (Kennet et al., 2015, p. 129). However, we can say that this ware dates broadly to the medieval period.

4.14 Class 14

This class of pottery is characterised by small organic inclusions and very small fibre impressions on the sides. The paste has a medium texture or it is slightly coarser (fabric groups 3b, 2d, 2h). We are constrained in our ability to identify the shaping techniques that were used to make vessels of this class due to the size of the sherds. However, rim portions are regular in thickness, which might indicate at least the use of RKE for the finishing stages of the shaping process. All variants display a slip, with the exception of variant 5 where the slip has been probably washed out. Variants are established on the basis of the surface treatment and the firing atmosphere (linked to the colour of the slip).

Potsherds belonging to this class are present only at sites within the Chamak zone. As such, and because examples of pottery Class 2 (with a fine to medium paste) and Class 5 (with a coarser paste) are present in this area in only very small numbers, it may be that Class 14 pottery was a local reproduction of Classes 2 and 5 that were produced in large quantities in the Mandhal and Pauni areas. This remains to be confirmed through further research.

In terms of vessel shapes, we can identify: basins with thick sides and a slightly rounded rim (type 231); plates with an elongated and slightly everted rim (type 232); plates with a straight rim (type 233); plates with a thick and top-flattened rim marked externally by a careen (type 234); plates with a thick, top-flattened, square-shaped rim (type 235); bowls with a thinned rim (type 236); bowls with a slightly thick and inverted rim (type 237); bowls with a ribbed and top flattened rim (type 238); plates with a thinned, elongated and inverted rim marked externally by a careen (type 239); plates with an elongated bifoliate and inverted rim (type 240); pots with an inverted rim (type 241); pots with a slightly thick, elongated and inverted rim (type 242); pots with a very complex ribbed and inverted rim with incised and impressed decorations (type 243); pots with an elongated, ribbed and slightly inverted rim, with incised, impressed or appliqué decorations (type 244); pots with a slightly thick and round inverted rim (type 245); large pots with a top-flattened and straight rim (type 246); pots with a thick, round, slightly elongated and everted rim (type 247); pots with a ribbed and straight rim (type 248); pots with a ribbed straight rim with a rounded lip (type 249); large pots

with a thick, round and inverted rim (type 250); large pots with a thick, round and everted rim (type 251); pots with a slightly elongated and dropping rim (type 252); pots with an elongated and everted rim marked by an internal careen (type 253); pots with an elongated and slightly thinner everted rim marked by an internal careen (type 254); pots with an elongated, rectangular everted rim marked internally by a careen and ridges (type 255); pots with an elongated and everted rim marked by an internal careen and with a thick and round lip (type 256); pots with an elongated and slightly everted rim with a thick lip (type 257); pots with an elongated and everted rim with a thick and rectangular lip (type 258); necked jars with an everted rim (type 259); necked jars with a thick, round and everted rim (type 260); necked jars with elongated, rectangular, externally flattened and everted rim (type 261); necked jars with a thick and round rim (type 262); pots with a slightly elongated and everted rim sometimes with a thick and round lip (type 263); pots with a ribbed and straight rim (type 264); necked jars with a thick, rectangular and straight rim (type 265); necked jars with an elongated, thinned, bifoliate rim (type 266); necked jars with a thick, triangular and slightly dropping rim (type 267); necked jars with an everted rectangular rim (type 268); small necked jars with a slightly thickened, round and everted rim (type 269); goblets with a thinned and inverted rim (types 270, 271); small bottles with a straight rim (type 272); spouts (types 273 and 275); necks of sprinklers (type 274); and annular bases (type 276). For illustrations of these vessel forms, see Lefrancq and Hawkes (2020a, Plates 47 to 54, types 231–276).

4.14.1 Class 14 Variant 1

This class-variant is characterised by the presence of a good quality red slip (10R-5/8 red, 2.5YR-5/8 red) on the exterior and/or interior sides. A few mica specks are visible on both surfaces, which have been smoothed. An oxido-reducing firing atmosphere is indicated by the recurrent grey core and red margins (fig. 37).

4.14.2 Class 14 Variant 2

Many of the characteristic features of this class-variant are similar to Class 14 variant 1, except the quantity of mica specks visible on the surface is higher (fig. 38). The firing atmosphere is oxidised.

4.14.3 Class 14 Variant 3

This class-variant shares the same characteristics as Class 14 variant 1, other than the fact that mica flakes are only visible on the surfaces of the potsherds and not in the section. The firing atmosphere is oxidised.

4.14.4 Class 14 Variant 4

This class-variant displays a black slip (10YR-2/2 very dark brown, 2/1 black), a few mica specks on both sides and smooth surfaces (fig. 39). The firing atmosphere was reduced.

4.14.5 Class 14 Variant 5

The surfaces of this class-variant are not slipped, and both the section and the surfaces are dark grey (GLEY 1-3/very dark gray, 4/dark gray; fig. 40), indicating a reducing atmosphere. It is possible that a black-grey slip was present initially but disappeared due to the erosion. A few mica specks are visible on both sides and the surfaces are slightly rough to the touch.

Figure 37: External and internal surfaces of Class 14 variant 1 potsherds.

Figure 38: External and internal surfaces of a Class 14 variant 2 potsherd.

Figure 39: External and internal surfaces of Class 14 variant 4 potsherds.

4.14.6 Class 14 Variant 6

This class-variant displays a so-called ‘chocolate slip’ (2.5YR-3/1 dark reddish gray, 5/2 weak red, 3/3 dark reddish brown, 5YR-5/3 reddish brown), which is applied to the external surface and sometimes also the internal surface depending on the vessel shape. A few mica specks have been observed on both sides and the surfaces are generally well smoothed and sometimes polished (fig. 41).

4.14.7 Class 14 Variant 7

This class-variant is similar to Class 5 variant 3. Potsherds belonging to both have a black slip (10YR-2/2 very dark brown, 2/1 black) on one surface and a red slip (10R-5/8 red, 2.5YR-5/8 red) on the other. However, the clay paste used to make this class-variant is medium to coarse and organic impressions are more visible in this class than in those defined as Class 5. A few mica specks have been observed on both surfaces of vessels belonging to this class. This variant has been identified at only one site, Chachondi, in the Chamak area.

4.14.8 Comparisons and Dates

Class 14 variants 1–3 correspond to the ‘Coarse Red Slipped Ware’ identified at Chachondi in archaeological contexts that have been dated to the sixth to fifth century BCE (Hawkes et al., 2016). This class has not been identified at Mahujhari, Paithan or Pauni. Parallels can be identified at Pauniar. In particular, necked jars with a square rim identified as ‘Red Slipped Ware’ (Deo & Dhavalikar, 1968, Fig. 11) that resemble our vessel shape type 258 (Lefrancq & Hawkes, 2020a,

Figure 40: External and internal surfaces of Class 14 variant 5 potsherds.

Figure 41: External and internal surfaces of Class 14 variant 6 potsherds.

Plate 52). However, this particular ware and vessel type is recorded in archaeological layers dating from their periods 1, 2 and 3 making it hard to identify a clear chronological correspondence. Similarly, certain forms made from Class 14 variant 6 could correspond to the group of ‘Coarse Fabric Chocolate Slipped Red Ware’ noted at Adam (Nath, 2016). However, this group exists during the site’s period 2 (1750 to 1425 BCE) until period 4 (350 to 100 BCE). As such, precise dates are hard to pin down for this class of pottery.

4.15 Class 15

This class of pottery is present only in the Chamak zone, and is associated with a specific fabric group that contains a small fraction of kaolin clay, fabric group 9 (C.M. et al., 2020, p. 19). Small white inclusions (<0.5 mm) are visible both in section and on the surfaces. The shaping techniques are composite, as indicated by traces of coiling and the use of paddling at the junction of main parts of the vessel. However, the regularity and the thickness of the sides suggest that a slow wheel has been used to finish the pots. A coloured slip has been applied on one or both surfaces (depending on the vessel shapes) along with mica specks. Vessels are sturdy and the firing atmosphere was usually oxidised (all sections are buff). It should be noted that the second variant exhibits a dark grey-black slip, which is probably due to a secondary reducing post-firing treatment. Technical variants have been defined on the basis of the colour of the slip. However, it is not rare to observe both colours of slip on the same potsherd.

Vessel shapes exhibit relatively little variation in comparison to those of other classes. This indicates a certain degree of standardization, even if variants of types have been noticed. These variations can be due to the manufacturing techniques. The catalogue of shapes comprises: plates with a top-flattened and everted rim (type 277); plates with a slightly thick, top-flattened and straight rim (type 278); plates with an elongated, slightly thinned and inverted rim (type 279); bowls with an elongated and inverted rim (type 280); bowls/plates with an elongated and inverted rim marked by an external careen (type 281); pots with an elongated beaked straight rim (type 282); pots with an elongated and straight or slightly everted rim with a rounded lip, marked by an internal careen (type 283); pots with an elongated and everted rim marked internally by a careen and ridges (type 284); pots with an elongated and thickened rounded rim marked by an internal careen (type 285); pots with an elongated, flattened, straight or slightly everted rim marked by an internal careen and ridge on the top of the rim (type 286); pots with an elongated, top-flattened and everted rim, marked by an internal careen and ridge on top of the rim (type 287); pots with a flat rectangular-shaped and slightly inverted rim (type 288); pots with a slightly thickened, slightly elongated and everted rim (type 289); pots with a thick everted rim marked by an internal careen (type 290); small pots with a slightly thickened, slightly elongated and everted rim (type 291); small pots with an elongated, slightly-thinned everted rim (type 292); and pots with an elongated and everted rim (type 293). For illustrations of vessel forms, see Lefrancq and Hawkes (2020a, Plates 55 to 59, types 277–293).

4.15.1 Class 15 Variant 1

This class-variant is characterised by a red slip (2.5YR-6/8 light red, 5YR-7/6 reddish yellow, 7.5YR-5/6 red) on both sides of which the exterior shows black patches (fig. 42). This indicates that the firing environment was not perfectly controlled.

4.15.2 Class 15 Variant 2

This class-variant is characterised by a dark grey-black slip (2.5YR-3/1 very dark grey) (fig. 43). A degree of non-uniformity in the colour of the slip has also been observed for this variant, indicating a variable firing environment.

4.15.3 Comparisons and Dates

The only excavated site that has been published and that allows for comparison is the site of Paturda. Here, radiocarbon dates have enabled us to date the main period of occupation from the sixth to the ninth or tenth century CE (Deotare,

Figure 42: External and internal surfaces of Class 15 variant 1 potsherds.

Figure 43: External and internal surfaces of Class 15 variant 2 potsherds.

2004–2005). Specific parallels from the site are examples of ‘Red Ware’ with mica wash. The shapes are exactly the same, especially the carinated storage pots with out-turned rims marked by ridges. However, the brief definitions of this ware provided by the report could also correspond to Class 6 variants 3–4, which are also encountered only in the Chamak area. The fact that these two classes of pottery (15 and 6) are found at most sites in this area does not mean that they belong to the same chronological period. Rather, they could mark two distinct chronological periods. At Chachondi, this class also correspond to the ‘Later Red Slipped Ware’ dated to the early medieval and medieval periods (Hawkes et al., 2016). It is also worth noting that the sherds of this class of pottery encountered during survey are generally larger and less fragmentary than those of other classes. This may be due to collection bias, but may equally be an indicator of their later date.

4.16 Class 16

This class of pottery is made using medium to coarse fabric groups (2d, 3a, 8) that have a sandy texture (C.M. et al., 2020, pp. 5, 8, 18). The inclusions are visible and can measure up to 1 mm. While some mica specks are often visible, larger mica flakes do not appear to have been used as a temper as they were in the manufacture of Class 4 pottery. It is difficult to identify the shaping techniques used to make Class 16 vessels, but the thickness of sides is regular, indicating the use of a wheel. The firing atmosphere was oxidised but not well controlled. Variants are defined on the basis of their surface treatment.

The catalogue of shapes made using this class includes types 21, 56, 63, 64, 65; which were also made using Class 2 pottery (see Lefrancq & Hawkes, 2020a, Plates 3, 11–13). These are all relatively large shapes with thicker sides.

4.16.1 Class 16 Variant 1

Surfaces are smooth and treated with a red slip (10R-5/8 red, 10R-4/8 red) on one or both surfaces depending on their vessel shapes. A good amount of mica specks are visible on both surfaces along with a few mica flakes.

4.16.2 Class 16 Variant 2

Potsherds of this class-variant are characterised by a specific fabric group made of a fine matrix and frequent large inclusions up to 1 mm (fabric group 8). The surfaces of potsherds belonging to this variant have been slightly smoothed, but remain rough to the touch due to the size and frequency of the inclusions. Surfaces are devoid of any kind of slip (2.5YR-6/6 light red, 5YR-6/6 reddish yellow). Only few small mica specks are sometimes visible on both sides.

4.16.3 Class 16 Variant 3

The features of this class-variant are same as those that define Class 16 variant 2, but the frequency of mica specks on both surfaces is higher (2.5YR-6/6 light red, 5YR-6/6 reddish yellow).

4.16.4 Comparisons and Dates

In the reports of all sites in the region, this class tends to be encompassed within the broad group of ‘Coarse Red Ware’. Due to the lack of information recorded about these wares it is not yet possible to identify any exact parallels.

Figure 44: External and internal surfaces of a Class 16 variant 2 potsherd.

5 Dates of the Wares

On the basis of the above comparisons, it is possible to suggest tentative dates for the pottery encountered during landscape surveys of the Vidarbha region. The suggested dates of each class-variant described above, as well as key words for the characteristic features that define them (listed in a hierarchical order of fabric, shaping techniques, surface appearance, surface treatment, surface finish, feel, and firing environment) is provided in Table 2. Some of these dates are still uncertain, but are included here as suggestions that can be confirmed through further research. These are indicated with a question mark. Only thirteen class-variants remain undated. For ease of reference, this table also provides the previously reported names that have been applied to each of the class-variants we define here.

6 Discussion

Examining the pottery from Vidarbha with reference to the ways that pots were made has enabled us to identify sixteen distinct classes of pottery with fifty-four variants. By comparing these with excavated material from sites across the region, it has been possible to relate these classes and their variants with existing typologies derived from traditional methods and date them. In doing so, it is now possible to use this ceramic material to help date the archaeological sites where they were found. By the same degree, referring to this typology has the potential to help us date other sites and remains that might be found during future surveys in ways that were not possible before—when our understanding only extended as far as poorly defined ‘wares’ recorded from isolated sites. Indeed, by adopting an approach to the analysis of pottery that accepts the variation that is evident within it, we are now able to move beyond at least some of the limitations that accompanied earlier approaches.

Doing so has a number of benefits that extend far beyond a primary interest in dating sites and remains. First, this more detailed typology enables us to compare sites on the basis of the material culture that defines them. Obviously, this needs to be looked at in more detail, and that will constitute next step in our research. Yet it is immediately apparent that if we look at where all of these different classes of pottery are found there are geographical differences in the composition of ceramic assemblages. Pottery assemblages from sites in the neighbouring Mandhal and Pauni zones are composed mainly of classes 1, 2, 3, 4, 5, 6, 7, 9 and 11. Classes 10 and 16 also occur, but in much lower numbers (Fig. 45). As discussed above, there are still some areas of uncertainty within these classes (e.g. the ease with which we

Table 2: Suggested dates and review of main characteristic features of all Class-variants identified in this study.

Pottery Class-variant	Characteristic features	Suggested date	Previously reported name(s)
Class 1 variant 1	Fine paste, combined techniques, small mica specks, oxidised	1st cent. BCE to 4th/5th cent. CE	Slipped Red Ware / Red Slipped Ware
Class 1 variant 2	Fine paste, combined techniques, small mica specks, red slip, oxidised	1st cent. BCE to 4th/5th cent. CE	Slipped Red Ware / Red Slipped Ware
Class 2 variant 1	Fine to medium paste, combined techniques, few mica specks, red slip, smooth, oxidised	1st cent. BCE to 4th/5th cent. CE	Slipped Red Ware / Burnished and Slipped Red Ware
Class 2 variant 2	Fine to medium paste, combined techniques, more mica specks, red slip, less smooth, oxidised	1st cent. BCE to 6th/7th cent. CE	Slipped Red Ware / Burnished and Slipped Red Ware
Class 2 variant 3	Fine to medium paste, combined techniques, few mica specks, red slip, slightly rough, oxidised	1st cent. BCE to 6th/7th cent. CE	Slipped Red Ware / Burnished and Slipped Red Ware
Class 2 variant 4	Fine to medium paste, combined techniques, mica slip with specks, red slip (eroded), smooth, oxidised	1st cent. BCE to 6th/7th cent. CE	Slipped Red Ware / Burnished and Slipped Red Ware
Class 2 variant 5	Fine to medium paste, combined techniques, few mica specks, brownish-reddish slip, smooth, oxidised	1st cent. BCE to 6th/7th cent. CE	Red Slipped Ware
Class 2 variant 6	Fine to medium paste, combined techniques, few mica specks, red slip, greyish-black painting, less smooth, oxidised	1st cent. BCE to 6th/7th cent. CE	Painted Slipped Red Ware
Class 3 variant 1	Fine to medium paste, few mica specks, rough, oxidised	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 3 variant 2	Fine to medium paste, combined techniques, few mica specks, rough, reduced	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 3 variant 3	Fine to medium paste, combined techniques, few mica specks, smooth, oxidised	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 3 variant 4	Fine to medium paste, combined techniques, few mica specks, smooth, reduced	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 3 variant 5	Fine to medium paste, combined techniques, mica slip with small mica specks, rough, oxidised	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 3 variant 6	Fine to medium paste, combined techniques, mica slip?, rough, reduced	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 3 variant 7	Fine to medium paste, combined techniques, whitish inclusions, more mica specks, smooth, oxidised	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 3 variant 8	Fine to medium paste, combined techniques, frequent mica specks, smooth, oxidised	3rd/2nd cent. BCE to 4th/6th cent. CE?	N/A
Class 4 variant 1	Coarse paste, mica flakes and specks in section, combined techniques, mica slip with frequent flakes and specks, smooth, oxidised	1st cent. BCE to 3rd/4th cent. CE?	Coarse Micaceous Ware
Class 4 variant 2	Coarse paste, mica flakes and specks in section, combined techniques, mica slip with fewer flakes and specks, smooth, oxidised	?	Coarse Micaceous Ware
Class 4 variant 3	Coarse paste, mica flakes and specks in section, combined techniques, mica slip with fewer flakes and specks, smooth, oxidised	7th to 8th cent. CE	Coarse Micaceous Ware
Class 4 variant 4	Coarse paste, mica flakes and specks in section, combined techniques, mica slip with fewer flakes and specks, black slip, smooth, reduced	7th to 8th cent. CE	Coarse Micaceous Ware

Table 2: Suggested dates and review of main characteristic features of all Class-variants identified in this study.

Pottery Class-variant	Characteristic features	Suggested date	Previously reported name(s)
Class 4 variant 5	Coarse paste, mica flakes and specks in section, combined techniques, frequent mica flakes and specks, slightly rough, oxidised	?	Coarse Micaceous Ware
Class 4 variant 6	Coarse paste, mica flakes and specks in section, combined techniques, frequent mica flakes and specks, red slip, less smooth, oxidised	4th to 6th/7th cent. CE	Coarse Micaceous Ware
Class 4 variant 7	Coarse paste, mica flakes and specks in section, combined techniques, fewer mica flakes and specks, slightly rough, oxidised	?	Coarse Micaceous Ware
Class 4 variant 8	Coarse paste, mica flakes and specks in section, fewer mica flakes and specks, smooth, oxidised	?	Coarse Micaceous Ware
Class 4 variant 9	Coarse paste, mica flakes and specks in section, combined techniques, fewer mica flakes and specks, red slip, smooth, oxidised	?	Coarse Micaceous Ware
Class 4 variant 10	Coarse paste, mica flakes and specks in section, combined techniques, fewer mica flakes and specks, black slip, smooth, reduced	post-10th to 17th/18th cent. CE	Coarse Micaceous Ware
Class 4 variant 11	Coarse fabric, combined techniques, mica flakes and specks in section, mica slip with flakes and specks, less smooth, oxidised	?	Coarse Red Ware / Coarse Gritty Micaceous Ware
Class 4 variant 12	Coarse fabric, combined techniques, mica flakes and specks in section, fewer mica flakes and specks, rough, oxidised	?	Coarse Red Ware / Coarse Gritty Micaceous Ware
Class 4 variant 13	Coarse fabric, combined techniques, mica flakes and specks in section, fewer mica flakes and specks, red slip, rough, oxidised	?	Coarse Red Ware / Coarse Gritty Micaceous Ware
Class 4 variant 14	Coarse fabric, mica flakes and specks in section, mica slip with fewer flakes and specks, red slip, less smooth, oxidised	?	Coarse Red Ware / Coarse Gritty Micaceous Ware
Class 4 variant 15	Coarse fabric, combined techniques, mica flakes and specks in section, organic temper, fewer flakes and specks, smooth, oxidised	?	Coarse Red Ware / Coarse Gritty Micaceous Ware
Class 5 variant 1	Medium paste, combined techniques, fewer mica specks, black slip, smooth, reduced	7th to 10th cent. CE (and post 10th cent. CE?)	Thick Grey Ware / Later Black Ware / Later Grey Ware
Class 5 variant 2	Medium paste, combined techniques, fewer mica specks, red slip, smooth, oxidised	7th to 10th cent. CE (and post 10th cent. CE?)	Thick Grey Ware / Drab Black Ware
Class 5 variant 3	Medium paste, combined techniques, fewer mica specks, black slip and red slip internal/external, well smooth, inverted	7th to 10th cent. CE (and post 10th cent. CE?)	Thick Grey Ware / Later Black Ware / Later Grey Ware
Class 5 variant 4	Medium paste, combined techniques, fewer mica specks, bad quality black slip, smooth, reduced	7th to 10th cent. CE (and post 10th cent. CE?)	Later Black Ware / Later Grey Ware
Class 5 variant 5	Medium paste, combined techniques, few mica specks, grey surfaces, less smooth, reduced	7th to 10th cent. CE (and post 10th cent. CE?)	Later Black Ware / Later Grey Ware
Class 5 variant 6	Medium paste, combined techniques, mica slip with fewer mica flakes and specks, black slip, smooth, reduced	7th to 10th cent. CE (and post 10th cent. CE?)	Later Black Ware / Later Grey Ware

Table 2: Suggested dates and review of main characteristic features of all Class-variants identified in this study.

Pottery Class-variant	Characteristic features	Suggested date	Previously reported name(s)
Class 5 variant 7	Medium paste, combined techniques, fewer mica flakes and specks, black slip, smooth, reduced	post 10th cent. CE?	Later Black Ware / Later Grey Ware
Class 5 variant 8	Medium paste, combined techniques, few mica flakes and specks, red slip, less smooth, oxidised	post 10th cent. CE?	Thick Grey Ware / Drab Black Ware
Class 6 variant 1	Fine to medium paste, combined techniques?, mica slip with specks and few flakes, smooth, oxidised	1st cent. BCE to 7th cent. CE?	Mica-Slipped Red Ware / Fine Micaceous Ware
Class 6 variant 2	Fine to medium paste, combined techniques?, mica slip with specks, golden shine, smooth, oxidised	1st cent. BCE to 7th cent. CE?	Mica-Slipped Red Ware / Fine Micaceous Ware
Class 6 variant 3	Medium paste with whitish inclusions, combined techniques?, mica slip with specks and few flakes, smooth, oxidised	1st cent. BCE to 7th cent. CE?	Mica-Slipped Red Ware
Class 6 variant 4	Medium paste with whitish inclusions, combined techniques?, mica slip with specks and few flakes, reddish-pink slip, smooth, oxidised	1st cent. BCE to 7th cent. CE?	Mica-Slipped Red Ware
Class 7 variant 1	Fine to medium paste, combined techniques?, very few mica specks, black and red slip, polished, oxido-reduced	3rd/2nd cent. BCE to 1st cent. CE?	Black and Red Ware
Class 7 variant 2	Fine to medium paste, combined techniques?, very few mica specks, black slip, polished-burnished, reduced	3rd/2nd cent. BCE to 1st cent. CE?	Black and Red Ware / Black Burnished Ware
Class 7 variant 3	Fine to medium paste, combined techniques?, very few mica specks, red slip, polished-burnished, oxidised	3rd/2nd cent. BCE to 1st cent. CE?	Black and Red Ware
Class 7 variant 4	Medium paste, combined techniques?, very few mica specks, black slip, burnished, reduced	3rd/2nd cent. BCE to 1st cent. CE?	Black and Red Ware / Black Burnished Ware
Class 7 variant 5	Fine to medium paste, combined techniques?, very few mica specks, black and red slip, smooth, thinner, oxido-reduced	3rd/2nd cent. BCE to 1st cent. CE?	Black and Red Ware
Class 8 variant 1	Kaolin clay, wheel-made?, smooth, oxidised	Modern?	N/A
Class 8 variant 2	Kaolin clay, wheel-made?, red slip, smooth, oxidised	Modern?	N/A
Class 9 variant 1	Very fine paste, wheel-made?, red slip, polished, oxidised	3rd cent. BCE to 4th/5th cent. CE	Red Polished Ware / Fine Fabric Polished Red Ware
Class 9 variant 2	Very fine paste, combined techniques?, black and red slip internal/external, smooth-polished, oxido-reduced	3rd cent. BCE to 3rd/4th cent. CE	Rouletted Ware
Class 9 variant 3	Very fine paste, wheel-made?, black slip, polished, reduced	4th cent. BCE to 1st cent. CE	Fine Black Slipped Ware
Class 10 variant 1	Medium to coarse paste, combined techniques, organic fibre impressions, few mica specks, a bit rough, oxidised	4th to 2nd cent. BCE?	Red Ware / Coarse Red Ware
Class 10 variant 2	Medium to coarse paste, combined techniques, organic fibre impressions, few mica specks, red slip, smooth, oxidised	4th to 2nd cent. BCE?	Red Ware / Coarse Red Ware
Class 10 variant 3	Medium to coarse paste, combined techniques, organic fibre impressions, mica specks and few flakes, a bit rough, oxidised	4th to 2nd cent. BCE?	Red Ware / Coarse Red Ware
Class 10 variant 4	Medium to coarse paste, combined techniques, organic fibre impressions, thin mica slip with specks and few flakes, red slip, smooth, oxidised	4th to 2nd cent. BCE?	Red Ware / Coarse Red Ware

Table 2: Suggested dates and review of main characteristic features of all Class-variants identified in this study.

Pottery Class-variant	Characteristic features	Suggested date	Previously reported name(s)
Class 11	Medium paste, wheel-made, irregularities on surfaces, a bit rough, oxidised	4th to 6th/7th cent. CE	Coarse Red Ware
Class 12	Very fine paste, kaolin?, wheel-made?, monochrome glaze, oxidised	Medieval	Medieval Glazed Pottery
Class 13	Very fine paste, kaolin-porcelain, blue and white glaze, oxidised	14th to 18th cent. CE	Glazed Blue Porcelain
Class 14 variant 1	Medium paste, few organic impressions, combined techniques?, few mica specks, red slip, smooth, oxido-reduced	6th to 1st cent. BCE	Coarse Red Slipped Ware
Class 14 variant 2	Medium paste, few organic impressions, combined techniques?, mica specks, red slip, smooth, oxido-reduced	6th to 1st cent. BCE	Coarse Red Slipped Ware
Class 14 variant 3	Medium paste, few organic impressions, combined techniques?, few mica specks and flakes, red slip, smooth, oxido-reduced	6th to 1st cent. BCE	Coarse Red Slipped Ware
Class 14 variant 4	Medium paste, few organic impressions, combined techniques?, few mica specks, black slip, smooth, reduced	6th to 1st cent. BCE	N/A
Class 14 variant 5	Medium paste, few organic impressions, combined techniques?, few mica specks, grey surfaces, a bit rough, reduced	6th to 1st cent. BCE	N/A
Class 14 variant 6	Medium paste, few organic impressions, combined techniques?, few mica specks, chocolate slip, smooth-polished, oxidised/oxido-reduced	6th to 1st cent. BCE	Coarse Chocolate Slipped Ware
Class 14 variant 7	Medium paste, few organic impressions, combined techniques?, few mica specks, black and red slip internal/external, smooth-polished, inverted/oxido-reduced	6th to 1st cent. BCE	N/A
Class 15 variant 1	Fine to medium paste with whitish inclusions, combined techniques, few mica specks, reddish slip, smooth, oxidised	6th to 10th cent. CE (and post-10 th cent CE?)	Red Ware / Later Red Slipped Ware
Class 15 variant 2	Fine to medium paste with whitish inclusions, combined techniques, few mica specks, blackish slip, smooth, oxidised	6th to 10th cent. CE (and post-10 th cent CE?)	Red Ware / Later Red Slipped Ware
Class 16 variant 1	Coarse paste, combined techniques?, a lot of mica specks and few flakes, red slip, smooth, oxidised	?	Coarse Red Ware
Class 16 variant 2	Coarse paste, combined techniques?, few mica specks, less smooth, oxidised	?	Coarse Red Ware
Class 16 variant 3	Coarse paste, combined techniques?, mica specks, less smooth, oxidised	?	Coarse Red Ware

can distinguish between potsherds belonging to classes 2 and 4); and variations exist in the proportions of different classes at each site, presumably due to chronological differences in occupation. But by and large the composition of the assemblages at sites in these two zones are the same. The only measurable difference between them is that potsherds belonging to class 7 are more prevalent at sites in the Pauni zone than they are around Mandhal. However, the composition of assemblages from sites in the Chamak zone are markedly different. Here, there is no evidence of class 2 pottery whatsoever, and instead potsherds belonging to class 14 dominate assemblages, together with those belonging to classes 4, 6, 7 and 15.

These similarities and differences have implications for our understanding of these areas and the wider region. The similarities in the assemblages in the Mandhal and Pauni zones indicate that potters living across this wide area used

Figure 45: Charts illustrating the proportions of each class of pottery relative to each other in each survey zone. Numbers on the inner circumference indicate the ceramic classes (as defined in this study).

the same techniques to make the pots, and shared a common knowledge manufacturing process that continued over many centuries. The degree of overlap with the composition of assemblages in the Chamak zone suggests that many of these techniques and manufacturing processes were known across the region. While at the same time, the fact that we can identify one entire class of pottery that is confined to sites in the Chamak zone demonstrates that there were also intra-regional differences in the ways that people made pots. This, in turn, may point towards other cultural differences within the region.

This leads us to another benefit of having such a regional pottery typology. With the variation that we see (and now record) in the pottery being a material reflection of the different ways that pots were made, we are able to start considering how people were doing things differently at different sites in ways that have so far eluded us in the study of South Asia. This has implications on at least two different levels. Thus far, because of the ways that potsherds (and other artefacts) are traditionally accounted for, we have a somewhat vague understanding of what people did in settlements in ancient and medieval India. For instance, we might know that they produced and traded craft items, and that these practices are indicators of various economic and social structures. But our understanding of exactly *how* people carried out those practices is usually assumed with recourse to wider interpretive frameworks. We are rarely able to get close enough to the nuts and bolts of these underlying activities. But now, in shifting the basis of typological distinctions onto the practices that made pots, we are able to see something of the underlying activities that took place and that would have formed part of people's lifeways. By analysing pottery in this way, we can start to reconstruct the decision-making processes that lay behind peoples' actions—the choices people made in selecting different materials and employing certain techniques for different reasons. Leading on from this, we now have the means to identify certain communities of practice, and groupings of people based on what they were actually doing over and above shared presence of one or two visually distinctive types of pottery. Equally, and because of this, we are also able to start developing a slightly more nuanced understanding of the settlements (and other sites) where these pottery remains are found. Due to the way these artefacts have been studied in the past these sites have, by extension, become passive backdrops in which artefact are found, rather than active arenas where people lived. They end up being defined in vague terms as 'cities', 'towns' or 'villages' that are again understood with reference to assumed notions of what must have happened within cities, towns and villages rather than on the basis of the activities we as archaeologists can (theoretically at least) identify in the archaeological record.

The potential benefits of this typology in particular, and this way of looking at pottery in general are clear. Though this typology and methodology are not without limitations, and it is important to be clear about these. For a start, and as we have already noted, the typology presented does not afford very precise dates. This is largely due to the nature of the assemblage, which comprises material collected from reconnaissance surveys and not from dated stratified contexts; as well as the fact that there are only a limited number of dated comparators from excavations in the region. In addition, the surveys that generated the pottery analysed here were conducted at a large geographical scale and encompassed sites dating to a broad spectrum of time (from the mid-first millennium BCE to the mid second millennium CE). As such, we have had to define a large number of classes and variants in order to accommodate this regional and

temporal variation. In presenting this typology, we are also aware that our naming system is somewhat awkward and cumbersome. References to ‘Class 2 variant 4’ potsherds certainly do not roll off the tongue as easily as the standard nomenclature. Yet here it is also worth pointing out that the use of such terminology is a conscious decision, and one made in response to the fact that we are still at the most foundational stage of defining regional (and one-day hopefully inter-regional) typologies. Further, we are also aware that our regional picture is still limited to three survey zones and the ways material from them relate to those from isolated excavations.

Yet, at the same time, many (if not all) of these limitations can be resolved through further work. There is great potential to integrate the ceramic material collected by Lacey (2014) and Sontakke et al. (2016) into this typological framework through fresh first-hand examination of both assemblages.⁷ But what really needs to be done now is more work at the level of individual sites across the region, with more local site-based pottery analyses. The results of this work would enable us to constantly and reiteratively review understanding of regional pottery and the number of classes and variants. If there is further research in this area (and we sincerely hope there will be), and if that research is able to be done on the scale that it needs to be, then we will naturally end up with a far more detailed and refined, and reliable and trustworthy pottery typology—one in which pottery classes, groups, types or wares with much more specific names. We are fully aware that this will take time. In the world of Roman pottery, for instance, where it is possible to date a potsherd to within a few decades and sometimes even identify the kilns where it was made, it took over one hundred years of dedicated work by generations of ceramics specialists to develop our understanding to this level. There is no overnight answer.

Further in this regard, we are also aware that implementing any more of an involved method of ceramic analysis, whether it is a *chaîne opératoire*-based approach as argued for here or another method, presents a number of practical challenges. The first and most immediate one is that the use of this method does require more training than the current on-site observation of the colour, surface and quality of potsherds. The physical sorting, documentation and categorisation of excavated potsherds on-site (or, ideally, back in the excavating institution) needs constant specialist input. So too do decisions that are made regarding retention and discard policies in order to avoid inadvertently discarding entire classes of pottery in the mistaken belief that they are simply ‘undiagnostic’ or generic ‘Red Wares’. Equally, looking at pots in isolation and improving the way we look at them is only one small part of wider picture of archaeological practice in South Asia. Thus, implementing change in the way that pottery is studied and understood will also require a shift in the way that archaeological sites are approached and excavated. On-site decisions have just been mentioned; but over and above these there are various aspects of excavation and post-excavation practice that impact on our understanding of the pottery that is unearthed. For instance, the location and size of excavation trenches all effect how much material is likely to be retrieved, and how trenches are excavated will affect what we can say about the contexts in which pots were made, used and deposited. Also, having a more complex understanding of pots and having a more detailed typology will naturally result in assemblages being bigger. While it might be ideal, it is not always practical or possible to keep every single potsherd that is found. But assuming that archives would continue to comprise representative samples of what has been found and identified, and that these decisions would have been made by trained ceramics specialists, having a more involved typology will mean that we will *have* to keep more potsherds. Perhaps even as much as ten times as many as are currently retained. This means that there is also going to have to be a fundamental shift in the way that excavated assemblages are stored. Future inter-site comparisons will also require changes in the accessibility of these archives. We do, of course, realise that there are all sorts of financial and institutional impediments and constraints associated with these changes. Yet, we hope that this highlights the range of additional factors that would also need to be considered in adopting a new approach to the study and analysis of the pottery.

⁷ Further to these assemblages, additional comparative material exists in the form of assemblages collected during systematic surveys in neighbouring regions. For example, those collected during surveys in Madhya Pradesh to the north in the regions surrounding the sites of Bharhut (Hawkes, 2006) and Sanchi (Shaw, 2007). These not only contain a great deal of material that correlates to the Class-variables presented here, but also provide interesting cross-regional comparisons.

7 Conclusion

This study set out to: (1) identify and date the pottery remains found at archaeological sites across the Vidarbha region; (2) make the first attempt at a regional pottery typology; (3) further explore the applicability of a *chaîne opératoire* approach to the study of archaeological ceramics in South Asia; and in doing so to (4) stimulate discussion and research that will move the study of archaeological ceramics in this region forward. We have achieved all of these aims to varying degrees of satisfaction. First, with regards our pottery types and dates, we have identified types and dates that we can use to make sense of the survey results and enable the study of individual sites and spatio-temporal analyses on regional scale. Many of the identifications that we make are, of course, tentative. This is because this typology represents the first step in this direction. Also, while the pottery classes in this typology might not account for the material that exists across the entire swath of Vidarbha, it does represent the broadest picture of the ceramics from this region so far in existence. In doing so, it has considerable value—not only in terms of bringing this material together in one place; but also as an openly accessible dataset and working resource.

In defining these ceramic types and being able to date the majority of them, we have also demonstrated the applicability of this methodology as a tool for archaeologists working in this area. This is not to ignore the limitations that do exist. Yet, at whatever level we might identify these limitations—be they in terms of the size of samples, the extent of our regional coverage, the necessary uncertainties and complexities that are involved in working with a typology that is still ‘in progress’, or the clear need for more specialist input moving forward—they are not due to anything inherently wrong with the approach that we advocate here *per se*. Rather, any limitations have been shown to be due to the quality and quantity of comparative material from excavations that can (or cannot) be used to make sense of surface remains, and certain idiosyncrasies of archaeological practice in South Asia. There will be challenges in adopting and implementing this approach on a large scale—not least in terms of the level of specialist training required. However, this in itself should not be a reason to dismiss new methods; nor should it detract from their value and applicability. Indeed, we hope that any future developments in the study of archaeological ceramics (or indeed any other category of artefact) in any part of the world would necessarily require a commensurate increase in specialist skill.

The typology presented here is not fixed. It is adaptable and entirely subject to change. While this might seem like an uncomfortable prospect given our tendency to seek and rely on archaeological certainties, it is precisely this sort of uncertainty that has to be embraced and that must lie at the core of future approaches to archaeological ceramics in this region. As we have amply demonstrated, there is a great deal of variability that needs to be accounted for. We advocate identifying and defining this variability with reference to the ways people made pots, though there are certainly other methods that can be used. Yet, what should by now be beyond question is that approaches to ceramics in this region (and the rest of South Asia) cannot continue in this way. And we hope that at the very least this study stimulates discussion and signposts multiple avenues for continued research.

Acknowledgements: The research presented in this article was carried out in collaboration between the Indian Numismatic, Historical and Cultural Research Foundation, the Institut Français de Pondichéry and The British Museum. It took place as part of the *Asia Beyond Boundaries* project, an ERC Synergy project funded by the European Research Council under the European Union’s 7th Framework Programme (FP7/2007-2013)/ERC grant agreement no. 609823, awarded to Dr Michael Willis. The pottery analysed in this report was collected during archaeological surveys directed by Dr Riza Abbas and assisted by Mr Sitaram Toraskar (INHCRF), with permission for exploration granted by the Archaeological Survey of India (No. F.1/23/1/2014-EE). The preliminary recording and initial sorting of the pottery sherds was carried out by Miss Jaseera C.M. (Tamil University), and assistance in the drawing of the pottery was provided by Mr Sarath Chandrababu.

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