

## Chapter V

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### Archaeology Of Roman Maritime Commerce in Peninsular India

The impact of Roman maritime commerce on the socio-economic fabric of Early Historic India has been the theme of historical reconstructions from archaeology. Perhaps the most forceful projection of this theme was made by (Ghosh 1989:132) who says with regard to the urbanization of peninsular India that the 'early historical period of south and south-west India seems to have had its own peculiarities. Though, as in neighbouring regions it originated in the midst of megaliths, its driving force arose not so much out of north Indian contacts as trade with the Roman World in the 1st century B.C., particularly resulting in the establishment of seaports and emporia.'

Mehta (1983:139-148), also argues for Roman trade contact 'catalysing processes of urbanization in the Gujarat-Maharashtra region. Ray (1987: 94-104) in her study of urbanization of the Deccan, points out that '...enormous expansion of inland trade networks in the subcontinent, coupled with increased maritime activity between the west coast and the Red Sea ports of the Roman Empire, led to the rise of urban centres at vantage points along the trade-routes and in the peripheral and hitherto unoccupied areas.' Similarly, Sharma (1987) endeavours to build a case for widespread deurbanization in the subcontinent in the 3rd century A.D. caused, among other factors, by the collapse of Indo-Roman trade. In the conclusion to his analysis of urban decay in India, Sharma (1987:180) says: '...the Kusana and Satavahana urban centres suddenly declined in the second half of the third or during the fourth century. This marked the first stage in urban decay, which overtook the majority of early historic towns. It coincided with the fall of the two great kingdoms and the end of Indo-Roman trade.'

However, the discussions on impact of long distance Roman trade on the economy and processes of urbanism in Early Historic India have remained at the level of broad generalisations, doing little by way of demonstrating the causal process of change initiated by Mediterranean contact. This study proposes to undertake a deeper analysis of the archaeological evidence with the intention of situating and understanding dynamics of Indo-Roman contact and trade within Early Historic India

The area of study in this chapter - peninsular India - is divided into three regions Western India ; Southern India and Eastern India.

Possibilities of interpretation of the archaeological record lie in relating distributions of material indicators of Mediterranean trade with 'variables' in the Early Historic horizon. The variables are taken here as spatial and stratigraphic aspects of the 'indigenous' archaeological context. It is to these contexts with which the 'exotic' artefacts can be 'meaningfully' associated.

In the spatial context, important variables are trade routes along which we observe spread of Mediterranean artefacts. Here, the distribution of Mediterranean artefacts is understood as reflecting the penetration of Roman commerce - directly or indirectly - into the Indian hinterland. Resource-areas supplying goods of trade constitute another important variable. For instance, concentration of Roman coin hoards around ancient beryl mines in South India corroborate textual reference to import of Indian beryl in the Mediterranean. Lahiri (1992), in her seminal work on archaeology of Indian trade routes defines the inter-relationship of resource-areas and land-routes:

“... the main attempt of this survey is to understand the utilization of certain specific raw materials by the archaeological cultures in different periods, the delineation of probable areas which could have supplied the raw materials to these cultures and, on this basis, the essential direction of trade routes in, and across, distinct zones.” (Lahiri 1992: 3)

In this study we propose to apply Lahiri's approach, for defining the direction of trade routes in the context of resource-areas supplying raw materials and finished goods for export to the Mediterranean and Indian Ocean lands. **Fig. 39** shows the distribution of Roman artefacts along established Early Historic land routes in India. The regular deposition of Mediterranean material on these routes indicates their use by traders and transporters engaged in long distance commerce with the Roman World. The distribution of the exotic artefacts suggests movement of exchange-commodities between inland resource-areas/markets and ports.

Ten major land-routes showing archaeological evidence of Roman trading activity have been plotted in (**Routes A - J in Fig. 39**). All of these routes have been defined in Indian literature and archaeology as existing since mid-1st millennium B.C. Some of these routes are discussed in the *Periplus* as arterial highways providing access to commodities and raw materials imported into the Mediterranean. In this chapter, the specified land-routes will be discussed in relation to resource-areas of export-goods.

In the stratigraphic context, the appearance of Mediterranean artefacts in excavated sites is viewed as indicating Roman contact in the Early Historic horizon. Beyond delineating the stratigraphic point of Mediterranean contact, other significant indicator-context correlations recurring across a number of sites within a region are sought to be highlighted. For example, in the stratigraphic profiles of several Early Historic sites in western India we find a close connection between appearance of Mediterranean artefacts, enhancement in quality of habitational structures and increase in quantity of finished export-commodities recovered from manufacturing contexts. This inter-connection demonstrates the causal linkage between Roman trade contact and the Indian response to emerging overseas markets.

## 1. Western India

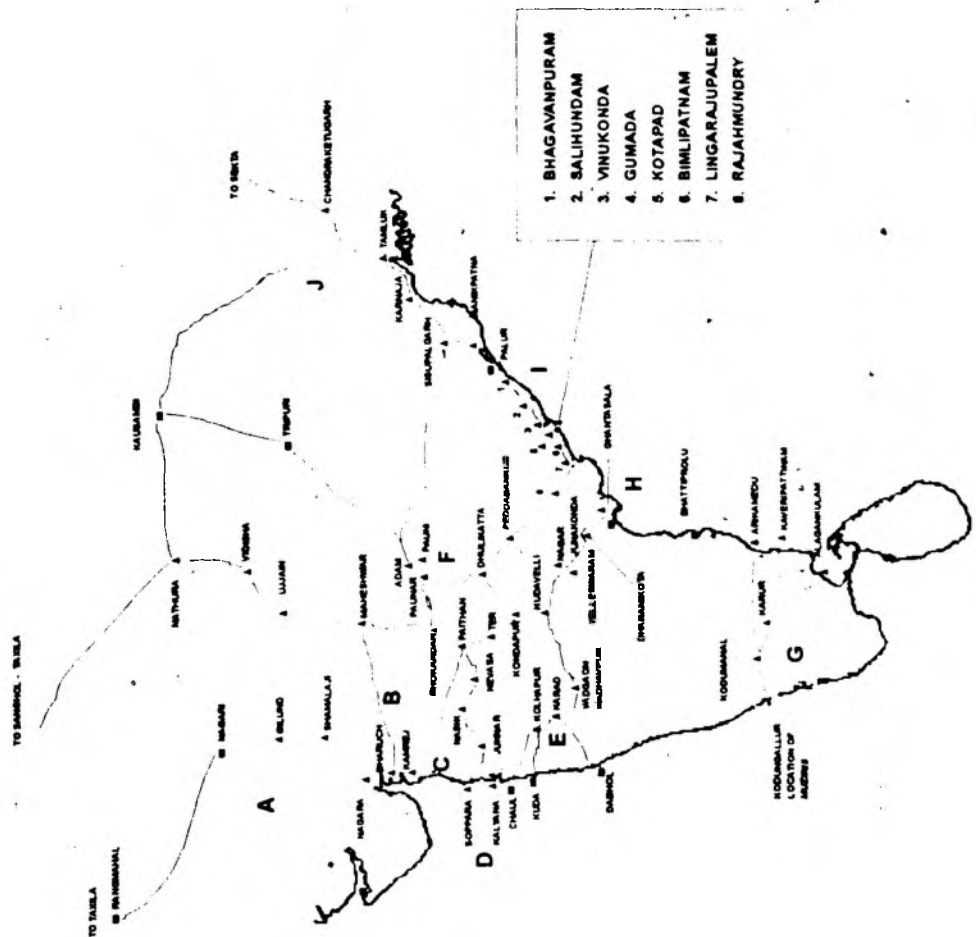
### 1.1 Spatial Analyses of Trade Routes

Western India happened to be a busy arena of Indo-Mediterranean trade. We have discussed in chapter IV the evidence for port-sites on the Gujarat-Maharashtra coast. The *Periplus* enumerates the various Indian, Roman, Arabian and Persian commodities traded at the entrepot of *Barygaza* \ Bharuch. The seaguide also mentions the inland market-towns of the region such as *Paethana* \ Paithan, *Tagara* \ Ter and *Ozene* \ Ujjain and refers to the various goods (semiprecious stones and cloth esp.) sent from these places for export to the west.

The ports of the Indus \ Gujarat trade zone can be best appreciated from our point of view as being the termini of several maritime commercial "segments" on the one hand and on the other, functioning as conduits \ exchange centres not only for the immediate hinterland but equally for commodities arriving from the far Gangetic zone and Central Asia. Earlier we have discussed the maritime connections between western India and the ports of the Red Sea, Gulf of Aden and the Persian Gulf. In particular, the harbour of *Barygaza* (modern Bharuch) functioned as a regular port of call for Arab and Mediterranean traders.

One major reason for the prosperity of ports such as *Barbaricum* and *Barygaza* was the vast hinterland that they served. The Indo-Mediterranean searoute from Egypt constituted a faster, cheaper and safer channel of trade than the overland Silk Routes connecting Central Asia and Gandhara-Bactria with the Eastern Mediterranean. Besides the prolonged state of hostilities between the Romans and the Parthians (who controlled the overland routes through Iraq-Iran) did create difficulties for the movement of trade-goods across West Asia. All these factors must have worked to the advantage of the 'neutral' Indo-Parthian \ Kushan and Kshatrapan ports on the Lower Indus \ Gujarat which received a heavy flow of export-commodities from the northern regions. Added to the long-distance inland markets

# DISTRIBUTION OF MEDITERRANEAN ARTEFACT ALONG EARLY HISTORIC LAND ROUTES IN INDI



was the rich local/regional hinterland producing export-goods. The area of the Lower Indus produced fine cotton (*PME* 39). Also, the *Periplus* (sec. 41) informs that the Saurashtra region produced abundant foodstuff like wheat, rice, sesame oil and clarified butter. These were precisely the edibles imported into *Moscha*, the island of Socotra and the Somali “far-side” ports (*PME* 14, 31). Iron and semi-precious stone were other major export-commodities produced in western India (discussion in Chapters. III & IV and below, **Figs. 16 & 17**).

We have traced trans-oceanic contact between western India and Indian Ocean lands (Persian Gulf, South Arabia, East Africa) and the Red Sea region (Ethiopia, Egypt, Israel/Palestine) in Chapter IV. In this section, the focus is upon stratigraphic analysis of important excavated sites of western India revealing archaeological evidence of early Indo-Mediterranean commerce. However, before approaching the stratigraphic data the major land routes of western India and their ‘role’ as facilitators of Indo-Roman commerce are discussed.

**Route A :** One of the important routes connecting trade-ports on the Gulf of Khambhat with resource-areas in Gujarat and further north is plotted as Route A in **Fig. 39**. This route is visualised as starting from the coastal settlement of Nagara at the head of the Gulf of Khambhat and leading upto passes in the Aravalli ranges immediately north of the fortified Early Historic settlement at Shamalaji. The efficacy of this route for coastal/sea trade is made clear by the excavators of Shamalaji. To quote from the Shamalaji excavation report:

‘The river Meshvo probably helped the traditional traders, who moved along its banks, and reached the interior from ports of the Arabian Sea. This route entered hilly track from Shamalaji, so this industrial habitation might have acted as an intermediate station for these traders, and this function probably led to further development of this town’ (Mehta and Patel 1967:51).

Mediterranean amphorae pieces have been found at the inland trading station of Shamalaji as well at Devnimori, an Early Historic Buddhist stupa-site situated a few kilometres from the former. Devnimori has also yielded a bronze statuette of Atlas (see Chapter II). The spread of Mediterranean artefacts along the river Meshvo route (Nagara - Shamalaji - Devnimori) continue further. North of Shamalaji, the land route from the Gujarat coast must have touched major Early Historic settlements in southern Rajasthan. Specifically, we can envisage a major crossroad in the Chittorgarh area, represented by the sites of Gilund and Nagari. Gilund, in particular, seems to have dominated the passage to Gujarat (**Fig. 39**). Exploration of the site conducted by me

in company of colleagues from the Deccan College showed high mound formations spread approx. 500 x 250 m. A handle of a jar picked up from the site could be that of an amphora fragment (Pl. VIII.a). Similar handle-fragments were picked up by Mr. Kurush Dalal of the Deccan College from the site of Marmi in Udaipur District (personal observation). To these suspected amphora pieces we may add the discovery of a Hellenistic clay lamps from the Early Historic levels at Balathal in Udaipur District (Misra *et al.* 1995: 57-80; section under Lamps in Chapter II).

The first signs of Mediterranean material in southern Rajasthan indicates that Roman commerce was penetrating the Aravalli barrier. Besides tracing the progression of the trade route, the spread of Mediterranean trade indicators on the Gujarat-Rajasthan border suggests an another significant commercial dynamic. The area of southern Rajasthan is rich in resources which were sought by traders from the Mediterranean. Three major items of export from this region can be confidently listed: iron, semi-precious stone and forest products. In his ethnographic reconstruction of tribal trading patterns with the entrepot of *Barygaza* in the early centuries A.D., Stiles (1993: 153-167; 1994b) includes southern Rajasthan as the active hinterland area from where Bhils supplied semi-precious stone and forest products to overseas traders.

Raw ore and nodules of agate must have been sent from southern Rajasthan to the beadmaking centres of Khambhat. No evidence of stone beadmaking industry has yet come to light in this region. However, the antiquity of a rich iron industry is attested. Current excavations at the site of Balathal (Udaipur Dist) by the Deccan College have brought to light a rich ironmaking centre dated to the early centuries of the Christian Era. Specifically, the evidence constitutes of a line of furnaces, copious amounts of slag and cowdung fuel stocks (personal observation). The evidence of ironmaking at Balathal is not isolated. Remains of furnaces and slag have also come to light at Shamalaji (Mehta and Patel 1967: 51-54). A rich metallurgical tradition in southern Rajasthan is attested by the development of copper extracting in the Udaipur area going back to Harappan times (Hegde and Ericson 1992:59-69). Good quality iron from industrial centres like Balathal and Shamalaji must have constituted part of the *Ariacan* iron exported to the west from *Barygaza* Bharuch (*PME* 6; see section under Iron & Steel in Chapter III).

The spread of Roman trade indicators across the Aravalli barrier signify contacts further north. In particular, the routes branching out from Gilund and Nagari must have traversed across Rajasthan to touch the settlement of Rangmahal in the Bikaner District of Rajasthan. Excavations at Rangmahal by a Swedish expedition have brought to light Red Polished Ware 'sprinklers' of the type excavated in western

India as also chank from the Kathiawar region of Gujarat (Rydh 1959:147-149, 189-195). The ceramics and other material from Rangmahal also show affinity with finds from Taxila (Rydh 1959:155-156). The archaeological evidence suggests that a major land route was in existence through Rajasthan in the Early Historic period connecting the ports of Gujarat with north-west of the subcontinent.

**Route B :** This specific the line of communication, beginning at the great port of *Brgukaccha* / *Barygaza* (modern Bharuch), charts its way upstream to Maheshwar on the Narmada and then turns north towards Ujjain. The Ujjain-Bharuch stretch is mentioned in the *Periplus* (49) as the conduit for a range of northern (Gangetic) goods reaching the coast. As Route B in Fig. 39 shows, the conduit from Bharuch can be plotted through Maheshwar - Ujjain - Vidisha - Mathura on the basis of Mediterranean artefact distribution. Maheshwar, in particular, seems to have been a major inland crossroad. Maheshwar, or ancient *Mahismati* also received men and goods on the way to northern India from ports of the Western Deccan. The *Suttanipata* describes the journey of Sage Bharavi's disciples from an area south of Paithan to northern India through Maheshwar and Ujjain (Deo and Gupte 1974:3).

Paithan can be identified with the ancient *Pratisthanpur*, the capital of the Imperial Satavahana dynasty (*Ency.Ind.Arch.* Vol.II: 325; Figs. 39, 40). Paithan is also the same as the settlement of *Paethana* mentioned in the *Periplus* (51), which calls it an inland market-town exporting semi-precious stones. The remains of Early Historic Paithan are represented by large mound formations spread over 4 sq. km on the banks of the river Godavari near the modern township. Small scale excavations at the site have revealed an Early Historic horizon underlaid by Chalcolithic levels. Explorations at Paithan have yielded imitation Roman coins and coins of Augustus and Tiberius (*Ency.Ind.Arch.* Vol.II: 325). A fragment of Roman glassware has also been recovered from the site (Stern 1992:115-117). Ancient Paithan lay at the crossroads of two arterial highways leading to important trade-ports of western India. Both these highways were major conduits of Indo-Mediterranean sea trade.

**Route C :** A major overland channel for overseas trade passing through Paithan was the trans-peninsular route described in the *Periplus* (51). The *Periplus* states that Paithan was twenty days journey from the port of *Barygaza* Bharuch and a further ten days journey eastward from Paithan lay the market-town of *Tagara* Ter. Onyx (onyx coloured glassware?) was exported from Paithan, cloth from ancient Ter and merchandise from further east, i.e., the eastern Deccan (Casson 1984:212-213). This trans-peninsular route is plotted as Route C in Fig. 39. The extension of this route into the eastern Deccan is plotted as Route G in Fig. 39. The points of

Mediterranean artefact distribution on Route C are represented by the sites of Bharuch - Kamrej - Paithan - Ter - Kondapur. Each of these settlements were closely integrated into Indo-Roman commodity-exchange. The *Periplus* (49) vividly details the imports and exports of the great harbour of *Barygaza* Bharuch. In chapter IV we have discussed Kamrej as a riverine port involved in iron exports to the Western World. Paithan, as noted, was a centre of semi-precious stone export. The *Periplus* (51) speaks of *Tagara* as a market-town dealing in textiles. *Tagara* of the *Periplus* has been identified with ancient mounds at the town of Ter in the Osmanabad District of Maharashtra (*Ency.Ind.Arch.* Vol.II:435-437). Excavations carried out Ter by two different teams in the sixties (see Chapekar 1969; *IAR* 1972-73) revealed a single-culture Early Historic horizon. There was also brought to light the remains of a stupa and an apsidal brick temple dated to the 2nd century A.D. (*Ency.Ind.Arch.* Vol.II:435-437). A number of brick-lined vats uncovered in the Early Historic levels at Ter have been interpreted by the excavators as tanks used for dyeing cloth, the industry for which ancient Ter was well-known (*IAR* 1968-69:17). A range of Mediterranean antiquities and 'syncretic' Indo-Roman objects found at Ter provides strong archaeological corroboration for active Roman trade contact with this inland market-town. During occasional prospections at Ter have come to light Roman glassware, amphorae sherds, Roman terracotta suspension lamp, intaglios inspired by Mediterranean techniques, a fragment of the *terra sigillata*, imitation Roman coins and lamps (see under Ter/Maharashtra in **Appendix-I** for bibliographic reference). Further east of Ter, the settlement of Kondapur provided access to the resource-areas and ports of the eastern Deccan. Excavations at Kondapur have revealed the existence of a flourishing Satavahana township having iron manufacturing and semi-precious stone bead industries. Both products were items of export to the Western World. Artefactual evidence of Roman contact is represented by two gold coins of Augustus Caesar, a number of clay imitations of Roman coins and fine 'Megarian-like' pottery pieces (see under Kondapur / Andhra Pradesh in **Appendix-I** for bibliographic reference).

**Route D :** This land-route connected Paithan with the flourishing harbours of *Kalyana / Kalliena* and *Surparaka* through the crucial Nanaghat Pass (Barrett 1957:1). An inscription discovered on a rock-cut cave at Kanheri records an endowment of a *kuti* (temple) and *kodhi* (hall) excavated in *Rajataleka Paithanapatha* or the royal road to Paithan (Luders' List No.988 in *Epigraphia Indica* Vol.X, 1909-1910). Regular distribution of Mediterranean artefacts is clearly discerned on the ancient land route. The points of deposition are Maheshwar - Bhokardan - Paithan -

Nevasa - Nasik - Junnar and the ancient harbour-complexes of *Kalyana* and *Surparaka* (Route D in Fig. 39). The importance of this route for Indo-Roman commodity-exchange is brought out in further analysis (especially of the sites of Nevasa and Bhokardan) undertaken below.

**Route E :** The *Periplus* (51) mentions that goods are brought up to *Barygaza* from coastal areas beyond *Tagara*. The extension of the trans-peninsular route passing through Kondapur to the estuarine areas of the Krishna and Godavari indicates acquisition of trade-goods from the east coast (see discussion below under section on Eastern India). Concomitantly, the commodities from the 'coast' may have also been those sent from the littoral tracts of the western and southern Deccan. In this regard Route E in Fig. 39 shows the links between Early Historic ports on the Konkan and inland settlements in southern Deccan such as Brahmapuri, Karad and Vadgaon Madhavpur. In Chapter IV we have discussed in detail two of the ports - Chaul and Kuda - and associated them with the '*Periplus*' market-towns of *Semylla* and *Mandagora* respectively. Mediterranean artefacts have been prospected at each of the three inland settlements. Brahmapuri, in particular, has yielded a rich hoard of bronze *objets d'art* of Mediterranean origin (see sites under Maharashtra / Karnataka in Appendix - I).

**Route F :** This land route came down from Kausambi through Tripuri and connected with the major Early Historic settlements in Vidharba. In the Vidharba region, the crossroad is represented by the large settlement of Adam (Fig. 39). Recent excavations at Adam have yielded Roman silver denari, Mediterranean glassware, Roman copper/bronze objects, Graeco-Roman bullae, terracotta male heads of Graeco-Roman affinity and the Hellenistic RPW (Amarendra Nath 1995:149-171). Earlier, a hoard of Roman gold coins had been discovered at Adam (Turner 1989: 46). The range of Roman artefacts recovered from Adam is greater than Mediterranean material found at Ter, the Early Historic settlement in the western Deccan identified with the inland market-town of *Tagara* in the *Periplus* (for antiquities from Ter see Cimino 1994: 175-181). It is posited here that Adam happened to be a major inland centre of Indo-Roman trade (like Ter, Paithan, Ujjain), offering access for goods from ports of Kalyana/Sopara/Chaul to traders from ancient cities like Tripuri and Kausambi.

## 1.2. Stratigraphic Analyses of Trade Dynamics

Sites yielding material indicators of Mediterranean trade have a widespread distribution in western India. In fact, nearly every major Early Historic sites in the region have yielded Roman artefacts (Figs. 39, 40). The distribution of

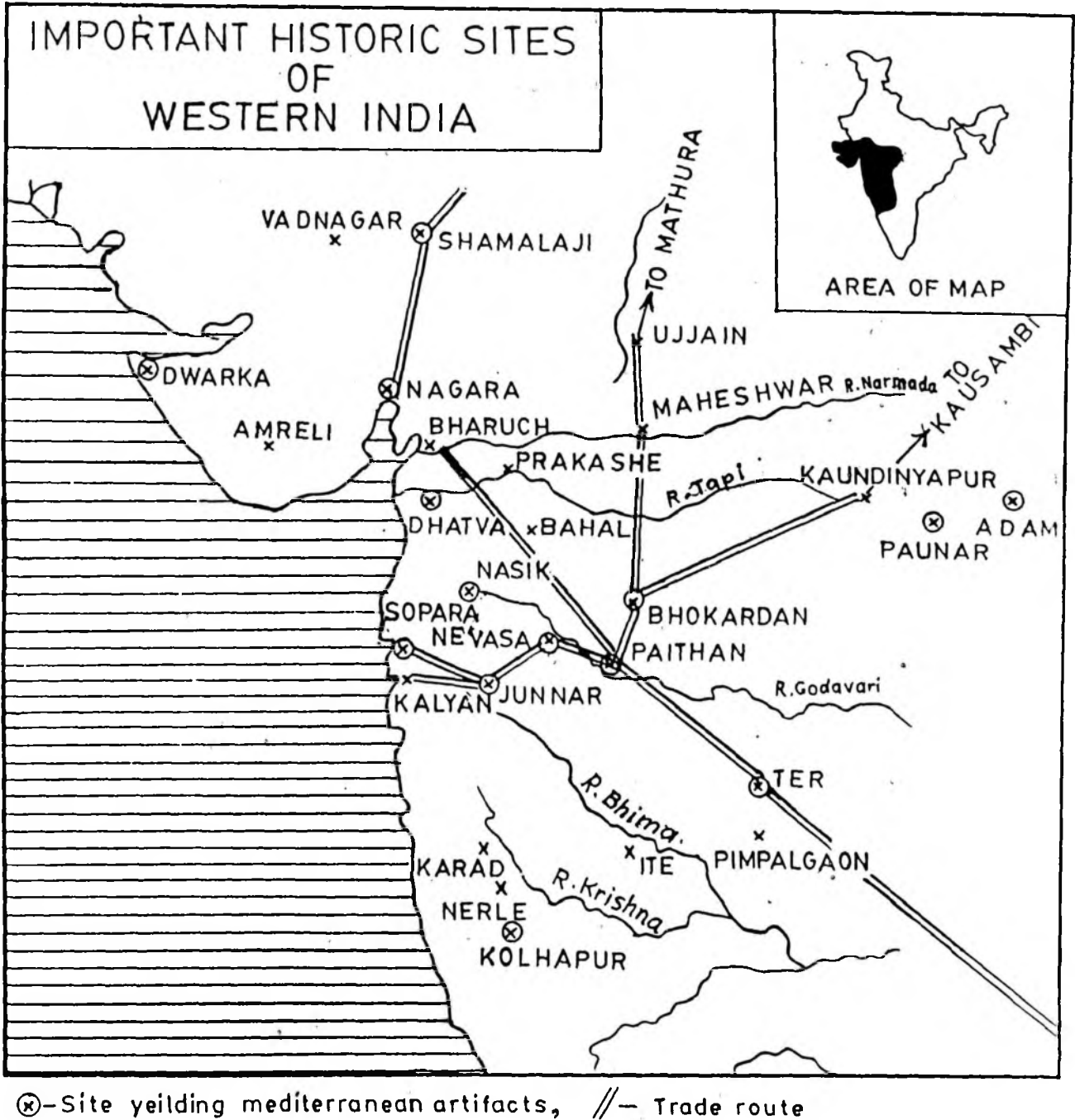


Fig. 40

| CONCORDANCE & CO-RELATION OF LAYERS, NVS                                                      |            |            |            |            |            |            |            |            |         |         |            |
|-----------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|---------|---------|------------|
|                                                                                               | A          | B          | C          | D          | E          | F          | G          | H          | I       | X       | Y          |
| PERIOD VI<br>MUSLIM-MARATHA.                                                                  | 1          | 1 G.C      | 1          | 1 G        | 1 G        | 1          | 1          | 1          | 1 G     | 1 R-P   | 1          |
|                                                                                               | 1a BR      | 1a BR      | 1a BR      | 1a BR      | 1a BR, G   | 1a BR      | 1a BR, V   | 1a BR, G   |         |         | 1a BR      |
| PERIOD V<br>INDO-ROMAN                                                                        | 2 BR, G    | 2 BR       | 2 BR, V    | 2 BR       | 2 BR       | 2 BR, V    | 2 BR       | 2 GCBR     | 2 BR, A | 2 BR    | 2 BR, +    |
|                                                                                               | 3 BR, P    | 3 BR       | 3 BR, A    | 3 BR       | 3 BR       | 3 BR       | 3 BR       | 3 BR       | R-P     |         |            |
|                                                                                               | 4 BR, A    | 4 BR, A    | 4 BR, A    | 4 BR, A    | 4 BR       | 4 BR       | 4 BR, A    | 4 BR       |         |         |            |
|                                                                                               | 5 BR, A    | 5 BR       | 5 BR       | 5 BR, A    | 5 BR       | 5 BR       | 5 BR, A    | 5 BR, A    |         |         |            |
|                                                                                               | 6 BR, R, A | 6 BR, R, A | 6 BR, R, A | 6 BR, R, A | 6 BR, R, A | 6 BR, R, A | 6 BR, R, A | 6 BR, R, A |         |         |            |
| PERIOD IV<br>EARLY HISTORIC                                                                   | 7 BR       | 6 BR       | 5 BR, A    | 6 BR       | 6 BR, 0    | 6 BR, 0    | 7 BR       | 6 BR, 0    | 3 BR, 0 | 3 BR, 0 | 3 BR, 0    |
|                                                                                               | 8 BR       | 7 BR       | 6 BR       | 7 BR       | 9 BR       | 9 BR       | 8 BR       | 9 BR       | 4 BR    |         | 4 BR, A, C |
|                                                                                               | 9 BR       | 8 BR       | 7 BR       | 8 BR       | 10 BR      |            | 9 BR       |            |         |         |            |
|                                                                                               | 10 BR      | 9 BR       | 8 BR       |            | 11 BR      |            | 10 BR      |            |         |         |            |
|                                                                                               |            |            | 9 BR       |            | 12 BR, 0   |            |            |            |         |         |            |
| WEATHERED HORIZON                                                                             |            |            |            |            | 13         | 10         | 11         | 10         | 5       | 4       | 5          |
| PERIOD III<br>CHALCOLITHIC                                                                    | 10a P      | 10 P       | 10 P       | 9 P        | 14 P       | 11 P       | 12 P       | 11 P       | 6 P     | 5 P     | 6 P        |
|                                                                                               |            | 11 P       | 11 P       | 10 P       | 15 P       | 12 P       | 10 P       | 12 P       |         | 6       |            |
|                                                                                               |            | 12 P       | 12 P       | 11 P       | 16         | 13 P       |            | 13 P       |         |         |            |
| POTTERY                                                                                       |            |            |            |            |            |            |            |            |         |         |            |
| N = NBP G = GLAZED C = CELADON R = ROULETTED A = AMPHORA M = MEGARIAN AC = ANDHRA CRISS-CROSS |            |            |            |            |            |            |            |            |         |         |            |
| BR = BLACK-AND-RED P = PAINTED POTTERY R-P = RED POLISHED WARE                                |            |            |            |            |            |            |            |            |         |         |            |
| COINS                                                                                         |            |            |            |            |            |            |            |            |         |         |            |
| 0 = SĀDAVĀHANA O = PUNCH-MARKED 0 = SIRI SĀTAKANI + = LATE SĀTAVĀHANA Δ = BULLAE U = MUSLIM   |            |            |            |            |            |            |            |            |         |         |            |

Fig. 41 After Sankalia *et al.*, 1960

Mediterranean artefacts in western India suggests that Roman commodities were reaching far-flung areas of the region. Interestingly, in the Early Historic horizons of western India the 'syncretic' Indo-Roman objects (especially fine RPW) appear in association with Roman material (Fig. 43). The *regularity* of occurrence of stratified Roman artefacts in the numerous excavated sites in the region points to possibilities of reconstructing archaeological patterns of Indo-Roman trade. Specifically, the analysis proposed here is initiated from a "central" context or type-site. Selection of the type-site has been made on the consideration that its stratigraphy offers the "best" scope for analysis relative to other contemporaneous sequences. For the reasons given below the site of Nevasa in the western Deccan (Fig. 40) is chosen for type-site analysis.

### 1.2.1. Nevasa as Type Site

(1) A prerequisite for undertaking the analyses is the presence of clearly recognizable Mediterranean artefacts in Early Historic strata. In this regard, the suitability of Nevasa as a type-site is suggested by the fact that it yields 63 amphorae sherds. Besides, Nevasa yields a rich corpus of 'syncretic' Indo-Roman artefacts including the finest RPW and imitations of Roman coins in clay, lead and gold (Sankalia *et al.* 1960:200-202,307-314). More important is the fact that amphorae occur at Nevasa along 8 consecutive layers, indicating enduring Indo-Mediterranean interaction. The only other sites revealing a comparable amphora sequence - Arikamedu and Alagankulam- are outside western India.

(2) The presence of a conspicuous 'pre-Roman contact' sub-phase is critical to our analysis. Nevasa reveals a thick Early Historic stratum prior to the appearance of Mediterranean material: a maximum of 5 layers making up the Early Historic levels of Pd. IV (Fig. 41).

(3) Nevasa reveals evidence of uninterrupted industrial activity across the Early Historic Pd. IV-V levels. The Nevasan industries comprise semi-precious stone and shell working, glass manufacture and glass working and ivory carving (Table 5). All these products are mentioned in textual sources as items of Indo-Roman trade (see Chapter III).

(4) Nevasa is located at the crossroads of ancient trade routes connecting the western Deccan to major trading ports on the Gulf of Khambhat and Arabian Sea (Routes C + D in Fig. 39). The site is merely 60 km from Paithan, the capital of the Satavahana dynasty and a major market-town on the trans-peninsular trade route mentioned in the *Periplus* (51). The settlement itself lay squarely on the

*Pratisthanpatha*, the royal road from Paithan to the great Konkan ports of Kalyana and Sopara.

**Analysis Proper :** The ancient site of Nevasa (19° 34' N, 75° E) is situated on the banks of the river Pravara, a tributary of the Godavari, in the Ahmadnagar district of Maharashtra. The main mound-area, locally known as Ladmod (880 x 330 ft) overlooks the Pravara on its south bank. Ladmod was excavated by H.D. Sankalia and his team from Deccan College, Pune between 1954-56 and again between 1959-61 (Sankalia *et al.* 1960; *IAR* 1954-55:5-9; 1955-56:8-11; 1959-60:25-28; 1960-61:19-21). The diggings revealed a multi-cultural stratigraphic sequence of the Palaeolithic, Chalcolithic, Early Historic and Medieval periods. In the present study, our concern is exclusively with the Early Historic period, i.e., Nevasa Pd.IV and V.

Mediterranean amphorae constitute the primary material indicators of Roman contact with Nevasa. A total of 63 amphora sherds were retrieved from Pd. V levels and the upper layers of Pd.IV (Sankalia *et al.* 1960:280-281). Significant from our point of view is the fact that amphora occurrence at Nevasa is continuous along 8 consonant layers of the Early Historic Pd.IV-V (**Fig. 41**). A similar sequence is observed at the coastal site of Arikamedu (Pondicherry) where amphorae occur in all Early Historic phases (Wheeler *et al.* 1946:41-46). The excavator of the site, Mortimer Wheeler, regarded the 'continuous supply of amphorae at Arikamedu' as indicative of *direct* Roman sea trade. Like Arikamedu, the presence of an amphora sequence at Nevasa suggests that Mediterranean commercial interaction with this ancient settlement was enduring and constant over a certain period (see **Pl. V.a.b.c.d.** for specimens of amphorae from Nevasa).

Interestingly, the *point of initial appearance* of amphorae in the Early Historic strata at Nevasa - indicating beginning of Roman contact - is accompanied by changes in material culture. In the words of the excavators:-

"The third phase (Pd.V) was only a continuation of the second one (Pd.IV), as it was not altogether different from the latter. Its most important feature was the gradual disappearance of the black and red ware and the emergence of the fine Red Polished Ware with sherds of the imported Mediterranean amphora. The occurrence of the latter indicated trade with the Roman World, the effect thereof being reflected in the construction of houses, which were now built on an extremely well-laid foundation" (*IAR* 1954-55:7).

These crucial observations suggest the direction of analyses. The points enunciated in the above extract are paraphrased thus: (a) Pd IV and V constitute one

continuous occupational deposit (b) the Black and Red Ware (BRW) 'gradually disappears' at the point of emergence of the Red Polished Ware (RPW) and Mediterranean amphorae (c) the amphorae indicate Mediterranean trade contact (d) the quality of habitational structures improves at the point of BRW - RPW/Amphora transition and (e) the better structures are due to the beneficial impact of Roman trade.

### 1.2.2. BRW - RPW & Amphora Transition

The BRW-RPW & Amphora transition is taken here as a yardstick for studying concomitant changes in the Nevasan stratigraphy. The generalisations emerging from the analyses will be tested against evidence from five 'Roman-contact' sites in western India: Brahmapuri/Kolhapur, Nagara, Paunar, Bhokardan and Dhatva. These excavated sites are widely dispersed over western India and can be thus taken, together, as representative sites for the region (Fig. 40). Situating the conclusions from Nevasa in a broader stratigraphic context will serve to raise the generalisations from 'local' to 'regional' applications. Stratified evidence from Early Historic sites other than the five representative sites will also be integrated into the analyses.

We know that the main BRW bearing layers at Nevasa are those of Pd.IV. Of course, this pottery does not actually 'disappear' at the point of initial occurrence of RPW and amphora in the Pd. IVV overlap layers but considerably reduces in quantity (Sankalia *et al.* 1960:276,481). The primary BRW forms at Nevasa and elsewhere in western India are rimless bowls and shallow dishes produced by inverted firing. Most of them possess a highly burnished exterior (Sankalia *et al.* 1960:259-264,276,286, Fig. 42).

The BRW is a diagnostic ceramic of Early Historic western India. The typical bowl and dish shapes begin to occur from the lowest Early Historic levels and precede the appearance of the Northern Black Polished Ware (NBPW) in the region (Banerjee 1965:217-218). The BRW was the deluxe ceramic of the pre-RPW period (Sankalia, Subbarao and Deo 1958:134-135; Deo and Gupte 1974:110). Its similarity in terms of form and fabric with the earlier Megalithic Black- and- Red Ware tradition has been noticed (Sankalia and Deo 1955:60-61; Sankalia, Subbarao and Deo 1958:134; Subbarao 1958:173-179). The Megalithic - Early Historic BRW transmission is particularly clear at Kaundinyapura (Dikshit 1968:32-70) where the finest burnished bowls and dishes occur in the Megalithic levels and continue uninterrupted into the Early Historic strata, becoming progressively coarser in the upper layers.

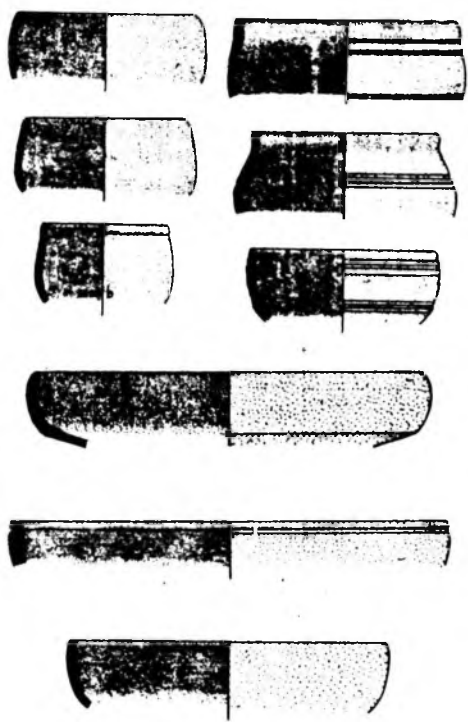


Fig. 42 Common Black-and-Red Ware from Nevasa

The qualitative and quantitative decline of BRW has been observed in a number of Early Historic sites of western India. We already know that the BRW finds at Nevasa become scanty at the point of occurrence of RPW and Mediterranean amphora. In this regard let us now focus upon the representative sites selected for analysis.

Excavations at **Paunar** (Deo and Dhavalikar 1968:16-69) yielded BRW in all four Early Historic phases (Pds. I, IIA, IIB, III). A progressive deterioration in the quality of the ware was observed across the four periods. In Pd.IIB, which marks the appearance of RPW and amphora, the BRW is seen to continue 'but gets thicker and the finer varieties less and less in quantity' (Deo and Dhavalikar 1968:41).

At **Bhokardan** (Deo and Gupte 1974:82-117), the BRW -RPW & Amphora shift has been taken as the basis for demarcating the Early Historic sub-phases Pd.IA and IB. Pd.IA (layers 6 and 5) is devoid of RPW and the BRW is the dominant deluxe ceramic. The succeeding Pd.IB (layers 4 and 3) yield the RPW and amphora. The Bhokardan excavation report contains no information about the quantum of BRW in Pd.IB relative to Pd.IA. However a deterioration in the quality of the ware is indicated from layer 4 ('ware has relatively thick sides' - Deo and Gupte 1974:91) to layer 3 ('sherds with thicker sides' - Deo and Gupte 1974:103). In the next Pd.II the ware was 'consistently represented by less bulk' (Deo and Gupte 1974:110).

Though the reported evidence from **Brahmapuri/Kolhapur** (Sankalia and Dikshit 1952:59), **Nagara** (Mehta 1968:73-78) and **Dhatva** (Mehta and Chowdhary 1975:8-9,63) does not reveal the BRW - RPW & Amphora seriation, we are informed that BRW begins before the RPW and amphora.

Furthermore, coming to the other sites, diggings at **Maheshwar** revealed a progressive reduction in the quantity and quality of BRW across the Early Historic periods IV, V and VI (Sankalia, Subbarao and Deo 1958:137, 143, 150). The RPW appeared in Pd.VI when both the quantity and quality of BRW were at the lowest (Sankalia, Subbarao and Deo 1958:159-162).

At **Bahal**, the BRW first occurs in Pd.II. However in sub-period A of the succeeding Pd.III 'the variants of the Black and Red Ware, abundant in the preceding period disappeared, but the main ware continued...' (*Ency.Ind.Arch.* Vol.II:40).

At **Prakashe**, the BRW which is the principal ceramic of Pd.II goes into disuse in Pd.III while the RPW makes its appearance (*Ency.Ind.Arch.* Vol.II:350-351).

At **Timbarva** (Dist.Baroda, Gujarat), the Early Historic Pd.I 'represented by layers 8,7,6 and 5 is characterised by the Red and Black Ware in association with the

N.B.P....' In the succeeding Pd.II 'the Red and Black pottery becomes *extinct* and only very minor sherds are occasionally seen. And new pottery types, viz., the Red Polished Ware...are found' (Mehta 1955:5-6; italics mine).

The BRW-RPW transition was also observed at **Bharuch** where K.V. Soundarajan of the A.S.I. conducted a limited excavation. The brief report on the excavation, appearing in *IAR* (1959:19) informs that the 'strata of Pd.I, about 5 to 10 ft thick, yielded black-and-red ware in *good bulk*... The types in black-and-red ware comprised the lota shaped pot, dish, bowl and lid, devoid of any painting and generally thick-sectioned but mostly with a fine burnished slip. Their analogues, by way of stratigraphic context and cultural ensemble, can be seen at such sites as Timbarva (Period I) and Nasik (Period II)...Period II was characterised by the occurrence of fragments of the Red Polished Ware in its lower levels... A *few black-and-red ware* sherds were also encountered in disturbed trenches in the lower levels of this Period'(IAR 1959-60:19;emphasis mine).

The BRW evidence examined above reveals a regular pattern over widely dispersed sites. The pattern suggests that the BRW decline was taking place over western India as a whole. Closely linked to the BRW decline is the 'displacement' of this pottery as a deluxe ware by the fine RPW. Significantly, Mediterranean amphorae invariably occur in association with the RPW. In fact, almost all stratified artefacts of Roman origin / inspiration occur in association with RPW and are hardly to be found in the pre-RPW levels in western India. This trend is observed in the Early Historic profiles of 15 excavated sites in western India (**Fig. 43**).

The RPW itself, in terms of the issue of its origin, is part of the discourse on Indo-Roman trade. In the detailed discussion on the RPW undertaken in chapter II it was posited that the finer varieties of the ware can be traced to the *terra sigillata* tradition.

The RPW collection from Nevasa is important in the context of the position taken above. Of particular significance are sherds from Nevasa Pd.V possessing brick-red slip and stamped decorations and motifs on the exterior (**Pl. XV.a, XVI.b**). Begley (1992:157-196) has compared similar pottery from Ter and Kondapur with Mediterranean red wares of the historical period.

The appearance of RPW & amphorae at Nevasa are concomitant with the occurrence of Early Satavahana coins which, as discussed in Chapter II (under Amphora section), have been dated to the last quarter of the 1st century B.C. In other sites of western India, especially those detailed in **Fig. 43**, RPW appears invariably in association of chronological 'markers' of the B.C./A.D. transition period.



The appearance of the Hellenistic RPW together with the Mediterranean amphorae at Nevasa, and elsewhere, indicates the point of Roman contact in the archaeological record. As we shall discuss, the BRW - RPW & Amphora seriation represents deeper processess of change than merely a sudden proliferation of pottery types.

### 1.2.3. BRW - RPW & Amphora Transition and Habitational Structures

A development at the point of BRW - RPW & Amphora transition observed by the excavators of Nevasa concerns changes in the quality of habitations. To reproduce part of the observation cited above: 'The occurrence of the latter (Mediterranean amphorae) indicated trade with the Roman World, the effect thereof being reflected in the construction of houses, which were built on an extremely well-laid foundation' (*JAR* 1954-55:7).

This intrinsic connection drawn by the excavators suggests the beneficent impact of Roman trade on the economic life of the Nevasans whose new found prosperity is reflected in the construction of better houses. A heavy concentration of structures was noticed from Pd IV onwards. The constructions, in fact, 'defined the strata' (Sankalia *et al.* 1960:17).

What specifically are the changes noticed in the Early Historic habitational structures at Nevasa? On the whole the basic features of the structures in Pd IV-V (synonymous with BRW-RPW transition) remain the same (Sankalia *et al.* 1960:53). In both periods the habitations constituting of single storey houses with black clay foundations, lime and mortar flooring, soak pits, bamboo supports for roofs and use of terracotta roof tiles (Sankalia *et al.* 1960:29-53). However, the Pd V structures showed sharp improvement in quality of building material. The black clay foundation came to be strengthened with undressed stones, better brick-lined soak pits appeared and the walls were now made of fired bricks instead of mud (Sankalia *et al.* 1960:53). Pd V also showed greater frequency of floor levels than Pd IV, indicating heightened building activity across the BRW - RPW & Amphora divide (Fig. 44).

The improvement in quality of habitations was noticed in the five representative Roman-contact sites as well:-

**Brahmapuri/Kolhapur** : Habitational structures similar to Nevasa Pd V have come to light in Brahmapuri. The structures have pebbly black-clay foundation filling and brick-lined floors. The roofs were covered with terracotta tiles. Both fired-bricks and sun-dried bricks were used for building the walls (Sankalia and Dikshit 1952:26-32, 135-140). The complex of brick houses belongs to the Satavahana

Period at Brahmapuri which has also yielded Mediterranean amphorae (Sankalia 1957:207-208) and the Red Polished Ware ('imported ware' in report, Sankalia and Dikshit 1952:61). According to the excavators these 'fine brick houses probably came into existence about the 1st century A.D., owing perhaps to a prosperous trade with Rome and the western world' (Sankalia and Dikshit 1952:140).

Evidence of structural activity was not noticed in the pre-Satavahana levels. In Square I, where the sounding was made upto the trap-rock it was seen that the foundation of the Satavahana houses lay almost over the natural soil, indicating a negligible pre-Satavahana phase (Sankalia and Dikshit 1952:10-23).

However, Brahmapuri provides us an opportunity for comparing the Satavahana structures with habitations in the post-Satavahana phase. Three layers of gravel flooring with multiple post-holes have been uncovered above the Satavahana brick houses. The presence of thick red debris in the post-Satavahana layers suggest the use of brick-bats in the making of the structures (Sankalia and Dikshit 1952:25,29).

In contrast to the habitations of the Satavahana phase the structures of the post-Satavahana period seem to be 'hurriedly constructed' judging from the multiple floor levels close together and the large number of post-holes (32 nos.) spread in an unplanned manner. The post-Satavahana structures show a deterioration in quality of habitations relative to the planned Satavahana Period brick houses (Sankalia and Dikshit 1952:24).

**Paunar** : Excavations conducted by Nagpur University in 1967 at the site of Paunar revealed nine layers of occupational deposit which were categorized into five periods: I, IIA, IIB, III and IV (Deo and Dhavalikar 1968).

Pd.IIA and IIB constitute the BRW levels. This period gave 'evidence of a series of lime floors' (Deo and Dhavalikar 1968:8). In Pd.IIA 'At least four major floor levels could be discerned' (Deo and Dhavalikar 1968:8).

Pd.IIB, which is a virtual continuation of IIA, has been distinguished by the excavators because of the appearance of the Mediterranean amphorae and the Red Polished Ware (IAR 1966-67:27). Of the structures of Pd.IIB the report informs:-

'The most remarkable feature of the houses of this period was that they were equipped with ringwells for drainage, storage jars for storage purposes and tiles for roofs' (Deo and Dhavalikar 1968:9).

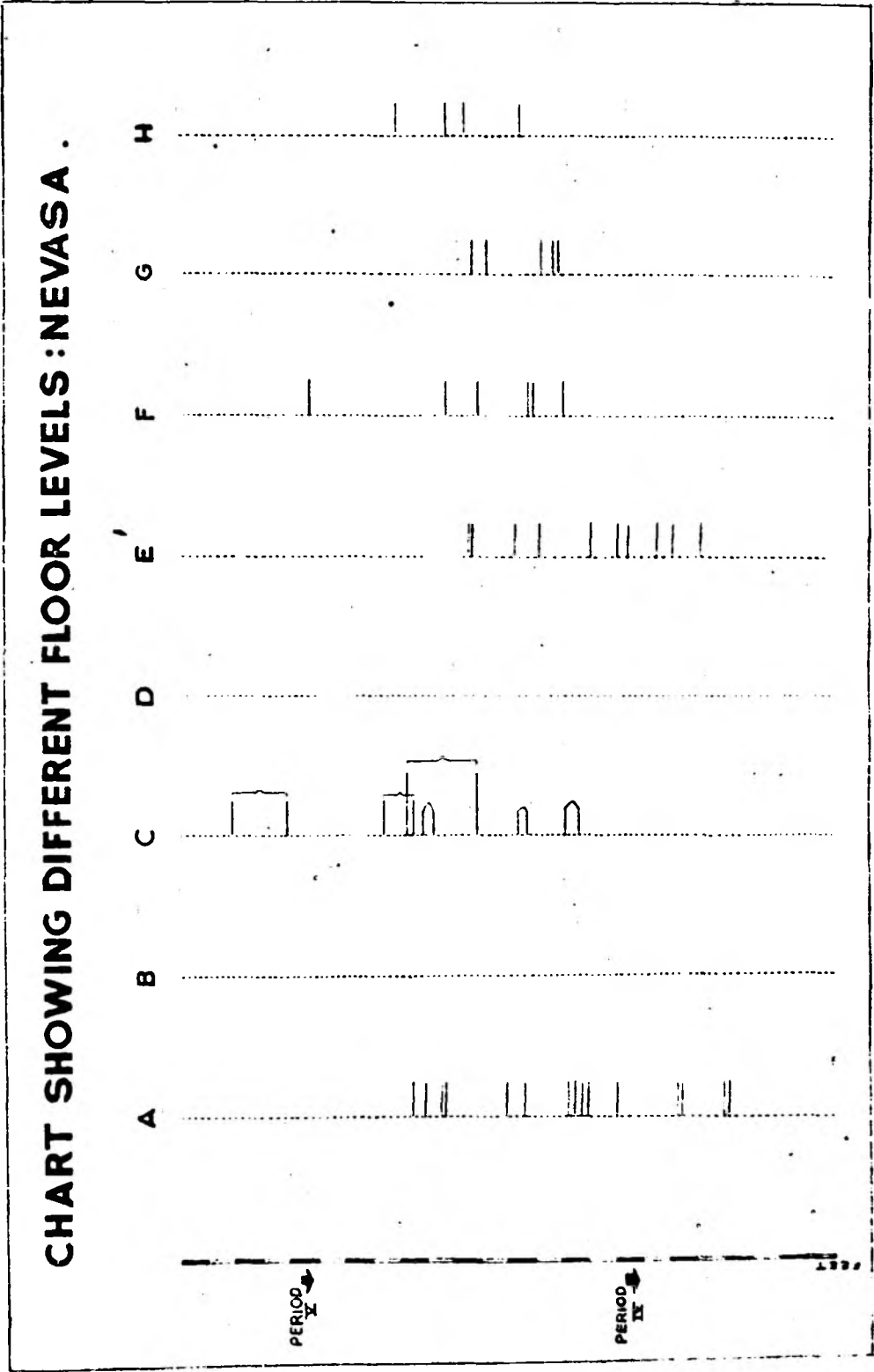


**Fig. 44** Chart showing different floor levels in Nevasa Pd. IV & V  
After Sankalia *et al.*, 1960

Though not as clear as Nevasa, Kolhapur and Bhokardan, the Satavahana houses of Pd.IIB at Paunar fall in line with the general pattern of 'superior' structures which appear in association with Mediterranean material in the Early Historic strata of sites in western India.

**Nagara:** The sequence of habitational structures at Nagara show the trend of simple beginnings to sudden improvement to relative deterioration. In the words of the excavators:-

'Towards the Early centuries of the Christian Era this village (Nagara in Pd.I and II) began expanding to become a large town due to the commercial interests. This was the most flourishing period at Nagara. Brick buildings were erected, and general prosperity of the town is seen in the use of imported objects from the Roman World, as well as from Central Asia' (Mehta 1968:9).

But then in the later stages of Pd.III 'prosperity slowly began to wither and structures of mud-brick and mud-huts sprang up on the ruins of this town. The habitation began to shrink and large parts of the town were given up' (Mehta 1968:9).

**Bhokardan:** The successive Early Historic levels of Bhokardan display clear shifts in the nature of habitational structures. Essentially, the changes follow the pattern observed at Nagara: better quality habitations in the RPW & Amphora levels (Pd.IB) relative to the BRW phase (Pd.IA) followed by a 'decline' in the succeeding Pd.II. The report on the structural activity at Bhokardan, sharply delineates the changes:-

'The habitation in Period IA which was evidenced in some of the trenches on Mound I, was marked by floors rammed with *murum*, black clay and lime. Though it is not possible to make any meaningful observation regarding the size and plan of the houses, these appear to have been very simple structures raised on posts supporting probably thatched roof. The absence of burnt or mud-bricks is significant. The only positive evidence is the use of *chullas* which have hardly changed their form since then.

The structures of Pd.IB which follow, evidence the change brought about by the habitants of ancient Bhogavardhana. There are now structures with a properly laid foundation,

better floors which are made of tiles rammed in clay or lime, planned technique of laying burnt bricks, soak-wells of bricks and pottery rings, acquaintance with sanitary structures and over and above all, a conscious attempt to arrive at a plan of a house with pottery tiles fixed on the rafters of a sloping roof supported by wooden posts.

The evidence of Period II shows the continuance of the use of earlier innovations like the ring-wells, but it is marked by an intense pit digging activity. The latter, though by itself not a proof of degeneration of habitation pattern, might be taken to bespeak of the diminishing importance of the trade centre, after the fall of Satavahana power' (Deo and Gupte 1974: 15-16).

**Dhatva:** The report on the Dhatva excavations is not very clear about changes in structural activity. However at one point we are informed by the excavators that Early Historic Dhatva had 'brick buildings' and that 'it seems to have been a fairly flourishing village settlement' (Mehta and Chowdhary 1975: 4). The report informs that 'The early settlers of this period (Early Historic) smelted iron, used a variety of pottery, and *at a later stage* began constructing houses of bricks' (Mehta and Chowdhary 1975: 63; emphasis mine). The 'later stage' at Dhatva Pd II must surely be consonant with the upper layers where the Red Polished Ware and Amphorae are found.

**Other Sites:** An expansion of building activity concomitant with the occurrence of RPW is also noticed at Vadnagar, Maheshwar and Shamalaji.

For the Early Historic Pd II at **Vadnagar**, which saw the appearance of the RPW, we are informed that 'this period represented by layers (4) to (11) seems to be the most flourishing stage of this area. A number of well-built structures were noticed in the excavation' (Subbarao and Mehta 1955: 23).

At **Maheshwar**, the BRW-NBPW phase of occupation (Pd IV) reveals habitation structures in the form of 'small huts with wooden posts and floors made of fine clay and lime' (*Ency. Ind. Arch.* Vol. II: 266). The succeeding Pd VI, which saw the appearance of RPW 'marks the most active phase of construction at Maheshwar' indicated by baked brick structures and terracotta roof tiles' (*Ency. Ind. Arch.* Vol. II: 267).

At **Shamalaji**, the RPW & Amphora phase is represented by Pds I and II (layers 12-8) (Mehta and Patel 1967:17). Specifically, Pd II marks the advent of amphora (layers 11-8). This period also witnesses the first phase of fortifications of Early Historic Shamalaji. The excavators are of the opinion that Shamalaji functioned as an 'intermediate station' for flow of trade (especially Indo-Mediterranean trade) between the Arabian Sea ports and the interior of Rajasthan and this factor 'probably led to the further development of this town' (Mehta and Patel 1967:51-52).

The sense of an 'enhancement' in economic prosperity is evident in the improvements observed in the habitational structures of Early Historic western India. In particular, the rise in living standards in the RPW phase is indicated by the prolific use of baked bricks to construct individual habitations. That baked brick constituted expensive building material is suggested by its limited use in domestic constructions in the BRW phase.

The higher value of baked brick relative to mudbrick is suggested in other space/time contexts. At Kalibangan, in the pre-Harappan Pd I levels, it was observed that the houses were built of mud-brick and baked bricks were specifically employed for lining drains, ovens and cylindrical pits (*Ency. Ind. Arch.* Vol II:194-195). In the Parthian levels of the Early Historic site of Sanghol (Dist. Ropar, Punjab), it was noticed that mud-brick habitations had been provided with fired-brick frontals. In the succeeding Kushana Phase baked-bricks completely replaced mud-bricks in the domestic constructions (G.B. Sharma:personal communication). Even in present times, 'pucca' houses of burnt-brick are regarded as sign of affluence in many parts of rural India.

It is important to note that the structures discussed in relation to the BRW-RPW seriation are essentially habitational/domestic. In restricting the analysis to habitational structures, we directly relate to the economic 'capacity' of the individual or family rather than that of the community as a whole. The underlying implication of this approach is that it is harder for individuals/families to invest in superior (i.e., expensive) building material (burnt-brick, terracotta tiles in the Early Historic context) for constructing their own habitations than in pooling resources and building a 'community' structure such as a stupa or temple.

We may also remember that the inhabitants of the 'common' houses constituted the skilled and unskilled labour-input into the local economy. A discernible growth of the local economy would obviously have a positive impact on the quality of living of the common people. This qualitative change in the standard of

living would, among other things, be reflected in the quality of habitations. The connection between structural activity and economic growth in the context of Indo-Mediterranean trade is taken up in the next section.

#### 1.2.4. BRW-RPW & Amphora Transition and Export-Commodity Production

Together with semi-precious stoneworking, the continuous Pd IV-V deposits at **Nevasa** reveal evidence of glass beadmaking/manufacture (Sankalia *et al.* 1960:354-374, 453), shell bead/bangle crafting (Sankalia *et al.* 1960:361, 458-465) and ivory bangle/ring carving (Sankalia *et al.* 1960:465-469).

All four Nevasan manufactures (semi-precious stone, glass, shell and ivory craft products) were current as exchange-commodities in Indo-Mediterranean trade in western India. The evidence of semi-precious stone supplies from Paithan has been noted. The *Periplus* (section 48) also mentions semi-precious stone arriving at *Barygaza* from *Ozene* (Ujjain). This is substantiated by the discovery of a flourishing agate/carnelian bead industry in the Early Historic levels at Ujjain (*IAR* 1956-57:27). In the *Geographia*, Ptolemy mentions the existence of a 'sardonyx mountain' in the vicinity of the Narmada (Francis, Jr. 1987). This is obviously a reference to the rich agate-bearing area of Ratanpur in Bharuch district of Gujarat where evidence of mining of semi-precious stone ore in the B.C.-A.D. changeover has come to light (K.K. Bhan, Dept. of Archaeology, Baroda University Personal Communication).

The *Periplus* (section 49) mentions the import of Roman raw glass through the port of *Barygaza*. Probable Roman blue glass beads and bangles found at Brahmapuri (Sankalia and Dikshit 1952:117), Nevasa (Sankalia *et al.* 1960:446) and Bhokardan (Deo and Gupte 1974:131) in the context of material remains of manufacturing suggests that imported glass was being worked together with the indigenous. Fragments of Roman glass vessels have been found at Paithan, Nevasa and Ter (Stern 1992: 115-117; see Chapter II for details on Roman glass in India).

The *Periplus* mentions shell of marine animals (tortoise, nautilus) as an item of Roman import (*PME* 56,63; Casson 1989:16). Marine shells were being worked at Nevasa (Sankalia *et al.* 1960:539-549), Nagara (Mehta 1968:127-132) and Bhokardan (Deo and Gupte 1974:28-29) among other places (Chapter III).

Ivory is listed among Roman imports from western India (*PME* 49). An Indian ivory figurine found at the Roman city-site of Pompei (Cimino and Scialpi 1974:28-29) has close stylistic affinity with the ivory figurine from Bhokardan (Deo and Gupte 1974:188-190; see discussion under Ivory in Chapter III).

Clearly then, the manufactures of Nevasa were integral exchange-commodities in Indo-Mediterranean trade. That the Nevasans must have been actively involved in supplying these commodities to Romans - either directly or through middlemen - is strongly suggested by the amphorae continuum across 8 layers of Pd.V. It is posited that the Nevasan-Roman commodity trade was a factor in enhancing the living standards of Nevasans as reflected in the construction of superior burnt-brick habitations at the point of the RPW and Amphora at the site.

In the analysis that follows the four Nevasan industries are subjected to a comparative study specifically focusing upon the relative quantities of 'finished' material recovered from the BRW - RPW & Amphora phases (Pd. IV-V with regard to Nevasa; **Table 5**). In the present study, the evidence of 'finished' products (beads, bangles etc) is regarded primarily as indices of production (rather than consumption) because of the material being found in the context of industrial activity. The trends observed at Nevasa will be 'tested' against evidence of export-commodity production from the five representative sites.

**Nevasa :** The Deccan College excavations revealed a rich bead/bangle making industry in the Early Historic Pds. IV and V. The use of stone for bead/banglemaking was in conjunction with glass, shell and ivory. The Nevasa excavation report informs that 'Period IV saw the use of varied material for beadmaking.' The succeeding Pd.V saw the 'climax' of beadmaking at Nevasa (Sankalia *et al.* 1960:368).

Significant from our point of view is the fact that out of a total of 1655 beads recovered from Pds. III, IV, V, VI at Nevasa, Pd.V yields the most quantity :708 beads. This is much greater than the 171 beads recovered from Pd.IV (**Table 6**). The relatively higher number of beads in Pd.V (the RPW & Amphora phase) suggest an expansion of the beadmaking industry. The Nevasa report documents 15 material categories of beads in Pd.IV-V. Pd.V yields greater quantity of beads for 8 categories (agate, amethyst, coral, faience, glass, opal, shell, terracotta) as contrasted with greater quantity of beads for 6 categories (bloodstone, chalcedony, crystal, jasper, lapis, steatite) in Pd.IV. 2 categories (carnelian, soapstone) reveal equal quantities of beads in Pd. IV and V. (**Table 6**).

The distribution figures given in **Table 6** also make certain trends clear. In Pd.V, glass, faience, shell and terracotta register the bulk of the increase with an aggregate of 630 beads. These 4 categories make up 89 % of the beads recovered from Pd.V levels. The dominance of these categories points to a shift in the use of material for beadmaking. The Nevasa report informs: 'The Indo-Roman or Period V

Table 5. Comparative quantities of finished material retrieved from manufacturing contexts in Nevasa Pds. IV \ V.

|                                   | Bead / Bangle Making<br>Stone, Faience, Clay | Glass Working | Shell Working | Ivory Working |
|-----------------------------------|----------------------------------------------|---------------|---------------|---------------|
| RPW / Amphora<br>Phase<br>(Pd. V) | 475                                          | 223           | 518           | 48            |
| BRW Phase<br>(Pd. IV)             | 139                                          | 32            | 60            | 4             |

Table: 5. Comparative quantities of finished material retrieved from manufacturing contexts in Nevasa Pd. IV / V

**Table 6. Material-wise distribution of beads in  
Nevasa Pds. IV \ V.**

|                     | Material   | Pd. IV | Pd. V |
|---------------------|------------|--------|-------|
| Pd.<br>V<br>+       | Agate      | 5      | 18    |
|                     | Amethyst   | 1      | 3     |
|                     | Coral      | 2      | 20    |
|                     | Faience    | 7      | 132   |
|                     | Glass      | 32     | 223   |
|                     | Opal       | 0      | 2     |
|                     | Shell      | 29     | 113   |
|                     | Terracotta | 39     | 162   |
| Pd.<br>IV<br>+      | Bloodstone | 2      | 0     |
|                     | Chalcedony | 1      | 0     |
|                     | Crystal    | 5      | 1     |
|                     | Jasper     | 13     | 5     |
|                     | Lapis      | 2      | 1     |
|                     | Steatite   | 5      | 0     |
| Pd.<br>IV<br>V<br>= | Carnelian  | 26     | 26    |
|                     | Soapstone  | 2      | 2     |
|                     | TOTAL      | 171    | 708   |

**Table 7. Colour-wise distribution of glass beads  
in Nevasa Pds. IV \ V.**

| Colours of Glass | Pd.IV     | Pd.V       |
|------------------|-----------|------------|
| BLACK            | 1         | 22         |
| GREEN            | 5         | 61         |
| RED              | 13        | 33         |
| PURPLE           | 0         | 1          |
| GREY             | 0         | 2          |
| BLUE             | 4         | 51         |
| YELLOW           | 7         | 41         |
| WHITE            | 0         | 3          |
| GOLD FOIL        | 2         | 1          |
| YELLOW<br>MATRIX | 0         | 8          |
| <b>Total</b>     | <b>32</b> | <b>223</b> |

saw the climax of the beadmaking industry at Nevasa. Here we have a different picture from that of Period IV. The natural material like semi-precious stones fall to the background and artificial material like faience and glass comes to the forefront' (Sankalia *et al.* 1960: 368-369).

Within the overall context of bead/bangle making, what are the comparative numerical trends for semi-precious stone, glass, shell and ivory working observed in Nevasa Pds. IV-V ?

**Semi-precious stone with faience and clay beads / pendants /bangles** In the aggregate more semi-precious stone and associated material has been recovered from Pd V: a total of 475 against 139 objects for Pd IV (**Table 5**).

**Glass:** Evidence of glassworking in Nevasa Pds. IV-V is furnished by glass slag retrieved from the site together with glass beads/bangles in process of manufacture (Sankalia *et al.* 1960:367-369,453). We have pointed out that greater production of glass products in Pd.V is indicated by the considerably higher quantity of glass beads recovered from this phase - 223 nos. - relative to 32 nos. in Pd. IV (**Table 5**).

The trend towards greater production of glass products in Pd.V is indicated in the internal distribution of various kinds of glass beads. **Table 7** shows the distribution of glass beads across Pds. IV-V in terms of glass-colour. The distribution reveals larger number of beads in Pd.V for 9 out of the 10 categories, the exception being gold-foil beads which are more in Pd. IV. The spurt in the yield of glass beads in Pd.V is particularly evident in the comparative quantities for the following colours of beads across the Pds. IV-V divide: black (22 > 1), green (61 > 5), red (33 > 13), blue (51 > 4) and yellow (41 > 7).

**Shell:** The existence of a local shell industry at Nevasa is revealed by the presence of cut shell pieces, unworked shells and shell bangles/beads in process of manufacture in Pds. IV-V (Sankalia *et al.* 1960:361, 368, 458-465, 539-549). The shell used as raw material at Nevasa comprised the freshwater, brackish water, marine and terrestrial varieties (Sankalia *et al.* 1960:540). The crafting of all varieties of molluscan shells in the bead/bangle industry of Early Historic Nevasa suggests that the settlement was a major centre of shell working.

The comparative figures for crafted shell products (bangles, beads, rings, ear studs, whistles) show a much higher aggregate for Pd.V: 518 against 60 in Pd. IV (Sankalia *et al.* 1960:346,459; **Table 5**). The higher figures for Pd.V is also evident in the internal distribution of shell bangles which comprise 95 % of the crafted shell products.

**Ivory Carving:** The existence of a flourishing ivory carving industry at Early Historic Nevasa is revealed by the waste discs of ivory left after cutting out bangles and rings. Ivory rods with outlines of bangles incised upon them have also been found (Sankalia *et al.* 1960:466).

The waste material from ivory carving is confined to Pd.V. The absence of ivory discards in Pd IV suggests that the industry may not have existed in this period or may have been at a nascent stage. In any case, it is clear from the available evidence that ivory carving was flourishing in Pd.V. In terms of aggregate yields, the 48 ivory items recovered from Pd.V are far more than the 4 items from Pd IV (Sankalia *et al.* 1960: 465-469; **Table 5**).

The review of Nevasan craft-industries of the Early Historic period shows greater quantity of finished products recovered consistently from Pd V levels (**Table 5**). Since the Pd.IV-V phases at Nevasa can be equated with the BRW-RPW & Amphora seriation it follows that the quantities of finished products recovered from the context of Nevasan industrial activity are consistently more in the RPW & Amphora levels. The higher amounts of export-commodities in Pd.V need to be seen in conjunction with other shifts observed across the Pd IV-V or the BRW-RPW & Amphora divide. In this regard it is posited that the connection observed between appearance of Mediterranean amphorae (Roman trade contact) and improvement in the quality of habitations (beneficent impact of Mediterranean trade) is strengthened by the evidence of increased production of export-commodities in Pd.V. The conspicuous rise in production-levels of craft-goods must have been, *inter alia*, a 'response' to the demand generated by newly opened markets in the Mediterranean. That Pd V Nevasa was supplying its products to the Mediterranean is evident in the fact that (a) all Nevasan products are mentioned in textual sources as exports to the Roman Empire (b) Nevasa was best situated to take advantage of the major trade routes connecting the western Deccan to the big ports of *Kalliena*, *Suppara* and *Barygaza* and (c) the occurrence of Mediterranean amphorae in all Pd V layers reveals that Nevasan-Roman commercial interaction was regular and enduring.

Is evidence for rise in export-commodity production at the point of BRW-RPW & Amphora shift observed in the five representative sites?

**Brahmapuri/Kolhapur:** Evidence of semi-precious stone and glass beadmaking has come to light in the Early Historic (Satavahana/Late Satavahana) and Medieval (Bahmani) levels at Brahmapuri (Sankalia and Dikshit 1952:87-121, 143-152). Specifically, the material evidence comprises 'large number' of crystal

nodules, a fragmentary bead mould and 'much glass slag, and...unfinished beads in various stages of manufacture' (Sankalia and Dikshit 1952:90,98,132).

Out of 'more than 1000' beads recovered from all periods, glass beads are 694 in number, followed by terracotta (328), semi-precious stone (87) and faience (42) (Sankalia and Dikshit 1952:87).

The Brahmapuri excavation report does not provide precise information on the period-wise distribution of beads. However, the report makes it clear that glass beads recovered from the Satavahana levels 'are comparatively large in size and show a greater variety of shapes than those from the Bahmani layers' (Sankalia and Dikshit 1952:99). The report also indicates that beadmaking in the Late Satavahana phase registered a decline. Occurrence of beads for 6 material categories is mentioned for the Late Satavahana levels as against 14 categories for the Satavahana levels (Sankalia and Dikshit 1952:87-121). In particular we are sure about the decline in the use of faience for the report informs '...faience fell into disuse after the Satavahana period, as comparatively fewer specimens have been noticed in the Late Satavahana layers' (Sankalia and Dikshit 1952:92).

**Paunat** : No quantified figures are available for semi-precious stone and glass beads from the BRW and RPW levels at Paunat. However, the observation of the excavators indicate that production levels progressively increased from Pd. IIA through Pd. III at Paunat. To quote from their report:-

'The distribution shows that no beads could be had from Pd. I. The beadmaking activity seems to have increased in subsequent periods, the largest collection belonging to horizons of Pd. III which may be the period of maximum prosperity in the history of Paunat. There is a decline not only in the number of beads but in the range of materials used for beads in the subsequent period' (Deo and Dhavalikar 1968: 78).

**Nagara** : Early Historic Nagara ( Pds.I, II, III ) has revealed evidence of flourishing shell (chank) and glass export-commodity production. The evidence for the shell industry is observed in the waste products of manufacture such as 'slices of chanks and their stems' (Mehta 1968:127). The evidence of chank working was found in all three periods. In contrast, evidence of glass manufacture in the form of slag pieces came to light only in Period III (Mehta 1968:135). Apart from chank and glass, the Early Historic Pds.II and III showed evidence of iron manufacture in the form of slag remains (Mehta 1968:164). However, the quantitative data on iron

objects from the site is not enough to make a comparison between the Pd I+II (BRW) levels and Pd.III (RPW/Amphora) levels (Mehta 1968:165-169).

A numerical comparison of chank products (bangles, rings, beads) and glass objects recovered from Pds I+II and Pd.III shows much higher quantity of crafted material in the Pd.III or RPW & Amphora phase (Table 8).

**Bhokardan** : The Early Historic site of Bhokardan reveals evidence of semi-precious stone, shell and ivory crafting industries. Remains of semi-precious stone working were observed in the finds of 'nodules of crystal, carnelian and agate, scores of unfinished beads and bead-moulds...' (Deo and Gupte 1974:119). The shell working industry at Bhokardan seems to have been quite specialised as attested by the 'very delicate work of metal rivetting' done on shell bangles (Deo and Gupte 1974:215). The evidence of the shell industry at this site also comes from 'scores of waste pieces of marine shell columelae, small perforated shells and a large number of shells as also unfinished beads and bangles...' (Deo and Gupte 1974:136).

With regard to the relative quantities of beads found in Early Historic phases at Bhokardan (Pds.IA, IB, II) the report is clear that 'the horizons of Period IB were found to have been richer in the yield of beads' (Deo and Gupte 1974:119). Significantly, the appearance of material indicators of Mediterranean trade such as the amphorae and bullae have been recorded from Pd.IB. This period also reveals a shift in quality of habitational structures from mud-walled to burnt-brick-walled.

The material-wise distribution of beads across the BRW (Pd.IA) and RPW & Amphora (Pd.IB) phases shown in Table 9 reveals higher quantity of beads for every material category, thus providing strong corroboration for the increase reflected in the overall figures. The greater volume of beads recovered from Pd.IB in relation to Pd.IA points to an increase in industrial output in the former phase. It is also seen that quantity of beads recovered from Pd.II remained substantial and comparable with Pd.IB quantity. The rate of bead production in Pd.II did not seem to slacken though we notice a deterioration in structural activity in the 'post-amphora' Pd.II phase.

The higher amounts of ivory and shell products in Pd.IB relative to Pd.IA also indicates greater volume of production of these export-commodities in the RPW & Amphora phase (Table 8).

**Dhatva** : Two cultural phases came to light in the excavations at Dhatva. Pd.I Dhatva was a Chalcolithic settlement from 1500 B.C. to 1000 B.C. (Mehta and Chowdhary 1975:9). Pd.II Dhatva was 'occupied by a people knowing techniques of smelting iron' from 500 B.C. to 200 A.D. (Mehta and Chowdhary 1975:4, 9).



Table 9. Material-wise distribution of beads at Bhokardan

| Material  | Pd. I A | Pd. I B | Pd. II |
|-----------|---------|---------|--------|
| Agate     | 1       | 8       | 20     |
| Amethyst  | 0       | 0       | 1      |
| Calcite   | 0       | 1       | 1      |
| Carnelian | 2       | 20      | 20     |
| Coral     | 0       | 2       | 5      |
| Crystal   | 0       | 13      | 26     |
| Faience   | 9       | 208     | 92     |
| Garnet    | 2       | 0       | 0      |
| Jasper    | 1       | 5       | 9      |
| Lapis     | 0       | 2       | 1      |
| Opal      | 0       | 2       | 7      |
| Glass     | 3       | 67      | 243    |
|           | 17      | 327     | 425    |

The Dhatva excavation 'revealed evidence' of the (iron) industry in the form of iron metal objects, lumps of iron metallurgical tap slag and chunks of iron ore in layers 3, 2, 1 and on the surface of the mound. Layer 3 was the earliest level of the Early Historic community at the site. It is therefore possible to observe that the iron smelting work was started at Dhatva as soon as the Early Historic community settled there' (Mehta and Chowdhary 1975:48). Though there are no numerical figures for comparison available for iron production in the different levels, the excavation report mentions that 'more' number of iron objects and larger quantity lumps of slag and iron-chunks were recovered from layers 2 and 1 than from layer 3 (Mehta and Chowdhary 1975:48-49). It is precisely in these upper levels that indicators of Mediterranean contact appear in the form of amphorae and brick houses are constructed.

To recapitulate, the sharp correlation in the Nevasa stratigraphy between appearance of indicators of Mediterranean contact, increase and improvement in building activity and increase in yield of finished export-commodities from manufacturing contexts reflects, *inter alia*, the beneficent impact of long distance Roman sea trade on the community of Early Historic Nevasans. That the same pattern observed at Nevasa is explicated across a number of settlements in Gujarat-Maharashtra strongly indicates the rise in 'prosperity' - as a result of overseas Mediterranean commerce - of the market-towns of western India (Table 8). Of course, the generalisations arrived here do not negate the possibility of higher productions indicated in the archaeological record being due to a concomitant rise in domestic consumption. To this extent, the conclusions arrived in this study remain 'open-ended', resting primarily on the argument that the serially observed link between higher production figures of export-commodities and improved living conditions *at the moment of appearance* of Roman artefacts is too proximate and widespread to be ignored.

## 2. Southern India

### 2.1. Spatial Analyses of Trade Routes

In Chapter IV we detailed the likely locations of trade-ports and market-towns on the Kanara, Malabar and Coromandel coasts mentioned in the *Periplus* and *Geographia*.

The land routes connections between Early Historic harbours on the 'Kanara Coast' (Fig. 33) and inland settlements on the southern Deccan have not yet been prospected by fieldwork. However, a consideration of resource-areas in the hinterland and settlement pattern points to probable channels of ingress to and from the coastlands. Specifically, we must look to the number of swift-flowing rivers coming

down from the rocky uplands of the Western *ghats* as providing short navigational access to thickly forested hilly tracts where a number of agricultural / botanical commodities could be found (Poonacha and Visweswara 1991:67). In particular, the river Sharavati in northern part of Kanara and the river Netravali in the southern tract seemed to have been important points of access into the interior of southern Deccan. Two Early Historic berthing points - Honnavara and Haigunda Island - are situated at the mouth of the Sharavati. Further inland, land routes must have connected the Sharavati harbours with the Early Historic settlements of Banavasi (*Ency.Ind.Arch.* Vol.II:45) and Vadgaon-Madhavpur (*Ency.Ind.Arch.* Vol.II: 456) situated in northern Karnataka. Excavations at Banavasi and Vadgaon-Madhavpur have revealed evidence of fortifications, sprawling brick habitations and storage areas. These two townships must have served as market-towns for commodity-exchange between trading stations on the Kanara and resource areas of southern Deccan. Distribution of Roman artefacts in Karnataka is yet insubstantial to elucidate 'patterns of trade.' Vadgaon-Madhavpur has yielded a single Roman coin during excavation (*Ency.Ind.Arch.* Vol.II:456). Similarly, diggings at Chandravalli have brought to light a number of denari of Augustus and Tiberius and few amphorae sherds (see **Appendix-I**). Roman coins have been discovered at Bangalore and Aki-Alur (**Appendix-I**). The Aki-Alur hoard comprises of Late Roman gold solidi, indicating that overseas Mediterranean commerce with Karnataka carried on till the 5th-6th century A.D.

In comparison to the Kanara Coast, the textual/archaeological records reveal considerable impact of Roman sea trade on the Malabar - Coromandel Coasts and their immediate hinterlands. Route F in **Fig.39** broadly delineates the land connections between the Malabar and Coromandel (for detailed specification of these routes see Rajan 1996: Fig.5). In Chapter II we discussed the role of Roman coinage as 'currency' for South India in Early Historic times. The map in **Fig. 15** specifies the various commodities sought from South India by traders from the Mediterranean. In Chapter III we discussed the evidence for south Indian export-commodities like pepper, medicinal herbs, iron, muslin, semi-precious stones, shell products and pearls. In this section, the focus is upon stratigraphic analysis. Specifically, the endeavour is to situate Roman contact with southern India within a broad stratigraphic framework. The analysis will thus attempt to integrate the Indo-Roman commercial dynamic in the material culture sequence of southern India. Appropriately, the discussion is initiated by a review of the stratigraphy of Arikamedu, the type-site for understanding Roman long distance commerce with Southern India.

## 2.2. Stratigraphic Analyses of Early Historic Sites in Relation to Arikamedu

The 'Indo-Roman' trading station of Arikamedu on the Coromandel coast of south India was excavated in 1945 by a team of the Archaeological Survey of India under the direction of Mortimer Wheeler. Arikamedu was excavated again in 1947 by the French archaeologist J.M.Casal. The Wheeler/Casal excavations were comprehensively reviewed by Vimala Begley in 1983. Begley also conducted excavations at Arikamedu in the early nineties with a joint Indian-American team.

Arikamedu has contributed to the archaeology of south India in three significant ways. Being the first *excavated* site in South India to yield material indicators of long distance Mediterranean trade, the Arikamedu stratigraphy has become the basic reference for studies of early Indo-Roman commerce in the region. Secondly, the ceramic sequence observed at Arikamedu (stratigraphic distribution of Rouletted Ware and Mediterranean ceramics especially) has been used to understand the profiles of other excavated sites in the region. Thirdly, the chronology imputed by Wheeler to the Arikamedu strata has been applied to date the sections of numerous sites subsequently excavated.

The emphasis upon the evidence from Arikamedu in studies of Indo-Roman trade and reconstruction of the Iron Age of south India has led, over the years, to 'marginalisation' of evidence from other excavated sites in south India. Also, the 'inadequacies' of the Arikamedu stratigraphy (such as surmising chronology from thickness of deposit by Wheeler) have been carried over into establishing space/time frameworks of some excavated south Indian sites and in discussions on Indo-Roman trade. This study seeks to address these two issues central to Iron Age-Early Historic archaeology of south India. In this regard, the attempt here is to delineate a 'broader' stratigraphic and chronological framework in which to situate the evidence from Arikamedu. This macro-stratigraphic view will incorporate important cultural elements not emphasized in the Arikamedu stratigraphy. At the same time, in the process of generating the macro-stratigraphy, the analysis will focus upon 'contradictions' in the past applications of the Arikamedu evidence.

### 2.2.1. The Arikamedu Stratigraphy as derived by Wheeler and Casal

The sequences recorded by Wheeler and Casal and subsequently consolidated by Begley are summarized below:-

Wheeler: Wheeler found a continuous single-culture occupation of the historical period at Arikamedu. In his diggings he discovered the occurrence of Mediterranean artefacts (amphorae) from the last layer but one. Excavations were undertaken at two areas of the site. These were classified by Wheeler as the

Northern and the Southern sectors. The basis for the subdivision of the Northern sector strata was the Arretine ware found in the middle layers. Naming this the Arretine Phase, the deposits below and above were called the Pre-Arretine and Post-Arretine Phases. The Southern Sector was subdivided with structures as the basis. From bottom upwards these are: Pre-Structural Phase, Early Phase (3 sub-periods), Middle Phase (3 sub-periods) and the Late Phase. Chronologically, the Arretine Phase of the Northern Sector is in consonance with the 'Pre-Structural' phase of the Southern Sector (Wheeler *et al.* 1946:17-124, pp 50 for inter-sectoral consonance). Wheeler called the settlement an 'Indo-Roman Trading Station' on the basis of his discovery of diverse Mediterranean artefacts (Arretine ware, Amphorae, Roman glass, Mediterranean lamps) in the context of a flourishing stone and glass beadmaking industry. Perhaps the most important interpretation of Wheeler related to the amphorae continuum he uncovered at Arikamedu. Wheeler *et al.* (1946:22) assert that 'the consolidation and development of Roman trade with the East was a product of the unification of the western world under Augustus (23 B.C.-A.D.14), and it is reasonable to suppose that previous trade with eastern India, if it existed at all, was of a spasmodic and indirect kind -*unlikely, for example, to have produced a continuous supply of amphorae at Arikamedu.*' (italics mine)

Casal: In contrast to Wheeler, Casal uncovered a multi-cultural sequence at Arikamedu. Digging at two areas of the site, Casal reported a Megalithic occupation in the lowermost levels indicated by the exclusive presence of the Black-and-Red Ware (BRW). This was followed by a transitional phase in which the Early Historic Rouletted Ware appeared while the BRW continued. The third period was termed 'Roman.' This period saw the appearance of Mediterranean artefacts in the form of amphorae and Arretine Ware (Casal 1949).

Begley (1983:461-481), in a perceptive study of the Wheeler/Casal excavations, consolidated the evidence to present a revised stratigraphic subdivision of the Arikamedu profile (Table 10). The results of her recent excavation of Arikamedu are consonant with the tri-cultural stratigraphic profile derived by Casal. To quote Begley *et al.* (1996:16): 'Generally, however, the evidence is more or less consistent with that of Casal's, although it should be stressed that the area excavated to virgin soil by us was very limited.'

### **2.2.2. BRW - RW - Amphora & Arretine Sequence at Arikamedu.**

The Megalithic horizon at Arikamedu (Casal's Grp. II and Begley's Phase A ), which precedes the Early Historic phase at the site, is characterised by the occurrence of the BRW. The BRW is the diagnostic Early Iron Age pottery of

Table 10  
REVISED CHRONOLOGICAL SEQUENCE OF ARIKANEDU PHASES, AND CONCORDANCE WITH  
WHEELER'S AND CASAL'S EXCAVATIONS

| B.C.                                                                          | B.C. / A.C. |                                      |                                                                     |                         |                                                    |                                                   |                      |     |     |     |
|-------------------------------------------------------------------------------|-------------|--------------------------------------|---------------------------------------------------------------------|-------------------------|----------------------------------------------------|---------------------------------------------------|----------------------|-----|-----|-----|
|                                                                               | 200         | 150                                  | 100                                                                 | 50                      | 50                                                 | 100                                               | 150                  | 200 | 250 | 300 |
| PHASES:                                                                       | A           | B                                    | C                                                                   | D                       | E                                                  | F                                                 | G                    |     |     |     |
| STRUCTURES:                                                                   |             |                                      |                                                                     |                         |                                                    |                                                   |                      |     |     |     |
| post-holes                                                                    |             | bricks;<br>ring-walls;<br>post-holes | "Reservoir", ring-walls;<br>walls; floors; lined pits;<br>wharf (?) | cont. from<br>Phase C   | "Warehouse"; tanks;<br>floors; ring-walls;<br>etc. | corbelled drains;<br>walls; floors;<br>ring-walls | stray<br>structures  |     |     |     |
| Black-and-Red                                                                 |             | Black-and-Red                        | Black-and-Red (?)                                                   | Rouletted;<br>gray; red | Rouletted;<br>more red than gray                   | Rouletted;<br>same as E<br>(distortion)           | Rouletted<br>decline |     |     |     |
| black                                                                         |             | Rouletted                            | gray; some red                                                      | asphorae;<br>Arretine   | asphorae                                           | asphorae                                          | asphorae             |     |     |     |
| one                                                                           |             | Rouletting                           | stamped designs                                                     | one                     | no. uncertain                                      | no. uncertain                                     | no. uncertain        |     |     |     |
| worked ivory; terracotta;<br>stone celtis and weights;<br>ear ornaments, etc. |             |                                      |                                                                     | terracotta              | terracotta;<br>grinding stone                      |                                                   | terracotta<br>panel  |     |     |     |
| glass bowl; bone stylus(?)                                                    |             |                                      |                                                                     |                         | glass bowl                                         |                                                   |                      |     |     |     |
| CONCORDANCE:                                                                  |             |                                      |                                                                     |                         |                                                    |                                                   |                      |     |     |     |
| Wheeler: (1905)                                                               |             | AK II                                | AK II<br>AK I (?)                                                   | AK II<br>AK IV          | AK II<br>AK IV                                     | AK IV                                             | AK IV                |     |     |     |
| Casal: (1947-48)                                                              |             | Gr. IV (?)                           | Gr. III, IV (?)<br>Gr. I, II                                        | Gr. IV<br>Gr. I, II     | Gr. I, II                                          | Gr. I, II                                         | Gr. I, II            |     |     |     |
| Casal: (1940)                                                                 |             | Gr. IV (?) (undisturbed)             |                                                                     |                         |                                                    |                                                   |                      |     |     |     |
| I. Sector                                                                     |             |                                      |                                                                     |                         |                                                    |                                                   |                      |     |     |     |
| I. Sector                                                                     |             |                                      |                                                                     |                         |                                                    |                                                   |                      |     |     |     |

After Begley 1983.

southern India. It begins to occur at the point of Neolithic-Megalithic overlap at Payampalli (*IAR* 1964-65:22), Hallur (*IAR* 1964-65:31-32), Malaiyamputtu (*IAR* 1970-71:34-35) and Mallappadi (*IAR* 1977-78:50). In fact, it is necessary to stress that the BRW is first and foremost associated with the beginning of the Iron Age in southern India and its association with the Megalithic culture is secondary to this reality (Ramachandran 1980: 43-76, 137; Begley 1983:464-467). Megalithism in south India, as a specific material culture complex, has been primarily identified with a funerary culture characterised by burials marked by stones (dolmens, cists, cairns etc.).

The transition from Iron Age/Megalithic Phase to the Early Historic in southern India is important. This transition marks the beginnings of the growth of towns, ports, industries and long-distance trade in the region. Southern India's commerce with the Mediterranean also needs to be situated in the context of the shift from Iron Age to Early Historic. A major issue with regard to the archaeology of Indo-Mediterranean trade in southern India has been to precise the point of Mediterranean contact, both stratigraphically and chronologically. At Arikamedu, Wheeler's excavation revealed occurrence of Mediterranean amphora (a primary indicator of contact) at all layers except the earliest (layer 15 of Tr. AKII). Wheeler *et al.* (1946:41) thought layer 15 of AKII to be part of the 'old foreshore' (therefore a non-occupational deposit) and concluded that Mediterranean contact took place almost from the beginning of occupation at Arikamedu. However, as Casal's excavations later showed, there were rich occupational layers preceding the strata yielding Mediterranean amphora at Arikamedu (Casal 1949). Begley (1983:464-471) in her review of Wheeler's and Casal's excavation of Arikamedu, summarizes these antecedent layers as Phase A and Phase B. Phase A, corresponding to the 'Megalithic' phase of Casal, has the Iron Age Black and Red Ware as the principal ceramic industry. Phase B, corresponding to the 'Intermediate' phase of Casal, reveals appearance of the Rouletted Ware in association with BRW. Amphorae begin to appear from Begley's Phase C onwards (Table 10)

### 2.2.3. Macro-stratigraphy of Iron Age to Early Historic Horizons

The three-fold cultural sequence for Arikamedu, demarcated on the basis of appearance of diagnostic ceramics, is presented in Table 11 together with stratigraphic profiles of important Iron Age-Early Historic sites in southern India. The sites have been selected from all four southern states (Tamil Nadu, Karnataka, Andhra Pradesh, Kerala) keeping in view the need for a regional distribution.

As **Table 11** shows, the transitions from Iron Age to Early Historic represented by ceramic indicators at Arikamedu are found to hold true over the south Indian landscape. The 'broadened' picture of the three phases observed at Arikamedu adds a significant element to the basic pattern. Specifically, we notice that the ceramic which immediately postdates the BRW at many sites is the Russet Coated Painted Ware (hereafter RCPW; Sites no 4,5,6,13,15,16,17,18,20,22,24,26 in **Table 11**). The RCPW, initially known as the Andhra Ware, was first excavated by Wheeler at Brahmagiri (Karnataka). He describes the pottery as 'decorated with varieties of simple rectilinear or slightly curvilinear pattern in a paste of kaolin or lime under a wash of russet coated ochre... The two commonest types on which this characteristic decoration is found are dishes with an internally grooved rim and partially straight sided bowls...' (Wheeler 1947-48:236-237; Thapar 1957:72-73 redesignated Wheeler's Andhra Ware as Russet Coated Painted Ware; **Fig. 45**).

At other sites (Nos.1,2,3,7,10,11,12,21 in **Table 11**) the Rouletted Ware succeeds the BRW. Also, as **Fig.1** shows, the RW is anterior to the RCPW at sites located near the coast in contrast to the anteriority of RCPW in sites located inland. In any case, the RCPW and RW, as new ceramics succeeding the BRW, manifest the transition from Iron Age to the more evolved Early Historic phase in southern India. Significantly, **Table 11** also reveals that Mediterranean artefacts and their imitations appear in the Early Historic horizon of southern India following the emergence of the RCPW and RW (Sites no 1,3,5,7,8,10,11,13,19,21,24,25,26). The appearance of Mediterranean artefacts and imitations, especially amphorae, indicate the point of Indo-Mediterranean long-distance contact. In the scheme presented in **Table 11**, the 'Mediterranean-contact' sub-phase has been isolated from the RCPW/RW phase. The latter is situated under the nomenclature Early Historic 1 (E.H.1) and the former under Early Historic 2 (E.H.2).

Now, before we further discuss the stratigraphic profiles of sites listed in **Table 11**, it is necessary to clarify the chronological extent of Megalithic culture in southern India in the light of the three-phase scheme of material culture change presented in this study. The Megalithic culture, which we consider as part and not synonymous with the Iron Age, survived well into the early centuries A.D. in southern India (for recent date of Megalithic in southern India see Rajan 1991:46-47). In this respect, the people believing in "lithic" burials were contemporaries at different points of time of the urbanising communities of the E.H.1 and E.H.2 periods.

Table : 11  
**STRATIGRAPHIC PROFILE FROM IRON AGE TO EARLY HISTORIC PHASES OF SELECTED EXCAVATED SITES IN SOUTH INDIA**  
**( BRW to RCPW / RW to Amphora/Arretine)\***

BRW = Black-and-Red Ware  
RCPW = Russet Coated Painted Ware  
RW = Rouletted Ware  
RPW = Red Polished Ware  
NBP = Northern Black Polished Ware  
**SITES YEILDING ORIGINAL OR IMITATION MEDITERRANEAN ARTEFACTS UNDERLINED**  
**(Originally reported dates in brackets)**  
\* Initial appearance in strata

| Name of Site          | Distt./State                   | Iron Age<br>(BRW)                                                           | Early Historic-1<br>(RCPW / RW)                                                                                              | Early Historic-2<br>(Amphora / Arretine)                                                                                                                                                                                                                                                | Reference                                                                     |
|-----------------------|--------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1. <u>Alagankulam</u> | Ramanathapuram,<br>Tamil Nadu. | —                                                                           | BRW, NBP, RW in lowest levels.<br>( 250 B.C. - 125 A.D.)                                                                     | Amphora, African Red<br>Slipped Ware ? , Roman<br>Coins.<br>(125 - 500 A.D.)                                                                                                                                                                                                            | Nagaswamy 1991:<br>247-254.                                                   |
| 2. Appukkallu         | N. Arcot<br>Tamil Nadu.        | Pd. I ; BRW                                                                 | Pd. II ; RW (few pieces)                                                                                                     |                                                                                                                                                                                                                                                                                         | IAR 1976-77:47-48.                                                            |
| 3. <u>Arikamedu</u>   | Pondicherry                    | Casal's Megalithic Phase,<br>Begley's Phase A ;<br>BRW.<br>(250 - 160 B.C.) | Wheeler's Pre-Arretine Phase,<br>Casal's Intermediate Phase,<br>Begley's Phase B ;<br>RW, BRW continues.<br>(150 - 100 B.C.) | Wheeler's Arretine Phase,<br>Casal's Roman Phase,<br>Begley's Phases C,D,E,F,G ;<br>Mediterranean amphora,<br>Arretine Ware, Stamped<br>Pottery, Roman glassware,<br>Roman clay lamps,<br>Mediterranean cameos<br>and beads, RW continues<br>glassware sherds.<br>(100 B.C. - 200 A.D.) | Wheeler <i>et al</i> 1946:<br>17- 124.<br>Casal 1949.<br>Begley 1983:461-482. |
| Begley's<br>Dates.    |                                |                                                                             |                                                                                                                              |                                                                                                                                                                                                                                                                                         |                                                                               |

|                                                          |                              |                                                                                          |                                                                                                                 |                                                                                                   |                                                                                 |
|----------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 4. <u>Brahmagiri</u>                                     | Chitaldurga,<br>Karnataka.   | Pd. II: BRW,<br>Burials.<br>(2nd B.C. - mid<br>1st A.D.)                                 | Pd. III: RCPW.<br><br>(mid 1st A.D. -<br>3 A.D.)                                                                | RCPW Continues.                                                                                   | Encycl. Ind. Arch. Vol. II:<br>82-84.<br>Wheeler 1947-48: 180-310.              |
| 5. <u>Chandravalli</u><br><u>Wheeler's</u><br>Excavation | Chitaldurga,<br>Karnataka.   | Pd. I: BRW.<br>Layer 13 NE<br>of section Ch. 43.<br><br>(Unspecified -<br>mid 1st A.D.). | Pd. I - II overlap<br>layers 13N, 12, 11<br>of section Ch. 43;<br>RCPW, RW.<br>(Mid 1st A.D. -<br>End 2nd A.D.) | Pd. II: layers 10 - 1<br>of section Ch. 43.<br>Roman coins.<br>Satavahana coins.<br>End 2nd A.D.) | Wheeler 1947-48:<br>180-310.                                                    |
| ASI Excavation<br>1978                                   |                              | Pd. II: BRW                                                                              | Pd. II - III<br>RCPW, BRW                                                                                       | Pd. III: Amphora ?                                                                                | IAR 1977-78: 27-29.                                                             |
| 6. <u>Cranganore</u>                                     | Trichur, Kerala.             |                                                                                          | BRW and RCPW in Megalithic<br>- Early Historic overlap layers.                                                  |                                                                                                   | IAR 1970-71: 19.                                                                |
| 7. <u>Dharanikota</u>                                    | Guntur<br>Andhra Pradesh     | Pd. IA: BRW<br>Pd. IB: BRW, NBP                                                          | Pd. IIA: RW                                                                                                     | Pd. IIA - IIB: Arretine<br>Ware, Mediterranean<br>amphora and glassware.                          | Encycl. Ind. Arch. Vol. II:<br>126. Revised stratigraphy<br>by K. Raghavachari. |
| 8. <u>Dhulikatta</u>                                     | Karimnagar<br>Andhra Pradesh |                                                                                          | Phase I - II of Gateway Complex<br>Early Phase of Stupa.                                                        | Phase III of Gateway<br>Complex.<br>Later Phase of Stupa.<br>Silver coin of Augustus<br>Caesar.   | IAR 1975-76: 2.<br>IAR 1976-77: 4-5.                                            |

|                    |                             |                                                                         |                                                                                                                                                                  |                                                         |
|--------------------|-----------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 9. Hallur          | Dharwad<br>Karnataka        | Neolithic - Iron Age<br>Overlap.                                        |                                                                                                                                                                  | IAR 1964-65: 31-32.<br>IAR 1976-77: 25.                 |
| 10. Kanchipuram    | Chingleput,<br>Tamil Nadu.  | BRW in earliest<br>layers.<br>(Pd. IA of Kamakshi<br>amman temple area) | RW appears after BRW.<br>(Kamakshiamman Pd. IB =<br>Kamakothi Math Pd. IA)                                                                                       | Stratigraphy revised by<br>Ramachandran 1980:<br>92-99. |
| 11. Kaveripattinam | Thanjavur,<br>Tamil Nadu.   | BRW in lowest levels:<br>Kilayur area.<br>315 ± 100 B.C.                | BRW continues. RW.<br>Vangiri, Manigramam areas.                                                                                                                 | Ramachandran 1980:<br>120-126.                          |
| 12. Kesarapalle    | Krishna,<br>Andhra Pradesh. | Pd. II: BRW.<br><br>(mid 6 B.C. -<br>mid 1 A.D.)                        | Pd. III A: RW appears<br>in Meg-Early Historic<br>overlap.<br>(mid 1 A.D. - first quarter<br>of 3 A.D.)                                                          | Encycl. Ind. Arch. Vol. II:<br>221-222.                 |
| 13. Kodumana       | Periyar,<br>Tamil Nadu.     |                                                                         | Pd. I: BRW, RCPW;<br>Semiprecious stones,<br>Iron manufacturing.<br>(250 B.C. - 100 A.D.)                                                                        | Rajan 1990:90-102                                       |
| 14. Kudikadu       | N. Arcot,<br>Tamil Nadu.    |                                                                         | Single culture site<br>yielding Medi. amphora,<br>imitation amphora, RW,<br>BRW, RPW. Evidence<br>of glass and semi-<br>precious stone bead-<br>making. (1 A.D.) | IAR 1987-88:103.<br>IAR 1988-89:80.                     |
| 15. Malaiyampattu  | N. Arcot,<br>Tamil Nadu.    | BRW with pottery of<br>Neolithic affiliation in<br>lower levels.        | Post-Megalithic culture<br>represented by use of<br>RCPW                                                                                                         | IAR 1970-71:34-35<br>Ramachandran 1980:<br>100.         |

|                        |                              |                                                                |                                                                                                                            |                                                               |
|------------------------|------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 16. Mallappadi         | Dharmapuri,<br>Tamil Nadu.   | Pd. I + II : BRW with<br>pottery of Neolithic<br>affiliation.  | Pd. III : RCPW,<br>BRW continues.                                                                                          | IAR 1977-78:50.                                               |
| 17. Maski              | Raichur,<br>Karnataka.       | Pd. II; BRW; burials.<br>(3 B.C. - 0 A.D.)                     | Pd. III; RCPW, RW.<br>(0 A.D. - 3 A.D.)                                                                                    | Encycl. Ind. Arch. Vol. II:<br>281-283.<br>Thapar 1957:4-142. |
| 18. Payampalli         | N. Arcot,<br>Tamil Nadu.     | Pd. II : Neolithic -<br>Megalithic overlap<br>in lower layers. | Pd. II : RCPW appears<br>upper layers.                                                                                     | IAR 1964-65:22.                                               |
| 19. <u>Peddabankur</u> | Karimnagar<br>Andhra Pradesh | Pd. I : BRW<br>(3 B.C.)                                        | Pd. IIA : Coarse BRW,<br>Punch Marked Coins.<br><u>2nd B.C. - 2nd A.D.</u><br>Pd. II B : Roman Coin<br>of Augustus Caesar. | IAR 1968-69: 2                                                |
| 20. Perur              | Coimbatore,<br>Tamil Nadu.   | Pd. I : BRW.<br>BRW continues.<br>(1 A.D. - 3 A.D.)            | Pd. II. RCPW.<br>(3 A.D. - 6 A.D.)                                                                                         | IAR 1970-71:33-35.<br>Ramachandran 1980 :<br>113-114.         |
| 21. <u>Sengamedu</u>   | S. Arcot,<br>Tamil Nadu.     | Pre-Rouletted Ware<br>Phase : BRW.                             | Rouletted Ware Phase :<br>RW.<br>Post-Rouletted Ware<br>Phase : Imitation<br>amphora ?                                     | Ramachandran 1980:<br>102-105                                 |

|                           |                                |                                                            |                                                                                                                    |                                                                           |
|---------------------------|--------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 22. T. Kallupatti         | Madurai,<br>Tamil Nadu.        | Megalithic habitation-<br>cum-burial site<br>yielding BRW. | The site continued to be<br>occupied into Early Historic<br>period. Appearance of<br>RCPW and copper coins.        | IAR 1976-77:46-47.                                                        |
| 23. T. Narasipur          | Mysore,<br>Karnataka.          | Pd. II : BRW,<br>BRW with graffiti.                        | Occupation deposit over-<br>lying washed away by<br>flood. Presence indicated by<br>few pieces of RCPW on surface. | IAR 1958-59:33.<br>IAR 1961-62:35.                                        |
| 24. <u>Uraiyur</u>        | Tiruchchirapalli<br>Tamil Nadu |                                                            | BRW, RCPW in lower layers<br>of Pd. I.<br><hr/> 1 3/4 A.D.                                                         | Ramachandran 1980:<br>119-120, 125.<br>Ency.Ind.Arch. Vol II:<br>452-453. |
| 25. <u>Vasavasamudram</u> | Chingleput<br>Tamil Nadu       |                                                            | Single culture site yielding<br>Mediterranean amphora,<br>imitation amphora and<br>RW (?)                          | Nagaswamy 1970:48-49                                                      |
| 26. <u>Veerapuram</u>     | Kurnool,<br>Andhra Pradesh.    | Pd.II: BRW.<br><br>(500 - 300 B.C.)                        | Pd.III A : RCPW, RW,<br>BRW continues.<br><br>(300 - 50 B.C.)                                                      | Kamalakara and Veerender<br>1991.<br><br>(50 B.C. - 300 A.D.)             |

The deposition of artefacts of Mediterranean origin or/and imitation at a number of Megalithic burial sites in southern India is evidence of the survival of Megalithism at the time of Mediterranean contact (E.H 2 period). For example, in the Coimbatore district of Tamil Nadu, a dolmen burial has yielded a denarius of Augustus Caesar (27 B.C.-14 A.D.; Ramachandran 1980:67-68). From a Megalithic grave at Savadipalayam silver punched marked coins together with Roman coins have been recovered (Ramachandran 1980:75). A barrow (Megalithic) in the Nilgiris has yielded a Roman gold coin issued at Constantinople in the 4th century A.D. (Ramachandran 1980:75). At Adichanallur, the important urn-burial site on the river Tambaraparni, bronze mirrors and scent bottles of Hellenistic affiliation have been found and tentatively dated to 1st century B.C.- 1st century A.D. (Margabandhu 1973:21-22; 1996:233-243). At Navalai (Distt. Dharmapuri), a cairn circle enclosing an urn burial and habitation mound has yielded punched marked coins and a (unspecified) Roman coin (Rajan 1991:51). At some places, the existence of Megalithic and Early Historic sites in close proximity and placed in same time-context, suggests interaction between two lifestyles. Begley (1983:464) has pointed to the possibility of interchange between Early Historic Arikamedu and the purely Megalithic settlement at Souttekeny lying only 20 km away. The Pandyan port of Korkai is only 12 km downstream on the Tambaraparni from the Megalithic urn-fields at Adichallanur.

In Table 11 we have taken care to include sites revealing 'Megalithic' strata only when the stratigraphy shows a Neolithic-Megalithic 'overlap' or two-culture Megalithic-Early Historic strata. This criteria of selection excludes single-culture Megalithic sites which, in the absence of a cultural context (Neolithic underpinning or Early Historic succession), may have existed at any point in the three phases specified.

To recapitulate, with regard to the Iron Age-Early Historic changeover there are two essential factors to be realised:

1. The stratigraphical shift from the Iron Age assemblage (BRW, Megaliths) to Early Historic phase is indicated, *inter alia*, by the appearance of the RCPW and RW. The impact of Mediterranean sea trade is discernible in the 'intrusion' of Mediterranean artefacts (amphora, *terra sigillata*, Roman coins, glass, lamps, cameos, beads) subsequent to the appearance of the RCPW and RW.
2. The co-existence of Megalithic cultures surviving into the 1st millennium A.D. with Early Historic complexes. The deposition of

Mediterranean artefacts in the 'late' Megalithic sites indicates involvement of the Megalithic communities in the international trade.

#### 2.2.4. Iron Age - Early Historic I Transition

Sites no. 2, 3, 4, 5, 7, 10, 11, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26 listed in Table 11 show Iron Age (Megalithic) levels succeeded by the Early Historic I phase.

We shall attempt to demonstrate the viability of material indicators of Iron Age-Early Historic transition by analysing in detail the stratigraphic evidence from three widespread sites: Arikamedu, Chandravalli and Brahmagiri.

The sites of Brahmagiri and Chandravalli (no 4,5 in Table 11) located in the heart of the southern Deccan, were excavated by Mortimer Wheeler and published in a single report (Wheeler 1947-48:180-308). It is at Brahmagiri and Chandravalli where Wheeler discovered the Russet Coated Painted Ware or the 'Andhra Ware' as he called it. The experience of Arikamedu was fresh in his mind and as we have from the Brahmagiri/Chandravalli report, Wheeler was drawing from the ongoing excavation of Casal to understand the sections at Brahmagiri and Chandravalli (see extract below). That Wheeler had pegged the material cultural transition from Iron Age (Megalithic) to the Early Historic on diagnostic ceramics (including the RCPW) is clearly revealed by two critical observations of his on the Brahmagiri/Chandravalli stratigraphy:

'In 1947 J.M. Casal carried out further excavations at Arikamedu and at one point found pottery of the familiar 'megalithic' fabric in layers immediately overlying the natural soil. The maximum overall height of these 'megalithic' layers was 3 feet: the two lowest were free from admixture, but the two highest (1-1 ½ feet) produced also typical 'Arikamedu' pottery, including rouletted dishes. The overlap of these two cultures was clearly demonstrated and the equation between this evidence and that of Chandravalli and Brahmagiri is in this respect *absolute*' (Wheeler 1947-48: 273-274; emphasis mine).

Next we see Wheeler's use of the principle of ceramic seriation on the main section at Chandravalli:

"...the cutting of Ch.43 is consistent. The lowest stratum in this fairly extensive cutting contained only pottery of the 'megalithic' fabric, with neither coins nor painted sherds. Overlying this was a stratum again containing much 'megalithic' ware, but now in association with Andhra fabrics, including both the

typically painted ware and fragments of 'beaked' dishes of the type to which rouletted decoration is sometimes applied. A little higher up, rouletted sherds were found immediately above the highest of the 'megalithic' sherds. The latter were completely absent from the remaining strata of the section" (Wheeler 1947-48: 271-273; section Ch.43 in Fig. 46).

These two observations 'dynamically' interlink the stratigraphies of Arikamedu and Chandravalli-Brahmagiri. Wheeler's observations constitute the first attempt to 'broadbase' the ceramic indicators of Iron Age-Early Historic transition revealed at Arikamedu. However, even though Wheeler highlighted a three-fold ceramic sequence at Chandravalli (BRW followed by BRW - RW - RCPW followed by absence of BRW) he did not formally divide his stratigraphy on the basis of the seriation principle. The scheme presented for Chandravalli was only a two-fold strata Pd.I (Megalithic) and Pd.II (Andhra). However, as is clear from the profile of the main section - Ch.43 - at Chandravalli, the intermediate phase is rather thick, occupying four complete layers (from top): layers 11, 12, 13 and 13N (Fig. 46; approx. 6 feet of deposit according to scale of feet in Fig. 46). These are the layers which display the BRW-RCPW ceramic association indicative of the E.H.1 period (see frequency table in Wheeler 1947-48: 273). The earliest layer 13NE is exclusively yields the BRW (Wheeler's observation above; Fig. 46). The E.H.2 phase lies above layer 11 (discussed below).

Similarly, at Brahmagiri we find a substantial transitional phase between the Megalithic and Andhra (Early Historic) levels which Wheeler did not formally classify. We find no sub-phase between Pd.II (Megalithic) and Pd.III (Andhra) cultures in the report. The need for an overlap to be separately defined becomes evident in the profile of the main section - Br.21 - of Brahmagiri (Fig. 47). Here we see the overlap or E.H. 1 phase represented by three complete layers (from top down): layers 4, 5, 6. (approx. one and half feet of deposit from scale of feet in Fig.47). The RCPW appears for the first time in layer 6 in which 7 'yellow painted' sherds are counted. Significantly, the adjacent cuttings 'equating with layers 5 and 6 of Br.21...produced 7 sherds of rouletted ware' (Wheeler 1947-48: 206). The consolidated evidence thus indicates the initial appearance of RCPW-RW after the BRW at Brahmagiri. The 'pure' BRW phase at Brahmagiri section Br.21 is represented by layers 7 and 8. (Wheeler 1947-48:206).

The BRW - RCPW/RW shift, representing the Iron Age - Early Historic transition observed in the Arikamedu stratigraphy also finds expression at Chandravalli and Brahmagiri. In fact, in course of collecting data for this study I found that the

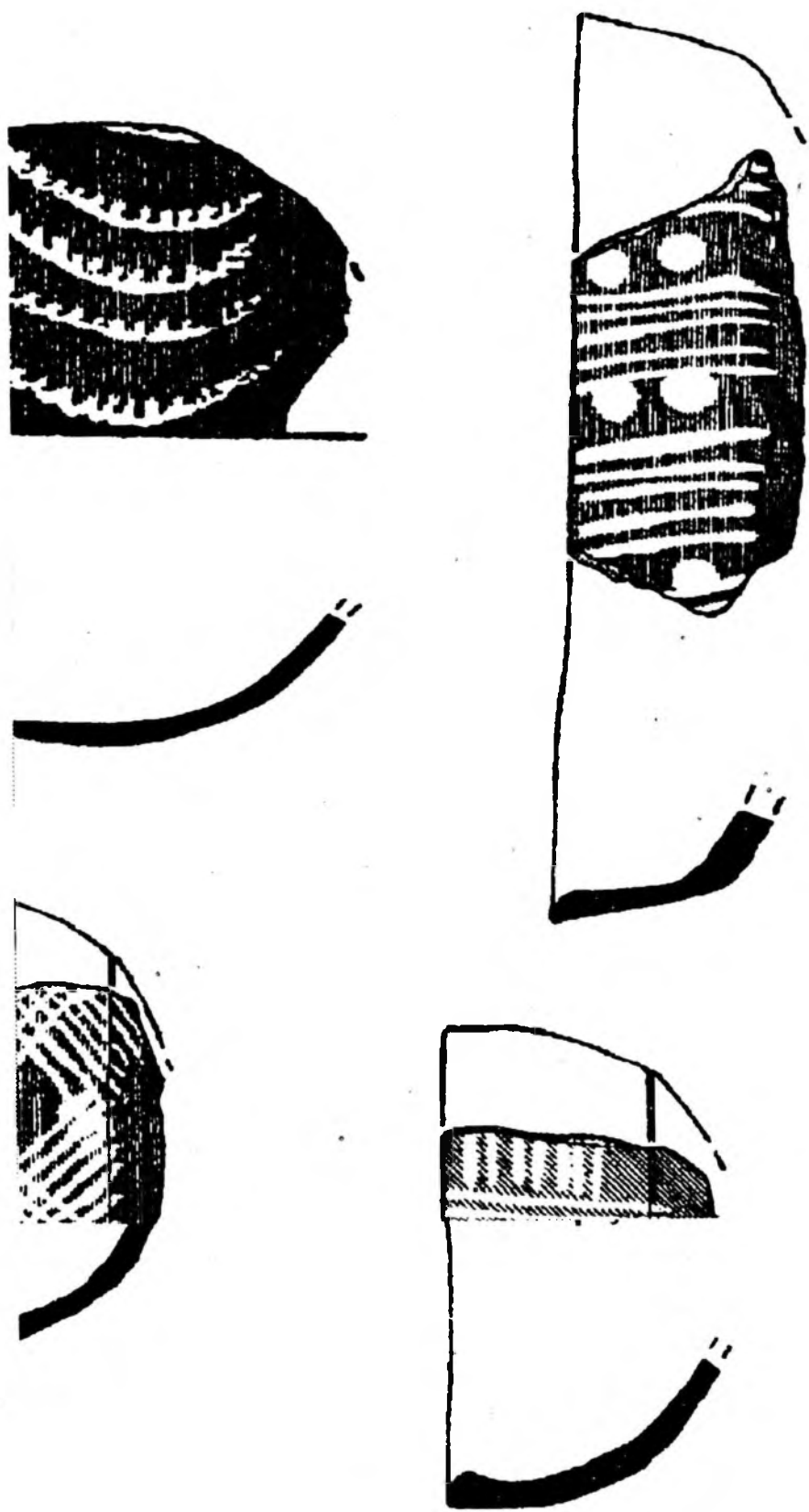
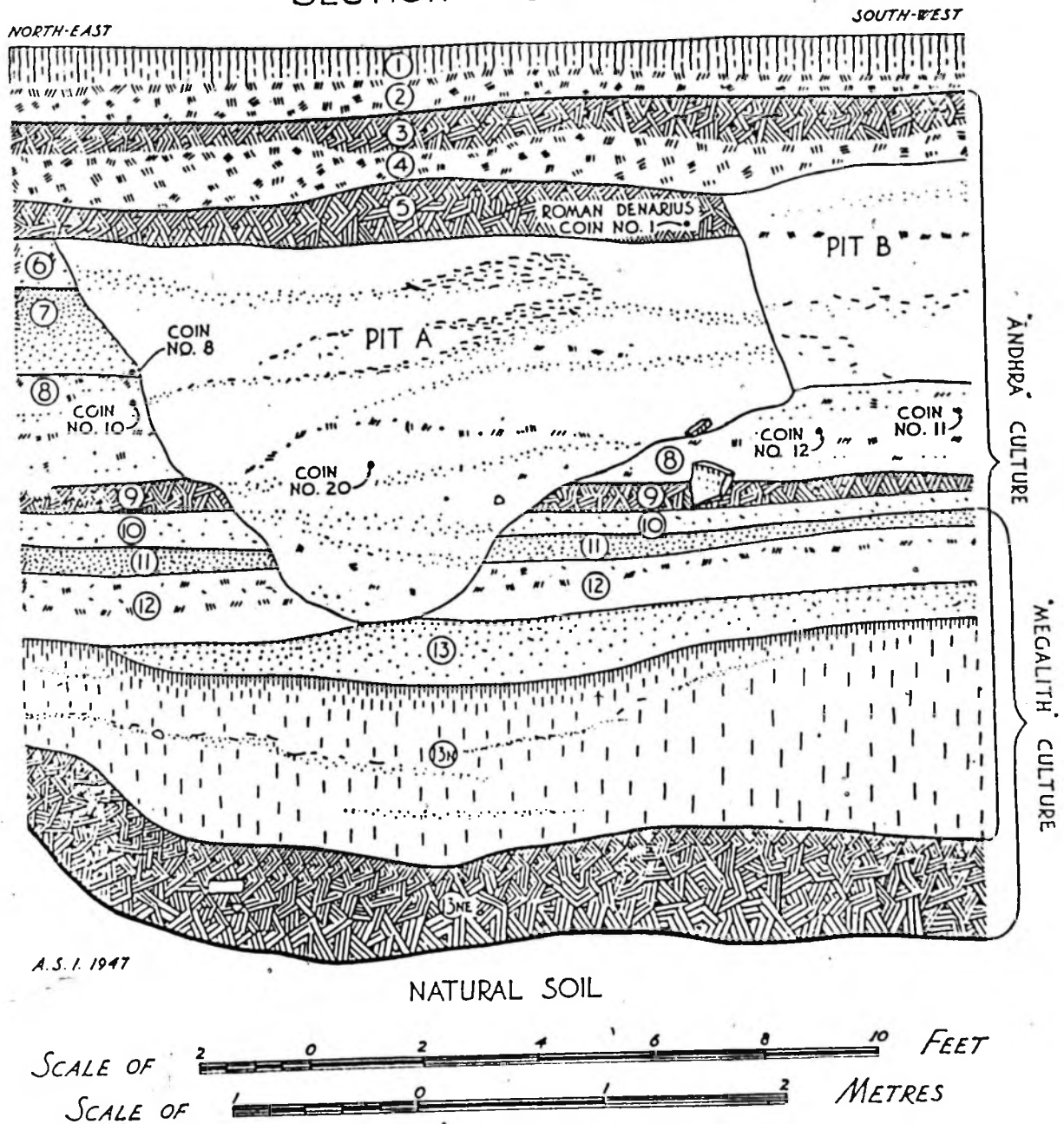


Fig. 45. Russet Coated Painted Ware from Maski  
(after Thapar 1957)

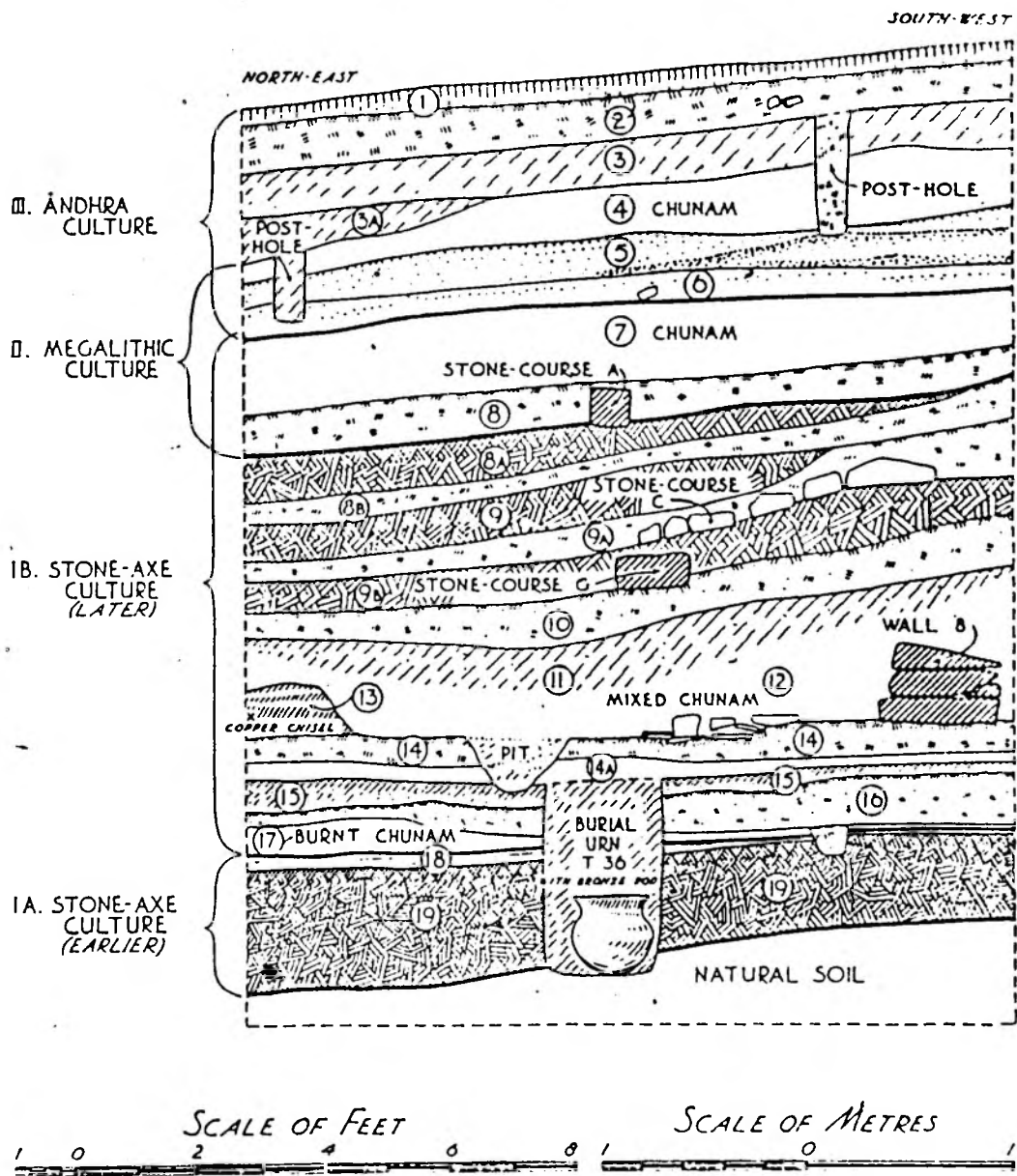
# CHANDRAVALLI, CHITALDRUG, MYSORE STATE SECTION CH. 43



After Wheeler 1947.

Fig. 46

BRAHMAGIRI, 1947: SECTION BR. 21  
SHOWING INTERRELATIONSHIP OF CULTURES



After Wheeler 1947-48.

Fig. 47

ceramic indicators of cultural change delineated at Arikamedu/Chandravalli/Brahmagiri had been 'independently' observed by archaeologists in subsequent excavations. For instance, reporting trial digs around Craganore (Kerala) the excavator comments: '... the discovery in Taluk Ponnani of the so-called Russet-coated Painted Ware, which overlaps with the Megalithic BRW in the early centuries of the Christian era is of great significance. The gap between the Megalithic and historical periods could thus be filled up to some extent' (*IAR* 1970-71: 19). In similar vein, the excavator of T.Kallupatti comments that the Megalithic site 'continued to be occupied in the early historical period as attested to by presence of some copper coins and Russet-coated white painted ware' (*IAR* 1976-77: 46-47). Also in Veerapuram Pd III we find a similar observation, 'The layers belonging to this later phase of the Megalithic culture are overlapped by Early Historic culture in a few trenches. In this transitional phase antiquities belonging to Megalithic and Early Historic cultures were recorded. For the first time, the Russet coated Ware and Rouletted Ware make their appearance...' (Kamalakar and Veerender 1991:4-5).

#### **2.2.5. Early Historic 1 - Early Historic 2 Transition:**

Again, beginning our analysis with Arikamedu, we quote Begley (1983: 471-472) who discusses the E.H.1 - E.H.2 transition in her revised stratigraphy of the site:

'Phase C, which corresponds to Wheeler's pre-Arretine ware layers in both Northern and Southern Sectors and to Casal's post 'overlap' layers in the Southern, is a period of rapid development and in many ways the most significant stage in the history of Arikamedu. For the first time amphorae and other items of undoubted Mediterranean origin are encountered.'

The basis for demarcating Phase C is the appearance of amphorae and other artefacts of Mediterranean origin in the Early Historic horizon at Arikamedu. Begley also suggests a spurt in economic activity due to Mediterranean contact. In our scheme Phase C of Begley represents the beginning of the E.H.2 phase which continues till Phase G.

At Chandravalli, layers 10 to 2 in Section Ch.43 are reported by Wheeler as the Andhra Period layers. The occurrence of a denarius of Tiberius Caesar and the complete absence of 'Megalithic' pottery in these layers correlates with the Begley's Phase C + stratigraphic assemblage at Arikamedu. The Roman coin at Chandravalli occurs in layer 5 of Ch.43. Since the basis of demarcating the E.H.2 phase are the earliest stratified Mediterranean/imitation Mediterranean objects, it would therefore mean that E.H.2 at Chandravalli comprises layers 5 through 1 of section Ch.43.

However, there is an indication that the 'Roman-contact' level may have been earlier. In his report Wheeler (1947-48:200) suggests that a coin of Augustus found at previous excavation at the site by the Mysore State archaeologists can be placed 'at a low, but not lowest level of this (Andhra) culture' (bracket mine).

At the same time, there is evidence to push up the E.H.1 phase at least to layer 9. Wheeler (1947-48:278) informs that the first occurrence of Rouletted Ware in Ch.43 is in layers 10 and 9.

Let us also take into account the stratigraphy of Chandravalli as revealed in the excavation by the ASI conducted in the seventies (reported in *IAR* 1977-78:27-29). Here also an Iron Age culture (Pd.II) is found to overlap with the succeeding Early Historic culture (Pd.III). In the main cutting (CDL-VI) the Iron Age is represented by layers (from bottom up) 9, 8, 7, the overlap by layer 6 and post-overlap by layers 5 through 1.

The earliest deposit of Pd.II yielded the BRW in association with Black polished ware. The report emphasises that Pd.II 'was found to overlap with the succeeding period.' Pd.III deposits yielded the RCPW, Satavahana coins and 'a jar comparable to amphora.'

The section Ch.43 of Wheeler's excavation and section CDL-VI of the later ASI excavation at Chandravalli follow the same sequence as at Arikamedu: the Iron Age BRW followed by appearance of RCPW/RW followed by occurrence of Mediterranean artefacts.

At Brahmagiri, the 'post-overlap' layers are demarcated (from bottom up) 3a, 3, 2, 1. However these layers do not yield any evidence of Mediterranean contact.

Apart from Arikamedu and Chandravalli the following sites recorded in **Table 11** show the E.H.1 - E.H.2 transition: Alagankulam, Dharanikota, Dhulikatta, Kaveripattinam, Kanchipuram, Kodumanal, Peddabankur, Sengamedu, Uraiyur, Veerapuram. Additionally the sites of Karaikadu and Vasavasamudram show a single-culture stratigraphy yielding material evidence of long distance trade from the Mediterranean World.

#### **2.2.6. Chronology of BRW - RCPW & RW - Amphora & Arretine Shifts**

In **Table 11** the three-phase sequence reflecting the shift from Iron Age to Early Historic in southern India is recorded with an attendant chronology wherever available (given under brackets). A review of the dates imputed to 'common' phases of the various sites show deep divergence. The different dates of common phases has been primarily the result of the practice of imputing time-frames to thickness of deposit. This estimation of chronology, first practiced by Wheeler at Arikamedu

(Wheeler *et al.* 1946:22-24), Brahmagiri and Chandravalli (Wheeler 1947-48: footnotes in 201), was later used prolifically by other archaeologists to fix the chronology of sites. Some of the sites dated recently on the basis of thickness of deposit are Sengamedu (Ramachandran 1980:102-105) and Alagankulam (Nagaswamy 1991: 247-254).

The primary chronological indicators from excavations of Iron Age-Early Historic sites in southern India have been (a) Mediterranean artefacts (primarily from Arikamedu) (b) Tamil-Brahmi and Prakrit inscriptions on pottery (c) coinage of the Satavahanas and (d) carbon dates (till now used sparingly). The secondary indicators, loosely 'datable', have been punch-marked coins, the Gangetic Northern Black Polished Ware and the Red Polished Ware.

The need for an 'standard' chronology for the Iron Age-Early Historic transitions in southern India is a need which cannot be ignored. In particular, the unearthing of more datable objects since Wheeler excavated Arikamedu and subsequent review of Wheeler's date for Mediterranean contact with Arikamedu/southern India generates the imperative for comprehensive re-assessment. Below, the primary chronological sources are discussed with the intention to provide clarity to the transitional periods, including the period of Mediterranean contact.

**Mediterranean artefacts:** The datable objects recovered from stratified contexts are *terra sigillata*, amphorae, glassware, Roman coins, Mediterranean lamps and Egyptian beads. All stratified Mediterranean objects from Arikamedu have been dated to the Augustan Period (27 B.C. +) and after except for a batch of amphorae from Arikamedu tentatively placed in the 2nd century B.C. (Wheeler *et al.* 1946: 17-124; Francis, Jr. 1987; Begley and de Puma 1992; Comfort 1992:134-150; for amphora dates see Will 1992:151-156 and Slane 1992:204-215). At Alagankulam, precise dates for the amphora are awaited. One of the Roman coins excavated at Alagankulam has been identified as that of Valentinian II (A.D. 375-392; Nagaswamy 1991:247-254). At Chandravalli the coins of Augustus (B.C.27- 14 A.D.) and Tiberius (A.D. 14 - 37) mentioned by Wheeler as coming from the post-overlap layers of Ch.43 indicate a *terminus ante quem* at the B.C./A.D. changeover (Wheeler 1947-48:287). Similarly, the clay imitation of the coin of Tiberius (A.D. 14-37) from Pd.III B at Veerapuram can be placed not earlier than the 1st century A.D. (Kamalakar and Veerender 1991:43). From the upper levels at Dhulikatta and Peddabankur was found one silver coin each of Augustus Caesar (B.C. 27- 14 A.D.).

Inscribed Pottery: Ceramics in the Black-and-Red and Rouletted Ware fabrics inscribed with Tamil-Brahmi graffiti and, occasionally, in north Indian Prakrit-Brahmi have been recovered from a number of excavations in southern India. From Quseir al-Qadim, the Roman port on the Egyptian Red Sea coast, a number of sherds containing Tamil-Brahmi inscriptions were excavated. A lone ostrakon inscribed in Prakrit-Brahmi was also found at Quseir (Salomon 1991:731-736).

Arikamedu was the first site to yield the inscribed pottery. A batch of 18 sherds were recovered which were dated, on the basis of their paleography, to the 3rd-2nd century B.C. According to Wheeler *et al.* (1946:109-110), the date of these sherds was in 'contradistinction' to the associated Mediterranean artefacts which were secured to the Augustan period and after (27 B.C.+). Mahadevan (1973:60-64), reviewing the ostraca identified at least one of the 18 sherds (listed as Prakrit sherd no. 3, Fig.46 under inscribed pottery in Wheeler *et al.* (1946:112) as carrying a 1st century A.D. date. This single contradiction of the 'consolidated' earlier chronology of the inscribed sherds makes the paleographical dating of the Arikamedu sherds from Wheeler's excavation ambivalent. In fact, N.P. Chakravarti, the epigraphist who reported the sherds in Wheeler's report discussed the possibility of a slow development of the Tamil-Brahmi which made it difficult to precise a paleographical chronology.

In similar vein, M.J. Filliozat (in Begley 1983:467) is uncertain with regard to dating a inscribed Tamil-Brahmi sherd from the Megalithic layers of Casal's excavation. He remarks that 'the characters resemble those of the 1st century A.D. at Arikamedu, as well as those in use from the 3rd century B.C.' Begley (1983:467) surmises that this particular inscribed BRW sherd from Casal's excavation can be placed in the 2nd century B.C. Her assertion is disputed by Nagaswamy (1991:251-252) who is of the view that the adoption of Brahmi to the Tamil language cannot be earlier than the 1st century B.C. Nagaswamy further suggests that the inscribed sherd from Casal's excavation should be dated to the 1st century A.D.

There is thus a fair debate surrounding the inscribed Tamil-Brahmi and Prakrit-Brahmi sherds (of BRW and RW) recovered from the excavations of Wheeler and Casal at Arikamedu. The paleographic dates range from 3rd-2nd century B.C. to 1st-2nd century A.D. At other sites in southern India the inscribed Tamil-Brahmi pottery occur within the above date-range: at Korkai (3rd century B.C.-2nd century A.D.; Nagaswamy 1970:54), Alagankulam (1st century B.C. - early centuries A.D.; Nagaswamy 1991:252-253), Alagarai (ascribed roughly to the 1st century A.D., if not earlier; *IAR* 1963-64:20-21), Uraiur (1st-2nd century A.D.;

IAR 1964-65:25), Kodumanal (2nd century B.C.; Rajan 1990:98) and Kanchipuram (2nd century A.D.; *Ency.Ind.Arch.* Vol.II:200-201). The Tamil-Brahmi inscribed sherds from Quseir (Egypt) and the single Prakrit inscribed sherd from the same site have been dated to the 1st century A.D. (Salomon 1991:731-736).

From the wide range of dates of inscribed sherds detailed above, we can say that the 'palaeographic' chronology of inscribed pottery in south India ranges from 3rd century B.C. to 1st-2nd century A.D.

**Satavahana/associated Coins:** Among the sites under review in this study, the coins of the Satavahanas are recorded in stratified contexts in the post-overlap layers of Ch 43 at Chandravalli, Pd III B at Veerapuram, Pd IIB at Dharanikota and upper levels of Pd. IA of the Kamakothi Math area of Kaveripattinam. Satavahana coins have also come to light in Dhulikatta, Peddabankur and Kaveripattinam.

At Chandravalli two potin coins of Sri Yajna Satakarni were each found in layers 5 and 6 of Ch.43. Additionally, 15 inscribed coins of the Maharathis were found distributed across layers 7-10 of section Ch.43 (Wheeler 1947-48: 287-295).

At Veerapuram, two Satavahana coins, one with the legend Satakarni or Pulumavi and the other the coin of the Satavahana King Pulumavi was found in Pd III B (Kamalakar and Veerender 1991:11-12). A number of coins of the Maharathi dynasty also occur for the first time in this phase.

In Sub-period II B of Dharanikota late Satavahana coins were recovered (*Ency.Ind.Arch.* Vol.II:126).

Among copper coins of the Satavahanas recovered from upper levels of Pd IA of the Kamakothi Math area at Kanchipuram (our phases E.H.1 and 2), the coin of Rudra Satakarni (dated 2nd century A.D.) was identified.

All the coins at the above sites are of the Imperial Satavahanas. This study draws from the shorter chronology of the Satavahanas as recently constructed by Shastri (1987:89-92; Forthcoming). The shorter chronology puts the first Imperial Satavahana, Satakarni around 25 B.C. In this respect, the above kings which follow from Satakarni (at Veerapuram) can be placed in the bracket of last quarter of 1st century B.C. to 3rd century A.D.

**Carbon Dates:** From time to time carbon dates have been released by various Indian laboratories (TIFR, PRL, BSIP) after analysis of charcoal/wood samples from number of Iron Age and Early Historic sites in southern India. Though some of the carbon dates have been often quoted in research papers, there has been no attempt to draw a 'structure' of  $^{14}\text{C}$  dates for the Iron Age-Early Historic transition in southern India. A chronological 'structure' is presented in **Table 12**. A

Table. 12

SELECTION OF CARBON DATES FROM IRON AGE - EARLY HISTORIC SITES IN SOUTH INDIA

TF = Tata Institute of Fundamental Research, Mumbai

PRL = Physical Research Laboratory, Ahmedabad

BS = Birbal Sahni Institute of Palaeobotany, Lucknow

| 1<br>Site      | 2<br>Laboratory<br>Sample No.              | 3<br>Megalithic |           | 4<br>E.H.1 |           | 5<br>E.H.2 |           |
|----------------|--------------------------------------------|-----------------|-----------|------------|-----------|------------|-----------|
|                |                                            | B.P.            | B.C./A.D. | B.P.       | B.C./A.D. | B.P.       | B.C./A.D. |
| 1. Alagankulam | PRL-1296<br>AGM-2, Lyr. 2<br>Depth: 1.40 m |                 |           | 2150±110   | 200 B.C.  |            |           |
| 2. Alagankulam | PRL-1297<br>AGM-2, Lyr. 3<br>Depth: 1.55 m |                 |           | 2210±110   | 260 B.C.  |            |           |
| 3. Alagankulam | PRL-1298<br>AGM-2, Lyr. 3<br>Depth: 1.90 m |                 |           | 2310±130   | 360 B.C.  |            |           |
| 4. Alagankulam | PRL-1299<br>AGM-2, Lyr. 5<br>Depth: 2.80 m |                 |           | 2330±110   | 380 B.C.  |            |           |
| 5. Appukkallu  | BS-38<br>Megalithic<br>Level.              | 2300±140        | 350 B.C.  |            |           |            |           |

| 1                        | 2                                           | 3                   | 4                 | 5                |
|--------------------------|---------------------------------------------|---------------------|-------------------|------------------|
| 6. Dharanikota<br>Distt. | TF-246<br>Early Period.<br>DTK-1            | 2425±100 475 B.C.   |                   |                  |
| 7. Dharanikota           | TF-247<br>Early Period.<br>DTK-2            | 2340 ± 100 390 B.C. |                   |                  |
| 8. Dhulikatta            | BS-117<br>Historical Level<br>Depth: 55 cm  |                     |                   | 1965±100 15 B.C. |
| 9. Dhulikatta            | BS-118<br>Historical Level<br>Depth: 2.25 m |                     | 2270±100 320 B.C. |                  |
| 10. Dhulikatta           | BS-119<br>Historical Level<br>Depth: 15 cm  |                     |                   | 2020±100 70 B.C. |
| 11. Hallur               | TF-570<br>Neolithic-<br>Iron Age<br>Overlap | 3055±100 1105 B.C.  |                   |                  |
| 12. Hallur               | TF-573<br>Neolithic-<br>Iron Age<br>Overlap | 2905±100 955 B.C.   |                   |                  |

| 1                           | 2                                          | 3          | 4        | 5                     |
|-----------------------------|--------------------------------------------|------------|----------|-----------------------|
| 13. Kilayur, Kaveripattinam | TF-207<br>BRW Levels.                      | 2265±100   | 315 B.C. |                       |
| 14. Payampalli              | TF-350<br>Post-Megalithic                  |            | 2330±105 | 380 B.C.              |
| 15. Payampalli              | TF-823<br>Megalithic/<br>Iron Age<br>Pd.II | 2590±105   | 640 B.C. |                       |
| 16. Peddabankur             | TF-1274<br>Lyr. 2<br>Depth: 3.68 m         |            |          | 1985±95      35 B.C.  |
| 17. Peddabankur             | TF-1276<br>Lyr. 2<br>Depth: 4.6 m          |            |          | 1960±105      10 B.C. |
| 18. Peddabankur             | BS-67<br>Lyr. 2<br>65 cm                   |            |          | 1975±110      25 B.C. |
| 19. Peddabankur             | BS-68<br>Lyr. 2<br>Depth: 75 cm            |            |          | 1995±95      45 B.C.  |
| 20. Togarapalli             | PRL-134<br>Megalithic<br>Deposit.          | 2240 ± 110 | 260 B.C. |                       |
| 21. Togarapalli             | PRL- 135<br>Megalithic<br>Deposit          | 2210 ± 110 | 260 B.C. |                       |

total of 21  $^{14}\text{C}$  dates are listed from 9 sites. The stratigraphic provenance of some of the carbon dates are clarified below.

**Neolithic - Iron Age :** It is noticed that the earliest dates available are for Neolithic-Megalithic overlap levels at Hallur (1105 and 955 B.C.). On the whole the 9 dates for the Iron Age range from 11th c. B.C. to 3rd century B.C. (1105 - 260 B.C.).

There are two carbon dates from the 'Early Period' at Dharanikota. The wood charcoal sample TF-246 (dated 475 B.C.) has been obtained from the layer 11 of cutting DKT-1 at a depth of 6.5 m below the surface (*IAR* 1965-66:86). The other wood sample of Early Period TF-247 (dated 390 B.C.) has been obtained from layer 8 of the cutting DKT-2 at a depth of 3.7 m below surface (*IAR* 1965-66:86). A third carbon date of 205 B.C. obtained from a wood charcoal sample TF-248 from layer 10 of the 'fortification' profile of DTK-1 could not be related to any of the three phases due to absence of contextual data. The report of the excavator in the informs that the lowest phase has been carbon dated to around 400 B.C. (Raghavachari 1989:126). The lowest levels at Dharanikota are associated with Iron Age Black-and-Red Ware (*IAR* 1962-63:1-2; 1964-65:2-3; Thapar 1957:19). Therefore the carbon dates deriving from samples TF-246 and TF-247 of 'Early Period' are placed in the Iron Age category in **Table 12**.

**Early Historic 1:** The 6 dates for the E.H.1 phase show a 4th-3rd/2nd century B.C. range (380 B.C. to 200 B.C.). The 4 dates for Alagankulam have been derived from charcoal samples obtained from the digging AGM-2. The trench AGM-2 has a total deposit of 4.75 metres and is situated on the slope of the mound. (Nagaswamy 1991: 248). The concordance of layers between AGM-2 and the deeper trench AGM-1 (deposit of 6 m) has not been established by the excavator (Nagaswamy 1991:246-254). The earliest date of 380 B.C. has been obtained from a charcoal sample in AGM-2, layer 5 and at a depth of 2.80 m. The other 3 samples are posterior in layer and chronology to the lowest sample PRL-1299 (**Table 12**). Layer 5, from which the earliest date has been obtained, has been designated 'BRW and Rouletted Ware levels' (Agrawal, Kusumgar and Yadava 1991:329). The latter three samples, from layers 3 and 2, are designated as coming from BRW levels (Agrawal, Kusumgar and Yadava 1991:329). In all likelihood, the BRW in the layers 2 and 3 are of Early Historic affiliation as indicated by the typical E.H.1 BRW-RW association beginning in the lower layer 5. Keeping these considerations in view, we can place the four carbon dates derived from the BRW and Rouletted Ware levels in E.H.1 phase.

The carbon date (320 B.C.) from sample BS-118 from Dhulikatta is derived from a wood charcoal obtained from a depth of 2.25 m. The other two carbon dates from this site have been obtained from depths of 15 cm (BS-119) and 55 cm (BS-117) (for dates see *IAR* 78-79:103). Dhulikatta is essentially an Early Historic Buddhist stupa complex showing regular rebuilding activity. The excavator does not make clear the depth of his excavation in his report (*IAR* 1977-76:2, 1976-77:4-5). The relative depths of the three samples suggest that sample BS-118 from 2.25 m comes from the early phase of the stupa at Dhulikatta. The earliest phase of the stupa is associated with Early Historic pottery in association with BRW. We therefore tentatively place the carbon-date from depth 2.25 m in the E.H.1 phase.

E.H.2 : All the 6 dates for E.H.2 period lie in the 1st century B.C. (70 - 10 B.C.).

The four dates from Peddabankur are generated from samples obtained from layer 2 of the site (*IAR* 1972-73:63; *IAR* 1978-79:103). Layer 2 constitutes the uppermost layer of the site if we do not take into account the 'surface' layer 1. Layer 2 would thus fall in the uppermost Pd. IIB at Peddabankur. This period has yielded a coin of Augustus Caesar as well as a terracotta figure modelled after a Roman (?) (*IAR* 1967-68:2; 1968-69:2; 1970-71:2; 1971-72:2-3; 1972-73:2; 1974-75:5).

Similarly, the two carbon samples recovered from depths of 15 and 55 cm at Dhulikatta belong to the uppermost levels which have also yielded Mediterranean artefacts (*IAR* 1975-76:2; *IAR* 1976-77:4-5).

The carbon dates are imprecise compared to other datable artefacts. However, in the consolidated state, the carbon dates are indicative of the chronological sequence that relates to the Iron Age-E.H.1-E.H.2 stratigraphic transitions. The carbon dates point to the 4th/3rd century B.C. being the transition period from Iron Age to the Early Historic in Southern India. Latest dates for Iron Age (315 and 260 B.C.) interface with earliest dates (380 and 360 B.C.) for E.H.1. The transition from E.H.1 to E.H.2 is indicated by the 6 carbon dates from latter levels at Dhulikatta and Peddabankur (70 - 10 B.C.). The E.H.1 - E.H.2 shift can be placed in the end of 1st century B.C. with the 70-10 B.C. range suggesting an emphasis towards the later part of the century. We know that E.H.2 sub-phase has been demarcated on the basis of occurrence of Mediterranean artefacts. Both Dhulikatta and Peddabankur yield Roman coins (silver denari of Augustus Caesar) in the upper levels. The dates of beginning of 1st century A.D. provided by Roman coins of Augustus at these two sites corroborate the B.C./A.D. transition period indicated by <sup>14</sup>C dates for the beginning of E.H.2.

**Discussion :** To recapitulate, the 'standard' chronology for the three phases indicated by the carbon dates is 11 - 4th/3rd century B.C. for Iron Age, 4th/3rd - 1st century B.C. for E.H.1 phase and late 1st - 1st/2nd century A.D. for the E.H.2 phase. Of course, the present projection is wholly preliminary and it will take more number of carbon dates in the future to bear out the chronology conceived here.

As for the inscribed sherds, none of them occur in the Iron Age levels. In the sites detailed in **Table 11**, the Tamil or Prakrit inscribed sherds are to be found distributed in the E.H.1 or E.H.2 phase along a 3rd century B.C. - 1st century A.D. chronological continuum.

No imperial Satavahana coins are to be found in the Iron Age and E.H.1 levels. At Chandravalli, Veerapuram and Dharanikota, where the stratigraphic sequences are clearly defined, the Satavahana coins occur in the E.H.2 levels in association with Mediterranean artefacts. We have dated the Imperial Satavahana coins according to the shorter chronology which commences from the last quarter of the 1st century B.C. (Shastri 1987:89-92; Forthcoming).

Mediterranean artefacts form the basis of stratigraphic sub-division for the E.H.2 phase. All stratified artefacts of Mediterranean origin are dated at the beginning of the Christian Era except for a batch of Koan amphora-handles from Arikamedu which has been placed in the late 2nd century B.C. (by Will 1992:151-156). However, before we accept Will's 2nd century B.C. chronology for the 'genuine' Koan handles (accounting for 'little more than half of the double-handled fragments at Arikamedu' : Will 1992:151) the anteriority-posteriority of genuine Koan amphorae and the later pseudo-Koan/Dressel 2-4 types in the Arikamedu stratigraphy needs to be clarified (see discussion under Amphora in Chapter II).

On the basis of the short review of the datable evidence above, a tentative chronology following the pattern of the carbon dates and supplemented by other chronological indicators for the three phases is suggested : 1000 - 300 B.C. (Iron Age); 300-50 B.C. (Early Historic 1); 50 B.C. - 250 A.D. (Early Historic 2).

**Conclusion:** The ceramic indicators representing the three-period cultural sequence at Arikamedu ('Megalithic' BRW/ BRW-RW/Amphora-Arretine ware) is reflected in the macro-stratigraphic classification of Iron Age/ Early Historic 1/ Early Historic 2.

The macro-stratigraphic profile of the Iron Age-Early Historic horizon in south India is presented here as a broader framework for understanding material culture transitions and precisising the stratigraphy of long distance Mediterranean trade contact with the region. The macro-stratigraphy, while validating region-

wise the three-period cultural sequence derived at Arikamedu, concomitantly shifts the focus from single-site study to a more comprehensive analytical paradigm.

The revised stratigraphic framework allows us to integrate elements not emphasised or not present in the Arikamedu profile. In this regard the Russet Coated Painted Ware (RCPW), which is absent at Arikamedu, appears in the macro-stratigraphy as a critical ceramic indicator of Iron Age-Early Historic shift at a number of excavated sites (especially at Chandravalli and Brahmagiri).

In terms of delineating chronology, the macro-stratigraphy creates the scope to integrate a variety of chronological indicators (carbon dates, Satavahana coins, Mediterranean artefacts). The bracketing of a range of chronological 'markers' within relevant stratigraphic periods gives direction to evolving a 'standard' chronology for the three-period sequence.

The macro-stratigraphy reveals that Mediterranean artefacts consistently appear in the Early Historic horizon of south India subsequent to the first occurrence of the Iron Age ('Megalithic') BRW and RCPW-RW respectively. The posteriority of material indicators of Mediterranean contact in the macro-stratigraphic sequence serves to clarify the space/time context for Early Historic maritime contact between south India and the Roman World.

### 3. Eastern India

Eastern India, broadly congruent with the states of Andhra Pradesh, Orissa and Bengal, seems to have been an important 'staging area' for long distance sea trade in the Early Historic period. We have detailed, earlier in chapter IV, the material evidence for port-sites and coastal settlements in lower Bengal, the Orissa coast and the estuarine areas of Andhra Pradesh/eastern Deccan.

In this section the focus is on the hinterland serving the eastern Indian trade-ports. The vast inland areas of Andhra Pradesh, Orissa and Bengal constituted a rich resource base of raw materials and manufactured goods, especially semi-precious stone, iron, ivory and muslins. The distribution of Early Historic sites, the pattern of deposition of Mediterranean artefacts and the specific 'resource' areas of export commodity production/acquisition, together indicate a possible trend for Indo-Mediterranean exchange in the region.

We have seen earlier (in Chapter IV) the regular northward spread of Roman/Mediterranean artefacts along the Andhra-Orissa-Bengal coast indicating the 'movement' of Mediterranean maritime trade up the east coast of India (Fig. 37). The occurrence of syncretic material such as the bullae and imitation Mediterranean lamps

and discovery of dedicatory seals of Graeco-Roman mariners on the Orissa-Bengal coast suggests direct and enduring interaction with traders from the western world.

Wheeler *et al.* (1946:123) were probably the first to offer an 'archaeological' reasoning for penetration of Roman/Mediterranean commerce into eastern India when they observed that the occurrence of various sub-varieties of quartzes in the eastern Deccan 'may have been a factor in the extension of Roman trade up the east coast.' Gupta (1969:169-180), also indicates a shift in Roman commercial activity from south India to the Andhra region in the 2nd century A.D. on the basis of the comparative chronology of Roman coin finds in the two areas. On the Bengal coast, ongoing archaeological prospections have revealed the existence of a network of estuarine sites which must have emerged only in response to flow of maritime trade in the Early Historic period.

Also, explanations to be sought for the operation of Mediterranean trade dynamics in eastern India will have to take into account factors emerging from the indigenous context. For one, we cannot perceive the eastern Indian region as 'homogenous.' Unlike western India (Gujarat-Maharashtra) where a common Early Historic ceramic complex (Black and Red Ware and the Red Polished Ware) and similar resource base (semi-precious stone and cotton) integrated the region, the eastern Indian region has to be perceived as a conglomerate of at least two material cultural zones: eastern Deccan/ Andhra Pradesh and lower Ganga area/deltaic Bengal. The Early Historic of the eastern Deccan was strongly influenced by transmissions from an earlier Megalithic Culture base (Ghosh 1989:132). Apart from the Early Historic Black and Red Ware, the eastern Deccan has its representative pottery in the Russet Coated Painted Ware and the Rouletted Ware (discussion under Southern India above). On the other hand, the lower Bengal region was integral to the classic Maurya-Sunga-Kushan-Gupta cultural phases of the historical horizon of the Gangetic Valley. This integration is reflected, *inter alia*, in the proliferation of the Northern Black Polished Ware (NBPW), ornamented mould-made terracotta figurines associated with Sunga rule and Imperial Gupta coins in the Early Historic/Historic strata of lower Bengal sites such as Chandraketugarh, Tamluk and others (Lahiri 1992:321-322).

### 3.1. Lower Bengal

The Early Historic ports of lower Bengal, like the coastal market-towns of the lower Indus and Gujarat, played a critical role in handling commercial traffic from rich inland production zones bound for overseas markets in Southeast Asia and the Mediterranean World. Trade links with Southeast Asia are suggested by the discovery

in that region of Gangetic material such as semi-precious stone beads, seals/sealings, inscribed intaglios and votive stupas (discussed in section on Southeast Asia in Chapter IV).

The ground evidence is also substantial enough to indicate a close Mediterranean connection with lower Bengal, a connection which may have included direct seafaring missions. This is indicated by the increasing discoveries of a range of Mediterranean artefacts, perhaps the most significant being Greco-Roman votive tablets containing inscriptions.

Votive tablets have been found at Tilda (Dist. Midnapore, *IAR* 1954:55-62) and Rajbadidanga (Dist. Murshidabad; Das 1968:60-61; Sarkar 1990:53-62). From Tilda, the clay sealing is inscribed with a dedication in Greek to the 'East Wind and the Dawn'. Rajbadidanga has yielded a seal inscribed "Horae" (?), a sea-goddess and a sealing (in clay?) bearing the Roman letters OABORRA, which Mukherjee (in *IAR* 1968-69:43) associates with a personal name. The sealing is dated to the 2nd century A.D. Such dedicatory sealings could have only belonged to Mediterranean sailors who had voyaged to the Ganga delta. Apart from the dedicatory seals a variety of Mediterranean artefacts and syncretic objects showing Greco-Roman influence continue to be reported from lower Bengal coastal sites. Though the full significance of this material would be realised after precise identification and quantification, the preliminary reports on the artefact finds point to a strong pattern of Indo-Mediterranean exchange in deltaic Bengal. Among the Mediterranean artefacts which have come to light are 'amphora-like' objects from a host of sites. One of the finest of such vessels is a complete specimen, measuring 26", discovered at Karnaji village on the coastal tracts of the Bengal-Orissa border (Sengupta 1996: 120). I have tentatively identified this vessel as a Dressel 28 type (see under Amphora in Chapter II).

Among other discoveries are carnelian intaglios with non-Indian motifs, vases and spouted pottery cups of western origin (Sarkar 1990:53-62), terracotta reliefs and figurines showing Hellenistic influence (Sarkar 1990:53-62; Dr. K.K. Biswas, Bharat Kala Bhawan, Varanasi: personal communication). Published in a pamphlet released on the occasion of an exhibition on Indo-Roman trade put up by the Indian Museum, Calcutta is the photograph of a Hellenistic unguent jar (in stone?) wrongly termed as amphora. This unguent jar may have come from the north-west where similar types are reported from Parthian contexts at Taxila or it could also be the result of deposition due to Mediterranean maritime trade as these vessels were common in the Roman ceramic repertoire.

A much earlier date for maritime contact between Bengal and the Mediterranean has been claimed on the basis of some artefacts found in lower Bengal. Scaraboid amulets discovered among antiquities at Pandu-Rajar-Dhibi have been taken by to signify contact with the Middle Kingdom of Egypt which flourished in the 3rd-2nd millenium B.C. (Sarkar 1990:58-59).

The possibility of long distance contact between Bengal and Bronze Age Egypt and the Aegean World can be taken to be extremely remote. Though scaraboid amulets have come to light in other parts of India (for which a likely Egyptian Bronze Age provenance is also claimed; see Postel 1989) and certain motifs common on Cretan and Harappan artefacts (During-Caspers 1985:435-452; Puskas 1988:15-22) have been highlighted as indicative of earliest contacts between the Indian and Western Worlds, the indicators are yet too few and far apart in space/time contexts to be convincingly systemetised into argument. Given the near-total absence of Mediterranean Bronze Age artefacts in proto-historic contexts in north-western, western and southern India, the case for such early contact between Bengal, on the edge of the Indian east, does not appear convincing.

The Bengal-Bihar-Orissa borderland is rich in metals like copper, gold, silver and iron which may have been exported from the lower Bengal coast in the Early Historic period. According to Sengupta (1996:123) the discovery of thousands of copper coins from the Early Historic levels at Chandraketugarh indicates dependence of coastal Bengal on the metal-rich uplands.

The river Suvarnarekha has been an important source of gold which the river washed down from the Chota Nagpur plateau all the way to the sea (Nanda 1992:16). Besides the placer deposits, the presence of auriferous quartz has been noticed in the Mayurbhanj area (Lahiri 1992:314). The gold panned in the Suvarnarekha must have found a ready market in the maritime economy of lower Bengal. In this context it is also important to note that the *Periplus* (sec.63) mentions the presence of gold mines near the Ganga estuary and informs of the circulation of a gold coin, *caltis*, current in the market-towns of deltaic Bengal.

The upland areas of Bengal and Bihar may have also been a source for semi-precious stone for foreign traders. Sengupta (1996: 122-123 ) interlinks the Early Historic Bengal ports with inland resource-areas of metal-rich Chota Nagpur and Singbhum plateaus and the quartzite zones of middle and upper Bengal. The quartzite zones suuplied good quality garnet, feldspar and pink-quartz (Sengupta 1996:122-123).

The Early Historic ports of deltaic Bengal received various trade-goods for export from regions beyond its immediate hinterland. The *Periplus* details these export-commodities as malabathrum, Gangetic spikenard, pearls, the muslin called "gangetic" and silk (*PME* 56,63-65). The connections of the Bengal ports with production zones beyond the immediate hinterland, in north-west and north-east India and upto Central Asia/China are attested by epigraphical and textual sources (Mukherjee 1992:135-146; *PME* 60-63).

Further evidence corroborates the references in the *Periplus* to the arrival of export-commodities to the Bengal ports from far distances. Mukherjee (1992: 135-146) and his colleagues have documented mixed Brahmi-Kharosti epigraphs on seals and sealings discovered at Chandraketugarh and other sites alluding to the presence of a powerful community of north-westerners in estuarine Bengal (see also Chakravarti 1992:155-160). According to Mukherjee, these migrants were essentially traders engaged in export of horses to Southeast Asia. The identity of the north-westerners has not been clearly established though their titles (*Aja*, *Vimma*, *Karchhugana*) and depiction of dresses on the seals show affinity with the Sakas. A likelihood is the migrants may be identified with the *Salankayanas*, a community of north-western origin whose inscriptions (of the early centuries A.D.) appear in the Gangetic plain (inscription on stone in the Allahabad Museum: personal observation). It is possible that the *Salankayanas* had established a commercial network from Gandhara to Bengal for regular movement of export-commodities from north-west and north India to the Bengal ports. In this connection it is interesting to note that Ptolemy in his *Geographia* mentions the rule of the *Salakenois* in the region of northern Orissa (see McCrindle in Sastri 1927:172-173). If we take the *Salakenois* to be the same as the *Salankayanas* of the epigraphs this would suggest the presence of politically dominant north-westerners in the lower Ganga region. Mukherjee's studies have shown the north-western migrants as a tightly hierarchical community organised under cheiftans.

The existence of a commercial corridor across north India linking the north-west Silk Route and the Gangetic ports is also suggested by the reference in the *Periplus* to Chinese silk arriving from Bactria to the Ganga estuary (*PME* 64). However, the mention in the *Periplus* of a tribe inhabiting the border of China and bringing malabathrum into India (*PME* 65) also indicates connections with Tibeto-Burmese groups and land connections with China through passes in Sikkim and other points in the eastern Himalayas (Schoff 1912/74:278-281). Recent studies have attempted to work out a basis for the existence of an ancient India-China

commercial conduit through the north-east (see especially Gupta 1991:280-299). Recently, excavations at Vadagokugiri, a Brahmanical / Buddhist site of the 4th century A.D. on the old course of the river Brahmaputra, has indicated the antecedents of the settlement going back to the 2nd century B.C. Pottery recovered from the lowest levels indicate connections of ancient Vadagokugiri with the Gangetic lowlands on the one hand and the material culture of the type-site of Sekta in the Manipur Valley (Sharma 1992b: 89-96). The site of Sekta is strategically located on the land routes into northern Burma and beyond. Excavations at Sekta were conducted here by the Archaeological Survey of India in 1991. The diggings have revealed rich burial contexts yielding gold masks, Buddhist reliquaries, microbeads and handmade pots with a 'variety of mat, cord, pinched, stamped, crisscross, sunray and fishbone designs' (Sharma 1992a: 46-57). The published photographs of this pottery show it to be similar to the stamped pottery recovered from the burial contexts at Ban Don Ta Phet in Thailand (Glover 1996: Plate III) and the pottery tentatively identified by Rao (1994a:829-831;1994b;1995) at Arikamedu and Kottapatnam as being of Southeast Asian origin. The earliest levels of Sekta have been tentatively dated by the excavator between the 1st-2nd B.C. - 1st-2nd A.D. (Sharma 1992a: 55). The present data provides an archaeological basis for references in the *Periplus* to active connections between deltaic Bengal and the remote tracts of northeastern India. Further prospections at Sekta may very possibly confirm the existence of active overland conduits of commerce between Gangetic India and Southeast Asia-China.

### 3.2. Orissa

Geographically, Orissa can be internally differentiated between the hilly tracts which make up most of the territory of the state, and the coastal plains which extend south from the river Suvarnarekha and range in breadth from 25 to 75 kms (Panigrahi 1961:182; Lahiri 1992:322).

The Early Historic settlement pattern of Orissa shows a concentration in the coastal plains. The large forested uplands, inhabited by tribal communities seemed to have been lightly administered. According to Panigrahi (1961:182) the *unconquered borderers* which Asoka speaks of in his Second Kalinga edict 'can be taken to be the people of the small principalities lying in the vast stretch of forests and hills that form the major portion of modern Orissa.' Compared to the uplands, where the Early Historic material culture is characterised by sparse habitations revealing southern Megalithic traits (Pradhan 1991:12-16, for recent excavations at Manamunda/Asurgarh), the coastal lowland of Orissa reveals a high urban character manifested in the monumental architecture of the fortified settlement of Sisupalgarh

(Lal 1949:62-105), the presence of royal epigraphs of Asoka (in the plains at Dhauli and Jaugada) and Kharavela (Udaygiri-Khandagiri caves near Bhubaneswar, Mitra 1978:4-13) and the archaeological remains of port-sites such as Manikpatna and Parur.

The occurrence of ceramics and other artefacts from south India, the Gangetic plain and the far Mediterranean at Sisupalgarh and other Early Historic sites indicates Orissa's extra-territorial contacts. The principal artefacts found in Orissa which have their correlates in South-East Asia are vessels with central protrusions or 'knobs' recovered principally from the 3rd century B.C. levels at Sisupalgarh (Lal 1949:78,89; Glover 1990; Pattanayak and Pattanayak 1994:52), the Rouletted Ware excavated at Sisupalgarh (Lal 1949:78,89; Begley 1988:427-440; Ardika *et al.* 1993:101-109) and recently at the port-site of Manikpatna near Puri (B.R. Pradhan:personal communication), Kharosti graffiti on pottery (B.R. Pradhan:personal communication) and glass and semi-precious stone beads of Gangetic and/or south Indian origin (Basa *et al.* 1991:351-365).

The 'knobbed' vessels (discussed in Chapter VI), excavated at Sisupalgarh are contemporaneous with those found at Ban Don Ta Phet (Thailand). Both finds are dated, principally, to the 3rd-2nd century B.C. (the best variety occurring at Sisupalgarh in the Early/Early Middle periods; Lal 1949:89; Glover 1990). We know that the 'knobbed' vessels have a widespread distribution in the Gangetic Zone and upto the western and north-western India (see Chapter VI). Keeping all these factors in mind it is entirely possible that the 'knobbed' vessels at Sisupalgarh and associated sites signify a 'pre-Christian' era trade between north India via Orissa (and lower Bengal) with Southeast Asia.

However, the degeneration of the 'knobbed' vessels in the later 1st-2nd century levels in Orissa (Lal 1949:89) and the proliferation of the Rouletted Ware in this period in the eastern Indian Ocean littoral points to the emergence of another network integrating eastern/southern India and Southeast Asia. The 'epicentre' of the new network effects a shift away to the south. In this context, it has been observed that the Early Period - 3rd century B.C. - levels at Sisupalgarh reveal a north Indian (Mauryan) character which soon disappears in the succeeding Early Middle (200 B.C. - 100 A.D.) and the Late Middle (A.D. 100 - 200) periods begin to show strong material cultural influences from South India, particularly in the occurrence of the Rouletted Ware (Panigrahi 1961:191-192). In the changed scenario, the markets and ports of Early Historic Orissa may have been handling more commercial traffic from the eastern Deccan.

The brief review above of Early Historic Orissa's extra-territorial contacts suggests that the essentially coastal/maritime economy of Kalinga was well 'positioned' to take advantage of overseas commerce emanating from north and south India. The southward orientation of Orissa indicated by the proliferation of the Megalithic Black and Red and Rouletted Wares in the B.C./A.D. transition essentially serves to distinguish this region from Lower Bengal, which, as we have discussed was closely integrated with northern India.

One of the main items of export from Kalingan ports to the Mediterranean was ivory. The *Periplus* informs of the high quality of ivory exported from *Dosarene*/Orissa (*PME* 62 ; Schoff 1974: 253). The Kalingans must have procured most of their ivory from hunting elephants in the vast forested tracts adjoining the Orissa coast. The etymological basis of the name of the southern Kalinga port of Palur or Dantapur with "tooth" (Chapter IV) indicates the association of this port with the ivory trade (Pattanayak and Pattanayak 1994:51-54; Padma 1991:28-33).

Diamond export from this region is indicated by Ptolemy's reference to one of the four rivers of northern Orissa as *Adamas* (diamond) (McCrindle in Sastri 1927:69). Warmington (1928/1995:236) points to the upper reaches of these rivers in the Sambalpur tract and the diamond bearing area of Panna further west as the source of the *adamas* (diamond). Diamonds mined from the rocky tracts of western Orissa were being traded in medieval times (Pattanayak and Pattanayak 1994: 51-54).

These isolated indications in textual sources to exports from Orissan coast to the Mediterranean point to the exploitation of forest wealth and minerals in the hilly regions of western Orissa, southern Bihar and eastern Madhya Pradesh. In this context, Stiles (1994b) suggests that the tribal Gonds of north-central India may have been engaged supplying forest products and semi-precious/precious stones to overseas markets through land-sea corridors emerging onto the eastern coast. However, his emphasis on a route leading to trade-ports in the Lower Krishna area seems overstretched. Logistically, a more quicker route must have been through the Sambalpur region to the *Kalinga* coastland. In this regard, Warmington (1928/1995: 117) alludes to the people called *Sabarae* inhabiting Sambalpur? who were engaged in supplying diamonds to overseas traders. The major Early Historic site of Asurgarh (Dist. Sambalpur), strategically located on the middle course of the Mahanadi as it emerges from the uplands, could have served as a forward trading point for forest products and minerals supplied by tribal groups. The similarity of the common red ware from Asurgarh and Sisupalgarh and same chronological point

of degeneration of this ware indicate connections between the uplands and lowlands of Orissa (Pradhan 1991:12-16).

A southern corridor of trade mainly supplying semi-precious stones from the rich chalcedonic and crystalline veins in northern Andhra region (lower/middle Godavari valley; map in Wheeler *et al.* 1946:122; Lahiri 1992:359) north along the coastal belt to trade-ports in southern Kalinga (especially Palur and Manikpatna) can be envisaged. Wheeler *et al.* (1946:123) has detailed the middle-lower Godavari region as one of the major quartz belts that would have attracted Roman trade. Warmington (1928/1995: 142) informs that a certain stone - the *sapphirine* - in demand in the Roman Empire could only have been sourced in the Vizagapatnam area. Though the *Periplus* and *Geographia* do not detail any coastal settlements on the stretch of coast between the Godavari mouth nearly upto the Chilka lake, the regular distribution of Roman artefacts along this tract (Fig. 37) belies the contention that this region was a *terra incognita* for Mediterranean traders (discussion in Chapter IV; McCrindle in Sastri 1927:68-69). This artefactual distribution, mainly Roman coins, is through the coastal points at Lingarajupalem, Kotapad, Gumada, Vinukonda, Salihundam, Bhavikonda and Bhagavanpavam (Fig. 37). The major site of Sisupalgarh further on this coast has yielded a rich collection of Roman coin imitations (*Ency.Ind.Arch.* Vol.II: 412-413). Panigrahi (1961:191-192) stresses that the terracotta ornaments and clay bullae found at Sisupalgarh indicate 'both in their prototypes and frequency of occurrence a culture more southern than northern.'

Other material linkages between the coastal Orissan and northern Andhra seaboard sites are suggested by the presence of the Rouletted Ware (Sisupalgarh, Manikpatna, Salihundam) and the knobbed-base vessels (Sisupalgarh, Jaugada, Kalingapatam). The occurrence of similar artefacts associated with trade in the major sites of Early Historic Orissa and northern Andhra and the fact that they are situated on a mutually accessible, contiguous stretch of coast suggests that the seaboard from the Godavari estuary to the Mahanadi estuary constituted an integral area of trade. The political integration of this area as the domain of ancient *Kalinga* is well documented (Lahiri 1992:352).

The local/regional patterns of contact, the location of resource-areas and distribution of Mediterranean artefacts in the extended Orissan trading zone strongly suggests that Mediterranean trading interests were substantially represented on the Orissa coast. In fact, the occurrence of 'syncretic' Indo-Roman artefacts in unusually high number and variety on the Orissa-northern Andhra coast indicates

actual presence of Roman traders in this part of the eastern Indian littoral. Apart from the imitation Roman coins excavated from Sisupalgarh, syncretic Indo-Roman material comprises a gold medallion from Sisupalgarh carrying the likeness of a Roman Emperor on one side and a standing Kushan (?) royal figure on another (Altekar in Lal 1949:100-101; Pl. XLVII A) and recently discovered terracotta lamps from Manikpatna imitating Roman types (Pl. XI). The port-site of Manikpatna has also yielded Mediterranean amphora (Pl. VII).

The gold medallion from Sisupalgarh is particularly significant. The short Brahmi inscription it carries on the obverse suggests that the issuer of the medallion was the Murunda king of Orissa, Dharmadamadhara (A.S. Altekar in Lal 1949:100-101). The Murundas were the late contemporaries of the Kushanas and are believed to have ruled over Bihar and Orissa in the early centuries A.D. Interestingly, the Murundas were not ethnic to the region and hailed from the north-west of the subcontinent (A.S. Altekar in Lal 1949:101; Das 1985:7-8). The presence of the "foreign" Murundas like the migrant *Salankayanas* from the north-west in the eastern Indian littoral strengthens the case for the existence of an active conduit of trade between the Orissan ports and north-west India. In this context, the choice of a Murunda king in issuing a medallion with popular Roman-Kushan numismatic motifs is thought provoking. Altekar (in Lal 1949:101) suggests that such medallions may have been brought to Sisupalgarh by pilgrims travelling south from Pataliputra, a Murunda power centre. Could it not be the contrary, that the medallion was released in Orissa itself, perhaps as an official identification for Hellenic traders wishing to move into Kushana territory further inland? The Sisupalgarh medallion and other syncretic Indo-Roman artefacts may be regarded as visible manifestations of what Warmington (1928/1995:116-117) called, in the context of Orissa, 'Greek exploration so far afield.'

### 3.3. Andhra Pradesh

Together with the uplands of southern Orissa, the territory of the state of Andhra Pradesh makes up the eastern spread of the Deccan plateau. Three major river systems, that of the Godavari, Krishna and Pennar define both the geomorphic and material cultural character of Andhra Pradesh. Historically, these rivers have acted as conduits for spread of material cultures, trade and religious beliefs from inland regions to the estuarine areas of the eastern Deccan. The emergence of important settlements and port-sites on the Andhra coast, especially along the lower reaches of the Krishna (Fig. 37), signifies, *inter alia*, exploitation of the river systems to procure commodities from the middle and upper valleys of the Andhra rivers as well as the

integration of maritime exchange networks of the Bay of Bengal/eastern Indian Ocean with resource-zones deep within peninsular India.

Two critical aspects of the above proposition concern, first, the distribution of export-commodity production areas within the eastern Deccan and second, related to a broader flow of commerce, the "role" of the trans-peninsular rivers draining the Andhra region in commercially interlinking the eastern and western Indian seabords. As we shall discuss, the latter aspect is manifested most visibly in the accessibility provided by the river Krishna for flow of trade from the western to eastern Deccan and *vice versa*. As for the former aspect, the production centres of Early Historic Andhra proliferate for semi-precious stone working, glass working, iron manufacture and lead mining (Lahiri 1992:358-359). Furthermore, the *Periplus* (sec.62) informs that the coastal region of *Masalia* (Krishna estuary) was a flourishing area of muslin production.

The sources of semi-precious stone in the Andhra region lie in the chalcedonic and crystalline quartz formations in the eastern Deccan plateau, particularly between the middle courses of the Godavari and Krishna (see map in Wheeler *et al.* 1946:122) and in nodule deposition in the estuaries of the Godavari (near Rajahmundry) and Krishna (near Guntur) (Wheeler *et al.* 1946:123, Lahiri 1992:359). Wheeler *et al.* (1946:123) have suggested that the presence of semi-precious stone concentrations in the eastern Deccan 'may have been a factor in the extension of Roman trade up the east coast.' The wide distribution of stratified Mediterranean/pseudo-Mediterranean artefacts in context of semi-precious stone working in the eastern Deccan sites gives substance to Wheeler's projection. With regard to his hypothesis we have discussed above the likelihood of Roman traders acquiring semi-precious stone supplies from the lower Godavari region through the harbours of *Kalinga*. Rajahmundry, the main source-area of semi-precious stone in the lower Godavari region indicates Mediterranean contact in form of probable Arretine Ware (?) finds (*IAR* 1979-80: 1). In the western part of the state, the Early Historic urban centre at Kondapur has revealed a major semi-precious stone beadmaking industry together with Roman coins, bullae and high quality Red Polished Ware with Hellenistic designs (Yazdani 1941:171-185; Begley 1992: 157-196). The Kondapur beadmaking industry is towards the eastern end of a continuum of Early Historic semi-precious stone working sites of the western Deccan (Nevasa, Bhokardan, Paithan, Ter, Paunar, Brahmapuri) all of which have yielded artefactual evidence of Mediterranean trade contact (discussed above; Fig. 16 for India-wide distribution of Roman material in context of stone working).

Iron happened to be another major product of the eastern Deccan. The principal iron-ore (magnetite) concentrations are in the upland tracts of western Andhra Pradesh, specifically in the districts of Adilabad, Nizamabad, Medak, Karimnagar and Kurnool (Lahiri 1992:358-359). In the Early Historic context, major sites in the western Andhra region show evidence of iron working, specifically Kondapur (slag all over the site, Yazdani 1941:171-185), Peddabankur (fragmentary terracotta forge with slag on it, Krishna Sastry 1983:153-154) and Dhullikata (crucible and slag, Krishna Sastry 1983:153). All of these sites have yielded artefactual indicators of Roman contact in context of iron manufacture (Fig. 17 for India-wide distribution of Roman material in iron producing sites). High quality iron from Kondapur and other sites in the middle Godavari-Krishna valley could have been supplied west along the arterial Ter-Paithan-Barygaza route to overseas West Asian and Mediterranean markets (Routes C+H in Fig. 39 showing western-eastern Deccan integration). High grade iron from the upper Andhra region may have also gone east, either to the *Kalinga* coast or the ports on the lower Krishna and onward to Southeast Asia (for early Indian iron exports to Southeast Asia see Glover and Syme 1993:119-127).

Besides the resources/commodities indigenous to the eastern Deccan which would have attracted overseas trade, the extra-territorial contacts of the Andhra region need to be studied from the point of view of the "commercially strategic" situation of the region, particularly the accessibility afforded by its rivers to move goods across a trans-peninsular axis. In this regard, perhaps the most used conduit must have been that provided by the river Krishna. The excavation of a reinforced wharf at Dharanikota at the mouth of the Krishna (*IAR* 1962-63:1-2, 1963-64:2-4, 1964-65:2-3) and built-up landing points on estuarine sites of Nagarjunikonda (*Ency.Ind.Arch.* Vol.II: 302) and Yelleswaram (Khan 1963, *Ency.Ind.Arch.* Vol.II: 468) show that the Krishna experienced a busy riverine traffic in Early Historic times. Neither the Godavari nor the Pennar have revealed such concentration of estuarine Early Historic settlements as the Krishna, though it is entirely possible that prospections along the under-explored Pennar bring to light more riverine sites. Furthermore, as Fig. 37 shows, the distribution of deposited Mediterranean material in Andhra Pradesh has its maximum concentration in the lower Krishna area. This concentration of Mediterranean artefacts in an estuarine area having excellent harbour/anchorage facilities and deep inland navigability suggests an appreciable level of Indo-Mediterranean commercial interaction in the lower Krishna basin.

Some scholars have seen the natural southward extension of the Bharuch-Paithan-Ter route (discussed above) as entering the eastern Deccan through the upland area of western Andhra Pradesh, specifically by way of Kondapur or in vicinity of modern Hyderabad (Fleet in Schoff 1912/1974:196; Ray 1983:2; Casson 1984:212) and then dipping further south to follow eastwards the course of the Krishna from the point of its confluence with the Tungabhadra. Fig. 39 shows the distribution of Mediterranean trade indicators (from sites or surface) in the integrated western/eastern Deccan region. From this distribution pattern we conceive an archaeological basis for the above route in the "functional" interlinkage of Mediterranean find-spots along Bharuch - Kamrej - Nasik - Nevasa - Paithan - Ter - Kondapur- Kudavelli - Nagarjunikonda/Yelleswaram - Ghantasala - Vaddamanu - Dharanikota. Alternately we can follow the artefactual distribution along Bharuch - Maheshwar - Bhokardan - Paithan and then south as detailed above. This is more or less the route suggested by Fleet (in Schoff 1912/1974:196) according to whom the Indo-Mediterranean trade commodities going from eastern Deccan (specifically from near Hyderabad) proceeded "through Ter, Paithan and Daulatabad, to Markinda (in the Ajanta Hills). Here the main difficulties began, through the western Ghats, over the 100 miles to Broach" (see also Deo and Gupte 1974:3).

Starting from the Krishna estuary, we can also visualise a trade route which went beyond the Tungabhadra-Krishna confluence and split into segments determined by the courses of the Tungabhadra, Krishna and Bhima (Fig. 39). Again taking Kudavelli as a major transit centre the following segments are proposed: Kudavelli - Veerapuram - Brahmagiri - Chandravalli ? going south with the Tungabhadra and another following the Krishna-Bhima contour through Maski and Sanatti to touch the Western Deccan sites of Karad, Brahmapuri and Vadgaon (Routes E+H in Fig. 39).

The course of the river Godavari, like the Krishna, takes a trans-peninsular route integrating the eastern and western Deccan. Fleet (in Schoff 1912/1974:196) has projected a trade route starting from Vinukonda in southern Kalinga, cutting across the lower-middle Godavari Valley to dip south towards Hyderabad and then join the arterial Ter-Paithan-Bharuch route detailed by the *Periplus*. However Mediterranean artefacts are under-represented along this route and there is a substantial gap between Rajamundry (where *terra sigillata?* is reported, IAR 1979-80:1) and the next Roman material finds at Peddabankur and Dhullikatta in the middle Godavari basin. However, north-east of Rajamundry we see regular deposition of

Mediterranean material upto the important Orissan ports of Palur / Manikpatna and beyond (Route I in Fig. 39).

The accessibility provided by the eastern Deccan rivers, particularly the Krishna, to move trade-goods across a trans-peninsular axis seems to have been exploited by those involved in Indo-Mediterranean commercial exchange. From this perspective we can view the Mediterranean artefact concentration on the Krishna estuary as symptomatic of a "forward" staging area for Hellenic trading interests. The trans-peninsular land route must have functioned in conjunction with Roman seaborne commerce on the active on the east coast upto Bengal.

#### 4. Summary

Compared to the southern, western and eastern zones, the northern Indian sub-region records a sparse distribution of Mediterranean artefacts. The spread of Roman artefacts north of the Vindhyas neither reveals the 'concentrations' evident in Roman coin deposition in southern and eastern India nor the 'regularity' of occurrence in stratigraphic contexts as in southern and western India. The lack of significant presence of artefactual indicators of Roman contact in spatial and stratigraphic contexts of the northern Indian Early Historic horizon precludes the nature of analysis undertaken for other sub-regions.

However, even though Roman artefactual distribution is meagre in north India, the many references in the *Periplus* to northern Indian and Central Asian trade-goods and trade-routes provide scope for corroboration with archaeological data (Table 13).

At various points of the present study, the involvement of northern India in Indian Ocean trade has been discussed. Trade-commodities of north Indian and Central Asian origin have been discussed in Chapter III (see especially Fig. 15). In Chapter IV we attempt to relate some of the artefacts from the site of Ban Don Ta Phet with material recovered from the Middle Ganga zone. The implications of PGW and NBP finds in Sri Lanka were also discussed. In the present chapter, we have discussed the integration of port-sites in lower Bengal with the Early Historic material culture of northern India and alluded to trading communities like the *Salankayanas* dispersed along the trans-Gangetic overland route connecting the Taxila region with coastal Bengal and Orissa. Similarly, we have discussed the use of land routes between the Indo-Gangetic uplands and littoral-regions of western India.

To recapitulate, this chapter tries to offers insights into the operation of long distance Mediterranean commerce in India through interpretation of artefactual indicators of trade appearing in spatial and stratigraphic contexts.

**Table 13. Artefacts of Mediterranean origin found in northern India, Pakistan and Central Asia.**

Coin references mainly from Wheeler *et al.* 1946: 116 - 121; Turner 1989

| Region            | Mediterranean Artefacts                                                                                                                                                                                                                                                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rajasthan         | Amphora handle from Gilund                                                                                                                                                                                                                                                                                                                              |
| Uttar Pradesh     | Coins of Diocletian from Allahabad; coin of Carinus (minted A.D. 283-4) from Mirzapur; copper coin of Numerianus (A.D. 283) from Chunar; copper coin of Diocletian from Kannauj; gold coin of Caracalla from Mathura; stamped handle-fragment of a Dressel 3 amphora from Mathura                                                                       |
| Madhya Pradesh    | 2 aurei of Commodus (A.D. 192) from Bilaspur                                                                                                                                                                                                                                                                                                            |
| Northern Pakistan | 7 Republican denari and 5 aurei of Imperial Roman period from Manikyala stupa in Punjab province; hoard of denari, the latest of Hadrian from Pakli, N.W.F.P.; denarius of Tiberius from Taxila; fragment of amphora from Sirkap, Taxila                                                                                                                |
| Afghanistan       | 3 Roman aurei from Ahin Posh stupa, Jalalabad; an aureus of Trajan from Shevaki near Kabul; 5 solidi from Tope 10 at Hadda (the solidi have been identified as imitations of Roman solidi); Roman bronze and alabaster statuary and glassware from Begram.                                                                                              |
| Central Asia      | Coin of Nero in Uzbekistan; Roman denari of 1st-2nd century A.D. from Tadjikistan; 3rd century A.D. denari of Aurelian Augustus from Kazakhstan; a hoard of denari from Vespasian to Hadrian in Kirghizia; a die of Diocletian near the Issyk-Kul lake and gold coin of Tiberius from Tillya-tepe; Roman glassware in Central Asian 'Silk Route' sites. |

Within the spatial context, the penetration of Roman commerce is perceived in the regular distribution of Mediterranean artefacts along traditional land routes of Early Historic India. The overland routes connected resource-areas of raw materials and production centres of export-commodities with ports and emporia on the western and eastern Indian seaboards. The major highways of Indo-Roman commerce detailed in the *Periplus* have been delineated through the 'distributional' logic. In this context, we find the *Periplus*' reference (*PME* 51) to the trans-peninsular route connecting the port of *Barygaza* / Bharuch with 'market-towns' of *Paethana* and *Tagara* and beyond sharply outlined by Roman artefactual distribution from Bharuch through Paithan/ Ter / Kondapur to estuarine sites on the Lower Krishna Valley (Route C+H in **Fig. 39**). Similarly, the reference in the *Periplus* (48) to goods coming to Bharuch from *Ozene* Ujjain alludes to the land-route reaching urban centres in north India. We have traced the distribution of Mediterranean artefacts along this route from Bharuch through Ujjain to Mathura (Route B in **Fig. 39**). The *Periplus* also alludes to land-routes traversing the Gangetic Valley and the north-east of India to reach ports in Lower Bengal (*PME* 64-65). The archaeological evidence for the use of these routes for transporting 'sea trade' commodities has been discussed (Route J in **Fig. 39**).

While we have attempted to set out an archaeological basis for the existence of the '*Periplus* routes', the functioning of certain other routes in Indo-Roman trading networks can be discerned primarily by the distribution of Mediterranean artefacts along these routes. These routes are specified in **Fig. 39** as Routes A, D, E, F, G, I. The relation of these routes to resource-areas of export-commodities has also been discussed.

Within the stratigraphic context, we find a concordance between a 'spurt' in urbanisation (reflected in rise in building and industrial activity) and appearance of material indicators of Roman contact in Early Historic horizon in western India. This dynamic inter-connection, observed in the Early Historic profile of Nevasa, is found to recur in a number of settlements in western India. The stratigraphic connections observed at Nevasa and other excavated sites points to a 'catalysis' of processes of urbanism in western India due to 'beneficent' impact of Roman sea trade.

In south India, the type-site of Arikamedu is discussed in the light of the utility of its stratigraphy for situating and understanding Indo-Roman trade dynamics in this region. The essential elements of the Arikamedu stratigraphy (as defined by Wheeler and Casal) are found to be in consonance with the Early Historic horizon in South India. The analysis highlights the Russet Coated Painted Ware (RCPW) as an important ceramic of the south Indian Early Historic whose occurrence is marginal in

the Arikamedu strata. The evidence of Arikamedu and other contemporaneous sites is integrated into a macro - stratigraphic framework in order to precise the point of Roman trade contact in the region.

The dynamics of Indo-Mediterranean commerce seems to have been determined by the different "orientations" of the Early Historic culture-complexes of the Bengal, Orissa, Andhra sub-regions. The lower Bengal area was firmly integrated with the Gangetic Zone and received regular commercial traffic from the Silk Route crossroads in the north-west of the Indian subcontinent. Early Historic Orissa, as the evidence from Sisupalgarh and associated sites indicates, became more entrenched into the settlement pattern of the Deccan after early (Mauryan, 3rd century B.C.) linkages with the Gangetic zone. The trade-ports of *Kalinga* drew commodities from a vast hinterland covering the forested tribal area of north-central Deccan, the Chota Nagpur plateau and the Godavari Valley. The Andhra region has to be primarily seen in terms of contiguity with the western Deccan/Maharashtra. In this context, the function of the river Krishna as a major commercial waterway for trans-peninsular trade facilitated the penetration of Roman trade into the eastern Deccan and further east.