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Archaeology of Durgadevi : A Proto-Historic Settlement, Odisha

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Abstract: The present research paper is based on the archaeological excavations carried out at the Chalcolithic, Iron Age and Early Historic settlement site of Durgadevi, located in the northern part of Odisha in Remuna Tehsil of Balasore District. The two sessions horizontal excavation(2020-21 and 2021-22) revealed interesting archaeological evidences like fortification, irrigation system, domesticated rice, stone and brick structures, pottery of divergent wares and antiquities. The site has been dated by absolute methods by BETA Research Laboratory, USA which provides an absolute date of 1350 BCE for the Chalcolithic period and 800 BCE for Iron Age/Early Historic period. An overview of the excavation result is discussed here.

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INTRODUCTION

The ancient habitation site Durgadevi (DDI) was subjected for excavation by the Odishan Institute of Maritime and South East Asian Studies (OIMSEAS), Government of Odisha with an objective to find out the mechanism of development of society and culture in its incipient stage, as no such major archaeological investigation has taken earlier in this part of Odisha. From the surface explorations, it was ascertained that the pottery samples are of Chalcolithic period and the existing two square kilometre mud fortification around the site, prompted us to take up the excavation in the year 2020-21 which continued for two sessions to understand the nature of the site and its historical contribution to the cultural development of India in general and Odisha in particular.

Pre and Proto Historic Excavations in Odisha are very scanty and in a late, the Neolithic and Chalcolithic sites were taken up for excavations, particularly after 1990s. Now, the Neolithic and Chalcolithic Cultural phases are becoming distinct. As few works in this line has undertaken earlier since the time of P. Acharya, who reported the first Neolithic - Chalcolithic artefacts from Baidyapur and other places of Odisha in 1923-24 and afterwards excavation was conducted at Kuchai, Neolithic Site by Archaeological Survey of India in 1962-63,and then at Sankerjang by State Archaeology and Utkal University in 1990 and 1993.(Yule 1990,Basa& Mohanty,2000). Major excavations at Chalcolithic sites were conducted by Archaeological Survey of India at Golbaisasan,1990-91,(Sinha,1993) Gopalpur (Kara,1996) Suabarei,2014-15 (Patnaik, 2016), Bharatihuda,2018-19 (Garanayak *et.al.* 2020). Again,

with the help of OIMSEAS, Utkal and RavenshawUniversities conducted excavations at Harirajpur (Banga) in 2013-14 (Basa *etal*. 2018) and Deltihuda in 2016-17.(Kingwell-Banham Eleoanor, *etal*. 2021). Besides, Sambalpur University has conducted excavation at the sites like Khameswaraplai (1998), Sabulia (2015), Badmal, Tarapurgarh and some other sites in middle Mahanadi valley during the years 2010 to 17.(Behera*etal*.2017) All these sites fetch a clear picture on transition of society from agricultural settlement and use of iron in second and first millennium BCE. But none of these sites have a specified strong portrait of phase wise transition from rural base society to emergence of urban settlement with fortification.

In recent years, the Odishan Institute of Maritime and South East Asian Studies documented several early historic urban sites of Odisha to understand the process of early historic dynamism on maritime and urban history. The prominent early historic urban centres like Radhanagar in Jajpur district, Sisupalgarh and Talapada in Khurdha district, Jaugarh and Lathi in the Ganjam district, Dantapuram in Srikakulam district (Andhra Pradesh), Asurgarh, Budhigarh, Taraporegarh etc. in the Western Odisha have been documented. These Urban centres flourished in between fourth century BCE to fifth –sixthcentury CE whichun folded many new ridges of history such as the process of urban growth, flow of ideas and images, trade and commerce, trance-oceanic cultural interaction and so on. (Patnaik, 2021).The main objective of this excavation was to trace the early historical settlements in North Odisha beyond the river Baitarani to connect Ganga Valley at least up to the port site of Tamralipti (Tamluk). Thus, the exploration (2018-20) and documentation in North Odisha at Durgadevi and Ranasahi in Remuna Tahesil of Balasore District, revealed traces of early historic fortified settlements. Since, the district is known for its maritime activities from the early part of the Common Era to the late medieval period, no such prominent major early historic sites have been documented previously in this region, prior to the discovery of Durgadevi and Ranasahi. Simultaneously, Buddhism flourished along with maritime activities in this region. Buddhist remains are found from Ayodhya, Jayarampur, Kupari, Sajanagarh, Soro, Bardhanpur etc.Several early historic sites around DurgadevilikeBhimta, K. Berhampur, Sasanga, Jayanagara have also been explored. There is a Jagannath temple located on the edge of a mound at Sasanaga while a mound with fortification is visible in the heavily disturbed cultivable land at Jayanagar village, both are 10 kms. from Balasore town towards east. However, the antiquarian remains of the region were earlier reported by few other scholars, (Behera 2018, Mohnatyet.al, 2006).

A team of scholars and archaeologists of OIMSEASassisted by, Sri Abhisek R.Das, Sri KailshBhoi, and Sri S. K. Behera, Draftsman participated in the excavation.Dr.SantanuVaidya and Soumya Shree Maharana of Deccan College Pune took part in the excavation. Senior archaeologists Dr.A.K. Patel and Dr. J. K. Patnaik extended their academic and technical inputs in the course of excavation.

THE SITE

The site can be approached from Balasore on Remuna Bazar Road and further via Hatiaganda square, on left, leading to Durgadevi at a distance of 20 kms. The village Durgadevi, named after its presiding deity of the locality, has a habitation of about 500 households having four hamlets. The present day village is located within the ancient fortified enclosure, some portions on the north-western margin being disturbed due to modern habitat. The open area of the site is marked with seasonal agricultural activities.

As the area is rich with the agricultural activities, paddy is grown abundantly. Prior to the excavation it was observed that a pond on the northern side was being under digging operation by the

locals in the core area of the fortified enclosure and dug up to a depth of about 4 meters in an area of 200 x 80 meters. Except from the northern side of the pond, other sides contain cultural material like potsherds of different wares like red-slipped burnished ware Turquoise coloured fine ware, superfine grey ware, red polished ware, burnished black slipped ware, and other wares as confirmed from our pre-excavation survey and documentation.

The entrance road, approaching to the site, has cut through the eastern side fortification at the present day village of Udayapur, a hamlet of the large village of Durgadevi. It is observed that the unusual mud fortification, constructed covering an area of 4.5 kms in circumference with an extensive habitation area of 2 kms in width, within the fortification wall in north-south and east-west direction. The height of the fortification is about 9 meters with a width of 30 meters. A moat encircles the sites which can be observed at various parts of the outer fortification. (Fig. 1). However, the eastern side fortification on its outer side is seen slope of about 20 meters and touches the moat where water still flows and somewhere diverted with check dams that connects to new water channels. On the western side, the fortification is disturbed as a road has been constructed. A small pond is also found adjoining the fortification on western limit, which was part of the moat.

A B C

Fig. 1: A.Location of Durgadevi Site, B. Aerial View of Fortification, C. Grid Pattern

The fortification is further disturbed towards south and water channel of the rivulet Prasanna, a small distributary of the river Sono, enters inside the fortified area, perhaps a part of the old water channel would have served as water source to the site. Similarly, on the North-Eastern tip of the site another rivulet, the Gangahara, a distributary of the River Burhabalang flows on. These two water resourcesserved the settlers for their sustenance and the fortification could have supported for balanced use of the water for irrigation purpose which is a unique feature of the site. One village named Kudia with a few houses (10 to 15) forming a hamlet is located adjoining to the fortification on its southern side. A potters village, Gududa having more than 200 households, located at a distance of two kms from the site on the bank of the rivulet Prasanna. The potters still manufacture earthen vessels quite similar to those found from the excavation.(Nayak, 2022).

THE EXCAVATION

The excavation process was carriedout on a habitation mound measuring 300 mtrs x 200 mtrs within the fortified enclosure where a school is running with a modern building nearby. This location was selected because of maximum habitation deposit of about 4 meter as determined from the exposed

section. The trenches (10 x10 mtrs) were laid in east -west direction after thorough survey with total station mapping with a contour plan to carry out a horizontal excavation. Further extension was undertaken by cross section excavation at the north -western margin on the fortification to ascertain the phases of construction. Again, a few trenches were laid down within the core area on the agricultural field. At the end of the second session's excavation three cultural phases were defined.

A total of 17 trenches were laid out and excavation was concentred three trenches. In two trenches the operation was more concentrated with depth of 3.56 meters and in another one 2.85 meters. The excavation at the three trenches YJ-1, XJ-1 and XE-1, mostly in two trenches marked three occupational phases with a break between the Iron Age the Chalcolithic measuring one meter. These are 1. Chalcolithic Period 2,Iron Age and 3, Early Historic Period.In between Chalcolithic and Iron Age there is a distinct gap of one meter.The description of the strata here is from top to bottom.(Fig.2).

Fig. 2: Excavation Operation

The topmost phase marked with Early Historic cultural material up to a depth of 0.76 meter excluding the surface humus. The cultural materials represented mostly with potteries of red ware, red polished ware,black slipped ware, grey ware, fine grey ware, terracotta ear studs, bangles, beads, hopscotch, stopper, gamesman, wheels and some conical objects.A Few terracotta figurines have also been recovered. An exquisite human figure of stone with royal attire have been found which is the positive indicator belongs to second-first century BCE.(Fig.3a).The stratigraphy of this phase represented with layers 1 & 2 from a depthof 0.14 to 0.76 mtrs.

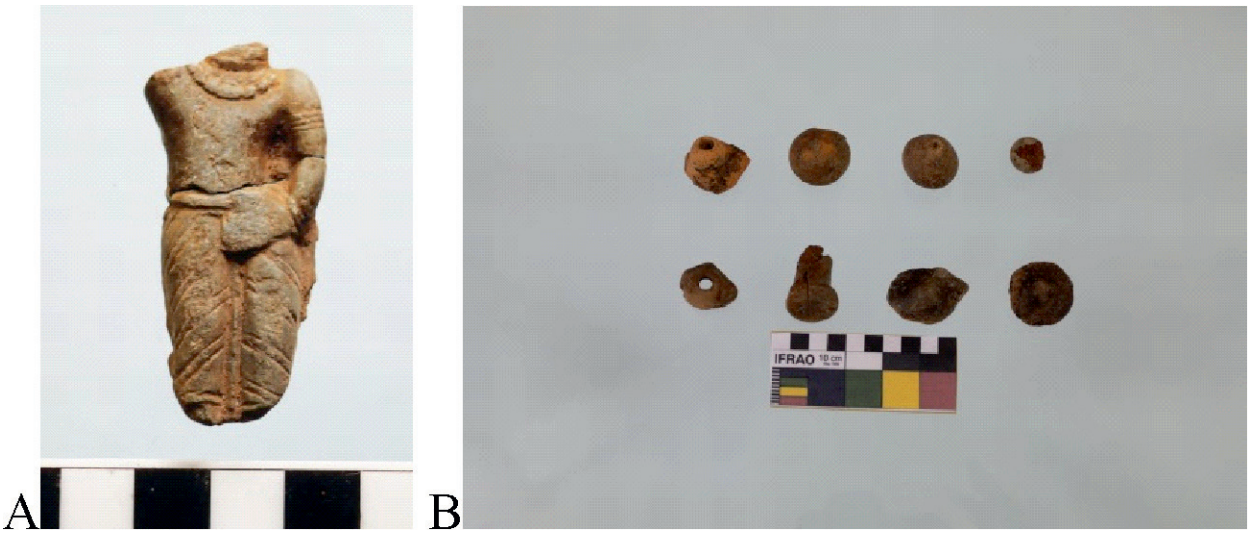

Fig. 3: A. Human Figurine, (stone) B. Terracotta objects

The Second phase is marked with Iron Age which is represented the stratigraphy with layers3 of the trench no XJ.1 and YJ.1 with a depth from 0.76 to 1.08mtrs.The soil pattern is loose, ashy with granules. This layer is marked prominently with ashy soil. It occursin all most all trenches.The cultural materials such as potteries are represented with superfine, fine and coarse grey ware, black and red ware, fine black ware with slip, red ware and red slipped ware. Rusted Iron objects like nails, chisel, bangle, points, iron and copper slags were recoveredbesides few copper objects(large blade ?)and terracotta beads,stopper, sling-shat, hopscotch, ear stud etc.(Anx.1). Maximum terracotta hopscotches are unearthed from this level. The second phase is represented with Iron using period and the date assigned is from 800 to 200 BCE.

Fig. 4: A. Iron objects B &C. Terracotta Objects

There is a gap of measuring 1.08 to 2.07 meter representing layer 4, 4a & 4b. In layer 4 the soil is reddish, compact, sticky devoid of antiquities. Layer 4a & b is more raddish than layer 4 having a slightly whitish or greyish leaned indicating twice dumping of the reddish soil. The layer seems to be deliberately accumulated earth of natural soil which is reddish in colour with yellowish patches. Most probably the habitational area has been raised by accumulating earth of natural soil. This has been done in phases as indicated as 4, 4A &4B.This seems the layer represented with beginning of iron age period.

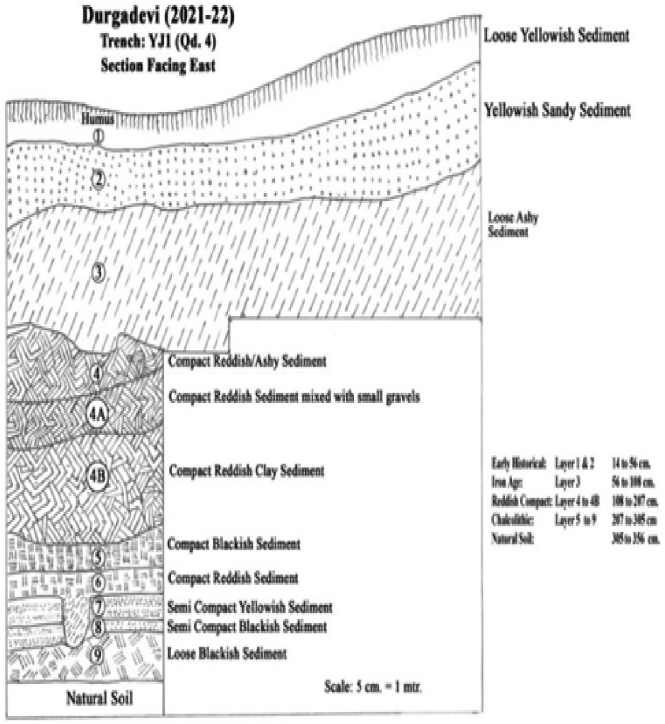

Fig. 5: Index Trench

The third phase is represented with layers 5 to 9 having a depth from 2.07 to 3.56 mtrs. This phase is represented with a circular structure possibly remains of wattle-and –daub hut in one trench at a depth of 2.60 meters. A well rammed with lime plastered floor was also traced.A post-hole has been noticed, sealed by the artificial deposit of layer (6), most probably by the habitation of layer (5). The post-hole cuts up to the middle of layer (9). This post-hole indicates the thatched structure with the erection of wooden poles. The potteries of this phase are represented with black painted red ware(wavy designs), chocolateslipped ware and black and red ware,black slipped ware coarse red and grey wares.is represented with variety of ceramics. The ceramics are of typical Chalcolithic. From the Chalcolithic phase crude variety of Terracotta ear stud, beads were found, however the fine variety of wavy design painted Black on Red ware shreds have been reported from the lower level of this phase.The Chalcolithic phase yielded fine variety of pot shreds, however only 3 numbers of copper objects were recovered. Besides the above antiquities from the Chalcolithic level few crude variety of terracotta beads and stone beads were also found from the excavations. The majority of terracotta beads are of circular shape including one areca nut shape. The stone beads are of either circular or barrel shape including one banded agate barrel shape bead found from the lower level of the site.

Fig. 6: Terracotta Beads and objects

EXCAVATIONS AT THE FORTIFICATION

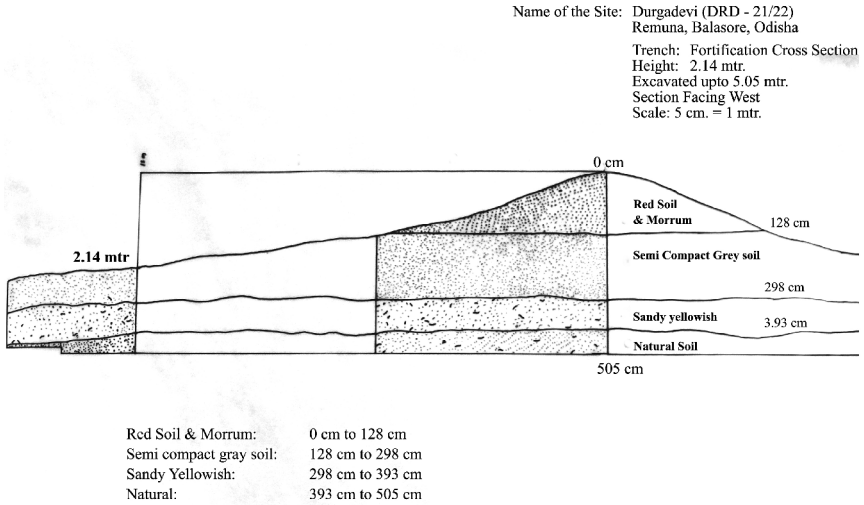

Fig. 7: Northern Fortification

To understand the nature and composition of filling martials and the construction pattern of the fortification, the corner area on the North-Eastern side wasselected for cross cutting in the upper portion which was already exposed earlier up to a depth of 3.17 meter.The height of the fortification

from existing surface level is 6.34 mtrs.The composition of the cutting is kanker and stone nodules which is similar to other early fortifications found at Radhanagar, Jaugarh, Talpada.After 3.17mtr, the digging and section scrapping has gone up to further 3.56mtrs to reach the natural soil (Fig.). Here,the composition of the fortification consists of 1, Sandy soil up to 0.26 mtrs, Loose soil 0.26 to 0.49 mtrs, Hard soil 0.49 to 117 mtrs, Black compact soil 108 to 2.07mtrs, and Red compact soil 157 to 247 mtrs. Thus, the construction pattern of the fortifications as revealed is mud andno brick or stone was encountered .The fortification belongs to the second phase of the site i.e Iron Age.Similar fortification of Iron Age is determined at the excavated site of NarlaAsurgarh (Garanayak 2019).

Fig. 8: Cross Section Cutting in the Northern Fortification.

EXCAVATION IN THE NORTHERN AREA (DDI-3)

To understand the nature extended area on the Northern side an trench YF-33 has been laid out in the field which is 1.5 metre below from the surface of the trench YJ-1 of the principal mound. The excavation operation is concentred in YF. 33 Quadrant.3and four occupational layers were determined. The first layer represented with 0.20 to 0.67 metres . Layer 2 is represented with 0.67-0.91 mtrs and Layer 3 from 0.91 to 129 mtrs finally Layer 4 is from depth of 129 to 210 mtrs. The sequence is almost same with previous ones.

CULTURAL SEQUENCE

The scientific archaeological digging was carried out in the selected trenches and gone up to 3.6 meter in the index trench YJ-1. Three cultural phases from bottom i.e. Chalcolithic (c.1350 to 800 BCE.), Iron Age (c.800 to 200 BCE.) and Early Historic Period (c.200 to 100 BCE.) are marked.

CERAMIC ASSEMBLAGE

The horizontal archaeological excavations yielded a large number of pottery varieties with distinctive shapes and sizes. Some of the pottery types are typical in nature and well compared with other Protohistoric and Early Historic/Iron Age sites of Odisha as also of Eastern India.

CHALCOLITHIC PERIOD

The Chalcolithic pottery, in general, was turned on first wheel and retained a lustrous surface. They are made of well levigated clay, well fired in high temperature and produce metallic sound when struck. Besides, some pottery specimens have also retained decorations on the both exterior and interior surfaces comprising triangles, scratches, oblong patterns and striation marks. The ceramic assemblage of the site comprises of Black Slipped Ware, Red Slipped Ware, Buff Ware, Black and Red Ware, Black Slipped Ware, Fine Grey Ware and Dull Red Ware. Besides, a few sherds of Buff Ware, especially of

dishes and bowls have also been encountered from the excavation. The ceramic assemblage of the site covers both table as well as kitchen and storage wares. The shapes of the pottery cover convex sided bowls, globular pots, bowls with carination, small pots with carination at neck, dishes, platters, cups and shallow storage bins. The slip treatment of the pottery is pre-firing in nature and hence retains carburized marks at some parts of the pottery. The cooking vessels are generally thick in nature and are made of coarse clay. However, the table wares like bowls, dishes and cups have been made of fine well-levigated clay. These were pedestal goblet, perforated jar, in Red Ware. Incense burner with stand, large handi, pot with stand wide mouth pot with ledge. The red surface of Black and Red ware is provided with thick red slip since the red surface is having bright surface. Similarly, Red ware with chocolate slip found in wide mouth Dish, Lota, Storage pot, quantity of large pot with flaring rim is high.

Fig. 9: a. Black Painting on Red b. Incised Decoration Potteryc. Black & Red Ware

IRON AGE

The Iron Age and Early Historic pottery types of the site include bowls, cups, globular pots, dishes, and storage jars. The pottery is relatively coarse in nature and is thick in profile. However, some fine specimens, especially small pots and dishes retain lustrous surface. The decoration executed on the pottery comprise of strokes, *svastika* symbols, triangles and other naturalistic motifs. Besides, the Early Historic pottery assemblage is not different from the Iron Age pottery and has similar shapes and wares. The life style of this phase is marked little improved and depended on agriculture and production of various crops and led settled life. The construction of fortification is traced which signifies that the people had enough knowledge about construction of ramparts and protection enclosures. The soil of the entire Iron Age phase is marked ashy throughout the site. This is one unique features of the site. The use of iron is a land mark phase in the growth of civilization in Odisha particularly in North Odisha. There are several Iron Age sites discovered by various archaeologists in upper and middle Mahanadi valley but in North Odisha this is the first site with fortified enclosure at the earliest phase.

Fig. 10: Burnished Black Slipped Ware and Red and Grey Wares

EARLY HISTORIC PERIOD

The cultural materials of this Early Historic phase are represented with pottery specimens of Red Ware, Red Polished Ware, Black Slipped Ware, Course Grey Ware, Fine and Super Fine Grey Ware, Terracotta Ear Studs, Bangles, Beads, Hopscotch stopper, Gamesman, terracotta wheels and some conical objects. The life styles of the people derived from the cultural materials are very improved from agricultural base to trade and strengthening the existing fortification in the site.

Fig. 11: Early Historic Pottery

STRUCTURAL REMAINS

Several mud and stone structures were exposed in different trenches but having little remains in the surface.A structure of early historic period made of laterite having two courses was exposed 4.50 meter in length and 075 meter in the trench YE 3 and 4.(Fig.12 A)

A complete circular mud structure is exposed in the trench XJ-1 measures 8.98 meter in circumference and 1.42 metre in radius. This structure has two phases. The upper phase is marked with lime mixed with kannkar. The lower phase is plastered with lime followed by compact red clay. The structure was exposed at depth of 2.38 to 2.54 meter. Traces of similar structures are also notices in trenches XE-1and XG-1. These structures represent mature phase of Chalcolithic period of the site. (Fig. 12 B & C).

Fig. 12: A Early Historic Phase B& C. Circular Structure, Chalcolithic Phase

ARCHAEO-BOTANICAL REMAINS

The archaeobotanical analysis of the charred plant remains of seeds and grains collected from the stratified context of the excavated site has been undertaken by Dr.SatishNayak of Deccan College Pune.The charred plant material recovered from the trench YJ1, Quadrant 4, and have been segregated with respect to the morphological peculiarities of seeds/grains. These plant remains are likely to have been incorporated into the deposits from certain human activities.The present archaeobotanical study

provides insights into the plant foods utilized at Durgadevi, consolidating our knowledge of agriculture practised in Chalcolithic Odisha.(Naik&Patnaik 2023)

The archaeobotanical remains recorded from 21 samples of the stratified layers of trench YJ1 belonging to the Chalcolithic phase comprise rice (Oryzasativa L.), fruits fragments of Indian jujube (Ziziphus sp.) and Citrus sp. It provides limited source of information about food habits, plant-based subsistence and ancient agricultural systems in parts of Odisha. The occurrence of ferricrete balls in greater quantity suggests lateritic formations in the vicinity of the site. Lateritic weathering produces these ironstone crusts, known as ferricretes.The crops identified at Durgadevi represent kharif summer crops without any traces of winter crops. This inference corresponds with the data from GolbaiSasan originally studied by Kajale and Sinha, which led to the identification of rice (*O. sativaand Oryza sp*.). It also accords well with the data collected by Harvey (2006) and Kingswell-Banham et al. (2015) from GolbaiSasan and Gopalpur respectively.

The archaeobotanical remains recovered from the stratified layers of the trench YJ1 belonging to the Chalcolithic phase show that the settlers at Durgadevi grew rice and also ate jujube and Citrus fruits. The archaeobotanical findings is the limited source of information relating to ancient food habits and agricultural systems at this site and represents the accumulation of knowledge on the plant-based subsistence in the parts of prehistoric Odisha.(Patnaik, 2023).

However, the available of rice grains from stratified context focusupon the domestication of rice in the region of Odisha since Chalcolithic period (1300-800 BCE). According to some scholars rice became a crop in parts of Peninsular India during the Iron Age, with the earliest few finds from the Jorwe horizon on the Northern Peninsula. In the latest levels at Inamgaon in Maharashtra, dated to 1200-900 BCE, rice occurs in small quantities (Kajale 1988b). Rice agriculture may have spread southwards in eastern coastal regions, from Odisha, and then up the Deccan river towards the west. The spread of rice in South India during the Iron Age may have constituted part of a major culinary shift as well as agricultural change. The Iron Age adoption of rice was accompanied by some changes in ceramic repertoire that suggest the influence of northern Indian food traditions (Fuller, D.Q. 2005.:761-777).

DATE OF THE SITE

Three samples were submitted for Radio Carbon date to BETA Labrotory and the result is
For Chalcolithic Period
Beta - 632524 DDCRL-1,Measured Radiocarbon Ageanalysis provides dates
(86.0%) 1306 - 1124 cal BC (3330 - 3293 cal. BP)
For Iron Age
Beta - 632525 DDCRL-2
(93.2%) 1050 - 897 cal BC (2999 - 2846 cal. BP)

CONCLUSION

Thearchaeological excavations at Durgadevi has contributed considerably to understand the evolution of society as agro based rural pastoral community who were dependent on farming, forging, stock raising, along with hunting, fishing and gathering. The journey of man from savagery, barbarian, and hunter stage to food gatherer, came to an end and subsequently man became a forger, food producer and finally as stock raiser of both plants and animal substances. Afterwards, man used to lead a sedentary life as is evident from the well laid floor levels, circular huts with post holes along with a hearth. It

was fully materialized in Chalcolithic period only which led the folk to enjoy sedentary.The site has yielded a total of 452 antiquities mostly of terracotta and stone comprising of beads of various shapes, throwing discs, hopscotches, spindle whorls, iron nails, hinges, pins, glass bangles, sea shell objects, mullers, pestles, hammers, catapult pellets etc. A small number of copper objects, iron nails, figurines, beads and bangles have been retrieved. However, maximum numbers of terracotta hopscotch and polished stone tools have been found from the excavations in comparison to other antiquities. Some stone architectural fragments were also unearthed. A sum of 305 terracotta objects of Hopscotch, Gamesman, Stopper, Sling Ball, Bead, Ear Stud, Wheel, Lid, Tile pieces, Decorative pieces, Dabber, Lamp, Crucible etc. were also recovered.The majority of terracotta beads are of circular and arecanut shape. The stone beads are of either circular or barrel shape including one banded agate barrel shape bead found from the lower level of the site. The other major finding of the excavation includes iron nails, chisel, point and few glass bangle pieces are also found from the excavations.Iron slags have been found which indicate local smelting of Iron.

The well managed hydraulic system is an important feature of the site.The Chalcolithic phase show that the settlers at Durgadevi grew rice and also ate *jujuphus-jujube* and citrus fruits. This sedentary settled life ultimately facilitated to have fortified settlements that ledto the emergence of urban growth in iron age and further to Janapadas towards sixth century BCE, is well positioned in the site. All these unique features dating back from 1350 BCE to 100 BCE covering Chalcolithic, Iron Age and Early Historic phases, is a distinctive land mark in the Chalcolithic and Iron Age horizons of Eastern India.This result is akin to the theory of cultural evolution believed that all societies evolved through certain cultural stages.(Tylor, 1871).Further the Neolithic Age is characterized by the development of settled agriculture and the use of tools and weapons made of polished stones. The major crops grown during this period were ragi, horse gram, green gram, jawar, cotton, rice, and barley, handmade and slow wheel turned pottery first appeared in this age with limited shapes and sizes.Better adoption of farming and surplus food production is marked from Chalcolithic phase (Basa,1999), which is very well observed in this site particularly in the Chalcolithic phase and thence to Iron Age. The Iron Age period here in this site is more pronounced with construction of the large fortification for irrigation purpose because of food surplus which required best use of the water source and also for carving out a safe region to protect from out-side dangers. (Patnaik,2023).This feature of the site needs further academic deliberations. This site has contributed immensely the science of transition from bronze copper age to theIron Age and then to early historic phase whichis understood as how the society in Odisha evolved gradually and one of the excavated sites that proves as how the excavation reveals date and transitional phases of a particular region.

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General View of Durgadevi Excavation and antiquity analysis

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