

Historical Note

The Incredible Survival of Stone Wheel Manufacture in South India

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Abstract

The manufacture of solid stone wheels in the granite-gneiss regions of the Deccan dates from a remote period since they are represented in Indian art, particularly, in Hoysala sculptures of 12th -13th century. The study of their structure and ornamentation points to similarity with the wheels of today ceremonial cars. Documents of the early colonial period prove that these wheels were largely used in the beginning of the 19th century in the Deccan, but that they slowly disappeared in most regions. Fortunately, we know the techniques used by the stone cutters, as the hewing of wheels in the Nelluru district, in Andhra Pradesh, has been described in detail at the end of the 19th century by Bruce Foote (1880). It is surprising to see that, in this fast-moving world which witnessed dramatic changes in the last decades, particularly in transportation, there are still craftsmen faithful to the ancient traditions, who are making stone wheels near Badami, in the Bijapur district.

Key words: Badami, Craftsmen, Deccan, Granite-gneiss, Stone hewing.

1. INTRODUCTION

Rock cutting technology is very ancient in India. We know that, in the peninsula, there are more than thousand known rock-cut structures and that many of them, adorned with exquisite stone carvings, are great art works. Indian craftsmen were even able to convert an entire mountain into beautifully carved temples by doing an extraordinary amount of rock cutting. It is therefore not surprising that they thought of manufacturing solid stone wheels in conjunction with axles for the purpose of transportation.

2. STONE-WHEELED VEHICLES FOUND IN PENINSULAR INDIA

Today solid wheels are still found in the vehicles used in some archaic zones scattered

within the subcontinent. They are usually made of wood but in many places in the granite-gneiss regions of the Deccan, in Karnataka and Andhra Pradesh, many processional cars are still provided with stone wheels.

The big wheels of large temple cars are cut with circular designs forming protruding crowns (Figs. 1, 2, 4, 6); the smaller wheels of ordinary ceremonial vehicles are not so thick and provided with a circular or square bulge in the centre with a hole set in it, large enough for the axle provided with a pin (Figs. 3, 5).

The temple cars are drawn, at the time of festivals, by thousands of men with the help of thick coir rope through the streets around the temple. They are very high and heavy and are controlled by experts with the help of solid blocks

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Fig. 1. Pattadakal, Bijapur district (IFP-EFEO 1984-5)



Fig. 2. Lakhundi, Dharavat district (IFP-EFEO 1781-7)

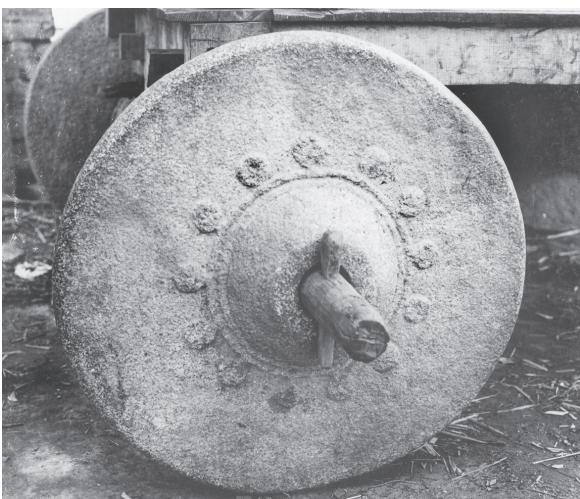


Fig. 3. Bhimavaram, Mahabubnagar district (Dagens)

of wood cut in the form of a right angled triangle (Deloche 2014, p. 42 & n.128).

What is surprising is that some bullock carts with stone wheels were still found forty years ago in the Bellari, Krishna, Kolar, Karnul and Mahabubnagar districts. They had their central

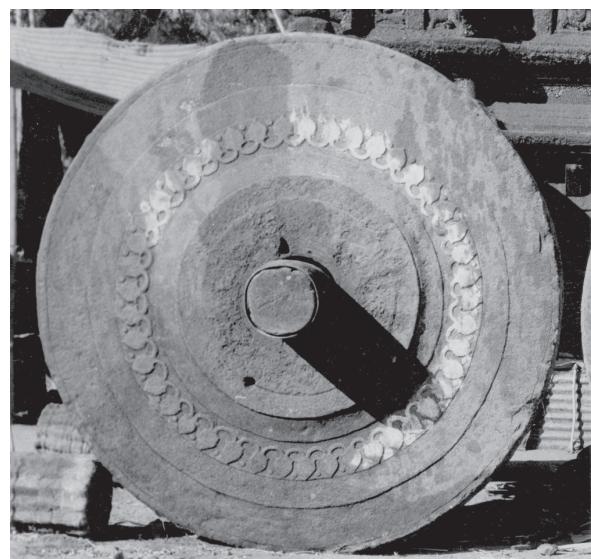


Fig. 4. Banasankari, Bijapur district (IFP-EFEO 4360-6)



Fig. 5. Nandi, Kolar district (IFP-EFEO 1418-5)

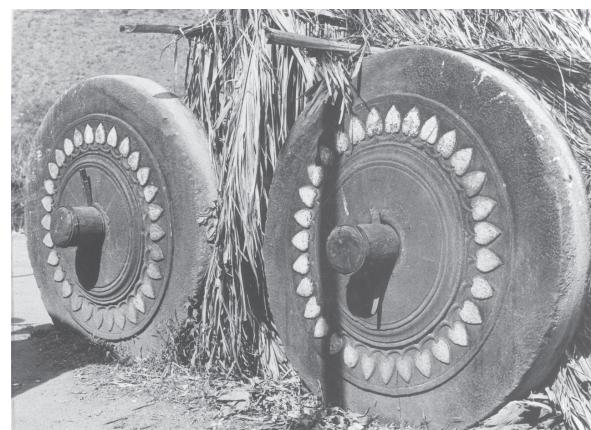


Fig. 6. Kotapalli, Dharavat district (Dagens)

portion likewise bulging to strengthen the axle (Figs 7-8).

A number of these wheels also, small or big, could occasionally be seen, abandoned near villages or temples (Figs. 9-12). They witness olden days.



Fig. 7. Karnul, same district (Dagens)

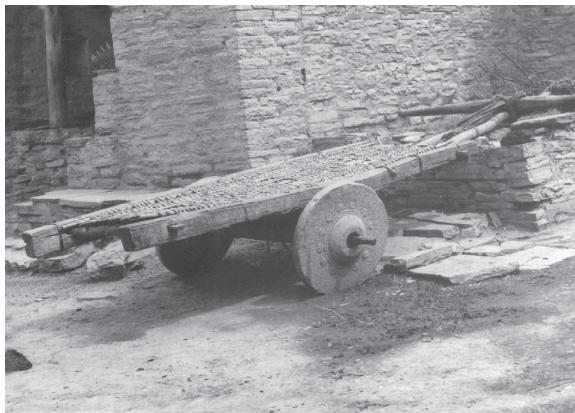


Fig. 8. Karnul, same district (Dagens)



Fig. 9. Akiripalli, Krishna district (IFP-EFEO 4705-10)



Fig. 10. Chilakanahatti, Bellary district (Deloche)

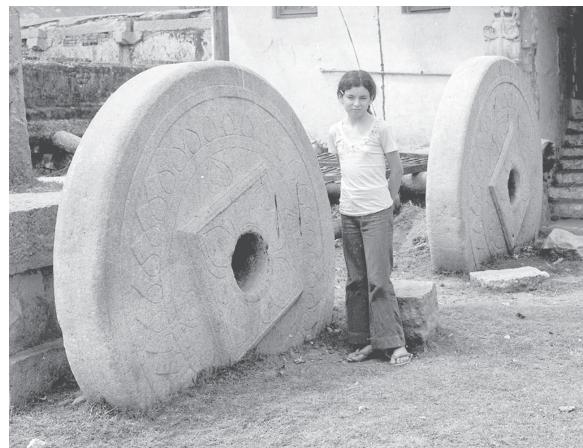


Fig. 11. Nandi, Kolar district (Deloche)



Fig. 12. Thondapadu, Anantapur district (Deloche)

3. ICONOGRAPHIC SOURCES: THE HOYASALA CARVINGS

The manufacture of solid stone wheels in South India dates from a remote period since they are represented in Indian art, in the monolithic stone chariots of the peninsula with large non-functional wheels, as in Hampi, and particularly in Hoysala sculpture (12-13th century).¹

In the carvings, the farm carts drawn by oxen are not different from those found in certain regions of the Deccan plateau (Fig. 13). Four-wheeled wagons resemble in structure and ornamentation to the modern ceremonial cars and are still seen in many temples (Figs. 15, 16, 17), a sign that the Hoysala sculptors chose as models the vehicles used in processions or in temples to represent the war-chariots described in the epics.



Fig. 13. Somnathpur (IFP-EFEO 7447-12)

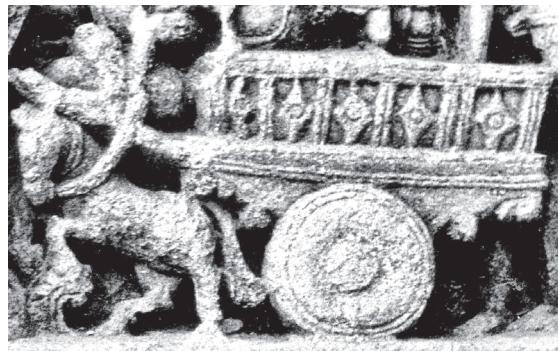


Fig. 14. Somnathpur (IFP-EFEO 7441- 12)



Fig. 15. Somnathpur (Deloche)

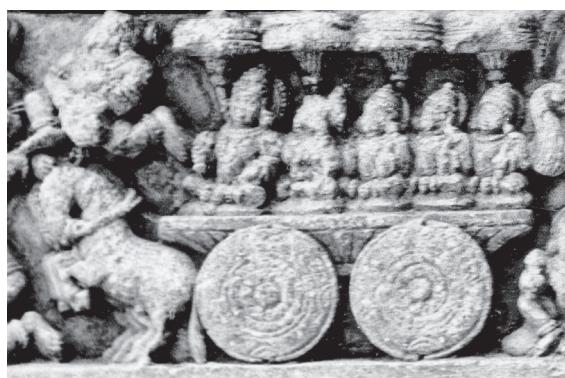


Fig. 16. Somnathpur (IFP-EFEO 7446-10)



Fig. 17. Tirukkunrukudi, Tirunelveli district (L'Hernault)

If we compare the wheels of the vehicles represented in the Hoysala temples of Karnataka with the stone wheels of the temple cars and even farm carts of this region, we are struck by their similarity in the decoration of the wheels.

¹ Names of the temples mentioned in the figures : Amritapura, temple of Amritesvara; Halebid H, temple of Hoysalesvara; Halebid K, temple of Kedaresva; Somnathpur, temple of Kesava; Amaravati, museum; Hampi, temple of Vitthala; Tiruvarur, temple of Tyagarajsvami, Tirukkurunkudi, temple of Srialagiyambirayar.

Most of the circular designs found in the representations, such as concentric circles or protruding crowns, can be observed on the granite stones of the processional vehicles in Karnataka and Andhra Pradesh and also in the wheels of temple stone chariots of South India.

Some wheels in Amritapura and Halebid are hardly decorated as in the temple cars of Pattadakal and Lakhundi (Figs. 1-2, 18-19).



Fig. 18. Amritapura (IFP-EFEO 7684-7)

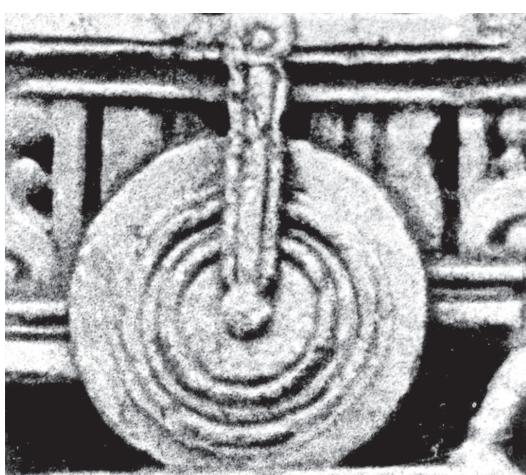


Fig. 19. Halebid K (IFP-EFEO 7338-11)

The wheels of some vehicles in Somnathpur are decorated with crowns of lotus buds, as seen in several wheels found in Mahabubnagar and Karnul (Figs. 3, 7, 8, 12);

other ones are adorned with curls that remind us of the undulating creeper formed by the long lotus stalk of the wheels of the Hampi stone chariot (Figs. 22, 27).

In Halebid a wheel with a large lotus rosette in full bloom is chiseled all over its surface (Fig. 24); another one is decorated with two circular bands of lotus petals running through the interior, as in the wheel preserved in Amaravati Museum (Figs. 25-26).

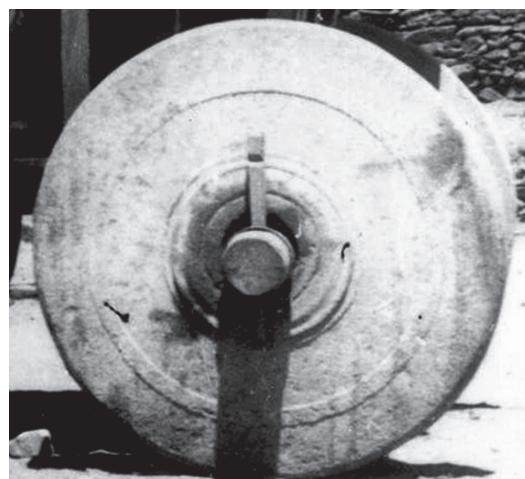


Fig. 20. Hiriyuru (L'Hernault)

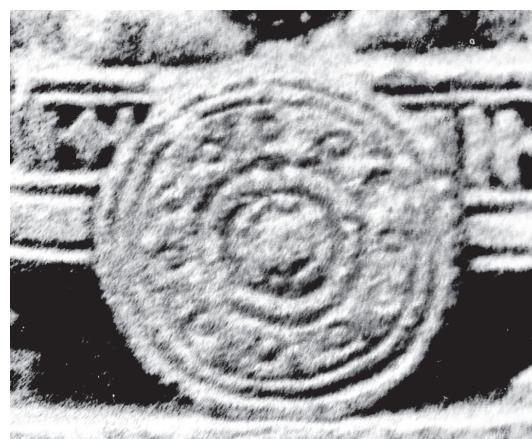


Fig. 21. Somnathpur (IFP-EFEO 7446-12)

We could multiply the examples. All of them show that the relationship between the wheels represented in the Hoysala monuments and the wheels of the surviving vehicles is evident. It



Fig. 22. Somnathpur (IFP-EFEO 7446-10)



Fig. 23. Hampi (IFP-EFEO 6429-12)



Fig. 24. Halebid H (IFP-EFEO 7351-6)

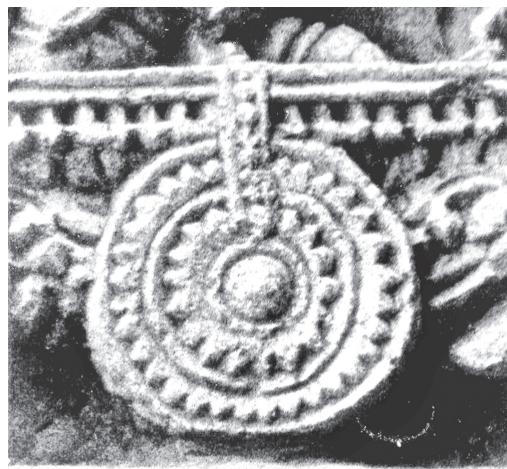


Fig. 25. Halebid H (IFP-EFEO 7353-9)

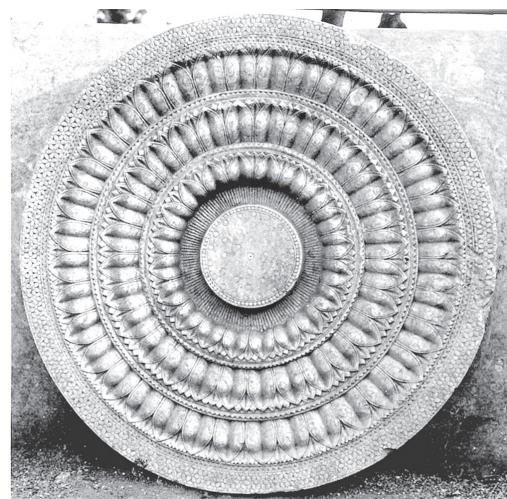


Fig. 26. Amaravati (IFP-EFEO 1843-8)

is significant to note that, in both cases, wheels are adorned with concentric circles enclosing a variety of motifs, especially the lotus flower design with its buds and petals carved in baffling diversity. Apart from this zone, only one representation of a bullock cart with stone wheels has been found in the south of the peninsula in the temple of Tirukkurunkudi in the Tirunelveli district (Fig. 17). Thus, iconographic sources confirm the antiquity of stone wheel manufacture in the granite-gneiss zones of South India.

4. DOCUMENTS OF THE EARLY COLONIAL PERIOD

We know that, until the middle of the 19th century, the spread of solid wheels, particularly those made of stone, was still wide in a large part of the peninsular plateau (Deloche 2014, p. 6, figs. 69-74).

It is attested that stone-wheeled carts were used in the beginning of the 19th century in the district of Daulatabad; one loaded 40 *man* or 1200 kgs (*MJLS*, vol. XV, 1849, p. 50). In 1848, in the district of Satara the number of carts was 8,119 of which 5,603 had stone wheels. These carts drawn by 12 bullocks travelled at only two third of the pace of the carts with wooden-spoked wheels drawn by three bullocks. In 1883, stone-wheeled carts had almost vanished (*Gazetteer of the Bombay Presidency*, vol. XIX, Satara (1885) p. 196 n.1). Thus, the heavy, clumsy carts with stone wheels, never used for distant journeys, which were common throughout the peninsula, were slowly abandoned in most regions.

5. MANUFACTURE OF STONE WHEELS IN NELLUR DISTRICT, ANDHRA PRADESH IN 1880

Fortunately, we know the techniques used by the stone cutters since the hewing of wheels has been described in detail at the end of the 19th century. Bruce Foote (1880, pp. 105-106) tells us how in the hills of Podile and Kuchipidi, to the west of Ongole, Nelluru district, in Andhra Pradesh, the rock was hewn to make wheels. A stone-cutter needed two months to complete a pair of wheels. He started by cutting out gneiss strips, paying careful attention to keep the central portion three times thicker than the rest; then he took great care while boring the hole intended for the axle and at the end he would decorate the frame. These wheels with a diameter varying from 1.50 to 1.90 m could last a very long time and it was thought that their strength increased over the years. For example, only a load of one *khandi* (roughly 200

kg) was put on a new pair of wheels but, after some years, the weight could be doubled. In the quarries of Kuchipudi approximately one hundred pairs of wheels were made annually; in other villages of this region the same work was carried out by craftsmen.

6. MANUFACTURE OF STONE WHEELS IN BADAMI, BIJAPUR DISTRICT, TODAY

I thought that the manufacture of stone wheels had completely disappeared, when a French photographer, Bernard Grismayer, a lover of art, to create awareness about the significance of temple cars as remnants of culture, showed me his photographs depicting the annual temple festival of Banasankari at Badami, in Bijapur district, and of a quarry located near this town where craftsmen are still cutting stone as their traditional occupation for temple vehicles.

The methods followed for cutting stones have not changed (Figs. 27-30). The craftsmen of the present day use the same tools (chisel, hammer) and the same techniques as the stone workers at the end of the 19th century.

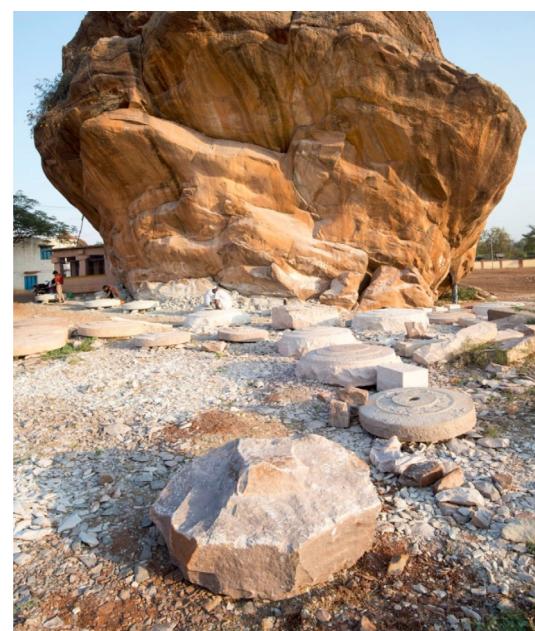


Fig. 27. The rock is broken out with wedges and dressed in hexagon or octagon (Grismayer)



Fig. 28. Then it is worked until the wheel is a perfect disc (Grismayer)



Fig. 29. The wheel is lensiform; the hole is drilled from both sides (Grismayer)

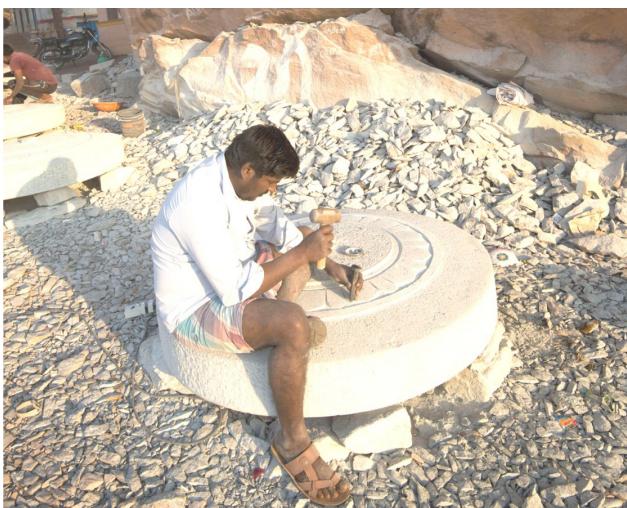


Fig. 30. Finally the wheel is ornamented with elegant lotus patterns (Grismayer)

Like them, they split the granite gneiss rock to obtain stone blocks that can be used for making wheels; and the stone is cleaved from the rock face by driving in wedges. After the rock is forced apart, breaks and starts to split, the stone can be worked and cut according to the chosen design by squaring off and progressively rounding off the bloc of stone. When the stone is rough-hewn, the carvers use their artistic ability into various designs, particularly the lotus shape to carve the stone.

7. BANASANKARI TEMPLE CAR

A few kilometres away from this quarry, there is the large processional car of Banasankari Amman temple, a massive and elaborate structure richly sculpted, with the same stone wheels adorned with lotus patterns similar to those made by the craftsmen of the quarry. This car, shown in a 1855 old photograph (Wikipedia, Banasankari), has not been modified since then, except for a dome-like superstructure that has been added. The *ratha yatra* (or car festival) that is held every year on the full moon day of the Hindu month of *pausha* (January) is witnessed by thousands of people and the stone wheels receive offerings (Figs. 31, 32).



Fig. 31. Its lower part above the wheels resembles the mouldings and sculptures of a temple (Grismayer)



Fig. 32. Offerings to the wheel by devotees (Grismayer)

8. CONCLUSION

To conclude it may be said that this beautiful conceptually hewing of stone wheel survived as ancient techniques have passed down from generations to generations and are still practiced in some specific places. This technology is a repository of ancient craftsmanship that has survived and a mirror of the cultural identity of the people who made it.

It is however surprising to see that, in this fast-moving world which witnessed dramatic changes in the last decades, particularly in transportation, there are still stone-cutters faithful to the ancient traditions.

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