



NEWS FROM AN OLD EXCAVATION: TWO HITHERTO UNNOTICED MEASURE CAPACITY SIGNS ON AN EGYPTIAN STONE VESSEL OF THE MIDDLE KINGDOM FROM ROYAL TOMB II AT BYBLOS

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ABSTRACT

Excavated by French Egyptologist P. Montet in the 1920s, Royal Tomb II at Byblos (Bronze Age Gubla) yielded a significant number of Egyptian objects of the Middle Kingdom. Among these finds is a stone vessel with lid that carries the cartouche of a king named Amenemhat, often believed to be Amenemhat IV of the late Middle Kingdom. Hitherto unnoticed by the scholarly community, however, are two Egyptian measure capacity signs on the stone vessel itself. Since measure capacity signs on stone vessels dating to the Middle Kingdom are only rarely attested even in Egypt, the signs on the stone vessel from Royal Tomb II at Byblos therefore contribute considerably to our understanding of the use and application of such signs. The article deals with the examination of these signs and tries to correlate them with the actual capacity of the vessel.

INTRODUCTION

In 1922, a landslide at the site of Byblos accidentally uncovered the first of nine royal tombs, which were subsequently excavated by the French Egyptologist P. Montet in the years 1922 to 1924.¹ Among the numerous finds recovered from the tombs, the Egyptian objects stand out and have been the topic of many studies ever since.

Among the Egyptian finds found in Royal Tomb II, identified to be the tomb of the Byblite ruler Ibšemuabi, one Egyptian stone vessel (“Montet 614”) made of an unidentified “grey stone” (most probably a variation of diorite or quartz diorite),² was recovered (Figure 1). A matching lid found associated with the stone vessel carries a cartouche with the name “Amenemhat” in hieroglyphs (Figure 2), usually thought to be King Amenemhat IV of the late 12th Dynasty (c. 1810–1793 BC). However, the identification with Amenemhat IV is far from certain, since at least seven pharaohs of the Middle Kingdom (12th–13th Dynasties) are attested to have reigned with that specific name. Although a box made of obsidian with the cartouche of Amenemhat IV was found inside Royal Tomb II, the identification of the “Amenemhat” named on the stone vessel with Amenemhat IV is primarily based on the assumption that Royal Tomb I, directly connected with Royal Tomb II and being the tomb of Ibšemuabi’s father and predecessor Abišemu, was contemporary to the reign of Pharaoh Amenemhat III (c. 1842–

1794 BC), the predecessor of Amenemhat IV, since a stone vessel made of obsidian with the cartouche of Amenemhat III was discovered there. At the moment, this chronological analogy can neither be verified nor falsified on the basis of the archaeological or historical evidence. It is beyond doubt, however, that the high shouldered jar typologically dates to the Middle Kingdom, i.e. the 12th or even the first half of the 13th Dynasty.³ An Egyptian origin

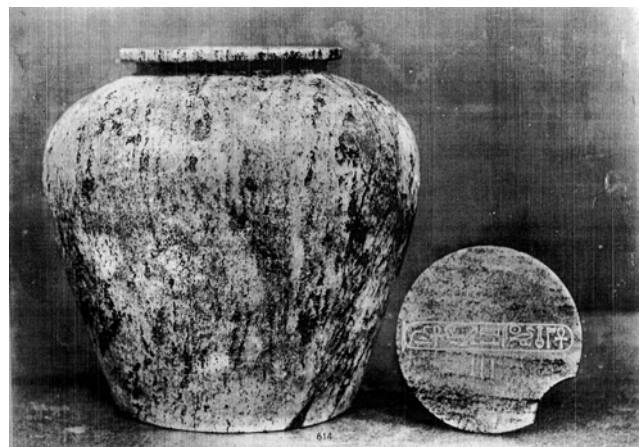


Figure 1: Stone vessel “Montet 614” with lid (after Montet 1928, pl. XCI).

of the stone vessel is not only proven by the lid's hieroglyphic inscription and the vessel's specific typology, but also by the stone material used for its production, which geologically is not attested in the northern Levant.⁴

STONE VESSEL "MONTET 614" AND THE MEASURE CAPACITY SIGNS

Apart from the hieroglyphic inscription on the lid of the stone vessel, Montet also noted two signs on the vessel's body itself (Figure 4). These two signs were executed only cursory ("peu profondément").⁵ Montet himself was of the opinion that the signs were either to be seen as an early attestation of a peculiar Levantine alphabetic writing system ("on serait tenté d'interpréter ce graffiti comme un mot phénicien [...], écrit alphabétiquement"), or even as marks of a specific workshop ("une marque d'atelier").⁶ Unfortunately, the figures and photographs of the stone vessel published by Montet do not show the exact location of the two signs on the vessel, although generally the region of the shoulder would seem most probable. Furthermore, no scale for the signs is given by Montet. Intriguing is also the fact that the actual orientation of the signs seems to be rotated at a 90° angle compared to other attestations of the writing of these specific signs: maybe this is due to a later mix-up and mistake by Montet when publishing the signs only years after he had copied them. On the other hand, the signs may well have been executed this way.

Obviously, at that time Montet was not aware of the fact that these signs are to be identified as Egyptian measure capacity signs that specify the vessel's fill capacity. Since these signs have never been dealt with since the first publication of the stone vessel over 80 years ago, a thorough analysis of the vessel's capacity might be of interest. Fortunately, in his treatment of the stone vessel in the final publication of the material found in the royal tombs, Montet recorded the dimensions of various parts of the vessel (Figure 3).⁷ These dimensions allow for an independent reconstruction of the vessel's shape and its fill capacity.

RECONSTRUCTING THE FILL CAPACITY OF THE VESSEL

On the basis of the thorough and substantial analysis of ancient Egyptian measure capacity signs by T. Pommerening, it is now possibly to securely identify the two signs used during the Middle Kingdom to indicate the unit fractions "1/4" and "1/16" (the signs are to be read from right to left), both signs are written in their hieratic notations.⁸ The volumetric measure to which these signs relate is the so-called Egyptian "heqat," which in the Middle Kingdom consisted of either approximately 5000 cubic centimeters/ccm (c. 5.0 liters, called "single heqat"), or 10000 ccm (c. 10.0 liters, "double heqat"). In order to obtain the vessel's original fill capacity, both unit fractions are to be added

together. Presuming that the double heqat was used and referred to by the measure capacity signs, the vessel's fill capacity would then be c. 3000 to 3200 ccm, while the use of the single heqat would then only amount to half of that, i.e. 1500 to 1600 ccm.⁹



Figure 2: Hieroglyphic inscription of the stone vessel's lid, naming a king Amenemhat (after Montet 1928, 160).

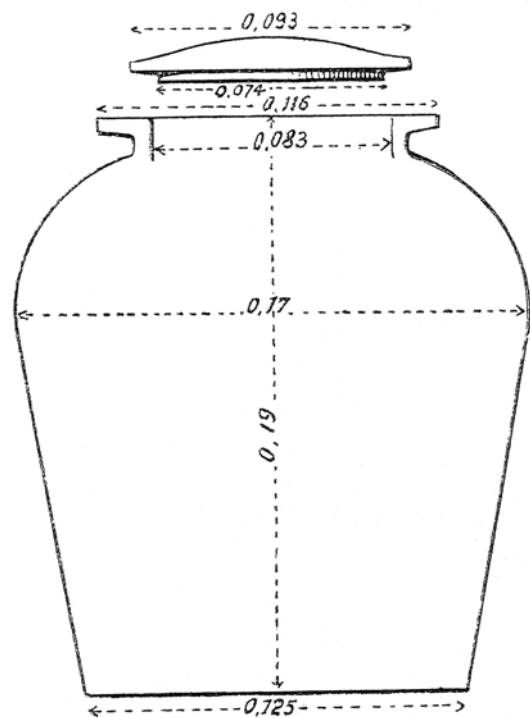


Figure 3: Stone vessel "Montet 614" with measurements indicated (after Montet 1928, 160, fig. 70).



Figure 4: Measure capacity signs on stone vessel "Montet 614", no scale given (after Montet 1928, 160).

As a useful corrective, since most of the vessel's measurements were provided by Montet, its original fill capacity can also be calculated by means of a virtual reconstruction of the vessel according to the measurements given, with only the wall

thickness not explicitly noted by Montet (Figure 5).¹⁰ This reconstruction of the vessel generates c. 1600 to 1640 ccm for the vessel's fill capacity, assuming that the vessel originally only was filled to the beginning of the vessel's neck.¹¹ Thus, the use of the double heqat can be excluded with certainty, since the specific quantity given by the measure capacity signs in relation to the double heqat (c. 3000 ccm) would, without doubt, be too much for the vessel to contain. The single heqat (c. 1500 ccm), on the other hand, would seem to fit quite well with the results.

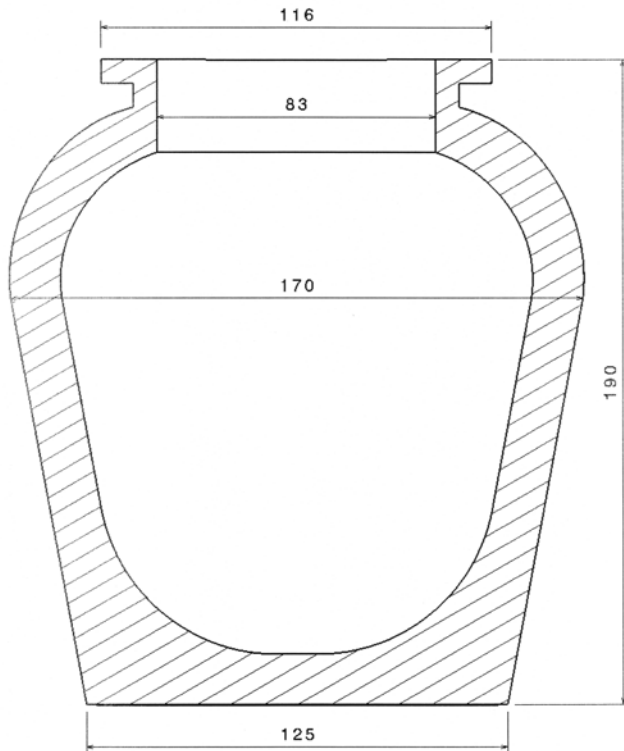


Figure 5: Reconstruction of the stone vessel “Montet 614” with measurements given by Montet (measurements are given in millimeters/mm; drawing by D. Schmitt).

CONCLUSION

Leaving aside the unknown course of the interior of the vessel, which to a limited degree hampers a correct calculation, the measure capacity signs clearly give a secure indication of the stone vessel's original fill capacity (i.e. 1.6 liters). The measure capacity signs were clearly executed in a stone vessel workshop in Egypt, and not added to the vessel later, i.e. in the northern Levant. Most probably, the signs were executed shortly after the stone vessel was completed and before the vessel was actually used as a container. Their cursory execution, which was already noted by Montet, probably shows that they were only to be seen secondary to the importance of the actual inscription, in this case placed on the lid of the vessel, but of prime importance for the

personnel involved with the producing and filling of such containers. Unfortunately, an indication of the contents of the vessel is not given. Without doubt, however, the vessel originally contained a precious substance, most probably an ointment or perfumed oil. As such, a precise indication of the vessel capacity was of importance when filling the vessel. This especially seems to be the case in the context of Egyptian funerary rituals within which specific amounts of many different kinds of oils or ointments were to be used and placed inside the tomb. While only very few of such measure capacity signs on stone vessels dating to the Middle Kingdom are archaeologically attested in Egypt, the examples known almost exclusively seem to hint to a ritual or funerary use.¹² If the vessel from Royal Tomb II indeed was used in a funerary context in Egypt (i.e. as part of the equipment of a tomb) before it was sent to Byblos, then tomb robbing might account for a secondary “re-cycling” of the vessel. A similar indication for such secondary use was observed on a stone vessel from the recently discovered late Middle Bronze Age to early Late Bronze Age Tomb VII at Tell Mišrife/Qatna.¹³

NOTES

- ¹ For the discovery of the first of the royal tombs, see Charles Viroilleaud, “Découverte à Byblos d’un hypogée de la douzième dynastie égyptienne,” *Syria* 3 (1922), 273–290; for the excavations of the royal tombs, see Pierre Montet, *Byblos et l’Égypte. Quatre campagnes de fouilles à Gebeil, 1921–1922–1923–1924* (Paris: Librairie Orientaliste Paul Geuthner, 1928).
- ² Montet 1928 (159) refers to the material simply as “pierre grise.”
- ³ For the type, see Rachael T. Sparks, *Stone Vessels in the Levant, Palestine Exploration Fund Annual VIII* (Leeds: Maney, 2007), 315, 436, fig. 14: 1.
- ⁴ The stone vessel is currently stored in the magazines of the National Museum Beirut (Lebanon). Apparently damaged during the civil war, the vessel is currently undergoing restoration and therefore could not be consulted by way of visual examination.
- ⁵ Montet 1928, 160.
- ⁶ Montet 1928, 160–161.
- ⁷ Montet 1928, 159–161 (vessel no. 614), fig. 70, pl. XCI.
- ⁸ Tanja Pommerening, *Die altägyptischen Hohlmaße, Studien zur Altägyptischen Kultur, Beiheft 10* (Hamburg: Buske, 2005), 122, Tab. 5.2.1; see also 141, Tab. 5.3.1.
- ⁹ Pommerening 2005, 138–139, Tabs. 5.2.3.a–b.
- ¹⁰ Therefore, the average wall thickness of the vessel was determined to be 15 mm, on the basis of other Egyptian stone vessels from the Middle Kingdom.
- ¹¹ It seems unlikely that the vessel was originally filled up to the rim, since then the lid could not have been placed to seal the vessel or cover the vessel's mouth. However, since the vessel's neck could carry another 30 ccm, this would

still match the capacity given by the fractions, allowing for a relative aberration of c. 3–7 %, which undoubtedly was inherent in Bronze Age measurement systems. Calculation of the capacity was done by the software program CATIA V5R19. The reconstruction of the stone vessel and analysis of its fill capacity was carried out by D. Schmitt (Technical University of Munich), to whom I am most grateful.

¹² The few known examples of stone vessels with measure capacity signs from secure archaeological contexts dating to the Middle Kingdom almost all seem to come from tombs within the burial precinct at Dahšur, i.e. the tombs of princesses Chnumit/Khenemet and Sathathor; for the vessels and the specific measure capacity signs attested on these see Pommerening 2005, 394–398 (§ 14.1.2, cat. nos. V05–V10).

¹³ See Alexander Ahrens, “A Stone Vessel of Princess Itakayet of the 12th Dynasty from Tomb VII at Tell Mišrife/Qatna (Syria),” *Egypt and the Levant* 20 (2010): 15–29, esp. 24–26. For the movement of Middle Kingdom objects during the Second Intermediate Period, see also Alexander Ahrens, “A Hyksos Connection? Thoughts on the Date of Dispatch of Some of the Middle Kingdom Objects Found in the Northern Levant,” in Jana Mynářová (ed.), *Egypt and the Near East – the Crossroads. Proceedings of an International Conference on the Relations of Egypt and the Near East in the Bronze Age, Prague, September 1-3, 2010* (Prague: Czech Institute of Egyptology, 2011), 21–40.