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Paiyampalli, Tamil Nadu: An Archaeological and Cultural Study of a Neolithic – Megalithic Habitation Cum Burial

Dr. B. Sheeba Kumari[1]

[1]Assistant Professor, Department of History, S. T. Hindu College, Nagercoil, Kanyakumari District, Tamil Nadu

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Abstract: Paiyampalli is a small village in Tirupattur taluk of present-day Tirupattur district (formerly part of Vellore / North Arcot district), Tamil Nadu, situated about five kilometres east of Barugur and eight kilometres west of Natrampalli on the Bengaluru– Chennai trunk route. The site is archaeologically significant as one of the few stratified habitation-cum-burial locations in northern Tamil Nadu that preserve an unbroken cultural sequence from the Neolithic through the Megalithic Iron Age. Excavations conducted by the Archaeological Survey of India under the direction of H. D. Sankalia and later under S. R. Rao, in the field seasons of 1964– 65 and 1967– 68, exposed two principal cultural periods, designated Period I (Neolithic, further divided into Phases A and B) and Period II (Megalithic). Radiocarbon determinations placed Period I at approximately 1390 ± 200 BC and Period II at approximately 315 ± 100 BC, though later reassessments extend the Neolithic occupation to around 1800– 2200 BC. Period I yielded ground and polished stone tools, bone implements, terracotta figurines including a long-horned cattle figurine, and hand-made grey ware, alongside charred remains of horse-gram and green-gram that attest to an early agro-pastoral economy. Period II is marked by Black-and-Red Ware, all-black and red wares, russet-coated painted ware, solenoid cists, cairn-circles and urn burials, together with an unusually large quantity of iron slag, ore and finished implements such as sickles, chisels, nails, lances and daggers, indicating in situ iron smelting. This makes Paiyampalli one of the earliest firmly dated find spots for the local introduction of iron technology in north-western Tamil Nadu. This paper synthesises the excavation reports and subsequent scholarship on Paiyampalli to present a consolidated account of its stratigraphy, material culture, chronology, economy and burial practices, and situates the site within the wider framework of South Indian Neolithic and Megalithic studies.

Keywords: *Paiyampalli, Tamilnadu Archaeology, Neolithic Culture, Megalithic Culture, Iron Age, Black and Red Ware, Archaeological Survey of India.*

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I. INTRODUCTION

The archaeology of Tamil Nadu is characterised by a long sequence of habitation extending from the Palaeolithic through the historical period, with the transition from a subsistence economy based on stone tools to one incorporating metal technology forming a particularly important research problem. Among the sites that document this transition, Paiyampalli occupies a distinctive place because it preserves, within a single stratified sequence, evidence of both the Southern Neolithic culture and the subsequent Megalithic Iron Age culture. Unlike many megalithic sites in the region that are known chiefly from burial remains, Paiyampalli offers evidence of both habitation and burial, allowing archaeologists to examine settlement organisation, subsistence strategies and mortuary practice within the same locality.

The site was first brought to scholarly attention through surface exploration in North Arcot district, and was subsequently excavated by the Archaeological Survey of India (ASI) in two seasons, 1964 – 65 and 1967 – 68. These excavations remain the principal source of information on the site, and later syntheses of South Indian Neolithic and Megalithic archaeology draw heavily upon the stratigraphic and art factual data recovered there. This paper reviews and consolidates that evidence, drawing on the published excavation reports in Indian Archaeology – A Review (IAR) and subsequent academic literature, in order to present an integrated account suitable for reference in comparative regional studies.

- *Location and Geographical Setting*

Paiyampalli lies at approximately 12° 30′ N and 78° 36′ E, in Tirupattur taluk of Tirupattur district, Tamil Nadu

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(the taluk was earlier administered under Vellore and, before that, North Arcot district). The village lies about five kilometres east of Barugur and eight kilometres west of Natrampalli, on the historic route connecting Bengaluru and Chennai. The surrounding landscape is one of undulating plains bounded by hill ranges, including outliers of the Shevaroy Hills to the west and south, which would have supplied both raw stone material and access to varied ecological niches for a mixed agro-pastoral economy. The site's position astride a long-distance overland route may also have facilitated its role in the diffusion of new technologies, including ironworking, into the interior of northern Tamil Nadu.

➢ *Excavation History*

The habitation-cum-burial mound at Paiyampalli was first excavated by the Archaeological Survey of India in the 1964– 65 field season, as part of a broader programme of exploration in North Arcot district. This first season established the presence of two distinct cultural periods, a Neolithic Period I and a Megalithic Period II, and produced the first radiocarbon determinations for the site. A second season of excavation was undertaken in 1967– 68 by the Southern Circle of the Survey, headed by S. R. Rao, specifically to resolve outstanding questions from the earlier dig. The renewed excavation was designed with five explicit objectives: to obtain more data on the nature of dwellings in both cultural periods; to ascertain methods of disposal of the dead; to confirm the apparent absence of metal in Period I; to investigate the role of the blade industry within the Neolithic complex; and to determine whether any time-lag, and consequent overlap in ceramic traditions, existed between the two periods.

The renewed work confirmed the previously established cultural sequence and refined the internal phasing of Period I into two sub-phases, A and B, corresponding to layers 9 – 8 and 7 – 5 respectively. Iron artefacts were recovered from the upper layers of Phase B (layers 6a, 6 and 5), found in direct association with Megalithic Black-and-Red Ware, Neolithic grey ware and polished stone axes, which prompted subsequent re-examination of the disputed absence of metal in the earlier Neolithic occupation.

II. STRATIGRAPHY AND CULTURAL SEQUENCE

➢ *Period I: The Neolithic Occupation*

Period I at Paiyampalli is represented by approximately one metre of cultural deposit and is divided into Phase A (layers 9 and 8) and Phase B (layers 7, 7a, 6, 6a and 5). The material assemblage of Period I comprises ground and polished stone tools, including axes with pointed or truncated butts, stone pounders and polishers, a stone chisel and a hoe. Bone tools were also recovered, particularly in the earlier Phase A, and were progressively supplemented by improved implements and better hut construction in Phase B, indicating a gradual improvement in living conditions through the Neolithic occupation.

Ceramic evidence for Period I consists predominantly of hand-made grey ware, occasionally burnished and painted on the rim with red ochre, with some sherds showing an orange-to-pink surface tint. Common vessel forms include lipped bowls, vessels with flaring mouths, storage jars, and dough-plates of thick, gritty red ware. Other finds include terracotta beads and a terracotta figurine representing a long-horned variety of domestic cattle, which, together with charred grains of horse-gram (kulthi) and green-gram recovered from Neolithic levels, points to a settled economy combining cereal and pulse cultivation with animal husbandry. Radiocarbon analysis of charcoal samples from Period I produced a determination of approximately 1390 ± 200 BC, though comparative regional chronologies proposed in later scholarship have suggested that the Neolithic occupation at Paiyampalli may extend back to around 1800 BC, with some researchers pushing associated regional phases as early as 2200 BC on the basis of comparison with other Southern Neolithic sites such as Mullikkadu.

➢ *Period II: The Megalithic Iron Age*

Period II represents the Megalithic culture and is marked by a distinct change in both mortuary practice and material culture. Burial types recorded at the site include solenoid cists, cairn-circles and urn burials, reflecting the variety of megalithic burial architecture known across the wider South Indian Iron Age. The associated pottery assemblage is dominated by Black-and-Red Ware, together with plain red ware and an all-black ware; a comparatively thin but coarse red ware painted in chocolate colour occurs in unusual abundance at the habitation area, distinguishing the Paiyampalli assemblage from otherwise similar megalithic pottery traditions elsewhere. Russet-coated painted ware appears in the later levels of Period II.

The most significant feature of Period II is the evidence for local iron production. Excavators recovered an enormous quantity of iron slag and unworked ore distributed across the site, together with finished implements including sickles, spearheads, chisels, nails and axes from the habitation area, and swords, lances, javelins and daggers from burial contexts. This concentration of smelting debris, rather than finished imports alone, indicates that the Megalithic inhabitants of Paiyampalli smelted iron on site, probably from around 500 BC. The radiocarbon date obtained for Period II, approximately 315 ± 100 BC, together with this metallurgical evidence, has led scholars to regard Paiyampalli as providing a firm chronological datum for the local introduction of iron technology in north-western Tamil Nadu.

III. SUMMARY OF MATERIAL CULTURE BY PERIOD

Approx. date | c. 1390 ± 200 BC (possibly to 1800–2200 BC) | c. 315 ± 100 BC (iron use from c. 500 BC).

Pottery | Hand-made grey ware, rim-painted with red ochre | Black-and-Red Ware, red ware, all-black ware, russet-coated painted ware.

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Tools | Polished stone axes, pounders, polishers, chisel, hoe, bone tools | Iron sickles, chisels, nails, axes, spears, lances, swords, daggers.

Subsistence | Horse-gram, green-gram cultivation; cattle herding | Continuity of agro-pastoral economy with metal tools.

Mortuary practice | Not clearly established | Dolmenoid cists, cairn-circles, urn burials.

Distinctive evidence | Terracotta long-horned cattle figurine, terracotta beads | Large-scale iron slag and ore indicating on-site smelting.

Overall, the excavation record from Paiyampalli contributes to two major debates in South Indian archaeology. The first concerns the internal development of the Southern Neolithic culture, for which Paiyampalli provides one of the clearer stratified sequences documenting a gradual transition from a simpler Phase A assemblage to a more developed Phase B, accompanied by improvementsin dwelling construction and tool inventory. The second, and arguably more significant, concerns the timing and mechanism of the introduction of iron technology into the Tamil region. The recovery of iron artefacts in direct stratigraphic association with late Neolithic grey ware in Phase B levels initially raised questions about whether metal use had begun earlier than previously assumed within the Neolithic sequence itself, prompting the ASI to design the 1967– 68 season specifically to test this possibility. While the renewed excavation broadly confirmed the integrity of a metal-free Period I, the presence of transitional levels underscores that the shift from stone to iron technology at Paiyampalli was not an abrupt replacement but occurred over a discernible interval.

The scale of iron slag and ore recovered from Period II deposits is unusually large in comparison with other contemporary megalithic sites in the region, suggesting that Paiyampalli may have functioned as a local centre of iron production rather than merely a consumer of imported metal goods. This has implications for understanding the spread of ironworking technology across the northern Tamil Nadu uplands and its relationship to similar developments documented at other South Indian megalithic sites such as Adichanallur, Brahmagiri, Hallur and Maski, with which Paiyampalli shares broad similarities in burial architecture and pottery typology while retaining locally distinctive features such as the chocolate-painted coarse red ware of the habitation deposits.

IV. CONCLUSION

Paiyampalli remains one of the key reference sites for understanding the Neolithic-to-Megalithic cultural transition in northern Tamil Nadu. Its excavated sequence documents a settled Neolithic agro-pastoral community that gave way, after an interval reflected in transitional deposits, to a Megalithic Iron Age population practising diverse burial rites and, notably, on-site iron smelting on a substantial scale. The site therefore anchors both the regional Neolithic chronology and the chronology of iron's local introduction, and continues to serve as a comparative benchmark for subsequent excavations of Neolithic and Megalithic sites across Tamil Nadu, including more recently investigated sites such as Chennanur. Further scientific dating and renewed field investigation, applying modern archaeometric and archaeobotanical methods, would help refine the site's chronology and its precise place within the wider network of South Indian Iron Age settlements.

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Feature	Period I (Neolithic)	Period II (Megalithic)
Approx. date	c. 1390 ± 200 BC (possibly to 1800– 2200 BC)	c. 315 ± 100 BC (iron use from c. 500 BC)
Pottery	Hand-made grey ware, rim-painted with red ochre	Black-and-Red Ware, red ware, all-black ware, russet-coated painted ware
Tools	Polished stone axes, pounders, polishers, chisel, hoe, bone tools	Iron sickles, chisels, nails, axes, spears, lances, swords, daggers
Subsistence	Horse-gram, green-gram cultivation; cattle herding	Continuity of agro-pastoral economy with metal tools
Mortuary practice	Not clearly established	Dolmenoid cists, cairn-circles, urn burials
Distinctive evidence	Terracotta long-horned cattle figurine, terracotta beads	Large-scale iron slag and ore indicating on-site smelting