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― 愛知県陶磁資料館寄託のパキスタン先史土器群（3） ―

Report on the Survey of the Archaeological Materials of Prehistoric Pakistan, stored in the Aichi Prefectural Ceramic Museum.
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要旨：

本稿は、愛知県陶磁資料館に寄託されている彩文土器の調査報告の続編である。前稿（Shudai *et al.* 2009, 2010）で述べたように、総数133点におよぶ彩文土器は、現在のパキスタン・イスラーム共和国の南西部にあたるバローチスターン丘陵部に展開した先史諸文化の所産である。前稿までに報告したナール式土器とクッリ式土器の他に、丘陵地北部のクエッタ地域一帯で製作されたクエッタ土器様式（ファイズ・ムハンマド式土器を含む）、それにイラン高原南東部に接するマクラーン地方のダシュト川流域で作られた土器（エミール式土器を含む）までが含まれている。これらの土器群は、紀元前4千年紀後半から前2千年紀初頭までの長期にわたる時間幅と、それぞれに個性豊かな彩文と製作技法によってバローチスターン先・原史諸文化の多様性を示し、バローチスターン丘陵部で長期にわたり展開した地域間交流と土器製作技法の復元に多大な情報を提供するものである。こうした理由から、筆者らは愛知県陶磁資料館に寄託されているこれら土器群をいち早く共有・活用できるデータとするために、その資料化を進めてきた。

今回報告するのは、エミール式土器とクエッタ土器様式である。前者は前4千年紀後半にマクラーン地方のダシュト川流域で製作された特徴的な土器であり、後者は紀元前3千年紀前半にバローチスターン丘陵北部のクエッタ地域に展開した土器様式である。エミール式土器は、灰色系と淡黄色系土器から構成され、卍文様やシカ文様などの彩文により装飾されている。一方、クエッタ土器様式も、ファイズ・ムハンマド式土器の灰色系とその他の淡黄色系土器により特徴づけられる。ファイズ・ムハンマド式土器の製作技法は、還元焔焼成を可能にした二段式土器焼成窯の使用やロクロ水挽き技法をはじめとする高度で専門的な技術体系に依拠している。また、彩文要素とその構成も非常に特徴的であり、階段文様を中心とする幾何学文様とコブウシやピーパル（インド菩提樹）などの動植物文様から構成される。エミール式土器とクエッタ土器様式は、ともに鉢を特徴的な器種とし、その見込みに彩文が描かれた精製彩文土器である。

以下では、愛知県陶磁資料館に寄託されているエミール式土器とクエッタ土器様式について、特に彩文要素とその構成パターン、およびに製作技法に着目して報告するが、エミール式土器とクエッタ土器様式の意義に関しては、器形・器種および彩文の成立と展開の様相、各時期の地域間交流の動態や両者の編年的位置づけなどを視点として次回に詳しく報告することとする。

なお、愛知県陶磁資料館に寄託されるトガウ式彩文土器などを含むその他の土器群と、人物や動物を中心とする土偶群に関しては、機会を改めて報告する予定である。

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Introduction

As mentioned in the last two reports [Shudai *et al.* 2009, 2010], 133 prehistoric painted potteries of Pakistan have been stored in the Aichi Prefectural Ceramic Museum, Japan. They are the private collection own by an individual who lives in Tokyo, and entrusted to the museum. Almost all of them are preserved in entirely, not in fragments, and then we suppose that they would be unearthed from burials by illegal diggings. They could be classified in the Wares of Nal, Kulli, Emir, etc. and Quetta Style Pottery including Faiz Mohammad Ware, and belong to the duration ranging the later half of the 4th to the beginning of the 2nd millennium B.C. by their form and painted motives. We have not seen these fine and good conditioned prehistoric materials even in Pakistan itself. In the light of its archaeological precious meaning, whatever it is the pottery from illegal diggings, we are convinced that these materials will be useful to consider the cultures of ancient Balochistan and Indus Civilization.

We had firstly surveyed with surprisingly some of the collection in the exhibition hall and others packed in wooden cases made of a paulownia tree like caps for the tea ceremony in the storeroom of the museum on 8th September 2005, and started to draw and take photographs of these materials for making the catalog of the potteries in the working space of the Aichi Prefectural Ceramic Museum from 8th to 15th September 2007. The second season of research at the Aichi Ceramic Museum had been held from 16th to 24th June 2008. And the third season of research had been held from 13th to 17th September 2009. We report here Emir Ware and Quetta Style Pottery that were observed in a great detail. Other potteries and figurines will be reported in the following volumes.

Member of participants form the first to the third researches were KONISHI Masatoshi (Professor emeritus of Rikkyo University), SHUDAI Hideaki (Tsurumi University), KONASUKAWA Ayumu (Department of Archaeology, Deccan College, Post-Graduate & Research Institute, Deemed University), ENDŌ Hitoshi (Research Institute for Humanity and Nature), KIMURA Satoshi (Toyohashi City Museum Art and History), UENO Tsuyoshi (Graduate School of Tokai University), YONEYAMA Akane (Cyber University) and SHUDAI Fukiko.

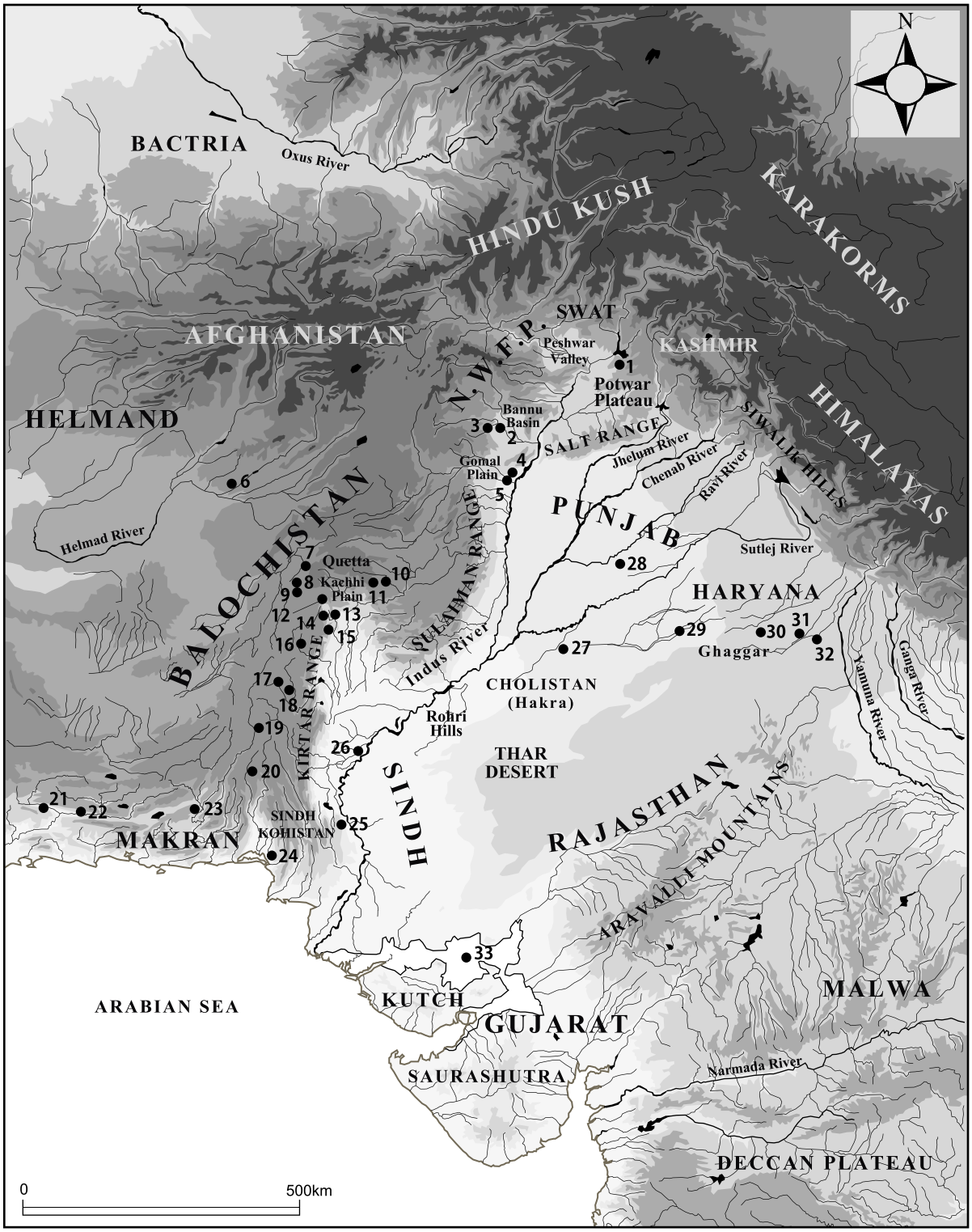
1. Emir Ware and Quetta Style Pottery[1)]

Emir Ware which distributed in east-southern Iran in the later half of 4th millennium B.C. and Quetta Style Pottery, including Faiz Mohammad Ware, which distributed in Quetta region of central Balochistan in the first half of 3rd millennium B.C. (Figure. 1, see chapter I of the previous volume [Shudai *et al.* 2010] about the geographical features of Balochistan region) have been studied from the beginning of its discoveries. Why these potteries have been studied by various scholars is special features of these potteries, example for the making techniques of Grey ware which reveals the craft specialization and the special function as an offering item for burial. According to sharing the manufacturing techniques between their pottery styles, these potteries have been defined as archaeological materials for understanding the cultural relationships and the chronology between Balochistan and east-southern Iran regions (Table 1). The history of discoveries and studies on these potteries are summarized in the following part.

(1) Background of the study on Emir Ware and Quetta Style Pottery

The first discovery of Grey wares at Balochistan and east-southern Iran regions was reported by A. Stein [Stein 1929, 1931, 1937]. Stein guessed that these Grey wares are special items for elite groupes on the ritual activities, because these potteries were discovered from the burials and made by elaborated manufacturing techniques.

S. Piggott divided prehistoric Balochistan cultures into Buff-ware cultures and Red-ware cultures and regulated its features in his representative archaeological book *'Prehistoric India'* [Piggott 1950]. The former includes Quetta culture, Amri-Nal culture and Kulli culture, the latter constitutes of Zhob culture. In these cultures, Quetta culture is characterized by Quetta Style Pottery including Faiz Mohammad Ware. Piggott summarized about shapes and painted motives of Quetta Style Pottery as follows. The shapes constitute of beaker and shallow bowl, etc. And painted motives constitute of geometrical motives, especially step-like motif mainly, which are painted by purplish-brown or black pigments, but naturalistic motives had not been



1. Sarai Khola
2. Lewan
3. Sheri Khan Tarakai
4. Rehman Dheri
5. Gumla
6. Mundigak
7. Kili Ghul Mohammad
8. Damb Sadaat
9. Kechi Beg
10. Rana Ghundai
11. Sur Jhangal
12. Faiz Mohammad
13. Mehrgarh
14. Lal Shah
15. Nausharo
16. Togau
17. Anjira
18. Siah Damb
19. Nal
20. Nindowari
21. Shahi Tump
22. Miri Qalat
23. Kulli
24. Bala Kot
25. Amri
26. Mohenjodaro
27. Ganweriwala
28. Harappa
29. Kalibangan
30. Banawali
31. Rakhigarhi
32. Farmana
33. Dholavira

Figure. 1 Map showing the major sites discussed in this paper

reported.

Piggott wrote that the Grey wares having same painted motives with Quetta Style Pottery are discovered in Zhob region of northern Balochistan. And he also seek a similar example of Quetta Style Pottery in Iran and Central Asia, because the comparative buff-wares had not been in the other Balochistan regions. Piggott pointed out that Quetta Style Pottery was parallel in time with Susa period I, Giyan period V and Sialk period III. According to sharing a painted motif of a step-like motif, he considered that the origin of Quetta Style Pottery had the relationship with Anau culture of central Asia. And Piggott understood that the pottery including Emir Ware discovered from the burials of Shahi Tump was belonging to the later than Kulli and Harappan periods.

D.H. Gordon also discussed on the pottery including Faiz Mohammad Ware bearing the step-like motif discovered in Quetta region for the study of chronology of Balochistan region [Gordon 1955].

W.A. Fairservis classified Grey wares discovered from Balochistan and east-southern Iran, as a painted Grey ware distributed in Sistan region was Emir Ware [Fairservis 1961] and a painted Grey ware in Balochistan region was Faiz Mohammad Ware [Fairservis 1956, 1959]. And he assembled the chronological sequence of Quetta region as Faiz Mohammad Ware had been firstly made since Damb Sadaat period II, based on the results of excavations at Kili Ghul Mohammad and Damb Sadaat [Fairservis 1975].

B. de Cardi [1965] and R. Raikes [1968] confirmed the great distribution sphere of Faiz Mohammad Ware over Quetta region by the surveys in southern Balochistan region. de Cardi [1979] also presented very important results of the studies on Emir Ware from the excavations at Bampur.

C.C. Lamberg-Karlovsky and M. Tosi studied on Grey wares excavated from Shahr-i Sokhta and pointed out that Grey wares occupies ca. 5% in all excavated potteries [Lamberg-Karlovsky and Tosi 1973]. They also clarified that Emir Grey Ware and the resemble potteries with Faiz Mohammad Ware from the burials in the sites. Emir Ware is discovered from the burials belonging to periods I and II, and the shallow bowls of Faiz Mohammad Ware and its related wares are excavated from the burials belonging to periods III and IV in the recent excavations at Shahr-i Sokhta [Sajjadi *et al.* 2003; Piperno and Salvatori 2007][2]. The significance of discoveries of these potteries as grave goods gives us important informations to discuss the social system in that time.

R. Biscione discussed about Quetta Style Pottery, he calls them as Quetta Ware, and defines the great distribution sphere of the step-like motif of Quetta Ware as a merkmarl of cultural relationships in these areas in the first half of 3rd millennium B.C. on the perspective of cultural relationships between southern Trukmenia, Balochistan and eastern Iran [Biscione 1973].

Lamberg-Karlovsky and Tosi pointed out that the manufacturing techniques of Grey ware showed the development of craft specialization and the social development in that time.

M. Vidale also prescribed the craft activities of prehistoric South Asia, and Faiz Mohammad Ware was made through the specialization of pottery making by the analyses of archaeological materials and structures excavated at some pottery manufacturing sites, Shahr-i Sohkta, Tepe Rud-i Biyaban and Tepe Dash, etc. for discussing the pottery manufacture and process of its organizations [Vidale 1983, 2000]. Vidale pointed out that the manufacturing techniques of gery ware was possibly derived from the outside of Indus, and observed at the great-sphere area including Afghanistan, Iran, Kachhi valley and Sindhi Kohistan regions. And Vidale surmised that the production of Faiz Mohammad Ware was intensive craft activities and its activities were performed by a specialized kin-ship group.

The excavations at Mehrgarh [Jarrige, C. *et al.* 1995] and Nausharo [Jarrige 1986, 1988, 1989, 1990] present the important information to discuss about chronological position of Faiz Mohammad Ware. Excavations at Mehrgarh by French team unearthed the oldest example of Faiz Mohammad Ware from period V, later half of 4th millennium B.C.[3]. And Faiz Mohammad Ware increased in the number of excavated pottery in Periods VI and VII, the first half of 3rd millennium B.C. In continuous periods, transitional phase (=Mehrgarh period VIIC, Nausharo periods IA to IC) and the formation phase of Harappan Ware (= Nasuharo period ID), Faiz

Mohammad type potteries were also discovered from the sites. G. Quivron discussed the pottery sequence of Nausharo, and concluded that Nausharo period IC is simultaneous with Quetta-Sadaat period III, and also pointed out that the shapes and motives of Nausharo period IC potteries were resemblance with Faiz Mohammad Ware discovered at Mehrgarh period VIIC and Lal Shah, and these features continue to the next phase, Nausharo period ID [Quivron 1994].

S. Pracchia examines the manufacturing process of Faiz Mohammad Ware that is based on the excavated six pottery kilns at Lal Shah site where is situated 1km to the west of Mehrgarh [Pracchia 1985][4]. Some setters for settling of pottery in firing, molds for making the base of pottery and scrapers made of pottery sherd were discovered with some shards of Faiz Mohammad Ware around the pottery kilns. Pracchia argues that same manufacturing technique level of Balochistan and eastern Iran, as Faiz Mohammad Grey Ware discovered at Lal Shah is resemblance with that of Tepe Rud-i Biyaban near Shahr-i Sohkta.

M. Santoni summarized specific features of Faiz Mohammad Ware with discussing the pottery firing structures in Mehrgarh period VI, as the reddish colour painting was used mainly in period VI, on the other hand black colour painting was used mainly in period VII [Santoni 1989]. And he presumes the method of firing the pottery without spacer because of existence of sticked potteries after firing them.

J.-F. Jarrige explains an important function of Quetta valley on the question of the formation of Indus Civilization and names characteristic culture of Quetta region as Quetta-Sadaat Complex [Jarrige 1993]. Quetta-Sadaat Complex had existed from the end of 4th millennium B.C. to 2500 / 2300 BCE with some changes or transformations. The characteristic pottery style of this cultural complex is Quetta Style Pottery including grey and buff types of Faiz Mohammad Ware. He also pointed out the great distribution sphere of Faiz Mohammad Ware.

R.P. Wright analyzed Emir Ware and Faiz Mohammad Ware on the perspective of the systems of distribution, exchange and cultural relationship [Wright 1986, 1989a, 1989c]. She examines the production and the distribution system of Grey ware in east-southern Iran and Balochistan by using Neutron Activation Analysis and microscope analysis. As a result, she summarized that Faiz Mohammad Ware discovered at Shahr-i Sokhta was carried from Kachhi region of central Balochistan and some pottery production sites were exist between Balochistan and Iranian Plateau[5], and showed the long distance trade sphere of Faiz Mohammad Ware. She classified clearly Emir Grey Ware and Faiz Mohammad Ware by shape, colour of surface and core, paste, painted motif, thickness and hardness of wall, as follows;

Faiz Mohammad Ware. Shapes: shallow bowl as a main shape, goblet, pot and straight-sided pot; Colour: grey type as a main type, and buff type; Paste: very fine; Painted surface: not glossy but basically frosted; Painted motif: animal and plant motif as a main motif, geometrical one; Thickness: 2 to 10 mm; Mohs hardness: 2.5 to 5.5; Distributional area: Kachhi, Sarawan, Quetta, Zhob-Lorarai regions.

Emir Grey Ware. Shapes: deep bowl as a main shape, pot, etc.; Colour: brownish-grey type as a main type, and frosted-colour type; Paste: very fine; Painted surface: basically glossy, not frosted; Painted motif: swastika motif, not complex motif in comparing with Faiz Mohammad Ware; Thickness: 2 to 6 mm (mainly 2 to 3 mm); Mohs hardness: 3.5 to 5.5; Distributional area: Sistan, Kerman, Bampur, Kej Valley and Hili regions.

She subdivided Faiz Mohammad Ware into the type 1 to 4 and Emir Grey Ware into the type 1 to 3. And she argued the period in use of both pottery as Faiz Mohammad Ware was simultaneous with Mehrgarh periods V to VII, Damb Sadaat periods II and III, and Emir Ware was simultaneous with Shahr-i Sokhta periods I to III, Bampur periods IV and V and Tepe Hahya periods IVC and B.

J.G. Shaffer examines the chronological sequence of the Greater Indus Valley in the *'Chronologies in Old World Archaeology'* edited by R.W. Ehrich [Shaffer 1992]. Shaffer divide the Balochistan Tradition, ranging from 3000 to 2600 B.C., into Faiz Mohammad Phase, Damb Sadaat Phase, Nal Phase, Kulli Phase and Periano Phase for discussing about prehistoric Balochistan cultures [Shaffer 1978, 1992][6].

H.M.-L. Miller discussed the manufacturing process of Faiz Mohammad Ware with synthetic examination of the pyrotechnology including pottery firing in the Indus valley [Miller 1997, 1999, 2007]. Miller pointed out the origin of specialization on the

Table. 1 Chronological chart of related region

	Mesopotamia	South Turkmenia	South-East Iran / Makran	Afghanistan	Middle / South Balochistan	Kachi / Quetta	Sindh	Punjab West	Punjab East	Gomal / Bannu	Gujarat / Saurashtra
1800BCE		BMAC	Shahr-i Sokta IV(0)	Mundigak V	Mehi (BMAC)	Mehrgarh VIII	Amri IIID	Harappa 5			Rangpur III
	Ishin-Larsa								Mitathal IIB Banawali III		
								Harappa 4			Rangpur IIC Kanmer III
2000BCE	UrIII		Bampur VI								
					Kulli	Nausharo IV	Mohenjodaro B (late) Chanhudaro Ic Amri IIIC	Harappa 3C			Rangpur IIA-IIB Lothal B Surkotada IC Kanmer IIB Dholavira V-VI
2200BCE									Rakhi Garhi II		
	Akkad		Shahr-i Sokta IV(1)			Nausharo III	Mohenjodaro B Chanhudaro Ib Amri IIIB	Harappa 3B	Bhirrana IIB Banawali II		Lothal A Surkotada IA-IB Kanmer IIA Dholavira IV
2350BCE		Kelleli							Mitathal IIA		
	Early Dynastic IIIB	Namazga V			Nindowari		Mohenjodaro A		Bhirrana IIA		
			Miri Qalat IV		Nal IV	Nausharo II	Kot Diji L1-2 Amri IIIA	Harappa 3A	Farmana II Kalibangan II	Ghandi Umar Khan Maru II	Dholavira II-III Kanmer I
2500BCE	Early Dynastic IIIA					Nausharo ID	Chanhudaro Ia				
2600BCE			Bampur V Rud-i Biyaban Shahr-i Sokta III Miri Qalat IIIC	Mundigak IV3		Nausharo IC Mehrgarh VIIC	Amri ID・IIA・IIB Kot Diji L4-3	Harappa 2	Mitathal I Farmana I Kalibangan I	Gumla IV Lewan Late Rehman Dheri IIIB	Dholavira I
	Early Dynastic II										
2700BCE					Nal III	Damb Sadaat III	Kot Diji L7-5				Moti Pipli
	Early Dynastic I		Bampur III・IV Shahr-i Sokta II Miri Qalat IIIB	Mundigak IV2		Mehrgarh VII		Sarai khola II	Kunal Ic Rakhi Garhi Ib Bhirrana IB Banawali I	Gumla III Lewan Middle Rehman Dheri IIIA	
		Namazga IV			SD III	Damb Sadaat II					
3000BCE	Jemdet Nasr		Bampur I・II Shahr-i Sokta I Miri Qalat IIIA	Mundigak IV1 Said Qala II	Anjira V SD II iii Anjira IV	Mehrgarh VI	Kot Diji L16-8	Harappa 1B	Kunal Ib Rakhi Garhi Ia		
						Mehrgarh V	Amri IC			Rehman Dheri II	Loteshwar
	Late Uruk	Namazga III		Mundigak III	Nal II	Damb Sadaat I	Balakot I Roheljo Kund		Bhirrana IA Kunal Ia Girawad	Gumla II Lewan Early Rehman Dheri IB Rehman Dheri IA	
3300BCE								Jalilpur II			
				Said Qala III	SD II i/ii Anjira III	Mehrgarh IV	Amri IB	Jalilpur I Harappa 1A			
3500BCE	Middle Uruk		Miri Qalat II	Mundigak II	Nal I	Mehrgarh III	Amri IA	Sarai khola I			
		Namazga II									

*1 SD : Siah Damb

*2 This chronological table is a relative chronology, based on investigations of the pottery types excvated from the Indus valley and neighboring regions. Adopting dates are not exact one, they are roughly estimated dates.

pre- Harappan phase | Transitional phase

Formation phase of Harappan culture | Early phase of Harappan culture

Middle phase of Harappan culture | Late phase of Harappan culture

pottery making because the manufacturing process of Faiz Mohammad Ware needs highly elaborated manufacturing techniques (i.e. up-draft kiln, etc.).

R. Besenval postulated the chronological perspective of Kechi-Makran region through the results of his excavations at Miri Qalat and Shahi Tump [Besenval 2005]. He reported that Emir Grey Ware was excavated from Kechi-Makran period IIIb ranging from the later part of 4th millennium to the first half of 3rd millennium B.C. [Besenval 1992, 1994, 1997, 2000; Besenval and Marquis 1993; Besenval and Sanlaville 1990; Besenval and Didier 2004]. Although Emir Ware had been understood as the pottery discovered from the later than Indus period [Piggott 1950, etc.], the employmental period of Emir Ware goes back to the later half of 4th millennium B.C. after his excavations [Besenval 1994].

Franke-Vogt surveys the prehistoric Balochistan cultures with detailed discussing of the results of excavations at Sohr damb / Nal [Franke-Vogt 2003-2004, 2005; Franke-Vogt and Ibrahim 2005] in *'Encyclopedia of Archaeology'* edited by D.M. Pearsall [Franke-Vogt 2008a]. She assigned that Emir Grey Ware is discovered from Shahr-i Sohkta periods I to III, Tepe Yahya periods VA to IVB5 and Miri Qalat period IIIb, and Faiz Mohammad Ware is discovered in Quetta to Surab regions in the period simultaneous with Mehrgarh periods VI to VII. And Faiz Mohammad Ware is reported that it is rarely in southern Balochistan and only one piece was discovered from the burials belonging to period II at Nal. As the discovery of both type Grey Wares at Mundigak periods III to IV1, she pointed out the cultural relationship between east-southern Iran and Quetta regions. And she supposed the great-sphere of cultural relationships between eastern Iran and central Balochistan because Faiz Mohammad Ware discovered at Shahr-i Shokhta periods III5b to 4 could be understood as the imported materials from central Balochistan[7].

We could summarize the earlier studies on the distributional sphere and the manufacturing techniques that Emir Ware and Faiz Mohammad Ware have been understood as the special materials to discuss the origin of craft specialization in the later half of 4th millennium to the first half of 3rd millennium B.C.

Japanese South Asian Archaeologists also discussed about the importance of Emir Ware and Faiz Mohammad Ware, especially Faiz Mohammad Ware as follows.

T, Sono summarized the pottery sequence of Faiz Mohammad Ware and Quetta Ware by the comparative analysis with the painted potteries of early agricultural society of West Asia [Sono 1974]. Sono understood that Faiz Mohammad Ware was a part of Quetta Ware, because both types share some common features.

H. Shudai discussed that manufacturing techniques and chronological position of Faiz Mohammad Ware with introducing of some surface collections of Mehrgharh [Shudai 1982]. And he prescribed the potteries of prehistoric Balochistan as Quetta Ware, and clarified the same pattern of pottery sequence between Mehrgarh and Quetta region and assigned that Faiz Mohammad Ware belong mainly to the period simultaneous with Mehrgharh periods VI and VII [Shudai 1997].

In addition to these studies, we can give some more studies about Faiz Mohammad Ware, example for H. Kamada [Kamada 1986], Xu [Xu 1987, 1989, 1995], A. Hori [2002] and others.

Recently the historical significance, the formation process and the distributional pattern of Faiz Mohammad Ware have been re-examined concerning to the studies on the formation processes of Indus Civilization [Shudai *et al.* 2010 ; Uesugi 2008; Uesugi and Konasukawa 2008; Kondō *et al.* 2007]. The present author supposed that it was sound convincingly that Harappan painted ware and Faiz Mohammad Ware had shared of painted motives between them by the comparative analysis of painted motives. But, the painting pattern and the style are different each other. We argued that the painted style of Harappan Ware had been constituted by the selection from the painted motives of Faiz Mohammad Ware and re-constructied the new system of the painted style [Konasukawa 2008a, b, c]. Author also discussed the historical (technical) significance of Faiz Mohammad Ware with introducing the Ware stored in the Okayama Orient Museum, Japan [Konasukawa 2010].

(2) Short summary

The studies on Emir Ware and Quetta Style Pottery, including Faiz Mohammad Ware, have been discussed on the origin of craft specialization in the prehistoric west-southern Asia in the later half of 4th millennium to the first half of 3rd millennium B.C., because these studies revealed that both Wares have highly complex manufacturing techniques (i.e. using up-draft kiln for the non-oxidizing atmosphere to be fired), fine painting style and great distributional sphere. Emir Ware in east-southern Iran and Faiz Mohammad Ware in Balochistan have been understood as a merkmarl of cultural relationship between them by the sharing of same manufacturing techniques on making pottery.

The detail studies on the manufacturing techniques of these potteries by R.P. Wright and the results of excavations at Mehrgarh and Nausharo revealed the social and economical relationships in Balochistan and Sistan regions in the first part of 3rd millennium B.C. The fact of making similar potteries at Lal Shah in Balochistan and Tepe Rud-i Biyaban in Sistan provide very useful informations on the studies of the social change in the formation process of Indus Civilization. It is needless to say that the burial goods including specific potteries of various regional traditions (i.e. Emir Ware, Faiz Mohammad Ware) of Shahr-i Sohkta also indicate the cultural and social interaction in these areas.

We will discuss the meaning and formation and developmental processes of both Wares in the following Volume after consideration of many informative studies about Emir Ware and Quetta Style Pottery, including Faiz Mohammad Ware, have been already presented. In this paper, the authors consider the features of Emir Ware and Quetta Style Pottery stored in the Aichi Prefectural Ceramic Museum as follows.

2. Emir Ware and Quetta Style Pottery in the Aichi Prefectural Ceramic Museum: Manufacturing Techniques and Painting Motives

The potteries stored in the Aichi Prefectural Ceramic Museum include 8 potteries of Emir Ware and 10 potteries of Quetta Style Pottery with Faiz Mohammad Ware. The potteries are decorated by the characteristic geometric and naturalistic motives (i.e. goat and pipal, etc.) in the main campus which is set on the internal or external surface of the body, and indicate elaborated manufacturing techniques (i.e. using of fast turn-table and double chamber up-draft kiln, etc.) as it will be discussed later.

It is clear that Emir Ware and Quetta Style Pottery belong to the different periods and were distributed in the different regions. It could be understood that the former is belonging to the second half of 4th millennium B. C. and was distributed in the Dasht Basin of South-east Iran, the latter is belonging to the period ranging from early to middle of 3rd millennium B. C. and was distributed in the center part of Balochistan region, especially Quetta valley.

We will limitedly use the nomenclature of 'Quetta Style Pottery' in this paper to express the potteries constituted of Faiz Mohammad Ware and other Wares that were distributed at the central Balochistan in the fist half of 3rd millennium B.C.

We defined Emir Ware and Quetta Style Pottery in the Aichi Prefectural Ceramic Museum, all of these potteries as typical examples of both types. This understanding for the potteries is according to the study of the manufacturing techniques and painted motives of Emir Ware and Quetta Style Pottery [Konasukawa 2010, etc.]. So, the manufacturing techniques and the painting motives of these potteries will be main topic in this report.

Emir Ware

The vessels of Emir Ware are constituted of grey core and buff core types, and made of medium fine paste without any gritty ingredient, though the fine sand temper is clearly visible. The clay is well-levitated as it gives a compact feel to the surface and the core of the body. Visible scraping traces and uneven rubbed marks seen on different parts of the pottery indicate that non-turning anvil or slow turn-table was used at forming the pottery, and we can see also the traces of building the clay coil ring on the surface of some complete potteries.

Emir Ware is basically formed by the hand modeling with employing the technique of clay coil ring building on the non-turning anvil or slow turn-table and finished by scraping and smoothening by spatulas or fingers without burnishing technique on the bodies. Thickness of them is medium size (0.2 to 0.7 cm, see the following part).

In most cases, the pottery vessels are rough surfaces and are painted by various motives including

animal, naturalistic and geometric patterns by reddish brown or black pigments. These motives will be discussed later.

The vessels are very well-fired probably using the closed kiln that were double chamber up-draft kiln. The presences of potteries having grey core mean that some potteries were fired in the non-oxidizing atmosphere. The colours of core of the body will be described later. The shapes of Emir Ware in the Aichi Prefectural Ceramic Museum can be classified into deep bowl and shallow bowl.

Quetta Style Pottery

The vessels of Quetta Style Pottery are also constituted of grey core and buff core types, and made of medium fine paste without any gritty ingredient, though the fine sand temper is clearly visible. The clay is well-levitated as it gives a compact feel to the surface and the core of the body. Visible horizontal scraping traces and uneven rubbed marks seen on different parts of the pottery indicate that the slow or fast turn-table was used at forming the pottery, and we can see also the traces of building the clay coil ring on the surface of some complete potteries.

Quetta Style Pottery is basically formed by the hand modeling with employing the technique of clay coil ring building on the slow or fast turn-table and finished by scraping and smoothening by spatulas or fingers with the traces of burnishing technique on the bodies of some potteries. Thickness is medium size (0.3 to 0.9 cm, see the following part).

In most cases, the pottery vessels are covered by whitish slip with smooth surfaces and are painted by various motives including animal, naturalistic and geometric patterns by reddish brown or black pigments. These motives will be discussed later.

The vessels are very well-fired probably using the closed kiln that is double chamber up-draft kiln. The presences of potteries having grey core mean that some potteries were fired in the non-oxidizing atmosphere. The colours of core of the body will be described later. Quetta Style Pottery in the Aichi Prefectural Ceramic Museum can be classified into the following vessel's types: deep bowl, sallow bowl, straight-sided bowl, short necked globular bowl, open-mouthed pot with three perforations, cup, bowl-on-stand, open-mouthed jar.

We will discuss about Emir Ware and Quetta Style Pottery individually.

(1) Emir Ware

a Painting motives of Emir Ware in the Aichi Prefectural Ceramic Museum

All of Emir Ware in the Aichi Prefectural Ceramic Museum are decorated by various motives including animal, naturalistic, geometric and other motives (Figures. 2 to 4). Animal, naturalistic and geometrical motives are basically decorated as a main motif at the interior surface of the body, while other motives are decorated on the both sides of rim. It is confirmed that various painting motives are decorated on the potteries in the Aichi Prefectural Ceramic Museum in this part.

Animal motives

The animal motif is basically the limited repertory of painted motif for Emir Ware. The animal motif is a only left-facing goat (Figures. 3-⑤ and 4-⑥). Each of designs are drawn clearly one by one and physical features of animal are also expressed clearly. This animal motif is decorated as a row of goat on the interior surface of the body.

Naturalistic motives

Naturalistic motif is a pipal only (Figure. 4-⑧). The nomenclature of pipal means a Indian linden tree, and the pipal as painting motif was a very popular design during the period from the pre-/ Early Harappan periods to the Harappan period. A leaf of pipal is expressed as a sacred gem or heart shape through various periods and regions of South Asia. Pipal motif decorated on Emir Ware also has the same design features like as that. But pipal motives observed on the pottery of the Aichi Prefectural Ceramic Museum are not expressed as a tree type but a leaf type.

Geometrical and Other motives

The most important motif on Emir Ware can be said that it is the geometrical one, especially swastika (卍) motif. Five of eight in Emir Ware (Figures. 2-①～④, 3-⑤) have a swastika motif as a main motif on the interior surface of the body.

Another main motif is consisting of comb-like motif (or temple motif). Rim portion of both sides of all Emir Ware are decorated by straight or curved lines, a row of triangle and festoon, etc.

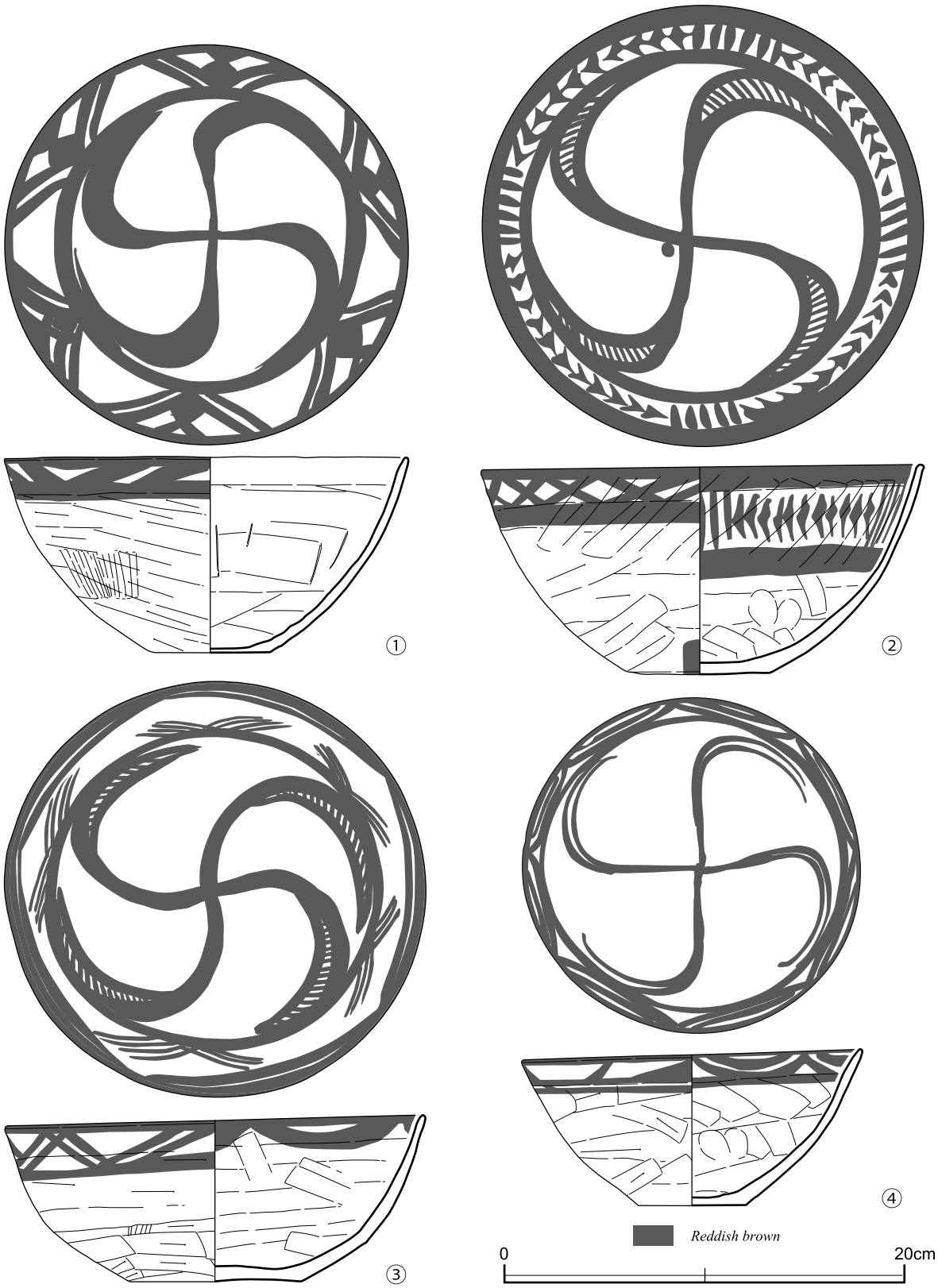


Figure. 2 Emir Ware in the Aichi Prefectural Ceramic Museum (1)

b Emir Ware in the Aichi Prefectural Ceramic Museum

① *figure. 2-①and plate. 1-1 to 6 (no. 028)*

Form: Deep bowl

Rim Diameter: 20.0cm, *Base Diameter:* 5.95cm, *Height:* 9.75cm, *Thickness:* 0.4 to 0.5cm

Surface Finishing, Colour of the Body and Other Features:

Marks of rotating smooth with fingers or a spatula by using the slow turn-table or non-turning anvil are observed on the internal surface. The rim is smoothed by fingers on the slow turn-table. The middle part of the body is smoothed by a spatula, and the lower part is smoothed by fingers or a spatula in uncertain directions on the slow turn-table or non-turning anvil. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on other parts of the body. We can understand on the observations that the direction of the first scraping is done horizontally and the direction of the second scraping is done from bottom to head obliquely. And it could be said that the external surface, excluding the rim part, is not smoothed after scraping. Whatever the wheel was used, turning speed of it is slow on the observations of scraping and smoothing marks. The base is flat made by scraping.

Colours of the body indicate 2.5YR7/6 to 6/8 (surface) and 10R4/4 to 4/6 (paint) on the both surfaces. Colour of the core can not be observed but this pottery can be defined as non-grey ware by colour of the surface. Fabric is good and firing condition is hard.

Slip Past and Painting Motif:

Slip is non-visible on the both surfaces. Reddish brown band and festoon are observed on the rim of the internal and external surfaces. A main painting motif on the internal surface is swastika. All of motives are painted by reddish brown pigment.

② *figure. 2-②and plates. 1-7 and 8, 2-1 to 3 (no. 029)*

Form: Deep bowl

Rim Diameter: 21.9cm, *Base Diameter:* 7.0cm, *Height:* 10.5cm, *Thickness:* 0.3 to 0.7 (near the base part)

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula by using the slow turn-table or non-turning anvil and finger impressions are observed on the internal surface. The upper part of pottery is smoothed by a spatula from bottom to head in oblique. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on other parts of the body. The direction of scraping is from bottom to upper part. And it could be said that the external surface, excluding the rim part, is not smoothed after scraping. Whatever the wheel was used, turning speed of it is slow on the observations of scraping and smoothing marks. The base is flat made by scraping.

Colours of the body indicate 2.5Y7/1 to 7/2 (surface) and 7.5R4/4 to 3/6 (paint) on the internal surface, 2.5Y7/1 to 7/2 to 10R6/4 to 6/6 (surface) and 5YR4/6 to 4/8 (paint) on the outer surface. Colours of the core indicates 10R6/4 to 6/6. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both surfaces. Reddish brown bands and cross-like motives are observed on the rim of the internal and external surfaces. A row constituted of triangles and vertical lines are also drawn on the internal surface. A main painting motif on the internal surface is swastika. And cross-like motif is expressed on the base (plate 2-3). All of motives are painted by reddish brown pigment.

③ *figure. 2-③and plate. 2-4 to 8 (no. 026)*

Form: Deep bowl

Rim Diameter: 21.0cm, *Base Diameter:* 8.6cm, *Height:* 8.3cm, *Thickness:* 0.4 to 0.7cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula on the turn-table or non-turning anvil are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on other parts of the body. The direction of scraping is from left to right. And, it could be said that the external surface, excluding the rim, is not smoothed after scraping. Whatever the wheel was used, turning speed of it is slow on the observations of scraping and smoothing marks. The base is flat made by scraping of uncertain directions.

Colours of the body indicate 7.5YR6/1 (surface) and 5YR6/6 to 5/6 (paint) on the internal surface, 10YR6/1 to 5/1 (surface) and 5YR6/6 to 5/6 (paint) on the outer surface. Colour of the core can not be observed, but this pottery is defined as grey ware according to the colour of surface. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both surfaces. Reddish brown bands with curved lines and bands with oblique lines are observed on the rim of the internal and external surfaces. Main painting motives on the internal surface are swastika and festoon. All of motives are painted by reddish brown pigment.

④ ***figure. 2-④ and plate. 3-1 to 6 (no. 016)***

Form: Deep bowl

Rim Diameter: 17.0cm, ***Base Diameter:*** 5.4cm, ***Height:*** 7.8cm, ***Thickness:*** 0.4 to 0.7 (near the base part)

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula by using the turn-table or non-turning anvil and finger impressions are observed on the internal surface. The middle part of the pottery is smoothed by a spatula from bottom to head. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on other parts of the body. The direction of scraping is uncertain. And, it could be said that the external surface, excluding the rim part, is not smoothed after scraping. Whatever the wheel was used, its turning speed is slow on the observations of scraping and smoothing marks. The base is flat made by scraping of uncertain direction.

Colours of the body indicate 2.5YR7/1 to 6/1 (surface) and 10R4/1 to 4/6 to 5/6 (paint) on the internal surface, 2.5Y7/1 to 6/1 (surface) and 10R4/6 to 3/3 (paint) on the outer surface. Colour of the core can not be observed, but this pottery is defined as grey ware according to the colour of surface. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both surfaces. Reddish brown bands with curved lines are observed on the rim of the internal and external surfaces. A main painting motif on the internal surface is swastika. All of motives are painted by reddish brown pigment.

⑤ ***figure. 3-⑤ and plates. 3-7 and 8, 4-1 to 5 (no. pre-number 018)***

Form: Deep bowl

Rim Diameter: 28.3cm, ***Base Diameter:*** 9.9cm, ***Height:*** 17.0cm, ***Thickness:*** 0.35 to 0.7cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula by using the turn-table or non-turning anvil are observed on the internal surface. The joining point of the base and the body of pottery is also visible on the internal side of it. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are

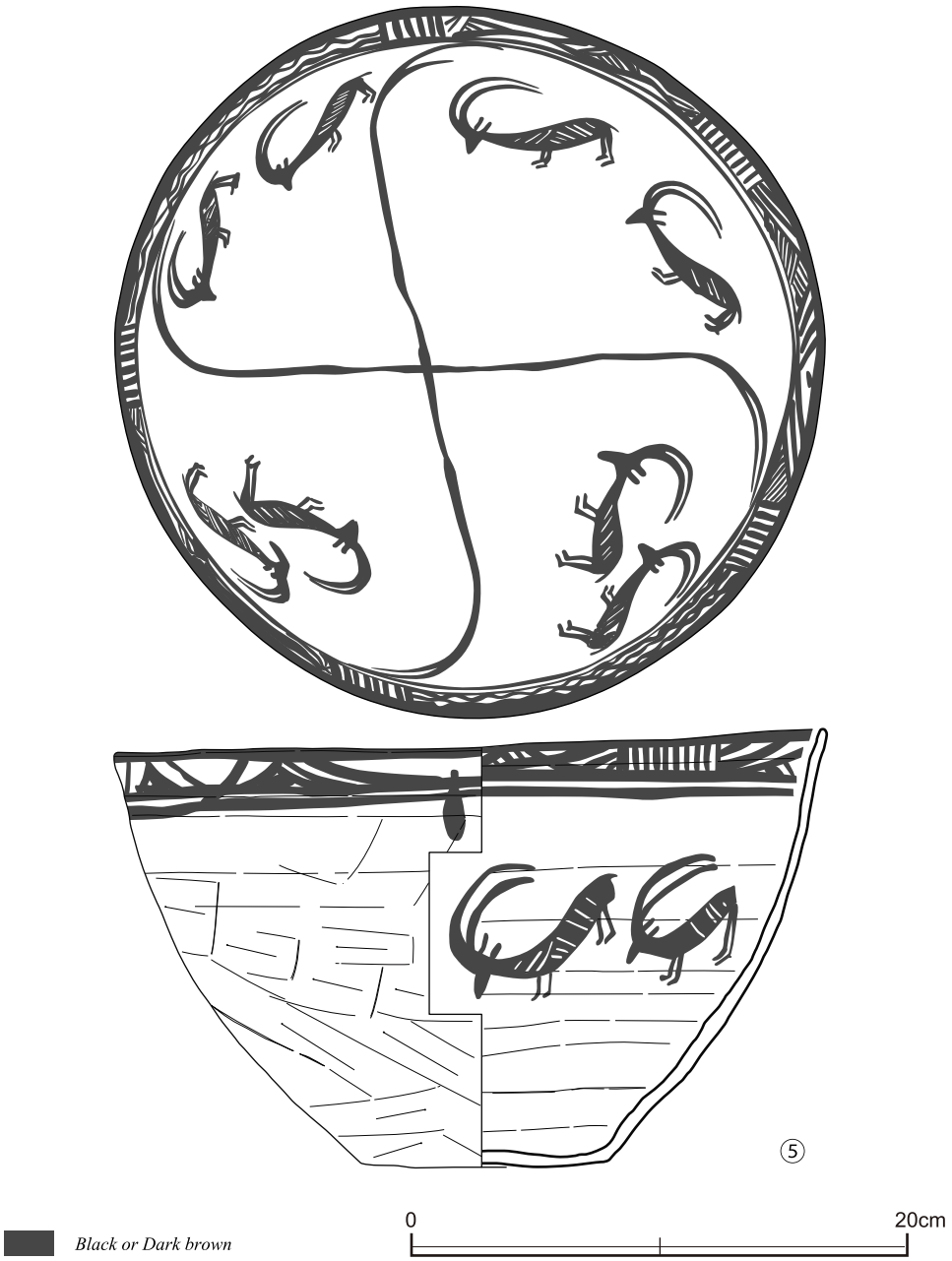


Figure. 3 Emir Ware in the Aichi Prefectural Ceramic Museum (2)

seen on other parts of the body. The direction of scraping is uncertain. It could be said that the external surface, excluding the rim part, is not smoothed after scraping. Whatever the wheel was used, its turning speed is slow on the observation of scraping and smoothing marks. The base is flat made by scraping.

Colours of the body indicate 2.5YR7/8 to 6/8 (surface) on the internal surface, 7.5YR8/3 (surface or slip?) on the outer surface. Paint on the both sides of the pottery indicate 5YR2/1 to 10R3/2. Colours of the core indicates 2.5YR6/6. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not visible on the both surfaces. Black bands with festoon and bands with various lines are observed on the rim of the internal and external surfaces. A main painting motives on the internal surface are swastika and goats. All of motives are painted by black pigment.

⑥ ***figure. 4-⑥ and plates. 4-6 to 8, 5-1 and 2 (no. 002)***
Form: Deep bowl
Rim Diameter: 17.4cm, ***Base Diameter:*** 6.2cm, ***Height:***

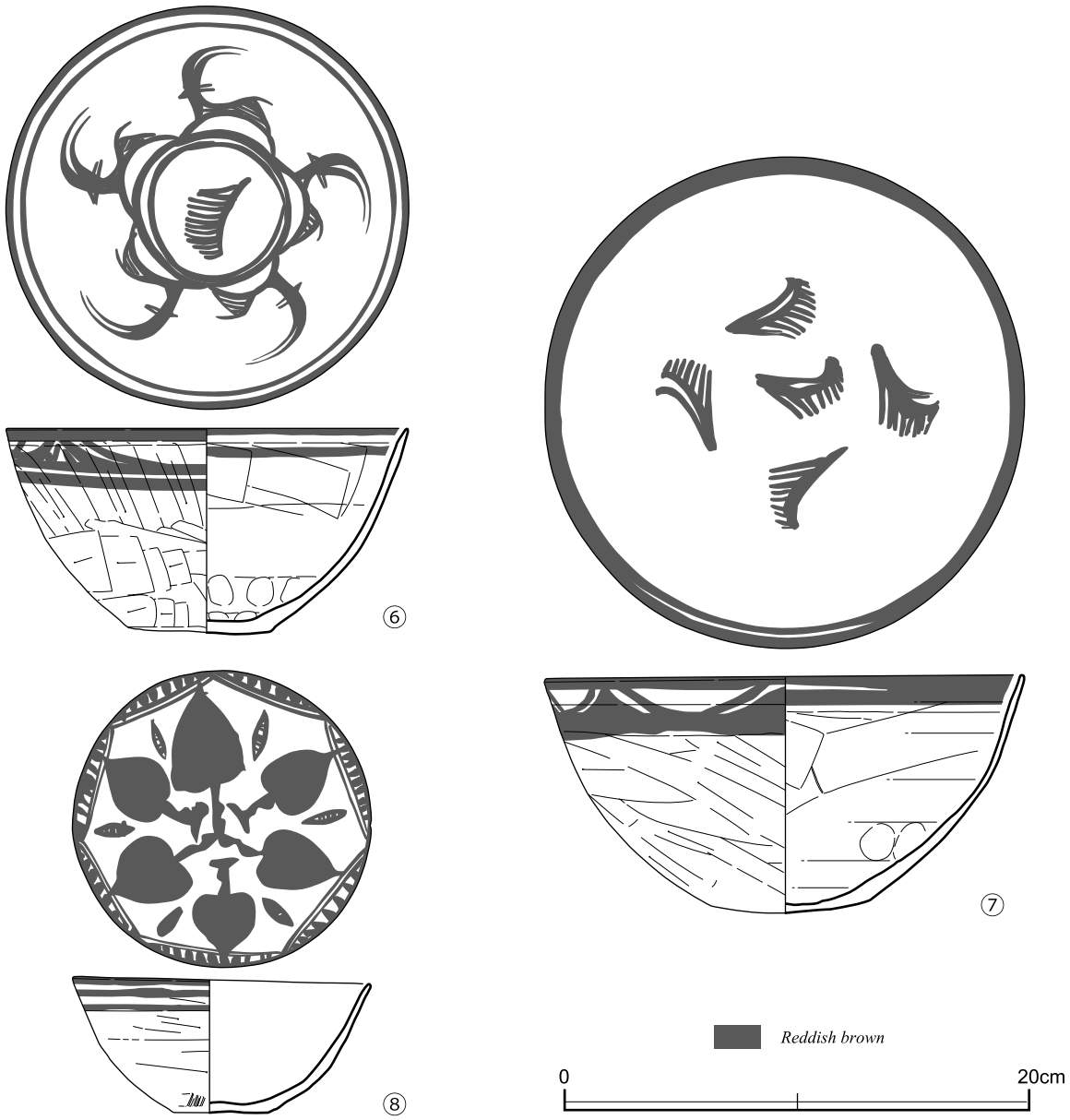


Figure. 4 Emir Ware in the Aichi Prefectural Ceramic Museum (3)

8.8cm, ***Thickness:*** 0.3 to 0.4cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula by using the turn-table or non-turning anvil and finger impressions are observed on the internal surface. The upper part of the body is smoothed by a spatula from bottom to head. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on other parts of the body. Two directions of scraping are from right to left at the lower part and from bottom to head at the upper part of the body. And, it could be said that the external surface, excluding the rim part, is not smoothed after scraping. Whatever the wheel was used, its turning speed is slow on the observations of scraping and smoothing marks. The base is flat made by scraping using a spatula.

Colours of the body indicate 2.5YR6/1 (surface), 5YR4/6 to 3/6 (paint) on the internal and exterior

surfaces. Colours of the core indicates 2.5YR6/1. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both surfaces. Reddish brown bands and festoon are observed on the rim of the internal and external surfaces. A main painting motives on the internal surface are goats with concentric circle and a comb-like motif. All of motives are painted by reddish brown pigment.

⑦ *figure. 4-⑦ and plate. 5-3 to 7 (no. 027)*

Form: Deep bowl

Rim Diameter: 20.5cm, *Base Diameter:* 7.0cm, *Height:* 10.2cm, *Thickness:* 0.2 to 0.5cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula by using the turn-table or non-turning anvil and finger impressions are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on other parts of the body. The direction of scraping is from bottom to head in obliquely. And it could be said that the external surface, excluding the rim part, is not smoothed after scraping. We can see that turning speed of the wheel is slow on the observations of scraping and smoothing marks. The base is rounded one made by scraping of a spatula.

Colours of the body indicate 10YR7/1 to 6/1 (surface), 2.5YR5/6 to 3/6 (paint) on the interior and exterior surfaces. Colours of the core can not be observed, but this pottery is defined as grey ware according to the colour of surface. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both surfaces. Reddish brown bands and festoon are observed on the rim of the internal and external surfaces. A main painting motives on the internal surface are five comb-like motives. All of motives are painted by reddish-brown pigment.

⑧ *figure. 4-⑧ and plates. 5-8, 6-1 and 2 (no. 100)*

Form: Shallow bowl

Rim Diameter: 12.75cm, *Base Diameter:* 4.0cm, *Height:* 5.9cm, *Thickness:* 0.2 to 0.4cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula by using the turn-table or non-turning anvil are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on other parts of the body. The direction of scraping is from left to right. And, it could be said that the external surface, excluding the rim, is not smoothed after scraping. We can see that the turning speed of the wheel is slow on the observations of scraping and smoothing marks. The base is flat made by scraping.

Colours of the body indicate 2.5YR7/6 (surface) on the internal surface, 5YR8/3 (slip?) on the exterior surface. The colour of painting indicates 10R3/4 (paint). Colour of the core indicates 5YR7/8. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not visible on the both surfaces. Reddish brown bands and circular lines filed with vertical lines are observed on the rim of the internal and external surfaces. A main painting motives on the internal surface are six pipal motives and six leaf-like motives. All of motives are painted by reddish-brown pigment.

c Short Summary

Potteries stored in the Aichi Prefectural Ceramic Museum had not been discovered with the stratigraphical context. But they are very efficient archaeological materials to study the typological analyzes on the manufacturing techniques, shapes of the pottery and painting motives of Emir Ware. We

summarize the result of observations of Emir Ware for the comparative study of pottery.

1) painting pattern

① to ⑤ are characterized by the motif of swastika, which are painted on the inside of deep bowl. ⑥ to ⑧ are painted respectively by goat, comb-like motif and pipal. All main motives are painted on the interior surface of bowl by reddish brown or black pigments. And the rim of Emir Ware are painted by parallel or circular bands and festoon, etc. It could be said that all of Emir Ware discussed above have the same painting pattern.

2) manufacturing techniques

The chronological changes of Emir Ware can not be discussed by the manufacturing techniques because all potteries have same manufacturing techniques. Making techniques employed in all pottery are as follows;

① rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or non-rotating anvil,

② pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. But the exterior surface excluding the rim part are coarse and so scraping marks before smoothing are seen on. The direction of scraping is uncertain. The procedure of scraping as follows; firstly pottery maker holds a pottery upside down, the pottery is scraped in the next step. We can presume that the using of turn-table is inefficiently and its speed is slow or non-turning.

③ the flat base is made of scraping. Pottery maker basically intended to make a flat base, but some bases indicate rounded one.

We can understand that these features of Emir Ware stored in the Aichi Prefectural Ceramic Museum have a lot of common features with Emir Ware reported in documents, drawings and photos of Shahi Tump and Bampur, etc. And the previous studies of Emir Grey Were by R.P. Wright [especially Wright 1989a] give us useful data to define the potteries as typical Emir Ware and belong to the same period that is the later half of 4th millennium B.C. But the pottery of the Aichi Prefectual Ceramic Museum does not cover all shapes, motives and manufacturing techniques of Emir Ware. We have to understand that Emir Ware stored in the Aichi Prefectural Ceramic Museum indicates just a part in all assemblage of Emir Ware according to the photos and drawings of the potteries excaveted from the burials of Shahi Tump [see the photos and drawings in Besenval 2000, etc.].

(2) Quetta Style Pottery

a Painting motives of Quetta Style Pottery in the Aichi Prefectural Ceramic Museum

All Quetta Style Pottery in the Aichi Prefectural Ceramic Museum are decorated by various motives including animal, naturalistic, geometric and other motives (Figures. 5 to 8). Animal and naturalistic motives are basically decorated as a main motif on the interior or outer surface of the body, while other motives are decorated mainly around the rim of both sides of the pottery.

Animal motives

The animal motives are consisting of fish (Figure. 5-①) and goat (Figure. 6-②). Each of motives are drawn clearly one by one and physical features of animals are also expressed. Fish motif with a big round eye is expressed on the inside of shallow bowl as a main motif. The motif of goat is expressed as a simply figure and in a row.

Naturalistic motives

Naturalistic motives are consisting of mainly pipal (Figure. 5-①) and plant, maybe water plant (Figure. 8-⑥). Pipal could be recognized as a stylized pipal tree, which bearing leaves and fruits or flowers. The motif of plant is expressed as a leaf. The inside of the leaf is filed with straight lines.

Geometrical and Other motives

Geometrical motives, especially step-like motif (Figures. 7-③, 8-④ and ⑤, ⑧ to ⑩) and concentric-circle motif (Figure. 8-④) are also expressed as a main motif.

Other motives are consisting of sun-like motif (Figure. 5-①), straight and wavy line motives, etc. These motives are basically expressed around a main motif, not as a main motif. The sun-like motif is expressed as a dot surrounded by small dashes.

b Quetta Style Pottery in the Aichi Prefectural Ceramic Museum

① ***figure. 5-① and plate. 6-3 to 6 (no. 011)***

Form: Bowl

Rim Diameter: 33.6cm, ***Base Diameter:*** 10.4cm,

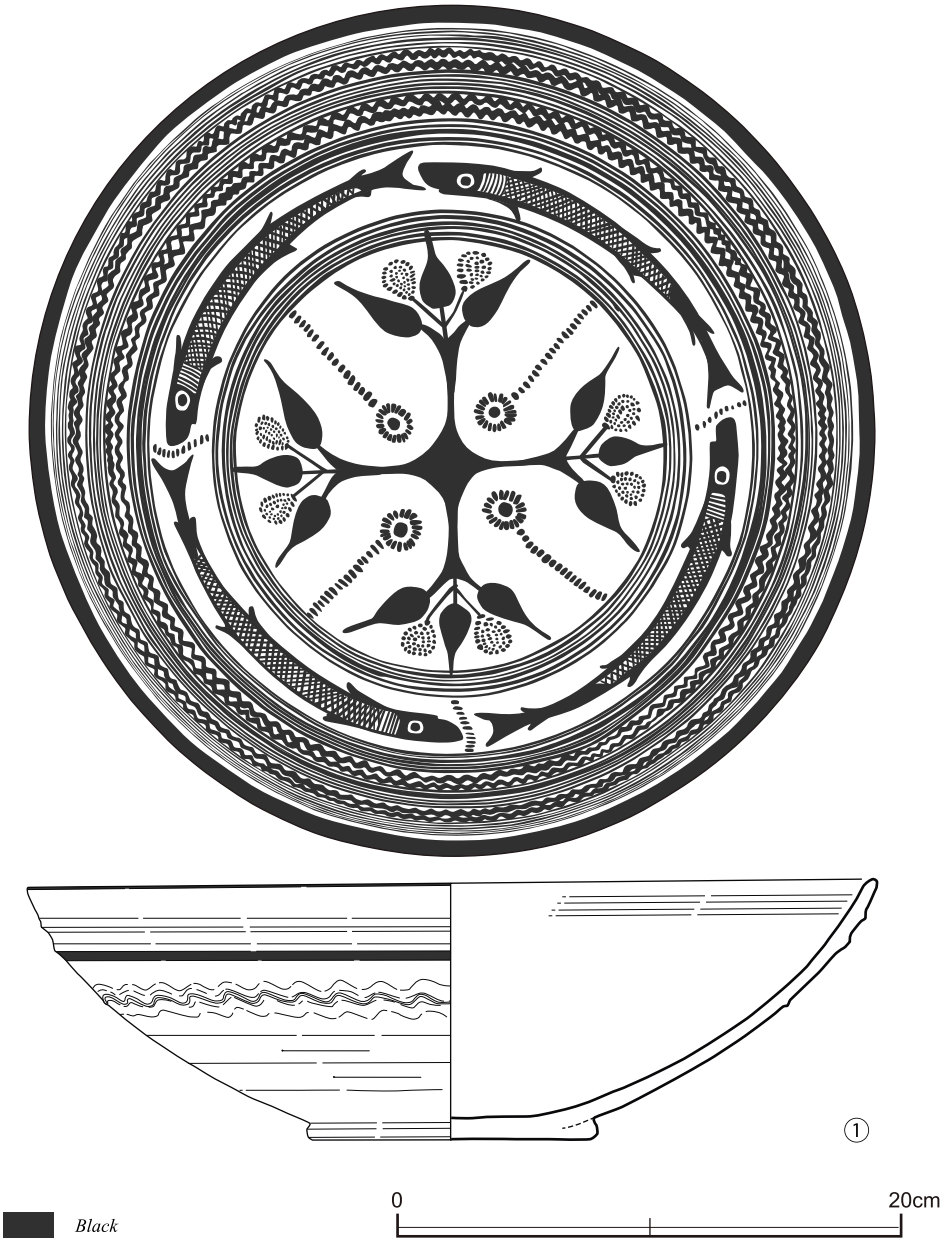


Figure. 5 Quetta Style Pottery in the Aichi Prefectural Ceramic Museum (1)

Height: 11.0cm, ***Thickness:*** 0.5 to 0.7cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. While we can not observe scraping marks on the middle to the upper part of the body because of smoothing with a spatula after scraping, scraping marks are seen on the lower part of the body. We can see that the turning speed of the wheel is slow on the observations of scraping and smoothing marks. Thirdly, one clay wavy and two clay horizontal bands are made by pinching out the wall. The internal surface is possibly burnished with some cloth on the turn-table after painting. A clay cord is attached on the base for making a ring base, and finished by scraping with spatula on setting a pottery upside down.

Colours of the body indicate 5YR7/3 to 7/4 (slip), 2.5YR2/2 to 3/2 (paint) on the internal, 5YR7/4 to 6/4

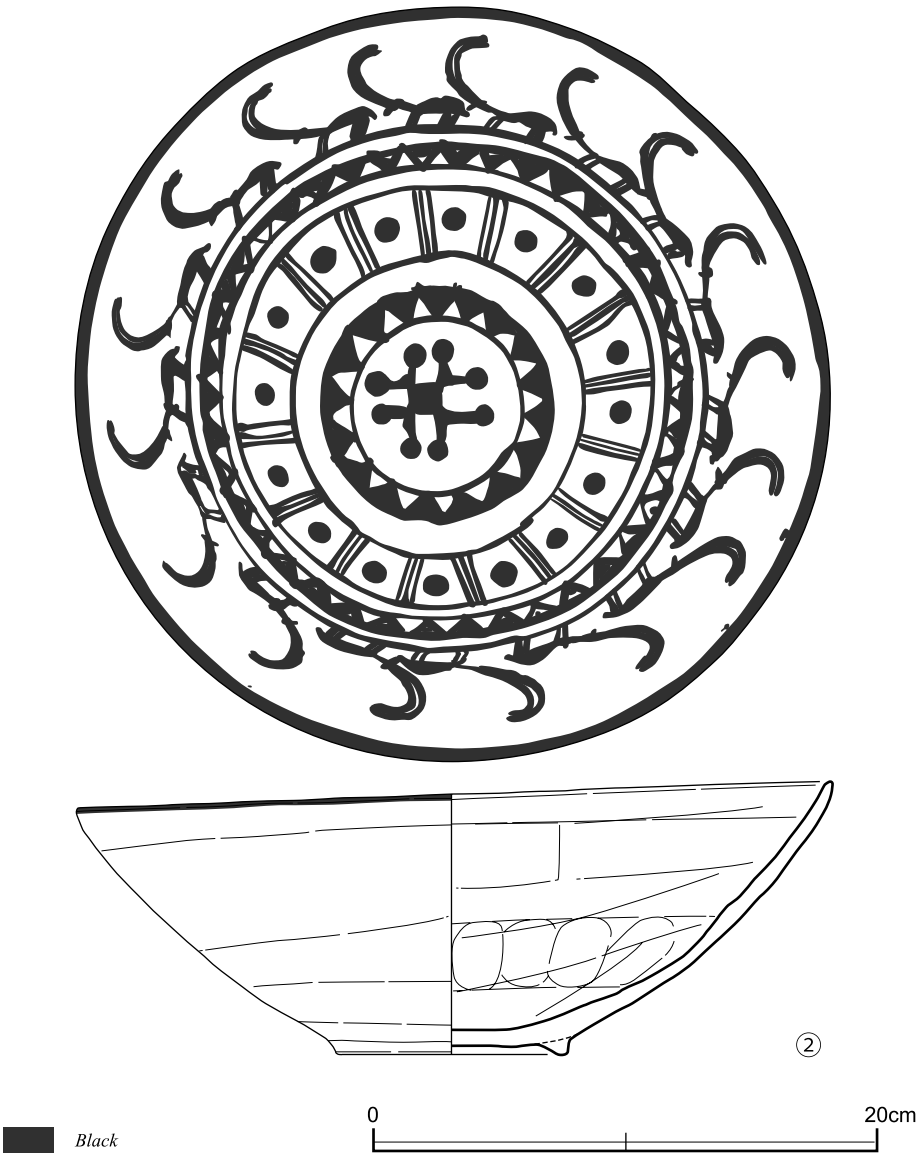


Figure. 6 Quetta Style Pottery in the Aichi Prefectural Ceramic Museum (2)

to 10YR8/4 (slip), 2.5YR7/8 (surface), 2.5YR2/2 (paint) on the external. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Whitish slip is seen on the both sides of the pottery. A black band is observed on the rim of the internal and external surfaces. Painting motives on the internal surface consist of four fishes, four pipals, four sun-like motives and several horizontal and wavy bands. All of motives are painted by black and dark brown pigments on the whitish slip.

Remarks

The painting pattern of this pottery resemble with the one of Kulli Ware (see previous volume: Shudai *et al.* 2010 fig. 9-⑩).

② figure. 6-② and plates. 6-7 and 8, 7-1 (no. 010)

Form: Bowl

Rim Diameter: 29.95cm, ***Base Diameter:*** 9.0cm, ***Height:*** 10.9cm, ***Thickness:*** 0.5 to 0.6cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula and feint finger impressions are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in

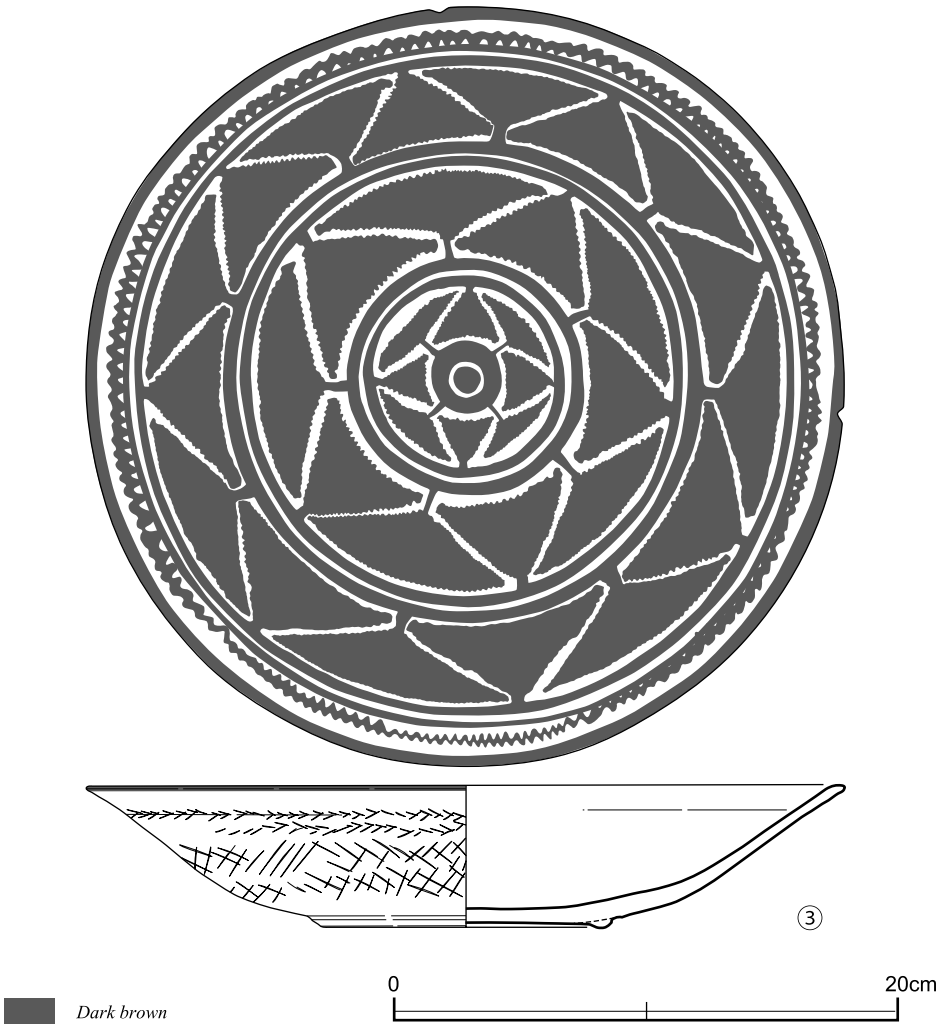


Figure. 7 Quetta Style Pottery in the Aichi Prefectural Ceramic Museum (3)

horizon. We can not observe scraping marks on the body because of smoothing with a spatula after scraping. We can see that the turning speed of the wheel is slow on the observations of scraping and smoothing marks. The internal surface is possibly burnished with some cloth on the turn-table after painting. A clay cord is attached on the base for making a ring base, and finished by smoothing with fingers on setting a pottery upside down. Colours of the body indicate 2.5Y8/2 to 8/3 (slip), 7.5R3/2 to 7.5YR 7/6 (surface), 5YR2/1 to 2/2 (paint) on the internal, 2.5YR8/2 to 8/3 (slip), 5YR3/4 to 2/4 (slip?), 5YR7/6 (surface), 5YR2/1 to 2/2 (paint) on the external. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Whitish slip is seen on the both sides of the pottery. A black band is observed on the Slip of the internal and external surfaces. Painting motives on the internal surface consist of a row of goats, triangles and dots with parallel lines. All of motives are painted by black and dark brown pigments on the whitish slip.

Remarks

The painting pattern of this pottery is resembled with the painting style of Togau Ware.

③ ***figure. 7-③ and plate. 7-2 to 7 (no. 031)***

Form: Bowl

Rim Diameter: 30.2cm, ***Base Diameter:*** 11.2cm, ***Height:*** 5.7cm, ***Thickness:*** 0.4 to 0.6cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the slow turn-table.

Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. While we can not observe scraping marks on the rim of the pottery because of smoothing with a spatula after scraping, scraping marks are seen on the lower part of the body. Scraping marks on the external surface are very clear and characteristic way. Their marks show X-like pattern in some points, because the scraping is performed on the turn-table. We can see that the turning speed of the wheel is slow on the observations of scraping and smoothing marks. A clay cord is attached on the base for making a ring base, and finished by smoothing with fingers on setting a pottery upside down. The centre of the base is scraped by a spatula.

Colours of the body indicate 2.5Y6/1 to 5/1 (surface), 5R4/1 (paint) on the internal, 2.5Y6/1 to 5/1 (surface) and 5Y7/6 (over fired?) on the external. Colour of the core indicates 2.5Y6/1 to 5/1. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both sides of the pottery. A black band is observed on the rim of the internal and external surfaces. Painting motives on the internal surface consist of geometrical motif, straight and wavy lines. Main motif in the internal surface is constituted of step-like motif. Colour of all motives are observed in black and dark brown, which are caused by over fired.

Remarks

We can observe the black spots on the external surface on the ashes in the kiln.

④ ***figure. 8-④ and plate. 7-8 (no. 081)***

Form: Short necked globular pot

Rim Diameter: 3.4cm, ***Base Diameter:*** 5.2cm, ***Height:*** 8.9cm, ***Thickness:*** 0.5cm (near the mouth part, the thickness of another part can not be scaled because this pottery is complete)

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery of upper and lower parts is formed by the clay coil building technique on the fast turn-table seperatelly. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. While we can not observe scraping marks on the middle to the upper part of the body because of smoothing with a spatula after scraping, scraping marks are seen on the lower part of the body. We can see that the turning speed of the wheel is fast on the observations of scraping and smoothing marks. A ring base is made to attached a clay cord or to be scraping, and finished by smoothing with fingers on setting a pottery upside down.

Colours of the body indicate 2.5Y6/1 (surface) on the internal, 2.5Y7/1 to 6/1 (surface) and 10YR3/1 (paint) on the external. Colour of the core can not be observed, but this pottery is defined as grey ware according to the colour of surface. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both sides of the pottery. A black band is observed on the rim of the internal and external surfaces. Painting motives on the outer surface consist of step-like motives and concentric-circle motives. All motives are painted by black and dark brown pigments.

⑤ ***figure. 8-⑤ and plate. 8-1 and 2 (no. 074)***

Form: Straight-Sided Bowl

Rim Diameter: 7.3cm, ***Base Diameter:*** 3.2cm, ***Height:*** 8.8cm, ***Thickness:*** 0.3 to 0.4cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the fast turn-table. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. While we can not observe scraping marks on the middle to the upper part of the body because of smoothing with a spatula after scraping, scraping marks are seen on the lower part of the body. We can see that the turning speed of the wheel is fast on the observations of scraping and smoothing marks. A clay cord is attached on the base for making a ring base and finished by smoothing with fingers on setting a pottery upside down.

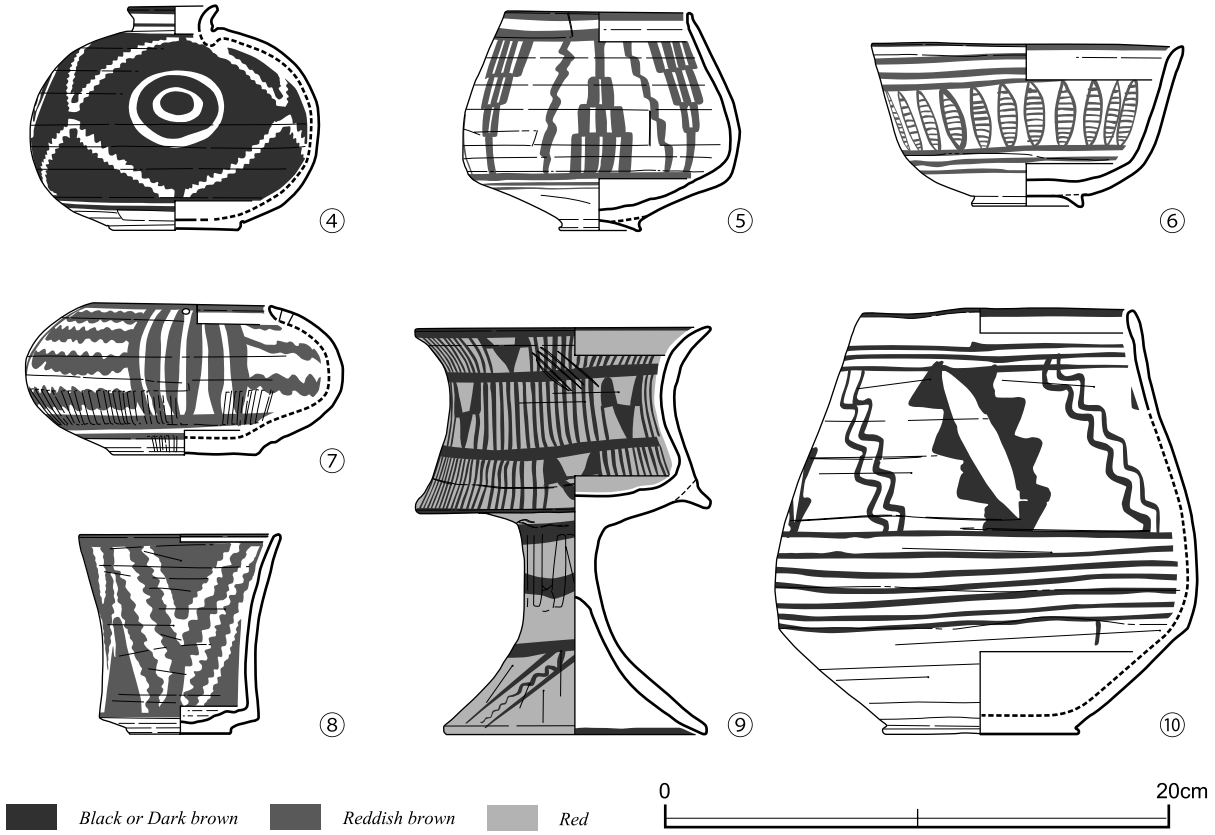


Figure. 8 Quetta Style Pottery in the Aichi Prefectural Ceramic Museum (4)

Colours of the body indicate 2.5Y5/1 (surface), 10R3/4 (paint) on the internal and external surfaces. Colour of the core indicates 2.5Y5/1. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both sides of the pottery. A reddish brown band is observed on the rim of the internal and external surfaces. Painting motives on the outer surface consist of step-like motives and parallel lines. All motives are painted by reddish brown pigment.

Remark

One potter's mark or graffity is inscribed on the center of base after firing (plate 8-2).

⑥ ***figure. 8-⑥ and plate. 8-3 and 4 (no. 113)***

Form: Straight-sided bowl

Rim Diameter: 12.3cm, ***Base Diameter:*** 4.3cm, ***Height:*** 6.5cm, ***Thickness:*** 0.4 to 0.5cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the fast turn-table. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. While we can not observe scraping marks on the middle to the upper part of the body because of smoothing with a spatula after scraping, scraping marks are seen on the lower part of the body. We can see that the wheel turning speed is fast on the observations of scraping and smoothing marks. A clay cord is attached on the base for making a ring base and finished by smoothing with fingers on setting a pottery upside down.

Colours of the body indicate 10YR6/1 to 5/1 (surface), 2.5YR4/6 to 4/8 (paint) on the internal and 2.5Y8/1 to 7/1 (slip), 2.5YR4/6 to 4/8 (paint) on the external surfaces. Colour of the core indicates 2.5Y5/1. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both sides of the pottery. A reddish brown band is observed on the rim of the internal and external surfaces. Painting motives on the outer surface consist of plant (leaf-like) motives

and parallel lines. All motives are painted by reddish brown pigment.

⑦ ***figure. 8-⑦ and plate. 8-5 and 6 (no. 108)***

Form: Open-mouthed Pot with three perforations

Rim Diameter: 7.0cm, ***Base Diameter:*** 5.8cm, ***Height:*** 6.0cm, ***Thickness:*** 0.4 to 0.5cm (this measurement is estimated one because this pottery is complete)

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the fast turn-table. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. While we can not observe scraping marks on the middle to the upper part of the body because of smoothing with a spatula after scraping, scraping marks are seen on the lower part of the body. We can see that the turning speed of the wheel is fast on the observation of scraping and smoothing marks. And three small holes are perforated around the rim in same intervals. The base is made of scraping and finished by smoothing with fingers.

Colours of the body indicate 2.5Y6/1 to 5/1 (surface), 2.5R3/4 to 3/6 (paint) on the external surface and the colour of the internal surface is not seen because of mud. Colour of the core indicates 2.5Y5/1. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both sides of the pottery. A reddish brown band is observed on the rim of the internal and external surfaces. Painting motives on the outer surface consist of vertical and wavy lines. All motives are painted by reddish brown pigment.

⑧ ***figure. 8-⑧ and plates. 8-7 and 8, 9-1 (no. 036)***

Form: Cup

Rim Diameter: 7.9cm, ***Base Diameter:*** 4.0cm, ***Height:*** 7.9cm, ***Thickness:*** 0.35 to 0.5cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the fast turn-table. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. Scraping marks are seen on the external surface of the body. We can see that the turning speed of the wheel is fast on the observation of scraping and smoothing marks. The base is formed by the scraping and finished by smoothing with fingers.

Colours of the body indicate 2.5Y6/1 (surface), 2.5YR5/6 (paint) on the both surfaces. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Slip is not seen on the both sides of the pottery. A reddish brown band is observed on the rim of the internal and external surfaces. Painting motives on the outer surface is the combination of step-like motives. All motives are painted by reddish brown pigment.

⑨ ***figure. 8-⑨ and plate. 9-2 to 4 (no. 022)***

Form: Bowl-on-stand

Rim Diameter: 11.55cm, ***Base Diameter:*** 10.2cm, ***Height:*** 16.2cm, ***Thickness:*** 0.4 to 0.9cm (for bowl part), 0.5 to 0.8cm (for stand part)

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface of bowl part, but it is not seen on the internal surface of stand part. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shapes of the bowl and stand are formed separately by the clay coil building technique on the turn-table. Secondly, they are joined with attaching a clay cord. We can observe clearly the joining point on the external surface of the bowl and stand. Finally, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon, but scraping marks are seen on all part of the body. Stand part is scraping in vertical direction from bottom to head. We can see that the turning speed of the wheel is fast on the observations of scraping and smoothing marks on the bowl part.

Colours of the body indicate 5YR7/8 (surface) on the internal surface, 10R5/8 (slip) on the external

surface. The colour of painting indicates 10R3/1 to 2/1. Colour of the core indicates 5YR 7/8. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

Reddish slip is seen on the both sides of the pottery. A black band is observed on the rim of the internal and external surfaces. Painting motives on the outer surface consist of geometrical motives including triangles, vertical and oblique lines. All motives are painted by black pigment.

⑩ *figure. 8-⑩ and plate. 9-5 to 8 (no. 044)*

Form: Open-mouthed jar

Rim Diameter: 10.7cm, *Base Diameter:* 7.5cm, *Height:* 17.0cm, *Thickness:* 0.4 to 0.5cm

Surface Finishing, Colour of the Body and Other Features

Marks of rotating smooth with fingers or a spatula are observed on the internal surface. We can trace the following manufacturing steps according to the observations on the external surface.

Firstly, rough shape of the pottery is formed by the clay coil building technique on the fast turn-table. Secondly, pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula in horizon. But scraping marks are seen on the body without a part of rim. We can see that the turning speed of the wheel is fast on the observations of scraping and smoothing marks. The base is formed by attaching a clay and finished by smoothing with fingers after scraping. The scraping mark on the base is observed as concentric circle-like trace. These traces on the base do not mean the thread cutting.

Colours of the body indicate 2.5YR7/6 (surface), 10YR8/2 (slip), 10R4/2 (paint) on the internal surface and 10YR8/2 (slip), 10R4/2 to 3/1 (paint) on the external surface. Colour of the core indicates 10R6/6. Fabric is good and firing condition is hard.

Slip Past and Painting Motif

White slip is seen on the both sides of the pottery. Black band is observed on the rim of the internal and external surfaces. Painting motives on the outer surface consist of step-like motives and horizontal lines. All of motives are painted by black pigment.

c Short Summary

Pottery reported here presents very useful archaeological materials to study the typological analyzes on manufacturing techniques, shapes and painting motives of Quetta Style Pottery. We summarize the result of observations on Quetta Style Pottery for the comparative study of pottery in this part.

1) painting pattern

The painted motives are consisting of fish, goat, pipal, plant and step-like, sun-like, triangle, concentric circle, lines. All main motives are painted by reddish brown or black pigments.

2) manufacturing technique

It could not be discussed about the chronological changes of Quetta Style Pottery stored in the Aichi Prefectural Ceramic Museum because the manufacturing techniques of all potteries indicate same ones. Employed common pottery manufacturing techniques are as follows;

① rough shape of the pottery is formed by the clay coil building technique on the slow turn-table or fast turn-table,

② pottery is fixed by smoothing with a spatula or fingers after scraping with a spatula. The marks of smoothing and scraping are horizontally, which indicate the use of turn-table to make pottery.

③ a clay cord is attached on the base for making a ring base and finished by smoothing with fingers on setting a pottery upside down. However, a flat base is made by scraping technique occasionally.

We can understand that these Quetta Style Pottery stored in the Aichi Prefectural Ceramic Museum have many common features with Quetta Style Pottery reported in documents and photos of the excavated sites in central Balochistan, especially Mehrgarh [Jarrige *et al.* 1955], and with Faiz Mohammad Ware stored in the Okayama Orient Museum, Japan [Konasukawa 2010]. The previous studies on Faiz Mohammad Ware by R.P. Wright [especially Wright 1989a] also give us useful data to define the potteries as typical Faiz Mohammad Ware. We divide the pottery described in this paper into two groups as follows as a result of investigations. ① to ⑦ are so-called Faiz Mohammad Ware, and ⑧ to ⑩ are defined as Quetta Style Pottery. Therefore, it can be said that these potteries belong to the same period that is the first half of 3rd millennium B.C. But the pottery of the Aichi Prefectural Ceramic Museum does not cover all shapes, motives and manufacturing

techniques of Quetta Style Pottery. We have to understand that Quetta Style Pottery in the Aichi Prefectural Ceramic Museum indicates just a part of all assemblage of Quetta Style Pottery according to the photos and drawings of potteries discovered from the sites of central Balochistan area [see the photos and drawings in Fairservis 1956 and Jarrige *et al.* 1995, etc.].

3 Conclusion

We reported here Emir Ware and Quetta Style Pottery stored in the Aichi Prefectural Ceramic Museum on the strength of its manufacturing techniques and painted motives. Nal Ware, Kulli Ware and Kulli related Ware are already discussed from the same observertion aspect in the previous reports [Shudai *et al.* 2009, 2010]. And we will report other Wares (i.e. Togau and Kechi Beg Wares, etc.) and finish up the report on all potteries stored in the Aichi Prefectural Ceramic Museum in the next volume. We will discuss the archaeological meanings of Emir ware and Quetta Style Pottery and its cultures, too in there.

The main body of this paper was completed by KONASUKAWA Ayumu and SHUDAI Hideaki. Some parts of this report are basically based on the another report written by KONASUKAWA Ayumu [Konasukawa 2010]. Drawing and tracing of potteries had been done by KONASUKAWA Ayumu, KIMURA Satoshi and UENO Tsuyoshi. Photograph of potteries had been done by SHUDAI Hideaki and ENDŌ Hitoshi.

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Notes

1) Various terms (i.e. 'ware' 'pottery' '～style pottery' '～style ceramic' 'ceramic complex') are used for the technical terms on pottery studies in South Asian Archaeology. But these terms are not strictly prescribed. We will use the terms '～style ceramic' '～style pottery' for pottery assemblage and 'ware' as the subordinate concept in the present paper.

2) The problem of chronological positions about Shahr-i Sohkta periods III and IV have not been reached consensus. Cultural sequences of Shahr-i Sohkta are phases 10 to 0, and they are divided into four periods. period I (phases 10 to 8), period II (phases 7 to 5b), period III (phases 4 to 2) and period IV (phases 1 to 0). The phase of pre-10 is set before phase10, and there is a gap between phase 1 and phase 0 in period IV. Italian excavation team set periods III and IV parallel with Indus civilization, ca. 2600 to 1900 BCE on ^{14}C dating [Cortesi *et al.* 2008 ; Salvatori and Tosi 2005]. On the other hand, French team set period III to the period simultaneous with the formation phase of Indus Civilization, 2800 to 2600 BCE as relative chronology according to the comparative study of materials imported from Balochistan region [Jarrige 1993, etc.]. These defferent perspectives on the chronology are related to the issues what there is the cultural relationship with both Indus and Hilmand Civilizations in their mature phase or not. The present author agree with the perspective of French team because of the discoveries of materials carried from Balochistan region in Shahr-i Sohkta periods III and IV [Biscione 1990 ; Jarrige 1993]. But we should discuss carefully about this problem hereafter, too.

3) We also understand the emergence period of Faiz Mohammad Ware as Mehrgarh V in this paper, according to the results of excavations at Mehrgharh [Jarrige *et al.* 1995]. Faiz Mohammad Ware is the fine painted pottery of Grey ware and Buff ware types.

4) Lal Shah was excavated by R.P. Wright in 1984. Two up-draft kilns were discovered at southern slope of the site in the excavation [Wright 1985].

5) The detailed theoretical discussions about cultural relationship by R.P. Wright are already presented in some papers and one book [i.e. Wright 1987, 2002, 2010]. Wright argued that active technological innovation and information

exchange are operated at the periphery where various cultures contact rather than the centre.

6) Shaffer regulated the cultural chronology of Indus valley by using the terms of 'tradition' 'Era' 'Phase'. The term of 'horizon' is also used recently [Franke-Vogt 2008].

7) She also pointed out that the features of potteries, including Faiz Mohammad Ware, discovered from Shahr-i Sohkta periods III5 to 2 are confirmed in the vast area of Tepe Rud-i Biyaban, Mundigak periods IV1 to 3, Mehrgarh periods VIIA to C, Nausharo periods IA to D, Nal period III and Miri Qalat period IIIc. She supposes that the great-sphere of cultural relationship has very important factors on the formation process of Indus Civilization society because those period is understood as the final phase in the formation period of Indus Civilization society [Franke-Vogt 2008]. Same perspective is argued by other scholars [Jarrige 1993 ; Uesugi 2008 ; Uesugi and Konasukawa 2008].

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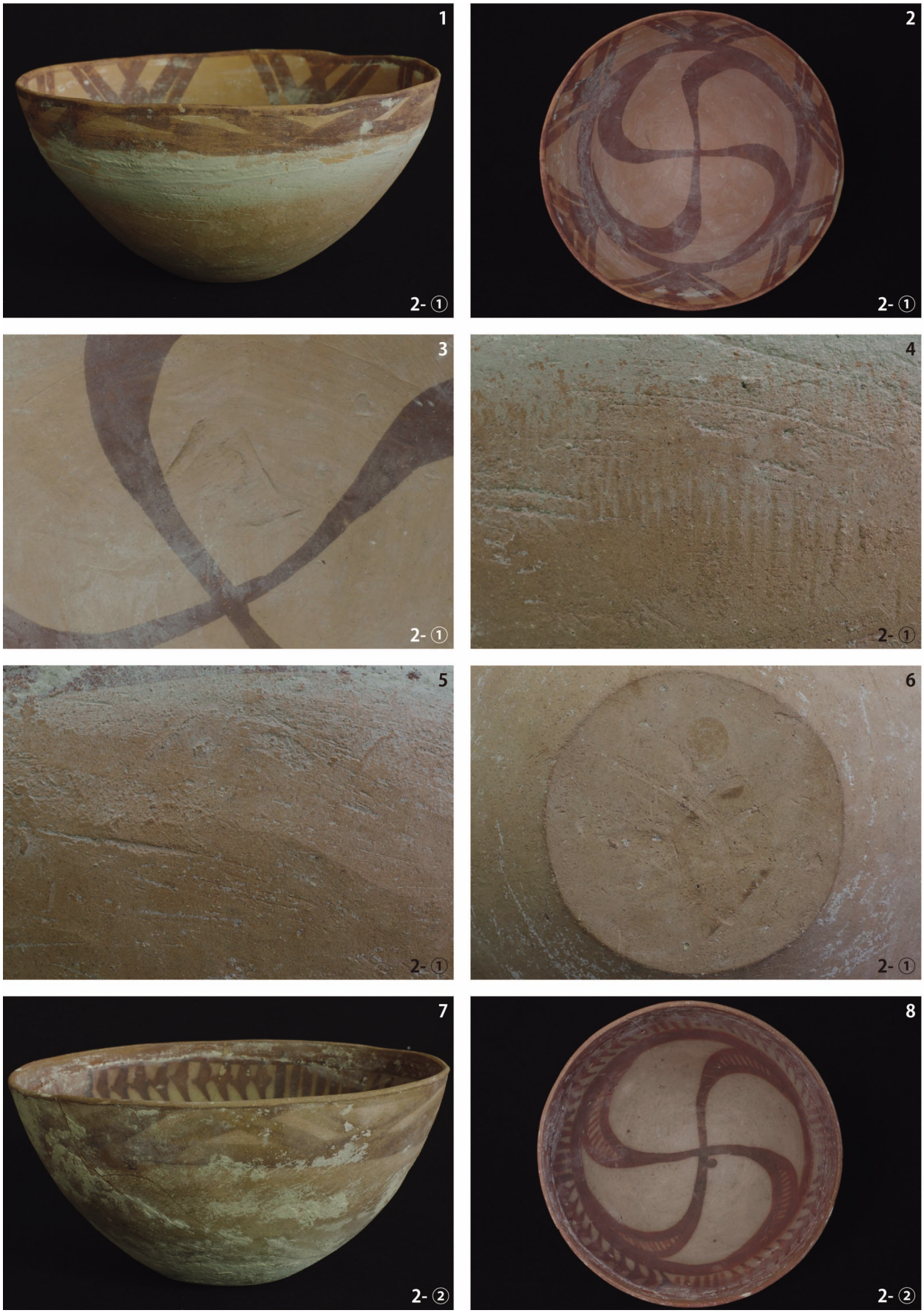

Plate. 1 Emir Ware in the Aichi Prefectural Ceramic Museum
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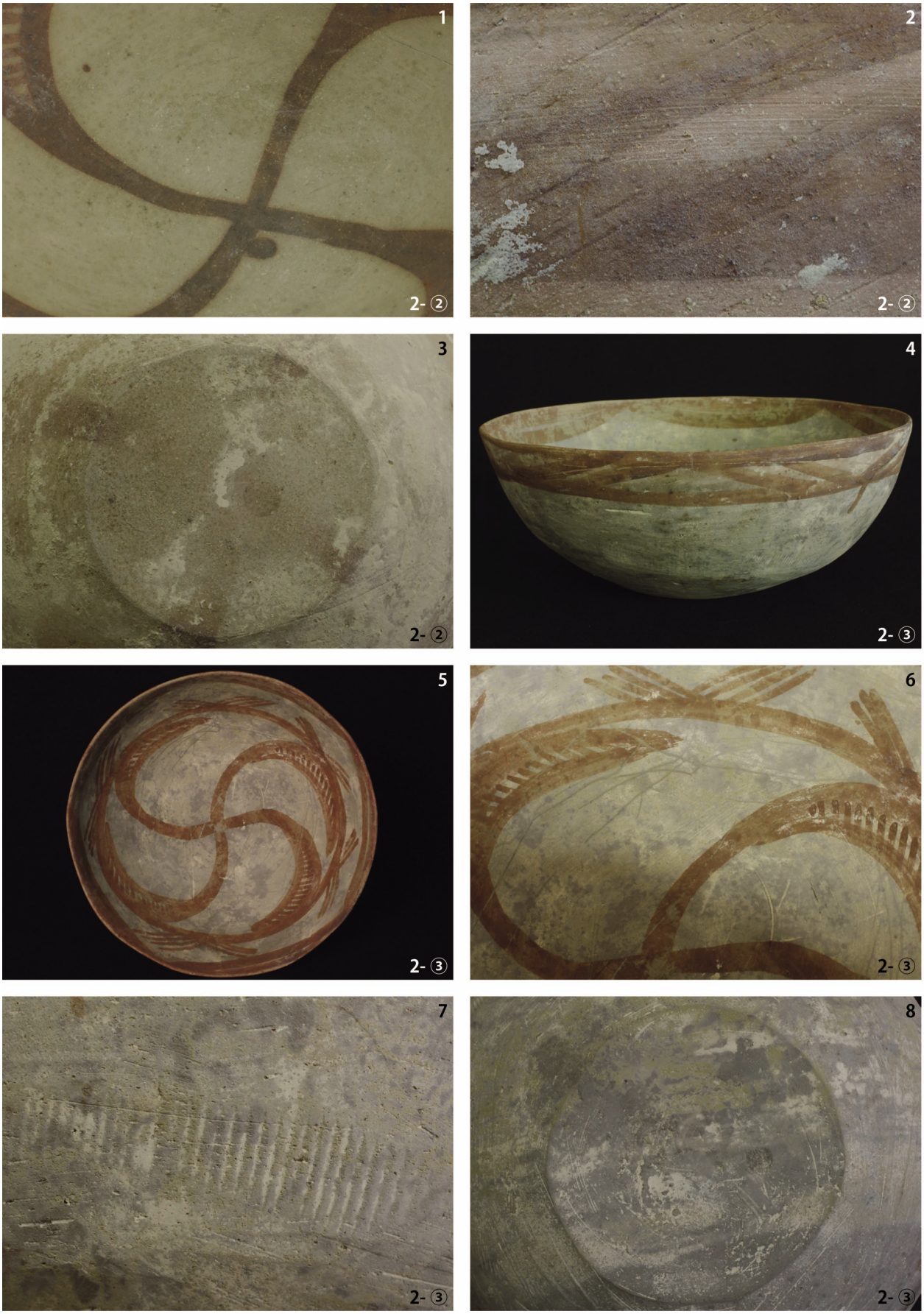

Plate. 2 Emir Ware in the Aichi Prefectural Ceramic Museum
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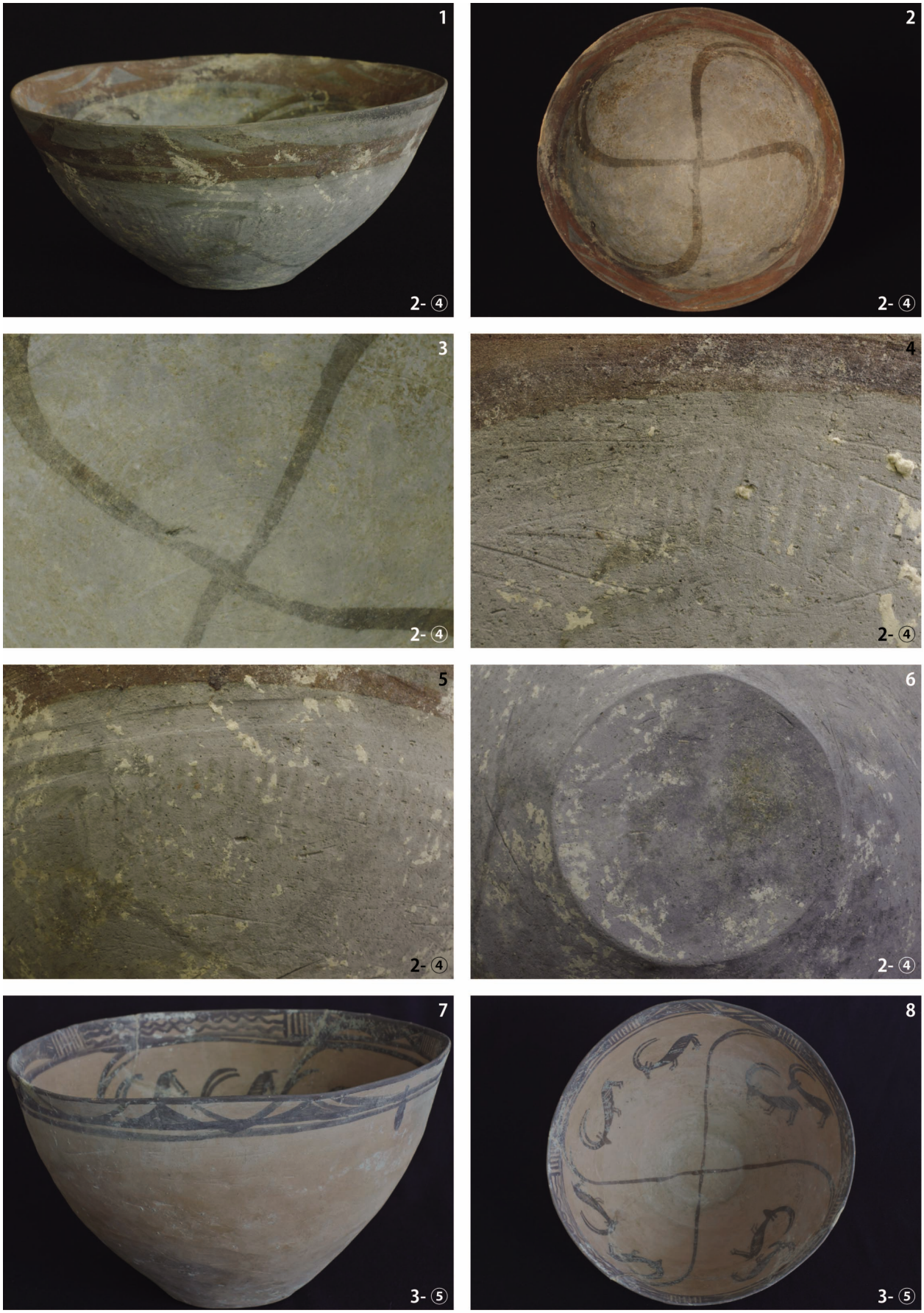

Plate. 3 Emir Ware in the Aichi Prefectural Ceramic Museum
(number in lower right part indicates the figure number)

Plate. 4 Emir Ware in the Aichi Prefectural Ceramic Museum
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Plate. 5 Emir Ware in the Aichi Prefectural Ceramic Museum
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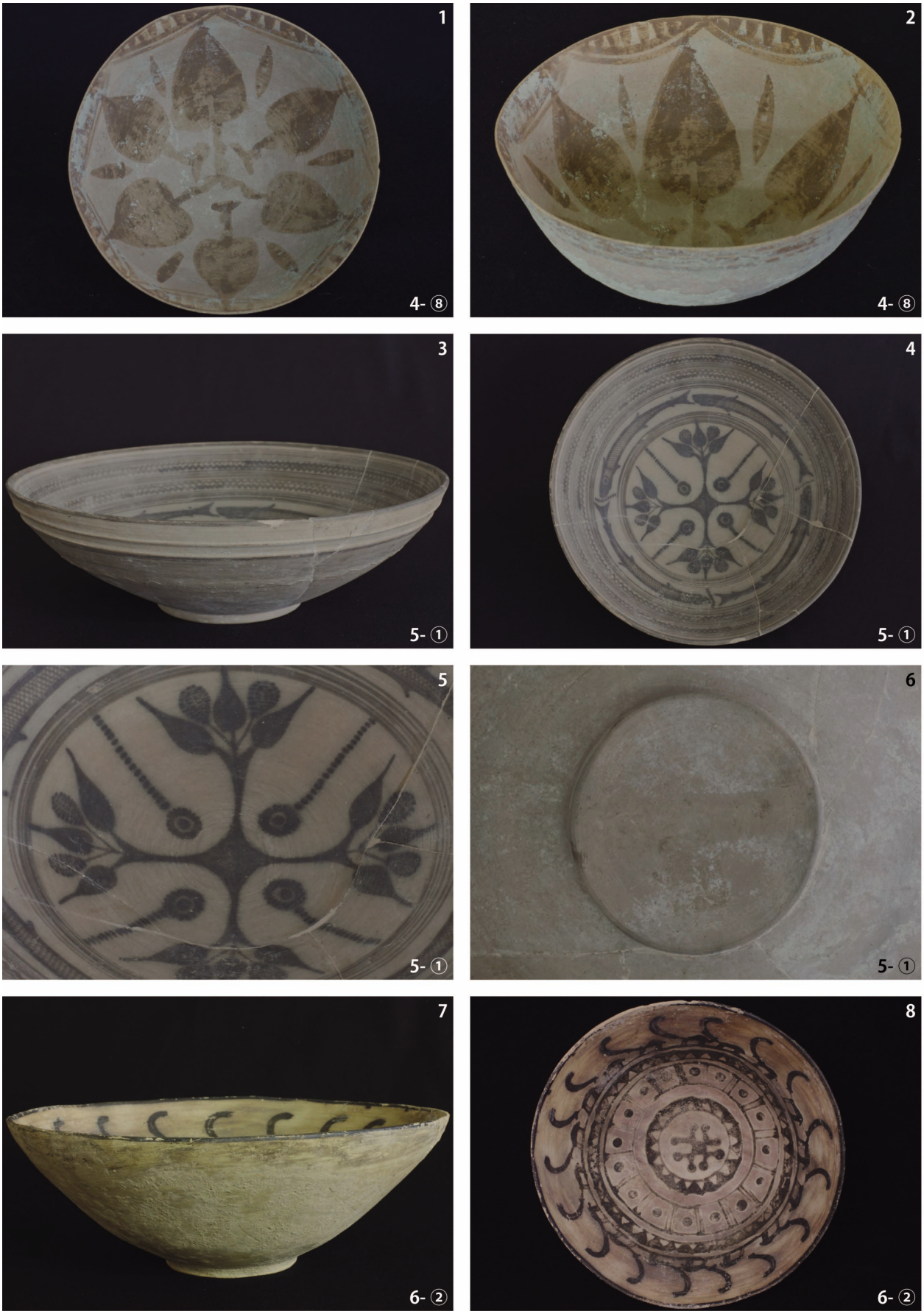

Plate. 6 Emir Ware and Quetta Style Pottery in the Aichi Prefectural Ceramic Museum
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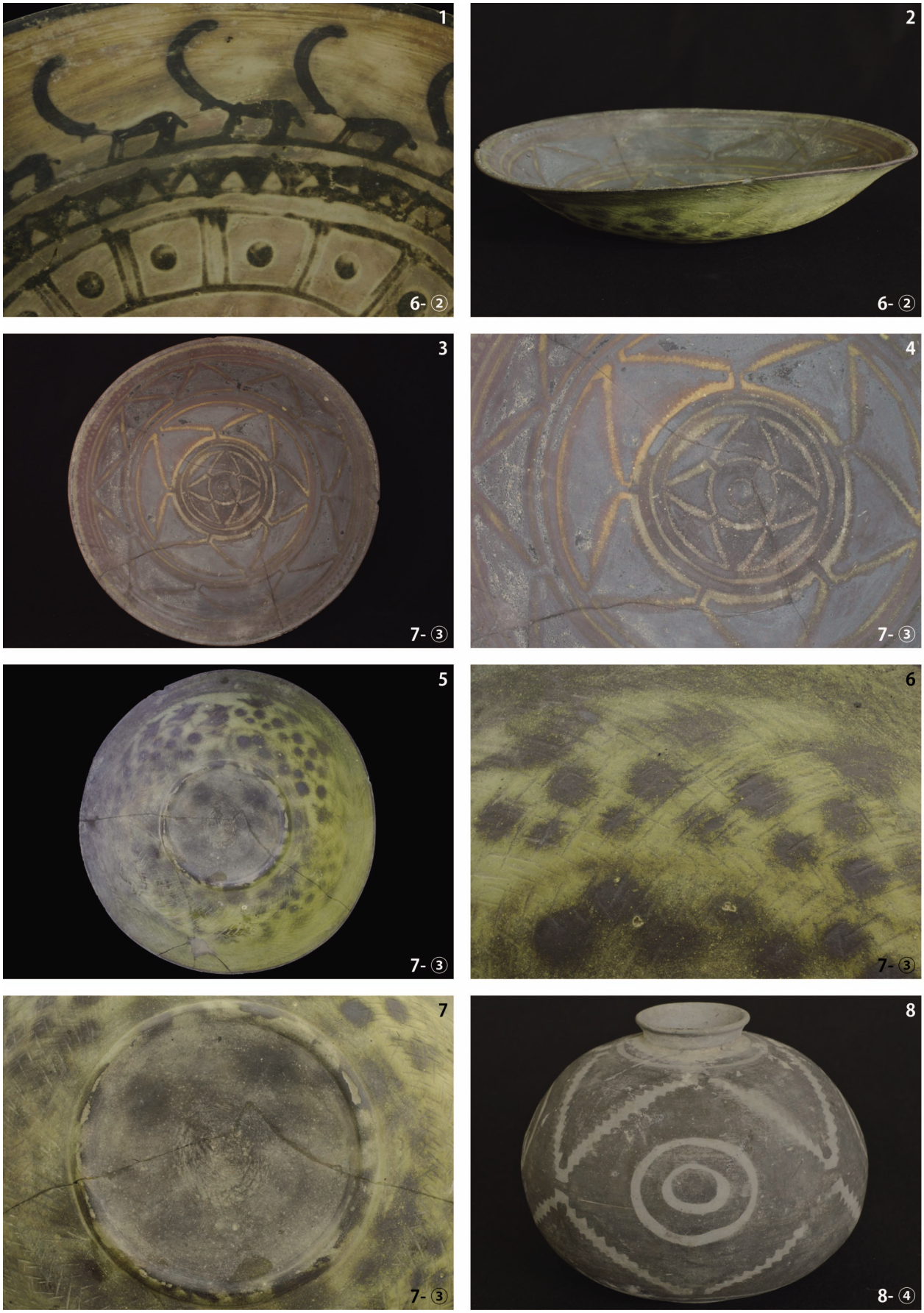

Plate. 7 Quetta Style Pottery in the Aichi Prefectural Ceramic Museum
(number in lower right part indicates the figure number)

Plate. 8 Quetta Style Pottery in the Aichi Prefectural Ceramic Museum
(number in lower right part indicates the figure number)

Plate. 9 Quetta Style Pottery in the Aichi Prefectural Ceramic Museum
(number in lower right part indicates the figure number)