
Black-and-Red Ware

A Cultural Study

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THE BLACK-AND-RED ware was first designated as such by Sir Mortimer Wheeler about two decades ago. However, for a long time, this ware was supposed to belong to Early Historical horizon and was termed as the Satavahana Ware. Along with the Megalithic black-and-red ware and some associated wares, for a long time, it was considered to be of Early Historic character. However, it is now more than certain that the ware is of greater antiquity than hitherto advocated. This has been positively confirmed by the find of this ware in the chalcolithic and other proto-historic contexts. This necessitated a revaluation of the problem in its entirety.

So far, scholars had studied this ware in terms of shapes of the pots, thus overlooking its associated cultural equipments and chronological assignments. Evidently their studies had fallen short of a fuller assessment of the personality of this ware. In their studies, various scholars had sought to associate this ware with one or the other group of people but taking into consideration its wide cultural associations, chronological assignments, changing technological personality and varied typological personality, it would only be too hazardous to identify it with any race or groups of people.

CULTURAL AND CHRONOLOGICAL IMPORTANCE AS ADVOCATED BY WHEELER

Until 1945, sites after sites were being "ransacked rather than excavated" in south India yielding, in the process, burial remains of megalithic character, including, besides other material relics, a characteristic ware distinguished by fully black interior and partially black and largely red exterior. Wheeler's systematic and scientific probings carried through extensive excavations at Arikamedu (1945) and Brahmagiri (1947) a *merveille* 'opened up' a new vista in the archaeological activities of south India. It *en effect* stabilised the Megalithism and *inter alia* the black-and-red ware both culturally as well as chronologically. He dated the black-and-red ware in relation to the megalithic burials of south India. According to him, this Megalithic ware had a life-span between C. 200 (or a little later) to the middle of the first century A.D. (Wheeler, 1948, pp. 200-202). In one

of his later works, Wheeler (1960, p. 163) adds that "in review, there is at present no evidence for ascribing any south Indian megalith to a date earlier than the 3rd century B.C., and the 3rd century B.C.—1st century A.D. is here accepted as a provisional time-bracket".

FURTHER RESEARCHES IN POST-INDEPENDENCE ERA : BLACK-AND-RED WARE IN PROTO-HISTORIC CONTEXT :

Since independence, a host of sites have been plotted on the archaeological map of India through sustained spade-work undertaken by different teams of archaeologists in different parts of the country. One of the major contributions of these invaluable works was the shedding off of the supposed exclusive burial character of the black-and-red ware and its entrance into the chalcolithic framework of Indian Archaeology. Recognizing its increasing chronological importance and cultural association in view of the 'evidence of continuity' accumulating as a result of excavations at Lothal, Rangpur and Rojdi, Wheeler (1960 : pp. 116 and 165) too modified his view in respect of the black-and-red ware and placed it within the general limits of the 1st millennium B.C. He (1960 : p. 166) visualized an earlier date for the black-and-red ware when he observed that 'the probability of an earlier date in Kathiawad depends upon a further examination of Lothal or some equivalent late-Harappan site'. Verily, it has since then come true.

WIDE OCCURRENCE IN TIME AND SPACE

The post-independence era of Indian archaeology witnessed a phenomenal spilling over of its frontiers, both spatially as well as chronologically.

Thus, in India, it is recorded from Rupar in the north to Adichanallur in the south, and from Desalpur in the west to Pandu Rajar Dhibi in the east.

Outside India, it is reported from ancient Egypt and modern Africa. In ancient Egypt, it is reported from Tumas in the Nubian Valley, where it has been described as a "black-topped pottery" (Lal, 1963, No. 6455 ; Lal, 1964, : pp. 62-63, pl. XXXV ; IAR, 1961-62 : pp. 67-70, pl. CXV, A and C, CXVI, A and B ; Srivastava, 1971 : p. 374).

In India, the occurrence of the ware ranged in time from the middle of the third millennium B.C. down to the beginning of the Christian Era.

Outside India, the ware is credited with an earlier date. It was known to the ancient Egyptians as far back as 4th millennium B.C. The ware continued to be known to the ancient Egyptians down to the close of the second millennium B.C.

As a sequel to these far-reaching probings, the post-independence era witnessed the emergence of at least the following four Schools of Thought in regard to the cultural and chronological character of the black-and-red ware :

- (i) those who believed that it has only a technological personality irrespective of its vast expanse in space and wide horizon in time ;
- (ii) those who advocated that it is a single culture complex associable with ancient most races or people of India, e.g., Dravidians, Aryans, Vratyas, Turvasus, Yadavas, Bhils, etc ;
- (iii) those who proposed the identity both in the similarity of technique as well as in the

- oneness of its cultural composition notwithstanding its widespread distribution both in space and time ; and,
- (iv) those who opined that the black-and-red ware discovered in the Chalcolithic/Proto-historic context is different from that discovered in the Iron Age deposits/Megalthis context.

II. Wide Cultural Associations

As pointed out earlier, this ware seems to have had a wide cultural association. Right from the Pre-Harappan levels down to the early centuries of the Christian Era, this ware has been unearthed. Thus, we notice a varied cultural association. Therefore, this ware possibly had a varied personality. The following break-up in respect of its cultural association may enlighten this point considerably :

1. *Neolithic context* : e.g., Chirand, Piklihal, etc.
2. *Pre-Harappan* : e.g., Lothal.
3. *Harappan* : e.g., Lothal, Rangpur, Rojdi, Somnath (Prabhas Patan), Bhagatrav, Lakhabaval, Amra, Kanasutaria, Alau, Hasanpur, Desalpur, Surkotada, Rupar, Kotadi, etc.
4. *Post-Harappan Lustrous Red Ware Culture* : e.g., Rangpur, Hasanpur, Mota-Machiala, Sujnipur, Kanasutaria, Alau, Prakash, Chandoli, Ahar, Somnath (Prabhas Patan), etc.
5. *Post-Harappan Chalcolithic Culture* : e.g., Malvan, Jokha, Gilund, Pandu Rajar Dhibi, Mahisdal, etc.
6. *Ahar/Banas Culture* : e.g., Ahar, Agtari, Balathal, Bansen, Champakheri, Chosla, Darauli, Fachar, Gadriawas, Gondi, Hingwanio, Hironji-ka-khera, Jawad, Joera, Kadukota, Keli, Kheri, Khor, Menal, Nangauli, Rupawali, Sialpura, Sirdi, Tarwat, Umand, Undala, Viroli, etc.
7. *Chalcolithic Culture* : e.g., Chirand, Ashrava, Ashta, Badnapur, Banyakhedi, Basantapur, Hotoda, Koparli, Kuhurmunda, Kumshi, Makavana, Mangalkot, Old Alatala, Pimplas, Ranigam, Sarangpur, Satola, Udhamgarh, etc.
8. *Central Indian Chalcolithic Culture* : e.g., Navdatoli, Kayatha, Eran, Avra, Manoti, Besnagar, etc.
9. *Northern Deccan Chalcolithic Culture* : e.g., Prakash, Chandoli, Theur, Bahal, Tekwada, Bahurupa, Inamgaon, etc.
10. *Northern Karnatak Chalcolithic Culture* : e.g., Tekkalakota, Urchan, Kumshi, Ingalg, Dhulkhed, Jirakalg, Watgal, Hingni, Masali, etc.
11. *Jorwe Ware Culture* : e.g., Prakash, Theur, Inamgaon, Songaon, etc.
12. *Late Pre-Iron Levels (Chalcolithic)* : e.g., Kesarapalli.
13. *Proto-historic Period* : e.g., Amaval, Andhi, Bairat, Banda, Barahuli, Bartha, Bhadauli, Durhanpur, Chanahta, Chandauli, Dhus, Ganj, It twan, Jasuri, Kanwan, Lathaura, Machiyan, Panchwania, Sikandarpur, Takiyapar, Una, Warthan, etc.
14. *Posterior to O.C. Ware and anterior to P.G. Ware* : e.g., Atranjikhhera, Noh.
15. *Post-Chalcolithic Culture context* : e.g., Nagal.
16. *Painted Grey Ware context* : e.g., Atranjikhhera, Hastinapur, Alamgirpur, Khalua, Kaseri, Noh, Rupar, Sohgaora, Kausambi, Allahapur, Apra, Asara, Ashapur,

- Autha, Chosla, Dhonder Khera, Gond, Humayun Khera, Jakhera, Kariwaki, Nakora, Raniya, etc.
17. *With Grey Ware in the Bikaner region :*
 18. *Pre-N.B.P.W. context :* e.g., Sonpur, Prahladpur, Masaon, Ujjain, Nagda, Maheshwar, Rajghat, Bahal, Nevasa, Sarai-Mohana, Somnath (Prabhas Patan), etc.
 19. *N.B.P.W. context :* e.g., Sohgaon, Sonpur, Kayatha, Prakash, Somnath, (Prabhas Patan), Prahladpur, Masaon, Ujjain, Nagda, Maheshwar, Rajghat, Asohna, Babukasiktaur, Bahal, Bairat, Bakarganj, Baniya, Barehat, Barkad, Besnagar, Chandraketurgarh, Chebrolu, Chirand, Faridinagar, Jamdara, Kailas, Kanheri, Rudauli, Sarai-Mohana, Savalda, etc.
 20. *Early Iron Age :* e.g., Noh, Atranjikhara, Kausambi, Chirand, Hallur, Nagar, etc.
 21. *Iron Age Deposits :* e.g., Bahal, Kesarapalli, Pikhilal, Bilawali, Jaugad, Mahisdal, Pandu Rajar Dhibi, Tulsipur, etc.
 22. *Early Historical Period :* e.g., Jokha, Fran, Avra, Tekkalakota, Besnagar, Aderkatti, Broach, Chandapur, Daradgaon, Fatepur, Ghantasala, Hampasagar, Jategaon, Kamrej, Londikolyachi-haveli, Manigramam, Nasik, Nevasa, Porkalam, Rayatale, Singupuram, Sisupalgarh, Timbarva, Ukkunda, Utnur, Vadner-Budruk, Wavrat, Yattinhalli, etc.
 23. *Historical Period :* e.g., Amreli, Broach, Dhatva, Kalingapatnam, Saradkel, Sravasti, etc.
 24. *Megalithic context :* e.g., Amrithamangalam, Banimilia-Bahera, Brahmagiri, Chandravalli, Dharanikota, Gonakanahalli, Kokoria, Ittagi, Junapani, Khapa, Kotia, Maski, Nagarjunakonda, Paiyampalli, Sangankallu, T. Narsipur, Vanagiri, Yeleswaram etc.
 25. *Rock-cut cave (burial) context :* e.g., Elambulassery, Mangad, Mayppayur, Quilandy, Triprangode, etc.
 26. *Russet-coated Painted Ware/Andhra Culture :* e.g., Alagarai, Belgaum, Brahmagiri, Chandravalli, Devalgi, Gudgul, Hildahalli, Kadar Mandalg, Lakkundi, Madapur, Paiyampalli, Pedda Bankur, Sasankot, Tadas, Uraiur, Veeranapura, etc.

While dwelling upon the nature and extent of the cultural association of the black-and-red ware with the Jorwe ware in the North Karnataka region Sundara (1968 : p. 12) has observed thus : "..... this pottery is found only in those sites that have the red ware pottery of Jorwe fabric". In other words, 'in the association of a kind of black-and-red painted sherds having affinity with the chalcolithic red ware of Jorwe fabric, the chalcolithic black-and-red ware pottery, occasionally white-painted analogous to that of Tekwada, also occur in most of the sites. Dhulkhed and Urgan are the typical sites (Sundara, 1971 : 4). He adds : "It should be noted here that the black-and-red vessels along with the Jorwe pottery, are found as burial furniture in many of the chalcolithic sites of the Tapi Valley" (1968 : 3). Thus, it is clearly akin to that of the chalcolithic burial of Tekwada and of the Chalcolithic Chandoli on the one hand and the burials of Tekkalakota on the other (Ibid : 14). He concludes : "Excavations at Tekkalakota and explorations of the chalcolithic sites of the Bhima Valley, have conclusively disclosed the presence of the black-and-red ware in the chalcolithic context in association with the

plain and painted pottery of the Jorwe Fabric" (1972: 119).

III. Associated Material Equipments

This varied personality has to be considered in terms of associated material equipments, too, with a view to knowing its individuality, if any.

The architectural remains found in association with the black-and-red ware at sites like Lothal (Gujarat), Ahar (Rajasthan), Navdatoli (Madhya Pradesh), Chirand (Bihar), Pandu Rajar Dhibi (West Bengal), Chandoli and Inamgaon (Maharashtra), Tekkalakota (Karnataka), present a totally divergent picture. We do not find any inter-relationship amongst them. A close perusal of the available evidences undubitably reveals that while on the one hand the Harappan black-and-red-ware is associated with well-packed brick structures at Lothal in Gujarat, the black-and-red ware of non-Harappan context at Ahar in Rajasthan, on the other hand, is associated with loosely-laid rubble structures. Still contradictorily enough, it is associated with wattle-and-daub structures at Navdatoli in Madhya Pradesh. While the architecture as obtainable to us at Lothal is truly urban in character, the rickety structures at Chirand present a purely pastoral pattern. Numerous divergences can also be pointed out in respect of other sites yielding black-and-red ware in the chalcolithic context.

In other fields too, total divergence in cultural pattern is distinctly discernible, for instance, whereas at Ahar there are no microliths associated with the black-and-red ware, *per contra* at Navdatoli these are abundantly associated. Again, the microliths associated with the black-and-red ware in the Malwa culture context conspicuously differ from the Deccan Chalcolithic culture. Similarly, the typical Harappan blade industry found in association with the black-and-red ware at Lothal is clearly dissimilar to what is obtainable at Chirand. Thus, it is abundantly clear that this ware does not seem to possess a cultural assemblage of its own.

The fairly large assortment of tools and weapons found in association with the black-and-red ware in the Harappan context at Lothal differ largely with what is obtainable at Ahar, Navdatoli, Chandoli and other sites yielding this ware in the chalcolithic or proto-historic contexts. The copper objects of domestic use, ornaments for personal use and figurines of dog, hare, swan and of a dancing female found at Lothal are too remarkable for their variety and quality. No such things are found at Ahar which is noted for the discovery of black-and-red ware. Thus, it is more than obvious that this ware is totally devoid of cultural components of its own.

A probing of other associated finds reveals that similar divergences can appropriately be pointed out in respect of various objects of gold and silver, terracotta toys, terracotta cult-figurines, beads, burials, flora and fauna unearthed at different sites in the chalcolithic or proto-historic contexts. All these points have been broadly elucidated in the accompanying chart.

IV. Chronological Assignments

The chronological background of this ware is also none-too-less varied as can appreciably be attested to by relative and C-14 dates of these sites, e.g.,

LOTHAL

Maximal date : 2080 ± 135 B.C. (TF-136).
Minimal date : 1810 ± 140 B.C. (TF-19).

AHAR

Maximal date : 1940 ± 95 B.C. (V-58).
Minimal date : 1550 ± 110 B.C. (TF-32).

NAVDATOLI

Maximal date : C. 1600 B.C.
Minimal date : C. 1300 B.C.

CHIRAND

..... : 845 B.C. (TF-334).

PANDU RAJAR DHIBI

..... : 1012 ± 120 B.C. (C-14 date for Period II)

CHANDOLI

Maximal date : C. 1600 B.C.
Minimal date : C. 1440 B.C.

INAMGAON

Maximal date : C. 1000 B.C.
Minimal date : C. 700 B.C.

SONGAON

..... : C. 1000 B.C.

HALLUR

..... : C. 1000 B.C.

TEKKALAKOTA

..... : C. 1400 B.C.

Thus, we notice a blatant diversity in the chronological background, too.

V. Technological Make-up

This varied personality has to be considered in terms of technological differentiations, too.

As pointed above, this ware, besides India, is reported from Ancient Egypt, where it has been described as "black-topped" ware as well as 'Red-and-Black' pottery (Lucas, 1929, p. 121) or 'Black-and-Red' ware (Lucas, 1962 : p. 377). Basing on the results of experimental examinations conducted by the ceramic chemists and archaeologists alike, various theories have been advanced in respect of the structural aspect, the make-up and the manufacturing processes pertaining to the over-all technological personality of the commonly called 'Black-topped' ware of Ancient Egypt in the extra-Indian context. In the Indian context, too, a few experiments have been carried out but considering the vastness and largeness of the material remains they appear to be too negligible. The Indian archaeologists as well as the archaeologists writing on Indian archaeological activities have mostly repeated the same views and theories as held by others in respect of the 'black-topped' pottery of Ancient Egypt in the extra-Indian context.

In the following pages will first be stated the various views held by the archaeologists and others in the extra-Indian context followed by a summary of the experimental examinations conducted in the Indian context.

EXTRA-INDIAN CONTEXT

In Ancient Egypt, besides the 'black-topped' pottery, there was another ware known as 'Black-ware' characterised by a black interior and black exterior. Results in respect of the blackness of this ware have also been extended to the study of the blackness of the Egyptian black-and-red ware.

Without going into the details, we may only cite the conclusions arrived at by the different scholars in respect of the technological make-up of this ware.

Myres, J.L. : Dilating on the 'black-ware', Myres (1903 : p. 368) observes : 'what had begun as an accidental disfigurement had been seized and utilized and developed into an intentional technique ?

Scott, Sir Lindsay : Scott (1956 : 383) has to write this : "black ware may result from the reduction of ferric oxide in firing, but it may also be produced by soaking the pot in oil and heating it to a low temperature to carbonize the oil ; or by depositing particles of carbon throughout the fabric by throwing vegetable matter into the kiln at the end of the firing ; or by placing the pot, while still hot from the kiln, in vegetable matter such as chaff".

Randall-Maciver : Randall-Maciver (1905 : 20-2) attributes the blackening of certain pottery in upper Egypt to the 'fierce heat' caused by the addition of chopped straw to the fuel.

Jacquetta Hawkes : This attractive bicolour was secured by standing the inverted pot in ashes that prevented the access of oxygen to the buried portion while the rest of the vessel was exposed (Hawkes, 1963 : p. 304, Fig. 43).

Pollard, W.B. According to Pollard (1912 : pp. 72-76), the black of the Egyptian 'black-topped' ware is a carbon black.

Gordon Childe : 'Egyptian black-topped may contain free carbon'. Prof. Childe (1937 :

p. 44) pleads and adds that attribution of the black or grey colour exclusively to this element is not justified experimentally.

Crowfoot, J.C. : Crowfoot (1925 : p. 131) postulates a process in which the pot direct from the fire and still red-hot is buried in and covered with organic materials to turn its surface black.

Mercer, H.L. : Mercer's (1919 : p. 17) experimental examination involves the application of a wash of red-ochre, polishing off the surface by rubbing and then firing the pot placed in an inverted position with organic materials.

Petrie, Flinders W.M. : Petrie (1910 : pp. 130-131) attributes the blackness to black oxide of iron, and the redness to red oxide of iron, both formed at the same time from the iron compounds present in the clay, the different effects being produced by the vessel having been fired in an inverted position.

Petrie is supported by Franchet, (84-85), Forsdyke, (1914 : 137-139), Frankfort (1906) and Harrison (1928 : p. 49).

Lucas (1963 : p. 374), however, has something different to say : "That the colour of black pottery", observed Lucas, "may be due to the presence of black oxide of iron produced from red oxide by the action of reducing gases in the fire is theoretically possible and from a chemical point of view is very attractive, but that any such reduction actually occurred during the baking of Egyptian black and black-topped ware has not been proved".

Lucas A. : On the basis of his experimental examinations, Lucas (1962 : p. 380) postulated the possibility of two distinct operations, the first being the making of a red pot (the red of the clay being enhanced in some instances by a wash of red ochre) and the second being the subjecting of the rim and interior of the pot to the action of dense smoke in order to blacken them.

Baumgartel, Dr. Elise, J. : Baumgartel (1955 : 17) seems to support Lucas when he states thus : "We now know that the black top was not made in a single process together with the red body of the pot. A. Lucas has shown by his experiments that for the red pot to acquire its black top a second process was necessary, and that it had to be treated with a special matter, carbon, which is not present in the red slip. Black-topped pottery was thus a development of the polished red ware, and not a less accomplished stage in its manufacture".

INDIAN CONTEXT

In the Indian context, archaeologists have generally believed in what has been described as the 'inverted firing technique' of manufacture. In this technique, the pots are placed in an inverted position in the kiln subjecting the exterior to oxidising conditions and the interior to reducing conditions. Saw dust or some vegetable matter might have been filled in the pot while firing under reducing conditions. As a result, the interior turns black and the exterior dull red to buff in colour.

However, Sankalia and Deo (1969 : pp. 28 and 219), do not rule out the possibility of double firing technique involved in the preparation of the black-and-red ware.

In the Indian context, so far only a few scientific experiments are known. The first by Plenderleith (1930 : 190) pertained only to the Megalithic black-and-red ware. It was directed to the study of the make-up of this Megalithic black-and-red ware. Archaeologi-

cal chemist's examination was confined to the microscopic study of the black-and-red ware of the historical period (*Wheeler, 1946 : 50-93*). Mujumdar's experimental examination, of course, studied this ware in all its ramifications, i.e., the make-up, the structural aspect and the manufacturing process. Wakankar (1967 : 7) claims to have experimented the production of such pots.

Mujumdar, G. G. : Results of Mujumdar's (1969 : 92 ; Ramachandran, 1971 : 113) experimental examination are as under :

- (a) Single firing ; or,
- (b) Double firing when the pot is fired red first and after subjecting it to special arrangement and refiring it when the part protected by this special arrangement becomes black (Lucas's idea of Egyptian firing technique) ; or,
- (c) Double firing but this time firing the pot black first and refiring it (with special arrangement) when a portion becomes red.

According to Mujumdar (1969 : 93), the Megalithic Black-and-Red ware was more likely to have been produced by the last method, i.e., (c) Black-and-Grey might be due to some unfavourable position or condition of the pot (1969 : 93 ; *Ramachandran, 1971 : p. 113*).

Besides the afore-mentioned experimental examination, Mujumdar (1971 : 85) had also conducted a Megascopic and Microscopic study of the sherds of the chalcolithic black-and-red ware from Chalcolithic Navdatoli, which revealed the fact that the "ware is most probably a result of single firing under simultaneous reduction/oxidation conditions".

Thus, we find that the technological personality also of this ware is poignantly diverse for divergent views have been expounded in respect of its technological make-up, for example, inverted, single and/or double firing technique of manufacture. There may be still more complex methods of its manufacture which, however, are not firmly tested. This shows a changing technological personality of the black-and-red ware.

VI. Typological Personality

Ut Supra, varied cultural association and the possibility of different technological processes have given this ware unique importance in Indian archaeology. This has, however, to be supplemented by a study of typology, for typology too appears to be varied as for instance, at Lothal, Rangpur, Ahar, Navdatoli, Surkotada, etc. The excavator (*Rao 1963 : 108*) of the sites of Lothal and Rangpur has to observe thus : "Though the technique of inverted firing is the same at all the sites where the black-and-red ware vessels occur, the shapes of vessels vary from site to site, but they closely follow the shapes in other wares of a given site". He (*Ibid : 108*) reiterates : "the shapes of the vessels are similar to those of the major ceramic wares of a particular period to which the black-and-red ware belongs. This fact is fully borne out at Lothal and Rangpur". At the latter site, we notice that the shapes of black-and-red ware draw close parallels with the vessels of the Micaceous Red ware. In fact, the same shapes occur in both the wares (*IAR, 1956-57 : 15*). Thus, we find that this ware is devoid of any fossilized shape.

In respect of nature of paintings also variation is distinctly noticeable. As observed by Rao (1961 : 21), the vessels at Lothal are painted in white over black only in the

interior, while the Megalithic Black-and-Red ware and Chalcolithic Black-and-Red ware of the Ghaggar Valley and Central India are painted on both the surfaces or the exterior only.

At Rangpur, too, there is hardly any difference between the black-and-red ware and the Lustrous Red ware vessels in form or treatment of the surface, except in the technique of firing (Rao, 1963 : 17).

According to Rao, (1963 p. 108), the black-and-red ware was the result of a variation in the technique of firing ; pots of the same shape and fabric were subjected to two different techniques of firing at Lothal and Rangpur, resulting in the red ware and black-and-red ware (*Ibid* : 108, fig. 15, types 6-10a). Thus, we find that the slightly convex-sided bowl of black-and-red ware closely resembles the convex-sided bowl in the red ware in sub-period IIA of Rangpur (*Ibid* : 61 108, fig. 15, types 5 and 5a). In Sub-period IIB of Rangpur, it developed straight sides, closely following the bowls in the red ware (*Ibid* : 61 & 108, fig. 31, types 63-64). Both, however, developed simultaneously a concavo-convex profile with a blunt-carinated shoulder in Sub-period IIC and a deep carinated shoulder in Period II (*Ibid* : 61, 108 and 109, fig. 31, types 11 and 13).

Also, the ceramic shapes noticed in the Micaceous red ware are repeated in the black-and-red ware (*Ibid* : 61). The main shapes of both these wares are the convex-sided bowl, the bowl with a stud-handle and the small jar with a bulbous body (*Ibid* : 61).

Thus, we find that the shapes of the vessels in black-and-red ware closely follow those of the Lustrous red ware as well as the Micaceous Red Ware (*Ibid* : 61). As observed by the excavator, it is, therefore, quite evident that pots of the same form could be subjected to two different techniques of firing, producing red ware or the black-and-red ware depending, of course, upon the condition of firing (*Ibid* : 61, fig. 15). The excavator continues further by adding that at Lothal, too, the identity of shapes, in the Micaceous red ware and the black-and-red ware vessels is a noteworthy feature (*Ibid* : 61). The small necked jar, according to him, is a typical Harappan shape occurring in the sturdy fabric, black-and-red ware and the Micaceous red ware (*Ibid* : 61, fig. 15, type 1a). As a matter of fact, at every stage of evolution of the ceramic types in the red ware, especially the Micaceous red vessels, almost a corresponding evolution in the black-and-red ware vessels can be noticed (*Ibid* : 97, fig. 15).

Basing his observations on the data as available from Lothal, Rangpur and Ahar, Rao has pointed out a few contradictions in respect of black-and-red ware pots from these sites which may be briefly stated as below :

- i) The black-and-red ware from Lothal is noted for its simple forms, such as the bowl with an incurved or slightly-everted rim or with stud-handle. The bowl from the early levels of Ahar IA is beaded below the rim which is sometimes prominently everted ; a flange occurs on the exterior in the absence of any beading (*Ibid* : 109).
- ii) The painting is executed in white on both the surfaces of the Ahar vessels, with simple dots between parallel lines, spirals, etc. ; the zonal conception in painting is a remarkable feature of A har, which, however, is not to be found on the black-and-red ware of Loth (*Ibid* : 109).
- (iii) On the other hand, the Lothal designs are elementary, viz., sokes and wavy lines ; the painting is confined to the interior of the vessels, whereas at Ahar it is done on both surfaces or the exterior only ; intricate designs such as lozenges juxtaposed to

each other enclosing spirals between them are introduced in the late levels of Ahar IA (*Ibid* : 109).

Evidences from Surkotada also show that the ware overlaps with the shapes of the associated Harappan Red ware.

At Ahar, the ware again overlaps with the shapes of the associated wares. For example, bowl with carination in Burnished Grey ware is stated to be comparable to Type I in black-and-red ware (*Sankalia et al*, 1969:46); Type 3a, Type 5 and Type 1 of the black-and-red ware also occur in the Black burnished ware (*Ibid* : p.39). Fabric 5 of Red-slipped metallic ware of Red ware group is similar to Type 1 of the black-and-red ware (*Ibid* : p.61). The stepped dish and stems of three types of black-and-red ware of Phase Ib of Ahar seem to be an imitation of the Tan and Chocolate metallic ware (*Ibid* : p. 25). Certain few shapes of Thin red-slipped ware are also comparable to black-and-red ware, particularly the rimless bowl (*IAR*, 1959-60: p41).

Rao also finds a "certain difference" between the black-and-red wares of Ahar and Lothal. The observations made by him in the case of the black-and-red ware of Lothal A and B apply to those from Rangpur IIA and IIB also (*Rao*, 1963: p. 199).

At Gilund again the shapes in black-and-red ware are found to parallel the shapes of the Black-ware (*IAR*, 1959-60:41).

The black-and-red ware of Period II of Noh is stated to be different from the one found from Ahar and Navdatoli (*Srivastava*, 1969:39). As a matter of fact, the black-and-red pottery of Period II of Noh is not a slavish imitation of black-and-red ware from the Harappan sites or the chalcolithic sites of Ahar, Navdatoli, etc. (*Ibid* : 40). Agrawal (1972:4) also affirms thus : "... the shapes of unpainted black-and-red ware, Pre-P.G.W. levels at Noh, are quite different from those of black-and-red from Ahar".

Further, the black-and-red ware is reported to show a striking closeness in shapes to those of the Painted Grey ware. As observed by the explorer, in the north-eastern zone of the Ahar Culture, the shapes in the black-and-red ware acquire a fair nearness to the shapes in the Painted Grey Ware. In the words of the explorer (*Misra*, 1967:207 *IAR*, 1958-59:45), they "tend towards those of the Painted Grey Ware", e.g.,

Amli	(District Bhilwara)
Bihara	(" ")
Kotri	(" ")
Pander	(" ")
Banthali	(" ")
Lank	(" ")
Naner	(District Tonk)
Deopura	(" ")
Ram Kishan Pur	(" ")
Chosla	(" ")
Samelia	(District Ajmer)
Gondi	(" ")
	(District Jaipur)

The story of overlap in shapes does not cease here. At Atranjikhhera, too, during

Period III the Painted Grey ware and the plain grey ware, according to the excavator, show a remarkable resemblance in shape to the black-and-red ware (Gaur, 1965: pp. 144-145). However, a marked dissimilarity in shape is discernible between the black-and-red wares of Atranjikhhera on one hand and Ahar on the other (Sankalia *et al.*, 1969:221). As a matter of fact, most of the shapes of this ware are found to be different from those obtained from the other sites of chalcolithic assemblage yielding the black-and-red ware (IAR, 1963-64: p.47).

Besides Atranjikhhera, at Khalua also, lying between Atranjikhhera and Noh, commonness in shape between the Painted Grey Ware and the black-and-red ware is noted by the excavators (IAR, 1965-66:42).

According to the excavators of the site of Kaseri also, the bowls and dishes in the black-and-red ware have a typological connection with the Painted Grey Ware (Dikshit, 1970).

In the words of one of the excavators, (Verma, 1969:103), there is "a vast difference in the pottery types of Chirand and Sonapur". According to him, "types like dish-on-stand, footed bowl, spout, jug, *lota*, etc. are absent at Sonapur whereas at Chirand they have been found in good numbers" (*Ibid.*:103).

According to K. K. Sinha, the 'painted tradition on the black-and-red ware at Chirand is different from Ahar and other Central Indian sites' (*Ibid.*: 109, Comments).

At Navdatoli, amongst the painted bowls of Painted Red Ware, the (a) Hemispherical, (b) Ovaloid, and (c) Sub-ovaloid shapes are found in painted black-and-red ware (Sankalia *et al.*, 1958:92).

The various bowl-shapes or types in the black-and-red ware with paintings in white, in fact, largely copy or imitate the forms in Malwa ware (Sankalia *et al.*, 1971: 1074-413) of Black-on-Red ware types (*Ibid.*: 87 and 105). The discovery of two sherds of the bases of goblets indicate that the black-and-red ware goblets have longer stems as in the Black-on-Red ware (*Ibid.*: 98, Fig. 32-14, Fig. 32-15).

Thus, the black-and-red ware bowl and other forms either imitate those in the Black-on-Red and Cream-slipped wares, or show a parallel development (*Ibid.*: 80).

Except a solitary vague resemblance with a Rangpur bowl, the black-and-red ware of Navdatoli is otherwise different in treatment of surface and forms from the black-and-red ware of Rangpur (Rao, 1963:168). The Navdatoli black-and-red ware is black or grey on the interior and slightly reddish below the rim on the exterior, whereas in Rangpur IIC and Rangpur III the exterior of the vessel is lustrous red and the interior black and shining (*Ibid.*: 198). Most of the Rangpur bowls have a carinated shoulder in Period IIC and III (*Ibid.*: 198).

Ahar has yielded many more shapes and designs; on the contrary, those at Navdatoli exhibit shapes which are not represented at Ahar (Sankalia *et al.*, 197:187). As observed by the excavators. (*Ibid.*: 68 and 105), the black-and-red ware from Ahar and Navdatoli seemed to be "superficially similar" but both "differed in type, shape and surface decoration".

Navdatoli types in black-and-red ware are quite different from those of Atranjikhhera types in black-and-red ware, too (*Ibid.*: 105). The latter has comparatively large bowls with straight outgoing sides, and the fabric, as all the Gangetic fabrics, also much finer (*Ibid.*: 105). Navdatoli has smaller, more delicately made bowls (*Ibid.*: 105).

The channel-spouted vase, which is the characteristic type of the black-painted

red ware of the Malwa fabric, is reported to occur in the black-and-red ware, too, at Eran (*JAR*, 1963-64:15-16; Singh, 1967:22).

It has been observed by the excavators that the black-and-red ware of Songaon is totally different in fabric and types from the black-and-red ware of the Proto-historic period at Ahar and Navdatoli (*Deo et al*, 1969 : 544).

From the foregoing survey, it is fairly obvious that the black-and-red ware does not seem to possess any typological personality of its own.

VIII. Conclusion

From the above review of material equipments—associated with the black-and-red ware in the contexts of Harappa Culture in Gujarat, the Copper-Age Culture (Banas Culture) in South-eastern Rajasthan, and the Chalcolithic cultures of Central India, Bihar, Eastern India, Deccan and Northern Karnataka—compounded by the foregoing examination of the chronological assignments, technological distinctions and typological contradictions carried by the black-and-red ware, it is amply evident that this ware does not seem to possess a cultural personality of its own.

Moreover, in the context of the black-and-red ware we do not find any cogent and tangible inter-relationship also amongst these chalcolithic or proto historic cultures of India. The culture as known to us from Lothal is extensively divergent from that noticeable at Ahar. Again the Harappan Culture of Lothal, Rangpur, Surkotada and other related sites of Gujarat is conspicuously different in conception as compared to the chalcolithic cultures of Navdatoli and other adjoining sites of Central India. Further, the chalcolithic cultures of the Deccan and Northern Karnataka are convincingly materially dissimilar to what is obtainable at Chirand and Sonapur in Bihar, and Mahisdal and Pandu Rajar Dhibi in West Bengal. Thus, we notice a blatant sparsity of inter-relationship amongst the different cultures carrying with them the black-and-red ware.

Finally, it would thus appear that inspite of the wide range in space and time, the black-and-red ware does not seem to represent a cultural personality of its own as can aptly be stated in the case of Indus, Malwa and Jorwe wares.

References

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|------------------------|---------|------|--|
| Childe, V. | | 1937 | <i>MAN</i> , Vol. XXXVIII, March, No. 55. |
| Gordon | | 1925 | <i>Sudan Notes</i> , VIII |
| Crowfoot, J.C. | | | |
| Deo, S.B. & | | | |
| Mujumdar, G.G. | 1969 | | <i>Songaon Excavations</i> : 1965 ; Poona. |
| Dixit, K.N. | 1970 | | <i>Archaeological Congress and Seminar Papers</i> read before the 4th Annual Congress of the Indian Archaeological Society and the Seminar held at Nagpur on 10th, 11th and 12th November, 1970. |
| Franchet, L. | | | <i>Ceramique Primitive.</i> |
| Frankfort, H. | | | <i>Studies in the Early Pottery of the Near East</i> , i and ii. |
| Forsedyke, E.J. | 1914 | | <i>Journal Hellenic Studies</i> , XXXIV. |
| Gaur, R.C. | 1965 | | <i>Indian Prehistory</i> : 1964, Poona. |
| Harrison, H.S. | 1928 | | <i>Pots and Pans.</i> |
| Hawkes, Jacquetta | 1963 | | <i>History of Mankind</i> , Vol. I (Pre-History and the Beginning of Civilization). |
| I.A.R. | 1956-57 | | <i>Indian Archaeology—A Review.</i> |
| | 1958-59 | | |
| | 1959-60 | | |
| | 1961-62 | | |
| | 1963-64 | | |
| | 1965-66 | | |
| Lal, B.B. | 1963 | | <i>Illustrated London News</i> , Vol. 242, April, 20. |
| Lucas, A. | 1929 | | <i>Journal of the Royal Anthropological Institute of Great Britain and Ireland</i> , Vol. LIX, Jan.-Dec. |
| | 1962 | | <i>Ancient Egyptian Materials and Industries</i> , 4th Edition, enlarged and revised by Harris, J.R. ; London. |
| Mercer, H.L. | 1919 | | <i>Areika</i> (D. Randall—Mac Iver and C.D. Woolley). |
| Misra, V.N. | 1967 | | <i>Pre-and-Protohistory of the Berach Basin, South Rajasthan</i> ; Poona. |
| Mujumdar, G.G. | 1969 | | <i>Seminar Papers on the Problems of Megaliths in India</i> ; Varanasi. |
| | 1971 | | <i>Chalcolithic Chandoli</i> , 1957-59, Appendix I ; Poona—Baroda. |
| Myres, J.L. | 1903 | | <i>Journal of the Royal Anthropological Institute of Great Britain and Ireland</i> , Vol. XXXIII. |
| Petrie, Flinders, W.M. | 1910 | | <i>The Arts and Crafts of Ancient Egypt.</i> |
| Plenderleith, Dr. H.J. | 1930 | | <i>MAN</i> , Vol. XXX, October, No. 138. |
| Pollard, W.B. | 1912 | | <i>Cairo Scientific Journal</i> , VI. |
| Ramachandran, K.S. | 1971 | | <i>A Bibliography of Indian Megaliths.</i> |
| Randall-MacIver, D. | 1905 | | <i>Journal of the Royal Anthropological Institute of Great Britain and Ireland</i> , Vol. XXXV. |
| Rao, S.R. | 1961 | | <i>Marg</i> , Vol. XIV, No. 3, June ; Bombay. |
| | 1963 | | <i>Ancient India</i> , Nos. 18 and 19, 1962 and 1963. |

- Sankalia, H.D.,
Subbarao, B. and
Deo, S.B. 1958 *The Excavations at Moheswar and Navdatoli; 1952-53; Poona—Baroda.*
- Sankalia, H.D. Deo,
S.B. and Ansari, Z.D. 1969 *Excavations to Ahar, 1961-62 : Poona.*
1971 *Chalcolithic Navdatoli : 1957-59 ; Poona-Baroda.*
1956 *A History of Technology*, edited by Singer, C., Holmyard,
E.J. and Hall, A.R., Vol. I ; London.
- Scott, Sir Lindsay 1956 *Journal of Madhya—Pradesh Itihas Parishad ; No. V ; Bhopal.*
- Singh, U.V. 1967 *Potteries in Ancient India*, edited by Sinha, Dr. B.P. ; Patna.
- Srivastava, K.M. 1969 *Journal of the Oriental Institute*, Vol. XX, No. 4, June.
1971 *Journal of the Karnataka University—Social Sciences*,
1968 Vol. IV, April ; Dharwar.
- Sundara, A. 1972 *Archaeological Congress and Seminar Papers*, edited by
Deo, S.B. ; Nagpur.
- Verma, B.S. 1969 *Potteries in Ancient India*, edited by Sinha, B.P. ; Patna.
- Wakankar, V.S. 1967 *Journal of the Vikrama University, Kayatha Excavation Number.*
- Wheeler, R.E.M. 1946 *Ancient India*, No. 2, July.
1948 *Ancient India*, No. 4, July 1947-January 1948.
1960 *Early India and Pakistan.*