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# Earthen architectures and megalithism: the Soto monument (Senegal)

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## 1. Introduction

Since 2015, archaeological research carried out by Laporte and Bocoum on the site of Soto (Kaffrine region, Senegal) has offered new insights into the funerary tomb structures, known as *Mbaanar* which, until this work, were poorly studied (Fig. 3). These monuments are large pits filled by earthen mounds with a wide variety of architectures (Martin & Becker 1984). In the central-western region, some can reach several tens of metres in diameter, with a maximum height of 9 m (e.g., Wago Fall). Others form only discrete rises about 0.5 m high, barely perceptible in the landscape. Within the area of Senegambian megalithism, frontal stones erected on the eastern periphery sometimes complete the architectural device.



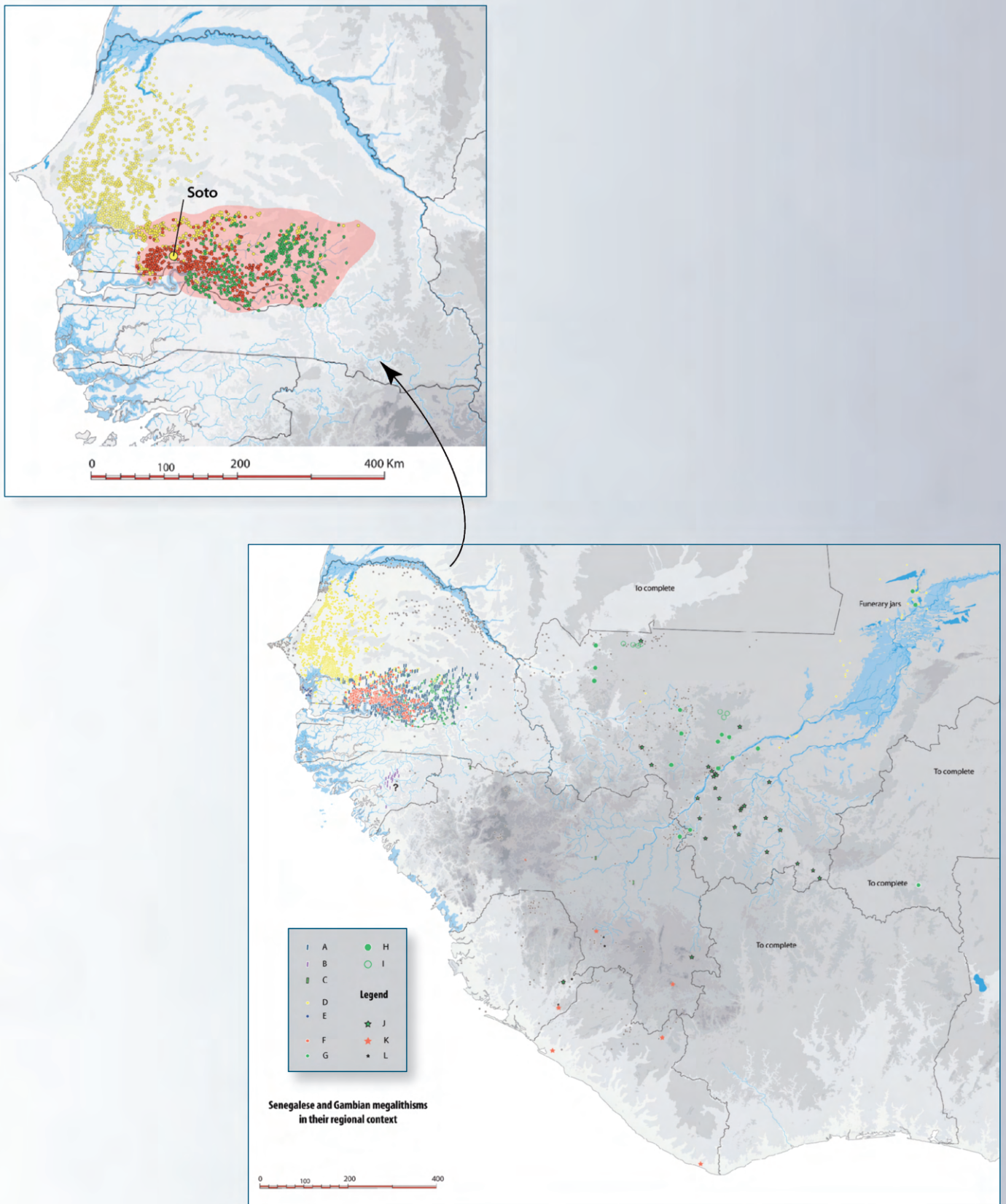
**Fig. 1** – Earthen funerary tumulus with a frontal stone from Mbolop Tobé (Santhiou Kohel) (Credit: archéo-gallay.com).

In Mbolop Tobé (Santhiou Kohel) (Fig. 1), excavations revealed the presence of four peripheral ditches, excavated successively, the embankments of which contributed to form the central earthen mound (Gallay *et al.* 1982). These clues led the authors to compare the structures to the funerary monuments known as *lomb*, still erected in the modern period by the Sereer population (Becker & Martin 1982). Unfortunately, no coherent radiocarbon dating could chronologically locate these archaeological features and the most recent studies do not provide much clarification of the whole phenomenon (Holl & Bocoum 2017).

In Soto, the bifid or ‘lyre’-stone originally erected on the eastern side of the monument was removed in 1966 (Fig. 2), as were two others at Djigui Tioker



**Fig. 2** – Lyre-stone in front of an earthen tumulus from Soto before its extraction (Credit: Archives Cyr Descamps).



**Fig. 3** – Localization of centre-western tumulus region (light yellow), earthen mounds (bright yellow), and Soto in the Senegambian megalithic area and among West African megalithism (Laporte *et al.* 2017).

and Keur Ali Ngane, now exhibited in Dakar and Gorée museums respectively. The Soto stone today stands within the Musée du Quai Branly - Jacques Chirac in Paris, France. The precise archaeological contexts of these stones remained unknown until recently.

## 2. Geophysical surveys in Soto

The site of Soto, which includes several burial mounds, is located about 10 km southwest of the present-day town of Kaffrine. In 2016, a campaign of geophysical surveys including electrical resistivity, magnetic survey and radar was carried out by four of the authors (Camerlynck, Camus, Boulinguez and Laporte) on a monument apparently devoid of a frontal stone. Electrical and ground-radar measurements both indicated a central 'argillaceous anomaly'. Magnetic survey revealed a discontinuous peripheral ditch and some hollow structures (Fig. 4).

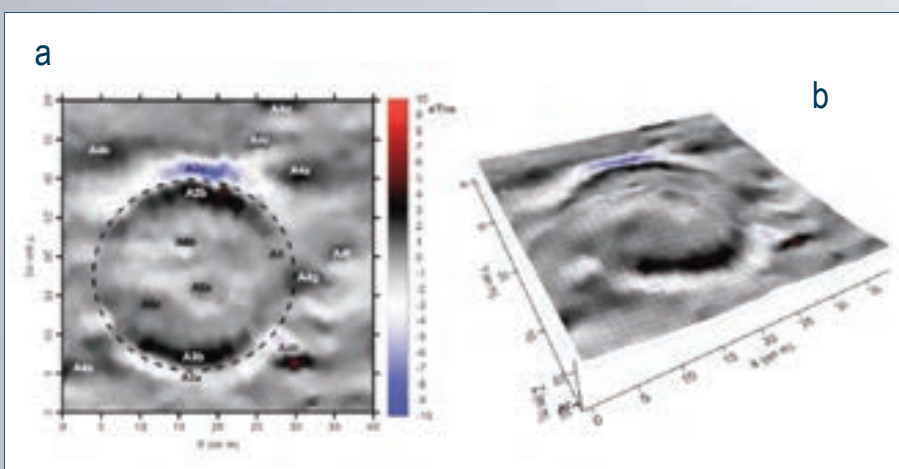
## 3. Revealing a funerary monument with cob walls

Initial explorations in 2017, followed by extensive archaeological excavations in November 2018 and April 2019, enabled us to unearth the entire monument (Fig. 5a): an oval-shaped earthen architecture, approximately 25 m in diameter and at least 1.5 m in height, erected at the centre of a large circular pit

and surrounded by several discontinuous ditches. Some of these ditches are clearly overlapped by other hollow structures and thus indicate different phases in the development of the monument. Additional clues of diachrony have been recorded on the central earthen tumulus. Here, multiple layers of earth, appearing as superimposed steps, contribute to the elevation of a cob-built structure.

## 4. First geoarchaeological study

Two trenches highlighted the stratigraphy of the monument from its foundation and allowed us to investigate different stages of its history. Pedo-sedimentary characteristics discriminate several facies of the earthen architecture. The deepest 'argillaceous anomaly' identified during geophysical surveys formed a dome of about 7 m in diameter, probably surrounded by a palisade of 10 m diameter. This dome was subsequently covered by a construction of superimposed steps of earth layers on the top of which a vertically planted iron spearhead was found (Fig. 5b). These steps were overlaid by materials similar to those used for construction, suggesting progressive erosion of the architecture. Other clues indicate a rapid collapse of part of the funerary architecture after it was abandoned. Micromorphological soil analysis will complete this first geoarchaeological study and will specify which construction techniques were used. Strategic samplings were carried out in this direction (Fig. 5c).



**Fig. 4** – Maps of Soto monument showing magnetic anomalies on the tumulus in plan (a), and with topographic information (b).

**Fig. 5** – a. Monument of Soto during excavations and location of the spearhead (b) (Photos: L. Laporte); c. Geoarchaeological block samplings (Photo: M. Onfray).



## 5. Itinerary of a monumental bifid stone from Senegal to France

The excavations carried out in Soto finally led us to confirm the presence of a monumental stone on the northeastern edge of the earthen tumulus. Although the large oval depression is surrounded by a proto-historic ground level composed of lateritic gravels and numerous pottery sherds (Fig. 6a, b), dark soil filling its central part clearly indicates a modern perturbation. The archaeological evidence corroborates local oral testimonies and 1960s photographs of the excavation of the lyre-stone which now stands in the museum in Paris (Fig. 6c).

## 6. Conclusion

This multidisciplinary research programme revealed, for the first time in West Africa, a completely unsuspected monument. Although these funerary monuments were seen only as small sandhills during the last decades, our research exposed instead an idea of hidden ostentation associated with a more classic monumental device: the lyre stone, which is today on view to millions of visitors.

Translated from French  
by the authors



**Fig. 6** – a, b. Ancient lyre-stone implantation pit associated with a protohistoric ground level (Photos: L. Laporte); c. The Soto lyre-stone in the Musée du Quai Branly - Jacques Chirac in Paris, France (Photo: A. Delvoye).