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SOUTH INDIA'S IRON AGE CULTURES: A COMPREHENSIVE STUDY OF TELEANGANA AND ANDHRA PRADESH

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Introduction

The states of Andhra Pradesh and Telangana are located on the eastern edge of the Indian peninsula. The big rivers of the Krishna and Godavari flow through the region, apart from a few lesser ones. Geographically, the area includes the high rocky Deccan region and low-lying coastal lowlands. The earliest volcanically formed Gondwana formations are found in the Deccan area. The Cuddapah basin, which is home to limestone-rich aquatic formations, covers a portion of southwest Andhra Pradesh. Granitic stone is the basic rock found in a large area of Andhra Pradesh and Telangana. In the research area, granites have been widely employed in the construction of megalithic structures. The megaliths from the Malabar coast have attracted the interest of researchers ever since Babington released his findings on them.

The existing area has been the focus of Iron Age tomb research for more than 150 years. Captain Newbold discovered a few cist burials near Chittoor. Colonel Meadows Taylor penned many articles about the megalithic structures in the Deccan for various journals. He studied two megalithic sites, Maula Ali and Bowenpally, and published descriptions and some very remarkable line drawings. Mulheran has made information on the megaliths in the Khammam forests available. William King, a geologist by profession, authored an interesting article for the Journal of Asiatic Society of Bengal on the megalithic buildings with stone crosses (anthropomorphic sculptures) from Mungapet and Kaperlaguru in the erstwhile Nizam's Dominions.Branfill not only studied the megalithic sites in the Mysore region but also carried out an extensive analysis of the Iralabanda buildings in Chittoor. With a total of 680 buildings, this site boasted one of South India's greatest megalithic complexes when Branfill undertook the study. In his 1971 work, Venkataramanayya conducted a broad assessment of a few megalithic sites. Nagarjunakonda is one of the megalithic sites that has been thoroughly explored. These

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are a few of the first investigations into the megalithic structures found in Telangana and Andhra Pradesh.

The middle Deccan area of Telangana has a long history of producing steel and iron from ancient times. The early populations in the area must have taken use of the iron-rich mineral zones in the area to produce steel and iron.

1 Albaka, Telangana

2 Bowenpally, Telangana

3 Dongatogu, Telangana

4 Gachbowli, Telangana

5 Gajagirigutta, Telangana

6 Hanamsagar, Karnataka

7 Iralabanda, Andhra Pradesh

8 Janampet, Telangana

9 Kaperlaguru, Telangana

10 Katapur, Telangana

11 Kistapuram, Telangana

12 Komaranahalli, Karnataka

13 Konasamudram, Telangana

14 Malur, Telangana

15 Maula Ali, Telangana

16 Mudumal, Telangana

17 Mungapet, Telangana

18 Nagarjunakonda, Telangana

19 Padugonigudem, Telangana

20 Ramapuram, Andhra Pradesh

21 Shakapur, Karnataka

22 Tottigutta, Telangana

Iron production in the Telangana region has been studied since 1832, when H.W. Voysey published an essay in the Asiatic Society of Bengal detailing the process of making iron in a hamlet named Konasamudram.

At least 183 of the more than 250 sites in northern Telengana that were examined for

earlier studies on the state of Telangana's iron and steel manufacturing were found to be active in metalworking. There are two different mineral formations that contain iron ore: magnetite and laterite. Up to 60% of iron may be obtained from both minerals. It appears that the Telangana area has perfected the art of producing steel.They started using the crucible method of producing steel. The goal was to make iron more carbon-rich so that it would become more like steel. By sticking wet sticks into the furnace, they were succeeding in doing so. It's likely that the iron absorbed more carbon due to the wet sticks burning slowly, giving it steel-like qualities. 'Wootz', an Indian steel, was much sought after by the Middle East in the Middle Ages for use in making swords.

We must acknowledge that there is significant confusion around the South Indian Iron Age's beginnings and technological uptake.

The diversity of iron things suddenly reaches a point of perfection with the start of the Iron Age. The early phases of development that we often observe when a new technology is introduced in an area do not occur. On the other hand, the abundance and diversity of artifacts discovered in Iron Age tombs demonstrate profusion. This might imply that technology is being adopted from a different area where it has already reached a suitable level of development. The third theory holds that the technology has not yet been discovered in the early Iron Age sites from South India, where it may have started and evolved.

One recurrent finding in most megalithic burials in South India is a rich store of iron items. Numerous tools, weapons, and various other items have been discovered in these burials. A handful of the tools reveal the specialization of the craft and provide an understanding of the types of jobs performed by the megalithic people. Numerous agricultural implements, including sickles, ploughshares, and hoes, were discovered in multiple locations. Similar reports have been made regarding woodworking equipment, such as various types of chisels, adzes, axes, and nails. The weapons that are most likely utilized for fighting and hunting are more spectacular. Weapons such as daggers, battle axes, javelins, spears, tridents, knives, etc. can be discovered in various locations.The horse bits, harnesses, and decorations imply riding and vigorous martial arts practice.

A History of Iron Age Culture

Different dates have been assigned to the Iron Age tribes in South India; these dates mostly fall between 1500 and 300 BC. This is only an approximate range of dates that may be accessed from different sites, even if late and early dates have been discovered at specific spots. The following dates are associated with the megalithic civilization of South India.

Thermo-luminescence - Komaranahalli 1440 BC

Radio-carbon - Naikund 545 - 505 BC

Radio-carbon - Takalghat 555 BC

Thermoluminescence OSL - Gachibowli 2795 BC and 2145 BC

The oldest dates for megaliths and iron from South India have been determined by the megalithic graves on the University of Hyderabad campus. Even if we take away the earliest date of 2795 BC, the second date, 2145 BC, is still the oldest known date for iron in India. It is crucial to remember that the Telangana megaliths provide the oldest dates for both the Indian civilization and the usage of iron. Even if it is impossible to determine how old all of Telangana's megalithic sites are, it is nevertheless necessary to take into account the chance that some of them date earlier than the first millennium BC.In this regard, it should be mentioned that the present author has collected some Neolithic-style pottery from under the menhirs in Mudumal from certain damaged levels. This implies that a few megalithic sites that have menhirs on them could be Neolithic in origin. From the above, it is evident that the Indian megalithic culture may be generally dated between 2000 BC and 300 BC based on the most current scientific dates available from several sites in South India.We might speculate that certain Chalcolithic populations acquired iron and megalithic methods, leading them to succeed into the megalithic phase, as it has been seen at several sites that the megalithic phase followed the Chalcolithic phase. Kurnool's Ramapuram has provided solid proof of this kind of succession in this regard.

It is important to note that certain isolated groups still engage in megalithism, indicating that the megalithic traditions have not entirely vanished from the area. Given the evidence that implies the active megalithic phase gradually faded around 300 BC, we can take this date as the end of the megalithic period.

The evidence from many excavated sites points to the Early Historic/Historic phase as the megalithic phase's successor in a number of locations.

Anthropomorphs and Individual Stone Circles with Trim

We encounter distinctive monuments in the districts of Khammam and Warangal that are not found anywhere else in India. We discover beautiful circles made of cut stone pieces in this area. Because of the exquisite trimming of the stone blocks, each slab has a little curve that aids in the formation of a perfect circle when these trimmed blocks are used. These rings encircle dolmenoid cists, which are composed of very thick slabs of sandstone. These monuments have geometric proportions because the dolmenoid cists are likewise made of precisely cut stone blocks. The capstones and orthostats of the majority of the monuments in this category are up to 50 cm thick. There's typically a port-hole with a square, 'U'-shaped opening facing west. Although they are less common, dolmens

can also be found among these monuments. Stone sarcophagi, another distinctive element of Indian megaliths, are found in the dolmenoid cists and in some dolmens. There are two to six sarcophagi in each monument. The rectangular sarcophagi range in length from 1 to 2.5 meters and width from 50 to 80 cm, with an average height of around 50 cm. According to Ahmed's previous digs, these coffins have iron and earthenware artifacts like as hoes, horse bits, and ploughshares, but no skeletal remains.It's conceivable that it was challenging to remove the skeletal remains from the sarcophagi's compacted soil, and it's possible that they still contain skeletal remains. Large clusters of these monuments are primarily seen in wooded settings. Roughly three thousand monuments are said to be present in the Janampet burial complex. The current author has just found that the sites of Padugonigudem and Kistapuram each contain over a thousand graves. Among the distinguishing features that necessitate classifying the megaliths in this area as a distinct megalithic complex with specific characteristics that are extremely uncommon or absent from other locations are the anthropomorphic sculptures, the trimmed stone circles, and the stone sarcophagi.

More than forty anthropomorphic statues have already been spotted at a location in the Khammam district known as "Rakshasi mitta" (Demon's hill), close to Padugonigudem. More statues are likely to be discovered there as a result of further exploration of the area's dense forest. Mulheran made the first finds of these figurines at Albaka, Malur, and Katapur. William King subsequently released a report on these monuments from Mungapet and Kaperlaguru. Later on, the current author commented about a few monuments from the Khammam district's Dongatogu and Tottigutta. As previously stated, these sculptures' general characteristics are as follows:

1. The human figure is shown in these statues in an extremely basic and abstract way.
2. Despite the fact that most of the sculptures are carved in the round, it is exceedingly challenging to discern between their ventral and dorsal viewpoints.
3. There is no carving on the lips, nose, ears, or eyes.
4. The elongations in the shoulder region occasionally allude to the upper limbs, but the entire limb is never carved.
5. There is not a clear representation of the lower limbs. Still, it's likely that the bottom body's extension is intended to symbolize the lower limbs.
6. Because the majority of the sculptures lack any sexually suggestive traits, it is impossible to determine their sex. Female characteristics, such breasts, are rarely visible in sculptures.
7. No statue with masculine anatomical traits has been discovered to yet.
8. The sculptures are typically between 1.5 and 2.6 meters tall, while smaller and larger statues have been documented from different locations.

9. Usually, these sculptures are positioned vertically either close to or inside the monument's circle.

Megaliths and Astronomy

Additionally, it appears that the megalithic culture in the studied region achieved significant advancements in astronomy and the comprehension of celestial object motions. There is enough concrete evidence to conclude that the megalithic people built funeral structures and buried their remains in graves according to certain orientations. Determining orientations must have been a difficult chore in an era without magnetic compasses. To ascertain the directions, they had to have been relying on observations of astronomical bodies like the Sun, Moon, and star constellations. Numerous locations within the research area have produced proof of the megalithic people adhering to different orientations.It is clear that their orientation determination has been based on celestial objects.

The European megalithic structures are known to have a close relationship with the heavenly bodies. However, aside from oblique allusions to this kind of relationship-particularly with the Sun-no thorough research has been done on Indian megaliths to date. The discovery of such depictions in graffiti and other works of art initially suggests the megalithic community's interest in the cosmic objects. For instance, images of the sun, moon, and stars may be seen in the graffiti discovered on the megalithic pottery. In a similar vein, Yadu Vanshi also published the graffiti that was discovered on Deccan pottery and had similar motifs.For example, the sun, crescent moon, and star are shown in the graffiti on the megalithic pottery that Yazdani published. Iralabanda pottery was also observed to include the sun emblem. Similar celestial depictions were also observed in megalithic art. Near Perisandra, Karnataka, there is a menhir with the sun and moon etched on it.Near Perisandra, Karnataka, there is a menhir with the sun and moon etched on it. The aforementioned instances hint, at least partially, at the megalithic society's fascination in cosmic objects. The megalithic structures have been shown to be orientated east and west in various locations, which likely indicates a connection to the sun's rising and setting cycles.

In order to verify the notion of an astronomical connection between the megalithic constructions, the present author has looked into a number of locations in Andhra Pradesh and Karnataka to evaluate megalithic sites with menhirs. This method was chosen because it was believed that, in contrast to circular objects like stone circles and cairn graves, which cannot be used to discern orientations, alignments and avenues are the best means of identifying directional characteristics. The alignments may be more accurate even though the directions can be found using the dolmens.

In order to identify allusions to locations with megalithic alignments and avenues, a literary study was conducted with the aforementioned goals in mind. Alignments from Hyderabad, Gudebelur, Gopalpur, and Devarkadra were reported by Allchin.The majority of these monuments have been entirely demolished and left no trace, according to a study conducted at these locations. Given that Gudebelur is a well-known place on the route that has been important since prehistoric times and that Mudumal and Gudebelur are around 6 km apart, Mudumal is most likely referred to as the Gudebelur site. Luckily, the monuments at Mudumal have been properly conserved because, as this article will discuss later, the locals hold certain superstitious beliefs. H.E.H. the Nizam's Dominions' Archaeological Department released Annual Reports that included references to a number of megalithic sites with alignments, such as Shakapur, Ivathalli, and Hanamsagar. The alignments in Mudumal, near the village of Muraridoddi.

Ursa Major Constellation Represented

In Telangana state's Mahbubnagar district is Mudumal, a magnificent megalithic structure that is home to the earliest recorded portrayal of the night sky in South Asia. The physical portrayal of Ursa Major, or the Great Bear constellation, is one of the site's most important findings. In Indian mythology and folklore, this constellation is referred to as the "Saptarshi Mandala" and is closely linked to a number of customary practices used by Indian groups.Moreover, the group of seven stars that form a rectangle and are joined by an arm is noteworthy because, since the beginning of time, people have used this group to locate the north star, also called the pole star, which indicates the direction of the north. This is due to the top two stars within the rectangle remain in alignment with respect to the pole star. The constellation Ursa Major and its surrounding stars were discovered on a flat, squarish rock with a slanting top. This boulder appears to have been deliberately placed by the megalithic people in order to map the constellation as "cup-marks," each with a diameter of around 4 cm and a depth of less than half a centimeter. Situated on an elevation region surrounded by megalithic stone circles, the stone bearing the sky chart is located on the southwest side of the site. This "sky map" is perhaps the earliest known example of a material representation of the night sky in India. Based on the established general chronology of the Indian megaliths, this "sky map" might be roughly dated to 1000 BC. It is amazing that the megalithic people (or artists) were able to sketch the sky map with such precision that, at a time without the use of instruments, the seven stars and their surrounding stars were mapped quite accurately. One of its notable qualities is that the top two stars of the rectangle in this representation are directed toward the north, much like in the true constellation. This certainly provides evidence in favor of the image's identification with the constellation Ursa Major.

It's unclear why this constellation was plotted. It is important to note that this depiction is mapped on a stone that has been placed atop the area's highest point. It is easy for those who know how to recognize the north star to determine north at night.

More than 80 menhirs are found in the Mudumal site, organized in various rows and patterns. Concentrated in the heart of the complex are about eighty tall (up to fourteen feet) menhirs that were erected in rows to create pathways and alignments. The rows are not all oriented the same way. Research on the complex on solar-significant days like the summer and winter solstices revealed that one row aligns with the Sun in the morning and another row with the Sun in the evening.For instance, three of the towering menhirs were seen to line up with the setting Sun on December 21, 2005. As a result, four rows in all are lined up with the Sun on the days of the solstice. Along with the bigger menhirs, the region features a configuration of stones set in concentric circles, with horizontal blocks strewn in between the upright menhirs. Two of the circle's higher menhirs have been seen to line up with the Sun on equinox days, both in the morning and the evening. Overall, it seems that this megalithic building functioned as a daytime and nighttime astronomical observatory.It is likely that this data was utilized for calendar computation as well as for identifying orientations and comprehending seasonal fluctuations.

Given its significance as an astronomical observatory that might aid the prehistoric people in deciphering seasonal variations and calendar computations, the Mudumal site must be carefully conserved. Most likely with this goal in mind, the locals spread an intriguing fable. The big menhirs are said to represent the humans who were cursed by the goddess Ellamma, while the lesser stones are said to represent the animals that were turned into stones. Legend has it that long ago, while the farmers were toiling diligently to cultivate their land, they requested Goddess Ellamma to look after their animals. In addition, they promise to send a basket full of gold in return for the labor. The farmers merely dispersed the gold pieces on top of the basket packed with husks when it was time to deliver the money. Ellamma discovers the farmers' ruse as she pokes her fingers into the basket. She then curses the farmers, turning their livestock into stones. The locals are terrified of damaging the alignment stones or the menhirs because of the widespread belief that they are.

Conclusions:

Such astronomical characteristics from other locations would presumably also be revealed by a detailed examination of India's megalithic structures. It has been noted that the placement of the cists, port-holes, skeletal remains, and burial pits at various megalithic sites all follow certain orientations. When compared to the Polaris, the longitudinal axis of

the rectangular burial hole at Gachibowli has been found to be precisely aligned in a north-south direction with less than 3° variation. Similar to this, it has been observed that the skeleton and cist at Gajagirigutta, one of the sites the author recently unearthed in the Jangaon region of the Telengana state, are precisely orientated north-south.The port-holes on the consecutive slabs of the slab circles at Iralabanda, in the Chittoor area of Andhra Pradesh, have been found to be positioned such that the dolmen chamber, which is located in the center of the concentric circles, is directly lit by the rising sun. All of the evidence points to the megalithic society having a basic knowledge of astronomy, which they used to determine orientations and calculate seasonal variations.

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