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# Medamud and the Nile

## Some Preliminary Reflections

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FÉLIX RELATS MONTSERRAT

### 1. Introduction

The Nile is a structural element of the Egyptian landscape. It is widely assumed that communities originally settled on natural elevations in the floodplain in order to be shielded from the flood, and also that costly structures like temples should certainly be built well above flood level<sup>1</sup>.

The link between temples and the Nile is visible in different levels: on the one hand, the friezes of Nile-gods ensure a symbolical connection<sup>2</sup>, on the other, some constructions architecturally connect the river with the temples, for example processional roads lined with sphinxes, statues or enclosure walls<sup>3</sup>. When temples were situated near the river, their topographical nexus with the Nile was obvious. But what about temples located far from the river? The Theban floodplain offers several examples of temples situated at the edge of the desert plateau, and consequently, distant from the Nile. The royal mortuary temples

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1 SEIDLMAYER, 2001, p. 82 has theorized on the relationship between assumptions on the expected flood height and building level. The location of the temples on elevations has a symbolic link with the image of the primeval mound *j3t*: SAUNERON/YOYOTTE, 1959, p. 35. For the case of Karnak, a succinct presentation is given by GOLVIN/GOYON, 1987, p. 28–31.

2 For a general presentation of the *soubassement* friezes: YOYOTTE, 1958, p. XI–XVI. More recently, LEITZ, 2004, p. 50–62.

3 The term *processional roads* is here used in the sense given to them by CABROL, 2001, p. 1–4. For a detail account of the pertinent structures, see *ibid.*, p. 330–418 (Sphinx), p. 424–7 (statues), p. 477–81 (enclosure walls).

of the New Kingdom can be considered paradigmatic cases. Most researchers assume the existence of channels between these temples and the river<sup>4</sup>.

In this paper, I would offer some reflections on the case of one particular Theban temple, that of Medamud, raising the question of its relationship with the Nile.

## 2. Medamud, a temple far away from the Nile?

Medamud is known since the *Description de l'Égypte*, but the first archaeological studies started only in 1924, with the excavations of the French Egyptologist F. Bisson de la Roque, which lasted until 1932.<sup>5</sup> Cl. Robichon and A. Varille succeeded him, carrying out some campaigns between 1932 and 1939.<sup>6</sup> Their work offers a summary of the various phases of the temple's construction from the Middle Kingdom to the Roman era.<sup>7</sup>

The temple, which is still visible, is located 5 km north of Karnak, on the right bank of the river. It is also 4.9 km east of the present course of the Nile, as shown in the image below.

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4 The monuments on the Theban west bank is detailed by PORTER/MOSS II, p. 340–538 and by CABROL, 2001, p. 653–6. GOLVIN, 1999, p. 40–41 and 64–71. The work of GRAHAM *et al.*, 2012 presents geomorphological studies on this matter.

5 All works in Medamud are published in the FIFAO collection of the Institut Français d'Archéologie Orientale: BISSON DE LA ROQUE, 1926; *ibid.*, 1927; *ibid.*, 1930; *ibid.*, 1931; *ibid.*, 1933; DRIOTON, 1926, *ibid.*, 1927; BISSON DE LA ROQUE/CLÈRE, 1928; *ibid.*, 1929; COTTEVIELLE-GIRARDET, 1931; *ibid.*, 1933; *ibid.*, 1936.

6 ROBICHON/VARILLE, 1940 have never published all their work in Medamud, only providing a succinct overview of their research. In my PHD, I will publish all the documentation we have about their excavation, and I will especially reconsider the question of the so called *temple primitif*.

7 For a brief presentation, however to be corrected: REVEZ, 1999.



*Figure 1. Satellite view of Luxor area, showing the actual location of Medamud and its distance from the river (© google-earth).*

This view can be transposed in a diagram, highlighting the most important settlements in the region of Thebes, with the current location of the Nile.

Therefore, Medamud is not situated near the river, and at first glance the temple had been intentionally implanted far away from the Nile. However, the excavations have proved the existence of a relationship between the river and the temple. In 1932, F. Bisson de la Roque discovered a tribune<sup>8</sup> linked to the enclosure wall<sup>9</sup> with a *dromos*. This structure, to be discussed below, illustrates that an access to the Nile was planned during the construction of the latest phase of the Medamud temple.

8 BISSON DE LA ROQUE, 1933, p. 9–10. He at first analysed this structure as a quay, and called it “quai-tribune”. However, Bisson de la Roque himself later recognised that this structure is too elevated to be considered as a quay. In fact the quay, never found, should be situated below the tribune. CABROL, 2001, p. 565 has pointed out the terminological issue connected with the term tribune.

9 BISSON DE LA ROQUE, 1927, p. 127; REVEZ, 2004, p. 495. For the gate of Tiberius, a publication is prepared by an IFAO/Sorbonne mission supervised by Prof. D. Valbelle and the author.

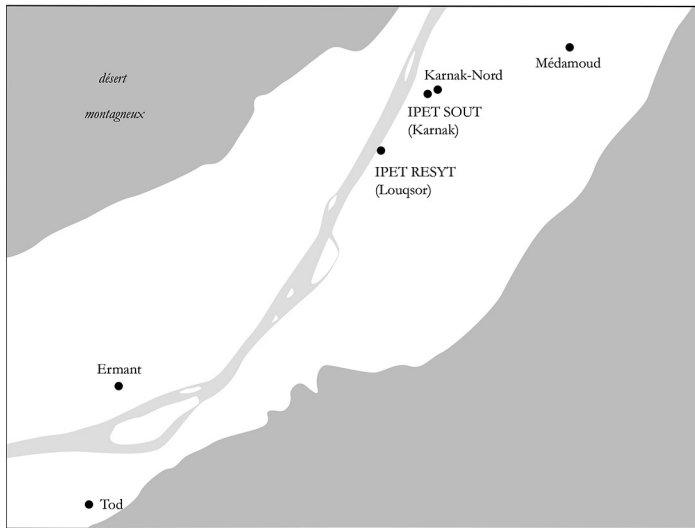


Figure 2. Theban temples with the current location of the Nile (© MASQUELIER-LOORIUS, 2013, carte 5).

### 3. The access to the Nile in the Ptolemaic temple: How was the tribune connected to the river?

The tribune<sup>10</sup>, located west of the *dromos*, is a rectangular, sandstone construction of 16.20 m x 13.40 m. It is an elevated building (with a floor level 1.70 m above that of the temple) and connected to the *dromos* by a ramp. In the excavator's opinion,<sup>11</sup> access to water was facilitated by two ramps beside the tribune.<sup>12</sup> These were adaptable to the water levels, being built with clay and mud brick.

The tribune of Medamud is similar to tribunes of other temples like Karnak, Karnak-North and Medinet Habu<sup>13</sup>. In all these examples, the temple is close

10 For an architectural description: BISSON DE LA ROQUE, 1933, p. 1–2 and 9–13.

11 BISSON DE LA ROQUE, 1933, p. 13: “Il est permis de supposer simplement des rives en terre pour le bassin d'accostage que la surélévation des eaux, par suite de l'apport de limon par l'inondation annuelle, obligeait de modifier sans cesse”.

12 BISSON DE LA ROQUE, 1933, p. 110–111.

13 The most synthetic discussion of these three examples is offered by CABROL, 2001, p. 571–89 (Karnak/Karnak-North) and *ibid.* p. 611 (Médinet Habu). SCHENKEL, 1980, offers an overview of the known tribunes in Egyptian temples. The case of

enough to the Nile to postulate the existence of a waterway linking the landing stage to the Nile. In the case of Karnak, a direct access to the Nile is certain at least during the Kushite period. But what about Medamud?

### 3.1 The hypothesis of Bisson de la Roque: a canal linking Medamud and the Nile

To resolve the distance between the tribune and the river, the excavators have proposed the existence of an artificial channel, although they never found any trace of such a canal. Nor did they pronounce themselves on the date when it would have been dug.

This channel would have departed from Karnak-North and would have connected the two temples. According to Bisson de la Roque, “une avenue de sphinx conduisait de l’enceinte sacrée à un quai, où devait aboutir un canal unissant Karnak à Médamoud, pour les processions par voie d’eau”.<sup>14</sup> É. Drioton advances a similar idea about the tribune, as being “élevée à cent cinquante mètres du temple. Cette tribune n’est point comme on l’a cru longtemps un quai d’embarquement. On assistait de là à l’arrivée et au départ du dieu sur le canal sacré”.<sup>15</sup> Neither author underpins their assumptions by archaeological evidence, only stressing that this hypothetical canal comes from Karnak-North. Their hypothesis was probably rooted in the assumption that the temples of Medamud and Karnak-North were dedicated to Montou, composing what Drioton called the *Palladium* of Thebes.<sup>16</sup> According to their view, the temples were interconnected not only symbolically, but also physically through a channel. They were not, however, the first to discuss this hypothesis. The same suggestion had been made in 1924-1925 during the first excavations of the tribune and the *dromos*<sup>17</sup> of Karnak-North by M. Pillet.<sup>18</sup> According to him, the

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Karnak, excavated by the CFEETK (LAUFFRAY, 1971) and SCA (BORAİK, 2010), is the most intensively studied example.

14 BISSON DE LA ROQUE, 1933, p. 1.

15 DRIOTON, 1932, p. 92. We can see in this quotation the same hesitation about the terms tribune and quay.

16 This expression is limited by DRIOTON, 1931 to the Third Intermediate Period.

17 For the structures of Karnak-North; PORTER/MOSS, 1972, p. 1–2; PILLET, 1924; ID., 1925; VARILLE, 1943, p. 1; GABOLDE, 1993, p. 248 and note 27; CABROL, 2001, p. 571–579. For a global explanation on the excavations in Karnak-north: CABROL, 2001, p. 9–12.

18 PILLET, 1924; ID., 1925.

tribune would provide access to a canal rather than to the river itself because it is not oriented towards the Nile (west) but to the North. That channel would have begun between Luxor and Karnak, branching off the right bank of the Nile, approaching the western quay of Karnak, then the quay of Karnak-Nord, finally reaching Medamud<sup>19</sup>.

Although M. Pillet's hypothesis was not justified, it seems it was based on the same two considerations later brought up by F. Bisson de la Roque and É. Drioton: firstly, the religious bond between these temples would explain the existence of processions and, by extension, the canals linking them. Secondly, these authors were influenced by the orientation of contemporary channels supplying the Theban plain.

### 3.2 An anachronistic hypothesis?

The second of the two reasons just outlined was hence influenced by the contemporary hydrologic system. The image below (see fig. 3), reproducing part of the 1920 map produced by the Survey of Egypt (scale 1/100,000), presents the layout of the post-Mohamed Ali canals. As elsewhere in this volume,<sup>20</sup> these channels are oriented north/south, parallel to the river. Their digging, particularly in the case of the Theban plain, aimed to ensure the complete irrigation of the valley to the edge of the desert.

If this map is compared with the description given by the archaeologists cited, it is likely they have modelled the ancient landscape on the early twentieth century situation. At that time, a channel was crossing the eastern part of the Theban floodplain. They envisioned a similar layout for an ancient canal. Nevertheless the Egyptian channels have experienced notable changes in the early nineteenth century with the policy of Mohamed Ali who established a network of canals parallel to the Nile. The afore mentioned map shows that Medamud is located between two channels: one passing to the East of the modern village (*El*

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19 This is what we understand in the confusing presentation PILLET, 1924, p. 86 gives in his excavation report: "On ne peut guère admettre, au contraire, que le fleuve fit à l'époque pharaonique, un coude tel qu'il vint baigner le quai nord et encore celui du temple de Médamoud, situé actuellement à plus de 3 kilomètres du Nil. Il semble beaucoup plus vraisemblable que les quais de Mantou (*sic*) et de Médamoud tout au moins, sinon le quai occidental lui-même ont été construits sur les rives d'un grand canal dérivé du Nil et prenant naissance entre Karnak et Louxor".

20 I refer to H. Willems' article in the present volume.

*Bayadiya Canal*<sup>21</sup>), and another to its west (*Ash-shi Saiyalet el el Gharbi*). These two channels both originate south of Luxor (at *El Bughâdi*), flowing parallel to the Nile and heading north to Khuzam. One of these channels (*Saiyalet el Ash-shi*) is even closer to Karnak-North and irrigates the plains between Medamud and the Nile.

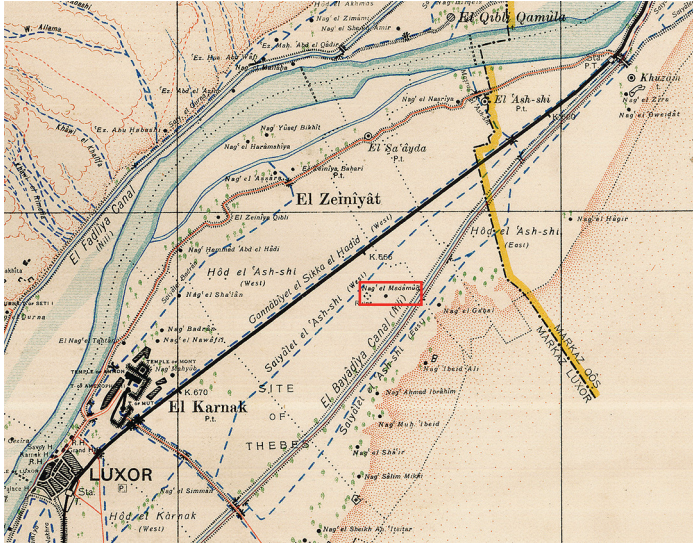


Figure 3. Survey of Egypt, 1920 (© Collège de France (cartes 18-32)).

G. Alleaume<sup>22</sup> was the first to point out the changes in the landscape due to Muhammad Ali's policy. This map can be compared with the one of the *Description de l'Égypte*, in which there is no channel parallel to the Nile<sup>23</sup>. Conversely, all channels are oriented East/West, crossing the plain. In the case of Medamud, a channel started in el Tahtâny, north of Karnak, and crossed the floodplain until reaching the northern part of the *Kom*.

21 I respect the spelling of the map.

22 ALLEAUME, 1992. The article of WILLEMS/CREYLMAN/DE LAET/VERSTRAETEN in this volume suggests that the plans of the *Description de l'Égypte* are not equally reliable for all parts of Egypt. Nevertheless, we are not looking for the course of the canals, but their overall direction. We also take into account the remarks of BALL, 1932, p. 130 for corrections to be made about the maps of the Description.

23 JOMARD/JACOTIN, 1818, Vol. II, pl. 1.





Figure 4. Map of the Theban region according to the *Description de l'Égypte* (see JOMARD/JACOTIN, 1818, Vol. II, pl. 1).

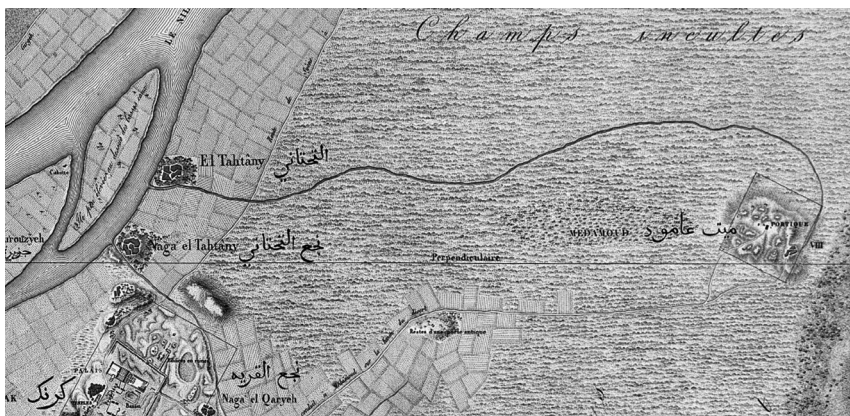


Figure 5. Detailed view of the canal linking Medamud with the Nile according to the *Description de l'Égypte* (see JOMARD/JACOTIN, 1818, Vol. II, pl. 1, detailed view).

The orientation of these channels is due to physical considerations, the profile of the valley being marked by an West/East dip from the river banks to the

desert plateau.<sup>24</sup> The slope is formed by deposits of the Nile whose heaviest elements were accumulating on the banks. The channel of Medamud should have run only by the force of gravitation: the water flowed naturally from the highest part (the Nile) towards the inferior. Far from being crisscrossed by a network of canals, the Theban plain seems to be left uncultivated. This explains the testimonies of travellers describing the landscape before the creation of the modern hydrological system. R. Pococke, who traveled Egypt in the 1740s, is the first to describe the ruins of Medamud. He states he departed from Karnak, reaching Medamud over land. He depicts the landscape surrounding Medamud as a plain remaining poorly developed. He does not mention a structured system of canals,<sup>25</sup> referring rather to a series of small canals of irregular shape. In the eighteenth century, therefore, the Theban plain is irrigated by a network of canals similar to the image published by the *Description de l'Égypte*, very different from the modern network. Thus it appears that the hypothesis of a canal linking the Nile and Medamud via Karnak-North was largely influenced by the contemporary topographic network of the excavators.

#### 4. The temple and the Nile: a localisation's problem

If such a canal never existed, two other explanations can be proposed for the presence of the tribune and quay at Medamud. Firstly, Medamud could have been linked to the Nile via an west-east canal similar to the one shown in the map of the *Description de l'Égypte*. But this hypothesis assumes the permanence of canals from antiquity to the early modern era without any supporting evidence. Also it attaches importance to human intervention in the construction of

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24 For the double dip of the Nile valley see ALLEAUME, 1992, p. 303. For a cross-section of the Nile in Upper-Egypt, see the description given by SAID, 1993, p. 53–55, and fig. 1.23, p. 56 and BUTZER, 1976, p. 13–25.

25 POCOKE, 1743, p. 96–97: “The plain to the east [of Karnak] naturally runs into coarse grass, much like a rush, great part of it lying waste; and where it is sown, the ground is laid in broad low hillocks, around which there are small irregular canals, the corn not being sown at the top of these hillocks, but only near the canals, in order, I suppose, that it may be more easily watered; for men raise the water out of the Nile into a small canal, which conveys it to all parts”.

hydrological projects<sup>26</sup> and fails to explain why Medamud has been implanted at such a distance from the Nile.

In response to this objections, one might consider that a possible migration of the riverbed might explain the localization of the temple at such great distance from the modern Nile.

#### 4.1 Medamud, a temple close to the river when it was founded?

The earliest structures found at Medamud date back to the Eleventh Dynasty. They are nowadays known as the *temple primitif* of Medamud.<sup>27</sup> Even though they have been only partially published,<sup>28</sup> and though the excavators have caused terminological confusion,<sup>29</sup> a new study of the ceramic material has established with certainty that the remains date from the reign of Montouhotep II.<sup>30</sup> I cannot

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26 PILLET, 1924, p. 86, in his hypothesis of a canal connecting Karnak and Medamud, grants importance to the workers. For him, the land obtained from digging the canal was essential in the construction of the temple's boundary wall: "On peut croire, d'ailleurs, que la masse de terre nécessaire à l'élévation des murs d'enceinte des temples a été fournie par le creusement des canaux et, en particulier, d'un fossé large et profond, renforçant l'enceinte elle-même". Nowadays, the construction of boundary walls is explained differently: I refer to studies on the site of Karnak; GOLVIN et al., 1990, p. 926–927; GOLVIN, 1995, p. 33 and 41.

27 ROBICHON/VARILLE, 1940, p. 1–2.

28 In my PhD, I shall publish all the documentation of the excavations of Robichon and Varille kept in different archives. For a preliminary explanation: RELATS MONTSERRAT, 2014.

29 Admittedly the excavators recognised the ceramic as typical from the Eleventh Dynasty: ROBICHON/VARILLE, 1940, p. 11. However, at the same time they use the word *primitif* which confuses the epoch they were talking about. This expression "*primitif*" is used to compare the structures with the predynastic sanctuaries (SAINTE-FARE GARNOT, 1944, p. 68) and the old kingdom's temples (ROBICHON/VARILLE, 1940, p. 19). All researchers who have worked on Medamud have kept this terminology thereafter. For a further discussion see RELATS MONTSERRAT, *forthcoming*.

30 In her PhD, Z. Barahona Mendieta is currently studying all the ceramics of Medamud. She attributes the ceramics to the second part of the Eleventh Dynasty.

discuss here the question of whether these remains originate from a temple or from another kind of building, but will only take an interest in its location.<sup>31</sup>

Considering the issues discussed above, it is clearly vital to establish where the river bed was located at the time the temple was built, in order to know if there was a great distance between them. Indeed, comparison of the satellite image of the Theban plain (see fig. 1) with the map of the *Description de l'Égypte* (see fig. 4) proves that the trajectory of the Nile has evolved considerably over the last two centuries. In the time interval that elapsed between the moments these two pictures were made, the distance separating the Nile from the temple has increased. Moreover, the course of the river also changed. Thus, the two islands at the mouth of the *El Tahtâny* canal in front of Medamud have now disappeared. Such islands<sup>32</sup> are an obvious signal of the continuous changes in the course of the Nile. It is clearly conceivable that Medamud could have lain much closer to the Nile when it was founded than it does today.

## 4.2 The Nile's arms and the evolution of the river's flow

According to the work of Butzer, the Nile migrated from West to East.<sup>33</sup> But for the Theban part of the valley, this movement is opposite, from East to West, as A. Graham has shown.<sup>34</sup> Thanks to the geomorphological analysis of sediment cores, the westward movement of the river is estimated by this author at 2/3 km every millennium.<sup>35</sup> This movement is due to the piling up of solid elements on the banks, carried by the water; these deposits can build up islands. These latter modify the flow of the river, opening then a new river branch. Over time, islands can be united with banks, changing both their own profile and that of the river. This phenomenon can be called *défluviation*.<sup>36</sup> This dynamics causes a lateral

31 The existence of archaeological remains cannot be questioned from now (RELATS MONTERRAT, 2014) given the photo archive. It is however clear that the interpretation given by ROBICHON/VARILLE, 1940 (a primitive osireion) has to be modified.

32 BUNBURY/GRAHAM/HUNTER, 2008, p. 356–357.

33 BUTZER, 1976, p. 33–36 and JEFFREYS, 1985, p. 48–51.

34 HILLIER/BUNBURY/GRAHAM, 2007, p. 1012. L. Gabolde, in his presentation at Mainz, argued similarly; see also GABOLDE, 2014, p. 14–15. I thank him for the discussions he has granted me during the conference at Mainz, and during his lectures or stays in Paris.

35 HILLIER/BUNBURY/GRAHAM, 2007, p. 1013 and 1015.

36 LEVY/LUSSAULT, 2008, p. 390.

displacement of the river, islands being gradually added to the banks, moving them westward<sup>37</sup>.

If we apply this pattern north of Thebes, Medamud was – at least initially – much closer to the Nile or to one of its branches. This assumption was already made by A. Graham, being based on the depressions of the valley in the neighbourhood of Luxor. He postulates that Medamud, during the First Intermediate Period, was irrigated by the Nile.<sup>38</sup> He points out that “More ancient motions (> ~ 2000 years B.C) may be preserved in the landscape [...]. Interpreting the topographic lineations NE of Luxor [...] implies a large-scale NW migration. The main indicators of this are the two prominent lineations passing either side of Medamoud, and the current position of the river. So established during the First Intermediate Period (~2150 B.C.) Medamud may have originally had a riverside situation, and Karnak may have been founded on an island or spit”.<sup>39</sup> It is likely that Medamud was near the river at the time of its first constructions even if the excavations of Robichon and Varille did not discover a structure linked with the Nile. Our knowledge of the *temple primitif* is

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- 37 For a graphic representation of this phenomenon applied to the Theban bank I refer to figure 3 of the article of Angus Graham in HILLIER/BUNBURY/GRAHAM, 2007 summarising the migration of the Nile over time. However, I do not figure out the reason that lead the author to qualify Medamud as “new land”, that term being reserved for riverside structures. Other works of Graham provide useful supplements to understand this movement: BUNBURY/GRAHAM, 2005; GRAHAM, 2010. A recent paper offers useful diagrams to explain the evolution of the Theban plain: CHARLOUX/MENSAM, 2012, p. 47–49.
- 38 Similar results were proposed by M. Ghilardi in a map rendering surface elevation in Upper Egypt, where a line is drawn between the south of Luxor and Medamud, indicating the presence of a possibly ancient Nile branch. But this author was only interested in Karnak in his paper (BORAİK/GHILARDI, et al., 2010, fig. 1, p. 109).
- 39 HILLIER/BUNBURY/GRAHAM, 2007, p. 1113. A. Graham follows the summary of the history given by SAMBIN, 2001, and his results recognize the changes in the river’s bed. However, for the chronology, the article of Sambin follows the theories of Robichon and Varille dating the *temple primitif* at the beginning of the First Intermediate Period (at least before the Eleventh Dynasty – Sambin, 2001, p. 351). A. Graham propose *circa* 2150 B.C. which corresponds more or less with the beginning of the Eleventh Dynasty (KRAUSS, et al., 2006, p.482). His study has therefore to be modified.

limited to the structures inside the polygonal enclosure wall but other structures of this period seem to exist westwards.<sup>40</sup>

If this hypothesis is followed, Medamud was founded near the Nile or one of its branches, and the course of the river gradually moved westward since. The aggregation of islands to the Nile banks and the emergence of new lands (*mꜣwt*) distanced the former bank from the course of the river. This resulted in a gradual separation of the Nile from the temple.<sup>41</sup> Even under Sesostri III, who built a new temple,<sup>42</sup> the Nile should have been still closer to Medamud.<sup>43</sup> The western orientation of the temple<sup>44</sup> convinces us of a possible nexus with the Nile even if it has not been discovered yet.

However, it is difficult to establish precisely if Medamud was near the river rather than to one of its branches<sup>45</sup> and if its course can be pieced together again.

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40 SAINTE-FARE GARNOT, 1944, p. 72–73.

41 This is certainly what happened between the nineteenth century and today: according to the *Description de l'Égypte*, islands were located in front of the village of El Tahtâny. They united the old river banks, pushing its course westward – which increased the distance between the river and temple.

42 The last archaeological study of the temple in the middle Kingdom is a short report of ROBICHON/VARILLE, 1939. The studies of EDER, 2002, p. 81–131 and NIVET-SAMBIN, 2008 claim to renew the subject, but their hypothesis are superficial because the lack of field work. We agree with Nivet-Sambin in her analysis of the middle kingdom's temple despite the lack of analysis of the architecture of the temple itself. For a new view: RELATS MONTERRAT, *forthcoming*.

43 At the time of Sesostri III the main course of the Nile had to be more to the east. For some researchers, it passed west of the Middle Kingdom's temple of Karnak but one old arm was still east of the temple: GABOLDE, 1998, § 201–205; GABOLDE, 2013a, p. 6–8; GABOLDE, 2013b; GABOLDE, *forthcoming*; and his contribution at the symposium in Mainz). Graham is more circumspect about the idea of imagining Karnak as an island (BUNBURY/GRAHAM/HUNTER, 2008, p. 364–365 and fig. 8). Nevertheless, he confirms that the Nile reached the *cour du Moyen Empire* inside the temple; and consequently that it flowed more to the west. Considering that, it is possible that the river was still closer of Medamud in the time of Sesostri III.

44 NIVET-SAMBIN, 2008; RELATS MONTERRAT, *forthcoming*.

45 One should remember that geomagnetic measurements of the Theban plain allow to postulate that the Nile had discharged further east, almost on the edge of the Arabian desert's plateau (HILLIER/BUNBURY/GRAHAM, 2007, fig. 3; BORAİK/GHILARDI, et al., 2010, *fig. 1*, p. 109).

Considering that Karnak was, at the Eleventh Dynasty, surrounded by the Nile<sup>46</sup> it is possible that a Nile's arm, originated south of Karnak, circumvented the temple by the East and then reached Medamud. Nevertheless the investigations around the Thoutmosis I's treasure in Karnak encourage us to think that this Nile arm flowed to the north of Karnak<sup>47</sup> and not near Medamud. This hypothesis also raises the question of the migration of the river during the Middle Kingdom. No studies seem to confirm the continuous existence of a Nile arm to the east of Karnak during the Middle Kingdom because this temple was united with the East Bank<sup>48</sup> from this point forward. Therefore this branch could not reach Medamud under Sesostri III.<sup>49</sup> An alternative hypothesis would be that it began near Karnak-North, reaching the northern quay of the temple before heading for Medamud. This postulate is similar to the ones proposed by Bisson de la Roque and Robichon and Varille, but its implications are completely different: far from being an artificial canal created for processional reasons, the connection between Karnak-North and Medamud is a legacy of the geomorphological evolution of the river. However, this final statement must remain a hypothesis until a real geomorphological prospection is realised between Karnak-north and Medamud.<sup>50</sup>

46 The existence of an island at the end of the Old Kingdom has been suggested by GABOLDE, 2013b, p. 24, fig. b and GABOLDE, *forthcoming*. GRAHAM, 2010, p. 136 considers Karnak as an island during the First Intermediate Period.

47 BUNBURY/GRAHAM/HUNTER, 2008, fig. 7

48 BUNBURY/GRAHAM/HUNTER, 2008, p. 364–365 and fig. 8

49 A canal seem to replace the former river branch at least until the Ramesside era (CABROL, 2001, p. 430 et 579–581).

50 The only archaeological information has been collected by PILLET, 1925, p. 4 during the excavation of the quay at Karnak-North. He refutes the possibility of a branch of the Nile because of the absence of *sandbars* which are the sign of fluctuations of the Nile. Thus he says “les coupes de terrain faites entre le fleuve et les constructions de Karnak [...] n’ont jamais montré de ces bancs de sable témoins d’un cours ancien du fleuve. On semble donc être en droit de penser que le quai occidental de Karnak était, de même que ceux du nord et de Médamoud, établi sur un canal dérivé du Nil et non sur le fleuve lui-même”. The indications given by the excavator should be verified: he didn’t mention the shingles that are a signs of the aggradation of the Nile. However, given the research by A. Graham at Karnak-North, their absence in the excavations of M. Pillet seems highly suspect. For the thoughts of A. Graham on Karnak-north: BUNBURY/GRAHAM, 2005, p. 17–19.

### 4.3 A reinterpretation of the archaeological remains?

Must the existence of a canal therefore be ruled out completely? It is possible that a canal was dug later in order to counterbalance the movement of the river. The temple was possibly founded near a Nile branch, but its gradual movement may have required such an adjustment. Only on-site surveys may help answer this question without a doubt. Nevertheless, we can start analysing the results of Bisson de la Roque's excavations despite the imprecision of the archaeological information. He offers the following description of a survey carried out in 1932 to the west of the tribune:

“À l'ouest de cette construction [the tribune] une coupe de terrain nous donne: une couche de limon noir au niveau -0m70, une couche de briques cuites brisées se terminant au niveau -0m80, une couche de briques crues brisées se terminant au niveau -1m20, une couche de terre argileuse jaune se terminant au niveau -1m50, une couche de limon noir se terminant au niveau -2 mètres sur un lit de terre argileuse jaune. Les deux couches de limon aux niveaux -0m70 et 2 mètres peuvent nous donner des lits de canaux postérieurs à l'abandon du dromos. Elles permettent de supposer à l'ouest de la tribune l'existence d'un canal.”<sup>51</sup>

Two ideas can be retained: the depth of the survey and the mention of two layers of silt. First, Bisson de la Roque reached 3,16m below the level of the Ptolemaic temple (chosen as “level 0” in Medamud's excavations) but he assured having never dug deep enough to find the ancient flood levels.<sup>52</sup> However, the water level in antiquity must not have been so deep. It is difficult to estimate the date of the construction of the tribune. If we consider the constructions' program of the dromos and the Tiberius' gate, the tribune was probably constructed under Augustus.<sup>53</sup> We still need to compare the level of the Nile (in absolute height) with data from the excavations of Bisson de la Roque (in relative height). The

51 BISSON DE LA ROQUE, 1933, p. 9

52 “Ces quais [...] se trouvent sans doute à des niveaux, que les fouilles sans drainage ni pompe n'ont pas atteints” (BISSON DE LA ROQUE, 1933, p. 9).

53 There are no archaeological remains which would allow to date the tribune. One could accept Bisson de La Roque's postulate, dating the tribune to the same date as the enclosure wall (REVEZ, 2004, p. 495; BISSON DE LA ROQUE, 1933, p. 7–8). The construction of the so called *Porte de Tibère* dates from the reign of Augustus (KLOTZ, 2012, p. 242 – I refer also to the current publication of D. Valbelle and her team which will discuss the constructions of Augustus and Tiberius). Recently



*Level 0* of the Bisson's excavations corresponds to the ground level of the Ptolemaic temple, which can be estimated to be 75,90 m.<sup>54</sup> This means that Bisson de la Roque came down to 72,74 m.<sup>55</sup> L. Gabolde and Cl. Traunecker have estimated the average level of the flood in the Middle Kingdom at Karnak to be 72,80 m<sup>56</sup> a.s.l. Following the same method, the average level of the flood at the end of the reign of Augustus can be estimated to be 74,69 m in Karnak.<sup>57</sup>

This method was questioned by Seidlmayer arguing the roman level should have been similar to those of the Third Intermediate Period (74,22 m).<sup>58</sup> If we adapt these measures to Medamud, the Nile should have flowed between 74,42 m and 73,95 m.<sup>59</sup> In both cases, Bisson seems to have reached the water levels of the time of the Tribune's construction. This also means that the water probably reached the Tribune.

More to the east, Bisson de la Roque describes "des couches de limon noir"<sup>60</sup> identified as Nile deposits transported by a canal during the Coptic period and he puts forward a hypothesis about the level of the ancient waters. In an unpublished report today kept in the Louvre archives, he dates these two silt layers to the fourth and fifth centuries AD based on the presence of a fired-brick construction.

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DEVAUCHELLE, 2015 examined the demotic graffiti graved on the tribune dated it between the II BC and the I AC.

54 I thank E. Laroze for this information.

55 Ground level of the temple – Level Survey = 75,90 m – 3,16 m = 72,74 m.

56 For details I refer to the explanation given by GABOLDE, 1998, p. 196, n. 72: "Je me fonde sur les données rassemblées par Claude Traunecker (Karnak IV (=Kémi 21) 1971, p. 186–187) avec un maximum moyen atteint vers le 10 septembre grégorien à 76.50 m (moyennes entre 1873 et 1902) auxquelles je retranche l'exhaussement de la vallée évalué à 3.30 m (0.96 mm par an cf. GOYON/GOLVIN, 1987, p. 123); entre 1960 avant J.C. et 1900 après. J.C."

57 The flood level under the reign of Augustus should be 1,82 m lower than the level maximum calculated by Traunecker for 1900 AD. This calculation includes the raising of the valley from the time of Augustus. I take the raising of 0,96mm annually established by J. Cl Goyon between the end of the reign of Augustus (14 AD) and 1900 AD.

58 SEIDLMEYER, 2001, p. 63–73. For the roman level see *Ibid.*, p. 67.

59 SEIDLMEYER 2001, p. 67–68 (difference between Luxor and Karnak). A difference of 27 cm can be estimated between Karnak and Medamoud (6,75 cm/km). This measure is however approximated because the Nile's course is not established.

60 BISSON DE LA ROQUE, 1933, p. 9

<b>Comparing mesures of the flood in Karnak and Medamud.</b>		
Karnak's levels	Average level of the flood in the Middle Kingdom according to L. Gabolde.	72,80 m
	Average level of the flood evaluated under Augustus according to L. Gabolde	74,69 m
	Average level of the flood evaluated under Augustus according to Seidlmayer	74,33 m
Medamud's levels	Floor level of the Ptolemaic temple	75,90 m
	Level reached excavations west of the podium by Bisson de la Roque.	72,74 m
	Average level of the flood evaluated under Augustus according to L. Gabolde	74,42 m
	Average level of the flood evaluated under Augustus according to Seidlmayer	73,95 m

Table 1: Comparing measures of the flood in Karnak and Medamud

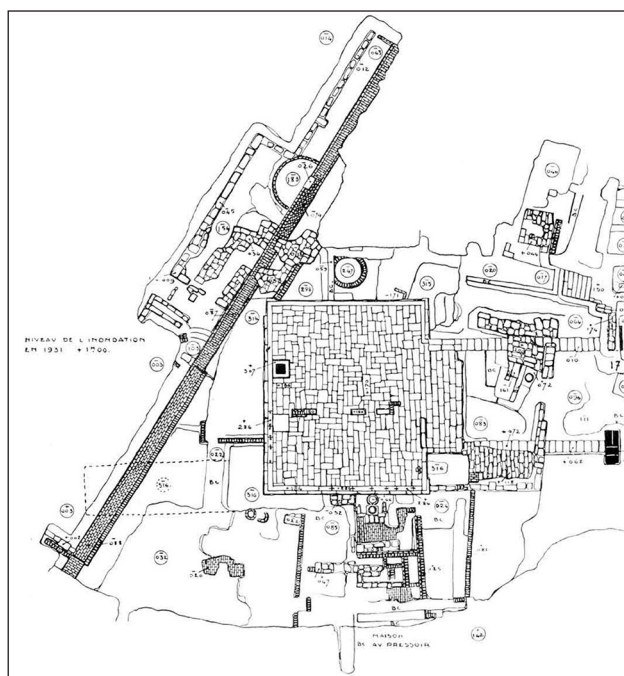


Figure 6. Map of the survey west of the tribune (see BISSON DE LA ROQUE, 1933, pl. I)

“Ce canal me paraît s’être déplacé obliquement en s’écarrant vers l’ouest et en s’élevant au cours des siècles. Je crois reconnaître un parapet en briques cuites au niveau 2m25 où une monnaie de Constantin me fait supposer un nouvel aménagement du canal vers la fin du IV<sup>ème</sup> s. Ce parapet donne l’apparence d’un

trottoir. Il nous donnerait la ligne et le niveau du dernier canal ayant desservi la tribune. Un parapet en pierres provenant du temple, situé plus à l'ouest, à 1m 63 nous donnerait la ligne du canal vers la fin du Vèmes, à l'époque du village copte dont nous avons des restes de dallage dans ces parages. Ce dernier parapet formait l'arasement en grès placé sur la carte de l'expédition de Bonaparte. Le canal actuel passe à une petite distance à l'ouest<sup>61</sup>.

One photo is joined to the report illustrating the hypothesis of the excavator.



*Figure 7. Photograph of the excavations of Bisson de la Roque, showing the emplacement of the silt layers and proposing a date (Louvre Archives, 2013 DAE1/9: 1931). The annotations are Bisson de la Roque's handwriting.*

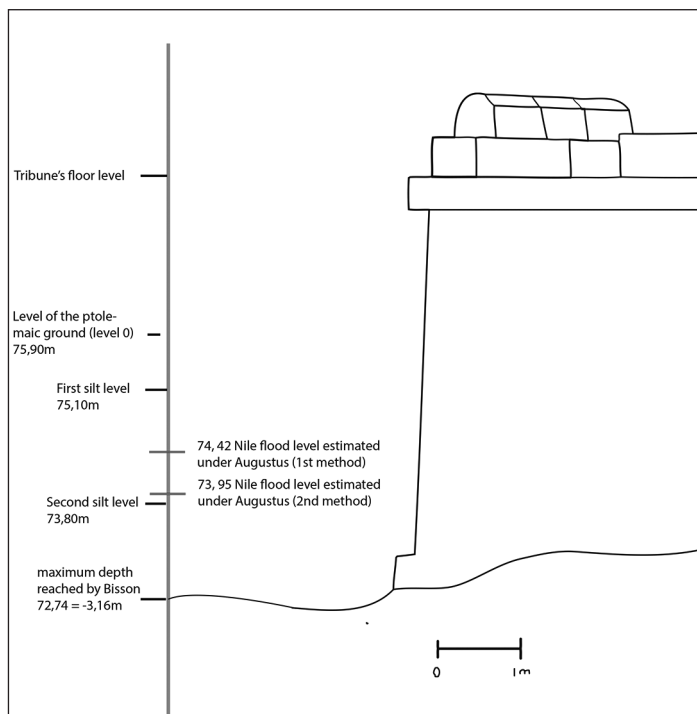
This picture shows what the excavator thought of the migration of the river. The fourth century canal lies east of the one of the fifth century. However, the silt levels seem too high to be interpreted as Coptic deposits of the Nile. These layers are at 75,20 m and 73,90 m a.s.l. (-0,70m and -2m respectively below the level 0 according to the measurements taken by Bisson de la Roque). If these

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61 Louvre Archives. 2013 DAE1/9: 1931 (report of F. Bisson de la Roque sent to P. Jouguet and Ch. Boreux). I thank V. Rondot, the head of the Egyptian department of the *Musée du Louvre*, for the permission to publish the records of the Medamud excavations kept in their archives. I also thank E. David, without the help of whom my work in the Louvre wouldnot have been possible.

measurements are compared with the estimated Roman flood level (74,42/73,95 m a.s.l.), one notes that these measurements are closer to levels of flood deposits under Augustus. Thus, the levels described by Bisson and attributed to the Coptic period could be in reality a deposit of an occasional Roman flood. Bisson de la Roque dates the silt layers only on the presence of a Roman coin and the fired-brick structure. But this structure might have been built later. Only an analysis of the silt could date the layers certainly. However Bisson gives no description of the contents of this silt (for example, is it really a silt level or did it carry rollers also?). It is impossible to offer a definitive answer to this problem until new excavations provide more information.

We diagrammed in the image below flood levels from the plane given by the excavators of the tribune.



*Figure 8. Assessment of the level's flow in Medamud according to the description of Bisson de la Roque and the estimation of the Nile's flood level in Karnak. Schema made by the author from a plan of the tribune by Cl. Robichon (see BISSON DE LA ROQUE, 1933, fig. 9).*

To sum up, the datas given by Bisson de la Roque have to be modified. Surveys should be made to verify the stratigraphy, and specify the geomorphological stratigraphy to verify what level the water reached near the tribune. However, the silt levels can certainly correspond to Roman levels and not to Coptic ones as presumed. These surveys would also allow to find whether it was a channel or one of the Nile's arm that reached Medamud's tribune in Roman times.



*Figure 9. Aerial view of Medamud when the River Nile was in flood (see PIERRE, 1978, p. 59). I thank P. Grandet for this reference. Note that in the original book, this photograph was reversed. I preferred to return the photograph to match the reality.*

#### **4. Conclusion**

Medamud has been chosen as an example to understand the relationship between the Nile and a temple. Unlike what the excavators thought, migrations of the river bed may help to ascertain whether the foundation of Medamud was originally closer to the main branch of the Nile or to one of its side branches. The idea of a temple distant from the Nile should in that case be abandoned. Thereafter, throughout the history of Medamud, the link with the river would be preserved: the tribune of the Roman temple was used as an access to a waterway.

The existence and usefulness of the waterway can be proved with the blocs of the gate of Tiberius, carried by water<sup>62</sup>.

In the future, new archaeological investigations will clarify the stratigraphy of the quay in order to determine if the tribune had a direct access to the Nile or one of its arms. However, as the colloquium in Mainz has shown, only a global framework of the Theban valley can give a clear answer to all these problems.

## Addenda

Since I wrote this paper, the mission Médamoud-Porte de Tibère (IFAO/Sorbonne) has expanded its aims with a new Medamud mission which purpose is to restart the archaeological activities on site.<sup>63</sup> In September 2015 a geomagnetic survey of Medamud has been carried out through a partnership between the Sorbonne and the laboratory UPMC (University Paris VI Jussieu –UMR 7619 METIS)<sup>64</sup>. Its aims were to survey the archaeological areas never excavated by Bisson de la Roque and to reexamine some formerly excavated areas in order to verify his assumptions. Although the results are not completed yet (and go beyond this paper), we can advance that a zone in front of the tribune has been surveyed and seems to prove that the water reached the tribune, as we supposed, through a canal coming in a straight line from the west.

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62 As BRAND, 2000, p. 191 has proposed, some of these blocks may come from the temple of Sethy I in Qurna. The most likely explanation for their transportation is the use of the Sethy I temple's channel in order to bring these blocks to the Nile and then to Medamud. Otherwise the builders could use other monuments in ruins nearer to Medamud. It is precisely the waterway which facilitated the transport of these blocks. Note however, that unlike P. Brand, I do not believe that all blocks are from the temple of Qurna..

63 Directed by D. Valbelle and myself, under the auspices of the IFAO, the Sorbonne university and the Labex RESMED.

64 The survey was directed by J. Thiesson, F. Réjiba and R. Guérin. Chr. Sanchez has performed the survey.

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