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# Autobiography of Weni (2)
# Some Remarks on the Expedition of Hatnub

Article 7

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# AUTOBIOGRAPHY OF WENI (2)
# SOME REMARKS ON THE EXPEDITION OF HATNUB

## ABSTRACT


**[AR]** **سيرة وني الذاتية (2) بعض الملاحظات على بعثة حتنوب**

تجري الدراسة الحالية فحصًا دقيقًا لجزء من المساعي الملاحية المسجلة في السيرة الذاتية لويني خلال عهد الملك مرنرع، وتبين تفاصيله بشكل دقيق؛ إذ سجل وني في سيرته الذاتية قيامه برحلة نهرية نجح فيها في بناء مركب ذي خصائص محددة - نوعًا ومادّة وأبعادًا - لنقل مائدة قرابين من حتنوب إلى سقارة خلال مدة محددة. وعلى الرغم من بساطة مفردات وني، وخلوها من التعقيد، إلا أنها لا تزال عصية على الفهم بشكل واضح - رغم تعدد ترجمات النقش وتنوعها - لاعتماد وني على أسلوب بلاغي ذي مسحة شديدة الإيجاز. الأمر الذي حال كثيرًا دون إماطة اللثام عن عدد كبير من التفاصيل اللغوية من ناحية والملاحية من ناحية أخرى. ويكمن مفتاح فك رموز هذا النقش في خطوتين أساسيتين: أولًا، تحديد معاني المصطلحات المتعلقة ببناء المركب مثل  و  ، وتبيان دلالاتهما اللغوية والسياقية بشكل دقيق. ثانيًا، مقارنة هذين المصطلحين بالأفعال الأخرى المستخدمة لأغراض مماثلة في أنشطة وني الملاحية في سيرته الذاتية. ثالثًا، تفسير أسباب استخدام وني لهذا الأسلوب في وصف بعثته النهرية. ويهدف هذا النهج إلى التحقق من صحة فترات بناء المركب والملاحة، بالإضافة إلى تمييز الأهمية الحقيقية للإطار الزمني المكون من السبعة عشرة يومًا، والجوانب الملاحية الأخرى ذات الصلة. ومما لا شك فيه أن التكامل بين دراسات الآثار المصرية وعلم الآثار البحرية كفيل بإلقاء الضوء على هذه الاستفسارات.

**[EN]** The current study undertakes a closer examination of a segment of the nautical endeavors chronicled in Weni's autobiography, which pertains to an expedition involving the construction of a barge with specific characteristics in terms of type, wood, and dimensions for the transportation of an offering table from Hatnub to Saqqara within a determined period. Despite the apparent simplicity of the vocabulary used in this inscription, it poses several challenges due to adopting the literal meanings, thereby impacting the translation and comprehension of the inscription. The key to deciphering this inscription takes two primary steps: Firstly, delineating the meanings of terms related to boatbuilding in the inscription, such as  and  , and understanding their precise and contextual significance; secondly, comparing these verbs with others employed for similar purposes elsewhere in Weni's autobiography. This approach aims to validate the durations for the barge construction and navigation and discern the true significance of the seventeen-day timeframe and other pertinent nautical aspects. Undoubtedly, the integration of studies in Egyptian archaeology and nautical archaeology promises to shed light on these inquiries.



**KEYWORDS:** Autobiography, barge, boatbuilding, boatyard, caulking, expedition, nautical, navigation, Weni.

## I. INTRODUCTION

Weni's autobiography is inscribed on a monolithic limestone slab, originally part of a wall in the single-room tomb chapel in the Northern Necropolis in Abydos[1]. The inscription comprises fifty-one vertical columns, and it is preceded by a horizontal line containing a prayer for offerings[2]. It is currently housed in the Egyptian Museum in Tahrir[3].

Weni held various positions during the reign of three consecutive kings of the 6th dynasty (Teti, Pepi I, and Merenre)[4] and was entrusted with numerous tasks, all of which he fulfilled, according to his narration, to the fullest[5]. Among these tasks were five nautical expeditions. In the fourth expedition, conducted during the reign of King Merenre (as detailed in lines 42 to 45), Weni was commissioned to journey to Hatnub to quarry and transport an offering table to Saqqara aboard a barge made of acacia wood[6].

In a previous article, we explored common themes across the five expeditions, including the use of acacia as the primary local wood for boat construction, particularly for the working boats; the type of barge referred to as  with dimensions of (60 x 30 cubits), conforming to Egyptian boat sizes and nautical archaeology standards. We noted that while the length was typical and feasible, the length-to-width ratio (2:1) was somewhat unusual, though the name of the barge, meaning «wide», may elucidate its exceptional width. Additionally, we observed Weni's concise and brisk narrative style, characterized by a preference for brevity and a tendency to avoid detailed explanations. This linguistic approach mirrors the constraints faced by artists in the Old Kingdom's tomb scenes, suggesting shared religious and practical conventions between autobiographies and depictions[7].

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[1] A group of blocks inscribed with a copy of the autobiography of Weni was found in Saqqara in 2012. The terms of the autobiography, which describe the hierarchical rise of Weni and several episodes of his life, are too similar in the two versions. However, the two texts are not identical. We find passages added or omitted in each of the texts but they don't concern the expedition under question. COLLOMBERT 2015: 145-157.

[2] LICHTHEIM 1973: 18. Compare MARIETTE 1864: 286; TRESSON 1919: III; EL-KHADRAGY 2002: 61-62; RICHARDS 2002: 82; KLOTH 2002: 11.

[3] Inv.CGC 1435. Width: 2.70 ms; Height: 1.10 ms; nearly half a meter thickness. For the dimensions of the slab, see: MARIETTE 1864: 286; MARIETTE 1880a: 84, Nº.522; MASPERO 1890-1900: 25; BREASTED 1906: 134, Nº.a; TRESSON 1919: III; BORCHARDT 1937: 115-119 [1435], and PLS.29-30; PIACENTINI 1987: 3, Nº.1; EL-KHADRAGY 2002: 61; RICHARDS 2002: 39, 78, 82; KLOTH 2001: 11. BROVARSKI mentioned that the slab may be originally wider than 2.70 m. He stated that at the right end of the slab is a single column of sunken hieroglyphs facing left; followed by five other columns, all facing right. It is impossible to ascertain how many columns occupied the lost section of the slab to the right. BROVARSKI 1994: 115, №.122.

[4] BREASTED 1906: 134 § 291; PORTER & MOSS 1937: 72; ROCCATI 1986: 852; KLOTH 2001: 11.

[5] RICHARDS 2002: 39, 78.

[6] For Weni's activity in Hatnub quarries, see: PETRIE 1894: PL.XLII; ANTHES 1964: 14, TAF.5, Inschrift VI; SHAW 1986: 194; GRIMAL 2005: 112; SHAW 2005: 435; STRUDWICK 2005: 147; GOURDON & ENMARCH 2017: 237.

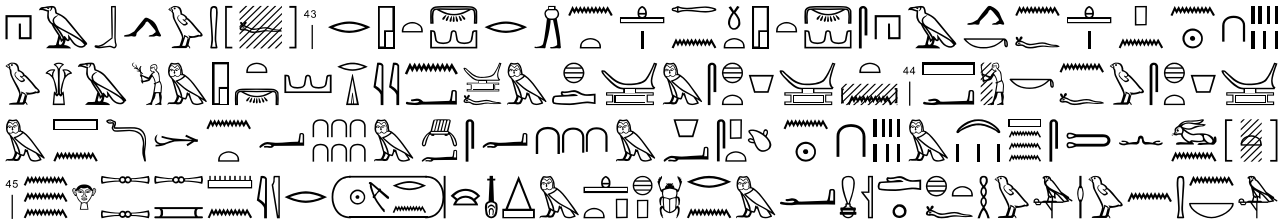
[7] AL-SHARKAWY & ABD EL-MAGUID: Forthcoming.

Our discussion now turns to the location of the barge's construction site in the Hatnub quarries and the duration of its construction and navigation. Numerous scholars believe that the barge was constructed in a seventeen-day timeframe. Yet, this hypothesis fails to address the feasibility of completing such a vessel in such a short period.

## II. METHODOLOGY

Drawing on their respective scientific backgrounds, the two authors collaborate to ascertain whether Weni constructed the acacia barge in 17 days, as translated by most scholars, or if there is an alternative interpretation. Their investigation also encompasses the duration of navigation and other nautical aspects. Adopting an analytical descriptive approach, the authors begin by translating the relevant paragraph and scrutinizing the two verbs employed therein:  and  . They consider Weni's other nautical activities documented in his autobiography, if necessary, to interpret or compare certain terms, such as the verbs  and  . Subsequently, they analyze the boatbuilding processes and procedures deduced from texts, iconography, or excavated materials to assess the feasibility of constructing a barge of such dimensions in this short period.

## III. THE INSCRIPTION



*ḥ3b w(i) ḥm[=f]* [43] *r Ḥwt-nbw r in.t ḥtp ʿ3 n(y) šs.t Ḥwt-nbw s:h3i=k(w) n=f ḥtp pn n hrw 17 wḥ3(.w) m Ḥwt-nbw rd.y nʿi=f m-ḫdi(=i) m <w>sḫ.t t[n]* (44) *šʿ=k(w) n=f wsḫ.t m šnḏ n(y).t mḥ 60 m 3w=s mḥ 30 m wsḫ=s sp.t n 17 hrw m 3bd 3 šmw sṯ n wn[.t]* (45) *mw ḥr ṯs.w mni(=i) r (mr) ḫʿ(i)-nfr-Mr(i)-n-Rʿ m ḥtp ḫpr.n m-ʿ(=i) m-ḳd ḫft ḥw wḏ.n ḥm n nb (=i)* [8]

«[His] majesty sent me[43] to Hatnub[9]. I brought this offering table down for him in 17 days. After it was quarried[10] in Hatnub, I had it go downstream in this *wsḫ.t*-barge; (44) I  *?* for it (the offering table) a *wsḫ.t*-barge of acacia wood of 60 cubits in length and 30 cubits in width  ? in 17 days in the third

[8] Text: SETHE 1903: 107, 16-108, 10. See also for example: DE ROUGÉ 1866: 139-140; MARIETTE 1880b: PL.45 [43-46]; MASPERO 1890-1900: PL.XVIII [43-46]; BRUGSCH 1891: 1476-1477 [42-45]; TRESSON 1919: *7* [43-46]; HOFMANN 2002: 228 [43-46].

[9] BREASTED and LANDSTRÖM read  *rwd.t* «enduring or hard stone», and «hard stone» respectively. See: BREASTED 1906: 149, N°.d; LANDSTRÖM 1970: 62. For the reading and true meaning of  *šs* «alabaster», see: ERMAN & GRAPOW (eds.): *Wb* 1971: vol.4, 540, 10-12.

[10] BREASTED mentioned that «the word *wḥ3* is used for cutting grain, papyrus, plucking grapes, separating blocks from the quarry, etc. It is used (in pseudo-participle) exactly as here, in the Hammamat inscription of the official Sesostris (LEPSIUS 1849: 11, 138, e): *twt … wḥ3 m rnp.t tn*, «a statue … quarried in this year»; and often in the quarry inscriptions». See: BREASTED 1906: 149, N°.e.

month of *šmw* when there was no (45) water on the sandbanks. It landed at the Pyramid «Merenre-appears-in-splendor» in safety. It came about through me entirely in accordance with the royal ordinance commanded by my Lord»[11].

## IV. LINGUISTIC ANALYSIS

The initial inspection of the inscription reveals that Weni did not furnish any explicit details regarding the construction phases of the barge. He contented himself with employing only two terms. Weni's linguistic pattern suggests that the construction process consisted of merely two stages. Unfortunately, these two terms proved insufficient for delineating the complete building phases of the barge. Adding to the ambiguity of the inscription is Weni's description of constructing other boats used to transport the massive granite blocks for King Merenre's Pyramid in Saqqara, as detailed in his 5th expedition. In this instance, he also utilized only two expressions: «his majesty sent (me) to excavate ... and to build  (*ir.t*) three *wsḫ.t*-barges …» and «to draw  (*sṯ3*) the timber for them»[12]. In the forthcoming pages, we delve into the interpretation of these four terms from a linguistic perspective.

### 1.  and their Literal and Contextual Significance

Weni employed two terms,  and , to encapsulate the entire process of barge construction. Both terms denote several meanings, some of which may not directly relate to boatbuilding compared to the broader group of terms found in inscriptions and depictions of Egyptian nautical activities in boat construction. Therefore, examining these two terms is crucial for grasping their literal and contextual significance, which in turn is essential for accurately interpreting the inscription.

#### A. 

In the Egyptian language, «*šˁ*« signifies actions, such as «cut off», «cut up», «knock down», «divide into pieces by cutting», and « diminish»[13]. This term finds its primary association with the Pyramid Texts. Within these texts, «*šˁ*» was employed to convey threats, intimidation, slaughter, and dismemberment[14]. Additionally, it was linked to cutting barley in a few instances[15]or simply cutting something[16]. However, «*šˁ*» did not

[11] Translations: MARIETTE 1864: 287; ERMAN 1882: 24-25, 29; MASPERO 1888: 9; GRIFFITH 1894: 17-18; BREASTED 1906: 149 § 323; BOREUX 1925: 128-130; CLARKE & ENGELBACH 1930: 34; STRACMANS 1935: 514; GARDINER 1961: 97; LANDSTRÖM 1970: 62; LICHTHEIM 1973: 21; OSING 1977: 173-174; ROCCATI 1982: 196-197 § 187; GRIMAL 2005: 167; WARD 2000: 9; HOFMANN 2002: 228, 232; KLOTH 2002: 183, 202; SIMPSON 2003: 406; STRUDWICK 2005: 356; SERVAJEAN 2018: 208; ESPOSITO 2019: 40-41.

[12] SETHE 1903: 108, 13-109, 7.

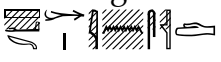
[13] TRESSON 1919: 41; GARDINER 1976: 594; MEEKS 1980: [77.4097]; FAULKNER 1986: 262; LESKO 1987: 136; HANNIG 1995: 805 (1-2); WILSON 1997: 992; HANNIG 2003: 1282 (1-2); DICKSON 2006: 152; HANNIG 2006: 2425-2426 (1-2); HANNIG 2012: 156, 561; JEGOROVIĆ 2017: 320.

[14] SETHE 1960: §§ 442, 653, 673, 1212, 1337, 1339, 1545; FAULKNER 1969: 89, 123, 127, 193, 210, 211, 235.

[15] KANAWATI 2012: 50-51, PL.37, 44, 84.

[16] HASSAN 1941: 190, FIG.153.

feature prominently in depictions of boatbuilding, nor was it commonly associated with cutting timber or trees[17] for boatbuilding. Two inscriptions dating back to the Late Old Kingdom utilized «*šˁ*» in boat building, one belonging to Weni and the other to the tomb of Ni-Ankh-khnum and Khnum-hotep in Saqqara.

This last scene depicts two men positioned on opposite sides of a tree, rhythmically wielding their axes to cut through its trunk. The legend describes this act as:  *šˁ ḫt in sḳd* «The tree was cut down by the boat maker»[18]. Following this scene, three subsequent scenes in the lower register depict the progression of boat construction. Among the scenes, additional legends provide further insight into the advancement of the work, such as:  [*šd*].*t* [*m*] *dšr šȝbt* «building a *dšr*-barge(?), (*i.e.*) a *šȝbt*-boat« and  *nḏr sḫt in mḏḥ* «carpentering the *sḫt*-boat by the carpenter»[19] **[FIGURE 1]**.

**[FIGURE 1]: Saqqara, the tomb of Ni-Ankh-khnum and Khnum-hotep, 5th dynasty. MOUSSA & ALTENMÜLLER 1977: ABB.8.**

The term «*šˁ*» denotes various meanings in the Coffin Texts[20], including «cut off», «make an incision into the body (possibly referring to surgical operations during birth)», and «be cut». In these texts, there are references to «cutting the papyrus stems» as part of constructing a papyrus boat for the deceased's journey to heaven[21]. From the Second Intermediate Period onwards, «*šˁ*» was used in the sense of «cut off»[22], with references to «cut down trees» and «cut branches from ebony trees». The first is in the Gebel Barkal stela of Tuthmosis III, where it describes punishment aimed at depriving enemies of these trees[23], and the second is in the accounts of Hatshepsut's Punt expedition[24].

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[17] FAULKNER 1986: 262; HANNIG 1995: 805 (5); HANNIG 2003: 1283 (5); HANNIG 2006: 2426 (3); HANNIG 2012: 504; JEGOROVIĆ 2017: 320.

[18] The authors provided several translations for *sḳd*: «sailor», «rower of a boat», «boat builder», and «woodcutter». MOUSSA & ALTENMÜLLER 1977: 74 [Sz.9.1.2], TAF.21, ABB. 8.

[19] MOUSSA & ALTENMÜLLER 1977: 74-75, [Sz.9.2.1], [ Sz.9.2.2], [Sz. 9.2.3], ABB.8.

[20] VAN DER MOLEN 2000: 604.

[21] De BUCK 1947: 97g, 113 *n-p*; FAULKNER 1973: 158, 161.

[22] BUDGE 1898: 391 [9]; GARDINER 1955: (P. Ram. IX = pBM EA 10762), 12, PL.XLA I, I; RATIÉ 1968: Tb 169, line 560; ALLEN 1974: 151; FAULKNER 1985: 149; MUNRO 1994: TAF.124 (Tb 99 B line 233); LAPP 1997: PL. 57 (Tb 153 A line 9); QUIRKE 2013: 378.

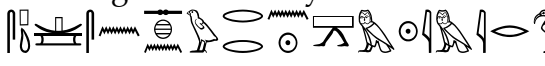
[23] DE BUCK 1948: 57 [14-15].

[24] NAVILLE 1898: PL.LXX; SETHE 1961: 326, 17-327, 1.

According to this historical record, the term «*šˁ*» was rarely used in boatbuilding scenes and inscriptions. While scenes depicting the transportation of felled tree logs existed, «*šˁ*» was not specifically associated with these depictions. This absence of «*šˁ*» from scenes depicting tree felling was consistent across various necropoleis, spanning from the Old and Middle Kingdoms, including sites, e.g., Giza[25], Saqqara[26], Lisht[27], Beni Hasan[28], El-Hammamiya, Meir[29], and el-Moalla[30]. Surprisingly, even during the New Kingdom, «*šˁ*» was absent from such scenes, regardless of their context[31]. This scarcity suggests that «*šˁ*» was more closely related to other topics, such as daily life or religious practices, rather than boatbuilding.

To summarize, «*šˁ*» in Weni's inscription means «cut» as an authentic meaning. Thus, the expression *šˁ.k*(*i*) *n=f wsḫ.t m šnd* must be translated «*I had cut for it a wsḫ.t-barge of acacia wood*». Hence, we dismiss the translation of the verb «*šˁ*» to mean «build a boat»[32], «made»[33], or similar meanings. The former is negated by the presence of another verb,  , which is likely involved in the construction process in the same paragraph. The latter translation is contradicted by the usage of the verb  «*ir*» in the same context in the autobiography. However, the authors acknowledges translations, such as «hew ship»[34] and «to carpenter»[35], because they closely align with the direct meaning of the verb.

**B.** 

This term was more frequently associated with boatbuilding operations in the Old Kingdom. It usually means «to bind together a papyrus float or skiff» with ropes[36]. This meaning is clearly mentioned in the Pyramid Text § 1206 as follows:  *sp=sn sḫn.wy n*(*y.wy*) *Rˁ šm Rˁ im*(=*sny*) *ir ȝḫ.t=f* «They bind together for Re the two reed-floats on which Re goes to his horizon»[37]. It is also attested in the Pyramid Text § 1209 as follows:  *bȝ=ti ḫˁ=ti m-ḫnt smḥ=k pw nỉ mḥ 770 sp*(*w*).*n n=k nṯr.w P ˁrḳ*(*w*).*n n=k nṯr.w ỉȝb.t sḏȝi.n=k N pn ḥnˁ=k m šnˁ.w smḥ=k* «You having a soul are appearing in the front of your *smḥ*-boat of 770

[25] HASSAN 1943: 115, FIG. 60.

[26] MOUSSA & ALTENMULLER 1971: PL.20.

[27] DEGLIN 2011: 89-90.

[28] NEWBERRY 1893: PL.XXIX.

[29] DEGLIN 2011: 89-90.

[30] VANDIER 1950: PL.29.

[31] For example: DAVIES 1927a: PLS.18-19, 21; DAVIES 1927b: PL.XXX; DAVIES 1963: PL.2; GALE et al. 2000: 353.

[32] JONES 1988: 226 [102].

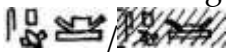
[33] STRUDWICK 2005: 356.

[34] BREASTED 1906: 149 §323; FAULKNER 1986: 262; DICKSON 2006: 152; JEGOROVIĆ 2017: 320.

[35] ERMAN & GRAPOW (eds.): *Wb* 1971: vol.4, 416, 4; HANNIG 1995: 805 (3); HANNIG 2003: 1282 (3); HANNIG 2012: 504, 716; HANNIG 2000: 1573 (3); KLOTH 2002: 183.

[36] ERMAN & GRAPOW (eds.): *Wb* 1971: VOL.4, 96, 13-14; JONES 1988: 222 [76].

[37] ERMAN 1893: 79; SETHE 1960: 1206 *c-d*; FAULKNER 1969: 192; SERVAJEAN 2018: 201.

cubits, which the gods of Pe bound together for you, which the eastern gods built for you. Take this King with you in the cabin of your *smḥ*-boat»[38]. This term also appeared as  and  in other versions of these two spells.

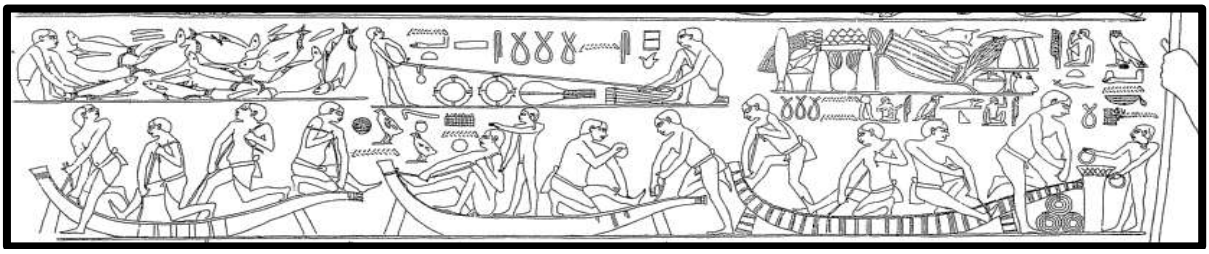
Following this principle,  emerges as a commonly encountered legend in scenes depicting boat building during the Old Kingdom. It appears with regularity, either independently or alongside other legends describing various boatbuilding operations. This usage is documented in the tombs of Rahotep, **[FIGURE 2]**[39], Nefermat and Atet in Meidum[40], Urarna II in Sheikh Saïd [FIGURE 3][41], as well as Akhet-hotep-her[42], Ptah-hotep, and Akhet-hotep in Saqqara **[FIGURES 4-5]**[43], and another Akhet-hotep in the same necropolis[44]. The term is also depicted in scenes of boatbuilding in the Sun Temple of King Neuser Ra[45] **[FIGURE 6]**. Another scene, found on a limestone block from Saqqara, portrays the binding of a papyrus boat[46] **[FIGURE 7]**. It also appears in the tomb of Khunes at Zaouiyet el-Meitîn **[FIGURE 8]**[47].

This term was written:  , , , , , , , and  in these scenes. In other scenes, the artists depicted the operation of binding boat parts without explicitly labeling it with -legend[48]. In other instances, they included coils of papyrus ropes in the scenes[49] **[FIGURE 9]**. Additionally, there are examples where artists combined both coils and -legend together[50] **[FIGURES 3 & 8]**.

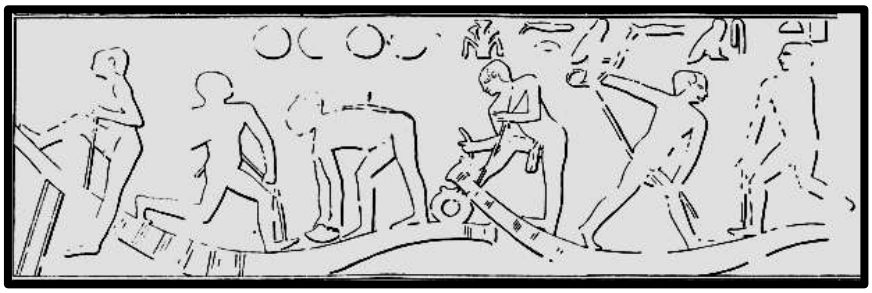
**[FIGURE 2]: Meidum, the tomb of Rahotep, 4th dynasty. PETRIE 1892: PL.XI.**

[38] SETHE 1960: 1209 *a-c*; FAULKNER 1969: 192; SERVAJEAN 2018: 203.
[39] PETRIE 1892: 23, PL.XI.
[40] PETRIE 1892: 26, PL.XXIII; BOREUX 1925: 177.
[41] DAVIES 1901a: 24, PL.XII; BOREUX 1925: 180-181.
[42] HOLWERDA, BOESER & HOLWERDA 1908: PL.14; BOREUX 1925: 178.
[43] GRIFFITH 1898: 28, PL.XXXII; DAVIES 1900: 10, PL.XXI, XXV-XXVI; DAVIES 1901b: 15-16, PL.XIII.
[44] SERVAJEAN 2018: 206.
[45] EDEL & WENIG 1974: PL.11.
[46] BORCHARDT 1964: 141 [1697], PL.90.
[47] LEPSIUS 1849: 106 a; BOREUX 1925: 181.
[48] See the tomb of Nebemakht (N°.86) at Giza. LEPSIUS 1849: 12 *b*; BOREUX 1925: 177-178.
[49] See the tomb of Inty at Deshaseh. PETRIE 1898: 7, PL.V; BOREUX 1925: 180.
[50] See the tomb of Urarna II (N°.25) in Sheikh Saïd. DAVIES 1901a: 24, PL.XII; BOREUX 1925: 180-181. See also the tomb of Khunes in Zaouiyet el-Meitîn. LEPSIUS 1849: 106 *a*; BOREUX 1925: 181.

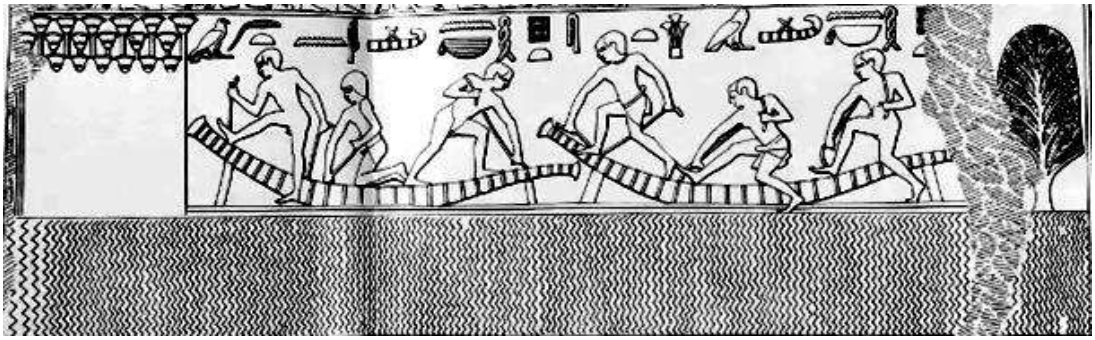
**[FIGURE 3]: Sheikh Saïd, the tomb of Urarna II, 5th dynasty. DAVIES 1901a: PL.XII.**



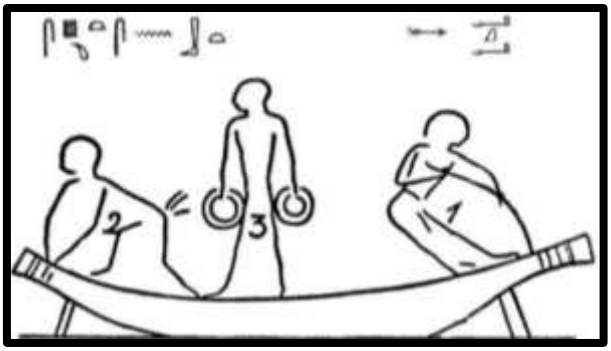
**[FIGURE 4]: Saqqara, the tomb of Ptah-hotep and Akhet-hotep, 5th dynasty. GRIFFITH 1898: PL.XXXIII.**



**[FIGURE 5]: Saqqara, the tomb of Ptah-hotep and Akhet-hotep, 5th dynasty. DAVIES 1901b: PL.XIII.**



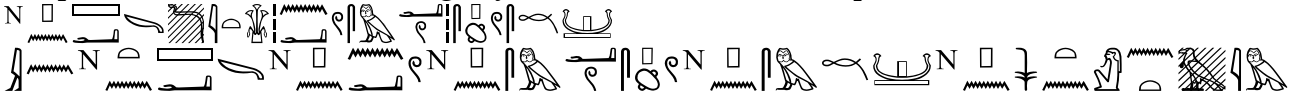
**[FIGURE 6]: Abu Gorab, the Sun Temple of King Neuser Ra, 5th dynasty. EDEL & WENIG 1974: PL.11.**




**[FIGURE 7]: Saqqara, a limestone block, 5th dynasty. BORCHARDT 1964: 141.**

**[FIGURE 8]: Zaouiyet el-Meitîn, the tomb of Khunes, 6th dynasty. LEPSIUS 1849: 106a.**

**[FIGURE 9]: Deshaseh, the tomb of Inty, 5th dynasty. PETRIE 1898: PL.V.**

Coffin Texts also confirm the previous meaning of  as a verb in the sense of «frap»[51], or «bind tightly»[52], such as spell 195, as follows: 
*N pn šˁ ḏyt nˁ smˁ.w sp smḥ ỉy.n N tn šˁ N pn (ḏ.t) nˁ N pn smˁ sp N pn smḥ N pn nsw nt.yw im* «O this N, cut the papyrus stems, twist the lacings (?) and frap the hull. This N has come, this N has cut (the papyrus-stems), this N has twisted the lacings (?), this N has frapped the hull, this N is the king of those who are yonder»[53]. Besides, the form , this term was also written:  and  in other spells[54].

In the same vein, the Middle Kingdom funerary scenes continued the pattern of depicting boatbuilding operations. An example of such a scene could be found in the tomb chapel of Senbi's son Ukh-hotep in Meir. In this scene, the boatwrights were depicted continuing their work on the boat, ensuring that the ropes binding the bundles of papyrus reeds together were tightly attached, as indicated by the  -legend[55] **[FIGURE 10]**.

[51] To frap means to bind tightly in nautical terminology. LAYTON 1994: 148.

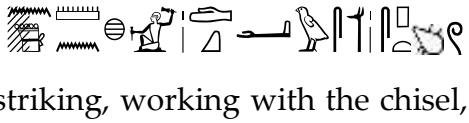
[52] VAN DER MOLEN 2000: 489.

[53] DE BUCK 1947: 113 *n-p*; FAULKNER 1973: 161. SERVAJEAN 2018: 202.

[54] DE BUCK 1947: 97g; 199 *i-k*; V 178 g-e; 212 *b*; 213 a.

[55] BLACKMAN 1915: 14, PL.IV, XXVI, 2.

**[FIGURE 10]: Meir, tomb-chapel of Senbi's son Ukh-hotep, Middle Kingdom. BLACKMAN 1915: PL.IV**

The usage of  was not restricted to binding together or frapping papyrus boats; it was also employed in the construction of wooden boats[56]. This is evidenced by the presence of this term as a legend in many scenes depicting wooden boatbuilding, such as the wooden boatbuilding scene in the tomb of Rahotep. This scene led many scholars to mistakenly identify the boats as being made of papyrus due to the depiction of a worker pulling a rope inserted into the hull, which could suggest carpentry lashing or sewing. The inclusion of woodworking tools in these scenes, along with the presence of the legend «*mnḫ*«, further confirms the wooden construction of these boats[57] **[FIGURE** 2]. Moreover, the overall boatbuilding operations were expressed in a few terms in the tomb of Zaʿu at Deir el Gebrâwi, accompanied by a damaged scene, as follows:  [58] *nḏr mnḫ dḳʿ wsr sp.t* (*in*) *ḥm.t n*(*y*).*t pr ḏt tn* «striking, working with the chisel, shaping (?) a paddle, assembling (the boat) (by) craftsmen of the funerary estate»[59] **[FIGURE 11].**

**[FIGURE 11]: Deir el Gebrâwi, the tomb of Zaʿu, 6th dynasty. DAVIES, CRUM & BOULANGER: 1902: PL.X**

To clarify the meaning of  and its application to binding operations in wooden boats, Pepi-nakht provided explicit insight into his tomb's inscription in Aswan. This official recounted his journey to the Red Sea coast, following the orders of Pepi II. His mission was to retrieve the body of An-Ankhet and his companions, who had been slain by Bedouins while «assembling a boat» on the sea coast. This account underscores the

[56] ERMAN & GRAPOW (eds.): *Wb* 1971: vol.4, 96, 13-14; JONES 1988: 222 [76].

[57] ROGERS 1996: 5.

[58] DAVIES, CRUM & BOULENGER 1902: PL.X.

[59] SERVAJEAN 2018: 209.

association of binding operations with boat construction, even in the context of wooden boats intended for voyages to destinations such as Punt[60].

Evidently, An-Ankhet did not construct his boat on the coast of the Red Sea; rather, he assembled the parts of the boat, which were disassembled and transported from the Nile across the desert. This tradition finds validation in the inscription of Antefoker from the 12th dynasty found in Mersa Gawasis. It confirms the ancient Egyptian custom of reassembling boats dismantled after being constructed on the Nile bank, then transported through desert wadis to the Red Sea coast[61]. Archaeological findings in locations such as Mersa Gawasis[62], Wadi al-Jarf[63], and Ain Sokhna confirm this practice[64]. This common practice of dismantling boats served various purposes, including funerary practices, as evidenced by the deposition of boats in pits like those found at Khufu I and II. Additionally, it served the practical need for wood reuse[65] **[FIGURE 12]**.

**[FIGURE 12]: Giza, Khufu's boat pit 2, disassembled hull planks © Photo taken by Mohamed Abd El-Maguid**

[60] Text: SETHE 1903: 134, 13-17. For translation, see: BREASTED 1906: 163 § 360; BOREUX 1925: 134-135; KITCHEN 1971: 192; ROCCATI 1982: 208–211; LICHTHEIM 1988: 16; STRUDWICK 2005: 335; TALLET 2009: 712-713; CREASMAN & DOYLE 2010: 14; TALLET 2013a: 191; BARD & FATTOVICH 2018: 192; SERVAJEAN 2018: 207; ESPOSITO 2019: 49.

[61] SAYED 1977: 169-173; SAYED 1978: 70-71; LECLANT 1978: 70; SAYED 1983: 29-30; FAROUT 1994: 144; TALLET 2009: 704; MAHFOUZ 2011: 54-56; ABD EL-RAZIQ et al. 2012: 6; TALLET 2013b: 76; FAROUT 2016: 22-23; BARD & FATTOVICH 2018: 193-195.

[62] BARD & FATTOVICH 2007: 250-251.

[63] TALLET 2012a: 152; BECKTELL 2014: 4, 9-10.

[64] TALLET 2009: 703-704; TALLET 2010: 18-19; ABD EL-RAZIQ et al. 2012: 5, 9-10; TALLET 2012a: 150; TALLET 2012b: 35; POMEY 2012: 35-52.

[65] ABD EL-MAGUID 2015: 15.

The term appeared in boatbuilding scenes and inscriptions with various determinatives. The majority of these signs corroborate the meaning of binding and assembling, further emphasizing the role of in the construction process, such as (forearm with hand holding stick = SL D40), (leg = SL D56), , , (boats on water = SL P1/20), (coil of rope = SL V1), and (a circle representing rope tie).

However, there are other determinatives whose relationship to the process of binding and assembling is difficult to explain. A sign somewhat resembles a piece of flesh /. Another one represents a pustule or gland (SL Aa2). A third one represents the same sign with liquid issuing from it (SL Aa3). The egg (SL H9) is the fourth one. The last one is the confusing sign with its diverse forms: , , , , which may represent the sign (lump of clay or dung = SL N32) or a vessel with two handles(?), or a form of Aa2, or anything else. These later determinatives aroused the interest of several scholars. Their efforts resulted in some interpretations that completely changed the meaning of this term, rendering a different function.

For Montet, could not represent anything other than a certain quantity of the sticky product spread on the joints. He interpreted - which appeared with the determinatives , , - in the sense of «caulking». But he was convinced that the rope played a role in the -action and that it was used to caulk papyrus barques according to the legend in the tomb of Ptah-hotep[66].

Boreux believed that the most common determinative of appeared to be a form of the sign that appeared particularly in medical papyri as an ideogram. On the one hand, it denoted the meanings of «put a poultice» and «mummified». It served as a determinative following words expressing ideas about sebum, secretions, and unpleasant-smelling substances. He believed that the sign indicated the same meaning and pointed out the appearance of this sign in the Pyramid Texts as a determinative to the word «waste» and its connection to the traditional depiction of clay and natural fertilizer in Griffith's opinion. Boreux's interpretation changed the significance of . He conceded that it might adopt the broader interpretation of «to construct a boat», yet he contended that the original sense was not «to tie» but rather «to seal» with resin, bitumen, or possibly a combination of both, after thorough assembly and binding, to prevent water leakage. Therefore, he believed that the use of the verb , in maritime language, meant «caulking a boat«, either with regolith, as Griffith suggested, or dissolved bitumen, which, in his opinion, corresponded to the determinative of the word[67].

Vandier, in turn, described this determinative as an object whose contours were particularly and deliberately imprecise. He wanted to make it either a stylized reproduction of a certain quantity of the sticky product used to caulk the boat or a simple

[66] MONTET 1925: 342-344.

[67] BOREUX 1925: 185-186.

rope, more or less clumsily represented. He acknowledged that the verb could have the meaning proposed by Boreux and Montet, such as «caulking». However, he argued that if the verb had such a narrow meaning, the Egyptians would not have used it so frequently to describe scenes in which workers were involved in tying ligatures. Therefore, Breasted's interpretation of the verb «*sp*» as having a broader meaning, encompassing boatbuilding, appeared more appropriate. According to Vandier, the first meaning would have been «to bind», and the verb would only have been used for the construction of wooden boats by analogy. On the other hand, he drew our attention to the fact that the construction of the boat also required caulking, explaining the regular presence of the curious determinative following the verb «*sp*».[68]

Servin established a connection between the different forms of the determinative of the verb «*sp*» and an ovoid mass object equipped with two handles. This object was depicted in the hand of a worker striking the upper face of a boat in Akhet-hotep's tomb. The use of this mass object was rare in Egyptian art; it was depicted in a three-quarter perspective to emphasize the need for the stems to be struck obliquely in order to even out the layers. The artist transgressed the conventions to highlight this crucial detail.[69]

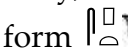
The verb, therefore, represents, in the first analysis, the operation of finishing the boat. This verb is generally accompanied by two determinatives: in the first  , one recognizes the mass used in the tomb of Akhet-hotep to compact the sheaves; the second O, the roll of rope, relates to the tightening of ligatures. In the tomb of Akhet-hotep, in the application of an almost general rule, the determinative  already represented in the drawing is omitted from the legend.[70]

Consequently, Servin had reservations about the interpretation of  in the sense of «caulking», claiming that this process would weigh down the papyrus boat and affect its buoyancy. Upon analyzing the inscriptions featuring the word  in various boatbuilding scenes found in the Old Kingdom's tombs, he highlighted the verb's () association with *smḥ* papyrus boat. Additionally, he noted its occurrence alongside the determinative of the two side handles  or , symbolizing the papyrus coil. He indicated that the same verb appeared with the determinative  in the aforementioned Pyramid Texts 1206 and 1209, linked to the process of binding Ra's boats.[71]

The analysis of these texts affirms, according to Servin, that at the time of building the tomb of Akhet-hotep, the term «*sp*» indicated a phase of construction of papyrus boats. The hull was formed by compacting the reeds (which made up the boat), using an ovoid mass fitted with two handles, and tightening the ligatures by force. This operation was intended to transform the papyrus hull into a homogeneous mass. But at the end of the Old Kingdom, artists refashioned their theme, and the wooden boat construction replaced that

[68] VANDIER 1969: 554-555.
[69] SERVIN 1948: 61-62.
[70] SERVIN 1948: 62.
[71] SERVIN 1948: 82-83.

of papyrus. Therefore, «*sp*» and its determinative disappeared from the inscriptions. However, it appeared in Weni's inscription with the meaning «to assemble the various parts of the (wooden) boat» and in the tomb-chapel of Senbi's son Ukh-hotep from the Middle Kingdom. The artist of Ukh-hotep's tomb copied the theme and the inscription from the tomb of Akhet-hotep[72].

Finally, Servin concluded that in ancient Egyptian boatbuilding, «*sp.t*» is found in its verbal form  (var.  ) and in its nominal form . The first, «*sp.t*» is the feminine infinitive of the verb *sp*(*i*): «to pack and bind (the papyrus boat)» then, by extension of meaning, «to bind«, by all useful means, or, in fact, «to build». The compound word  , which characterizes certain fixing elements of the Egyptian boat, derives directly from the idea of connection or joining contained in the root *spi*. The second,  ,  ,  …, *sp.t* designates a kind of resin (?) that was originally used in manufacturing or coating ropes used to bind the boat. These two phonetically identical words were distinguished by their determinatives:  , with or without its handles for the verbal form and , ,  and fortuitously  for the nominal form[73].

Servajean noted that the determinative of  evolved from the form  of the 4th dynasty to  of the 5th dynasty. He also mentioned that the shape and arrangement of  remained almost the same, with some minor differences, since the 6th dynasty, with the exception of  and  and the reappearance of the sign . He added that, in the Middle Kingdom's Coffin Texts,  was definitively replaced by that of the pustule . Using Griffith's interpretation in the explanation of the sign : «a conventional figure, apparently for mud, dung», that refers to the word *sin* «clay», determined by the same sign. Servajean confirmed that , in the word  *mḥsḥs*, was mentioned in the Mastaba of Ty and represented bovine droppings[74].

According to Servajean, the Egyptians possibly used a mixture of clay and bovine droppings not to caulk the hull in the strict sense but to seal cracks or weak points in the hull through which water could infiltrate. Consequently, he rejected the interpretation of «caulking» in its strict semantic field, believing that it refers to a systematic filling or sealing of the hull's parts. For papyrus boats, this assembly was made using a single operation: «attach» the elements of the hull to each other. For wooden hulls, it involves two distinct operations: «binding» the elements of the hull (determinative ) and waterproofing (determinative ). Regarding the term , it does not imply a systematic operation but is performed only once, if necessary, on the weak points of the hull under construction. Thus, when referring to this operation, terms such as «caulking» or «to caulk», which denote a

[72] SERVIN 1948: 83-84.

[73] SERVIN 1948: 88.

[74] SERVAJEAN 2018: 217-219.

specific and easily identifiable action, should be avoided. He preferred using «waterproofing» or «clogging» for nouns and «waterproof» or «to clog» for verbs[75].

The determinative of the verb «*sp*» is confusing and puzzling. While we acknowledge the earnestness of prior attempts to elucidate its significance, it remains challenging to endorse the notion that all its forms denote a singular concept or to streamline them into a solitary form, particularly given the notable disparities among them as follows:  ,  ,  ,  ,  , ,  ,  ,  ,  ,  ,  , and  . In addition, the clear difference between all these forms on the one side and  in the tomb of Akhet-hotep on the other side makes the comparison somewhat questionable. Since there is repetition of the old form across the different periods, we cannot trace the development of the sign in such a continuous manner that it can be said that the form  of the 5th dynasty arose from the form  of the 4th dynasty.

The second problem revolves around the reason for altering the form of the same tool in boatbuilding scenes, particularly when other tools depicted in the same scenes have not undergone significant or noticeable changes. It is noteworthy that  appeared alongside the sign  . In the legend in Saqqara's 5th dynasty pyramid of King Unas, a scene in the causeway depicts two workers polishing utensils of gold and stone with small round or oval-shaped blocks[76]. Interestingly, the artist depicted the two tools together, proving the tools were not interchangeable and had differing purposes.

Irrespective of caulking or any other procedure, the challenge lies in discerning the nature of the mass and determining whether all these determinatives denote a unified concept, evolved forms over time, or if the process varied with each instance, employing different tools. The scene of the two-handled mass  , in the tomb of Akhet-hotep, represents an exceptional case because we have not found a similar scene to confirm the use of this mass in packing the sheaves.

Another question to arise is why the process depicted in Akhet-hotep's scene is not repeated elsewhere. While scenes of boat building often depict workers holding various tools such as adzes, axes, chisels, saws, drills, awls, hammers, mallets, and plumb bobs, no similar scenes showcase workers with a tool resembling the determinative of the term «*sp*». This suggests that the tool depicted in the hands of one of the workers in Akhet-hotep's scene is likely just a simple hammer.

One last question: why have the two determinatives  and  been disregarded? It is noted that the scribe used «*sp*» in different forms in a number of versions of spell 403 of the Coffin Texts:  , , , . He used the form  , among others, as a version of the same verb in spells 195 and 407. In addition, the form  appeared in spell 219, where the last sign represented either part of a bird or a human finger. The multiplicity and diversity of these determinatives confirm we are not facing a process different from binding and assembling the parts of the boat , ,  with ropes 

[75] SERVAJEAN 2018: 221-222.

[76] HASSAN 1938: 520, PL. XCVI; SCHEEL 1989: 39, FIG.42.

by hands  and  legs, using a different set of tools referred to in the previous determinatives. For the determinative of «*sp*» as a form of  or  as Boreux and Servajean believed, respectively, this is contradicted by the diversity and difference in the forms of determinatives, as previously mentioned, regardless of their function or role, as we discuss later.

In conclusion, all previous scenes and legends support the true meaning of «*sp*» as «to tie», «to bring together the different parts of the boat's hull using ties»[77], «bind»[78], «assemble»[79], «lash together»[80], and «strap together»[81]. This usage is akin to the colloquial Egyptian word «sabbat», which refers to delicate baskets made from reeds or soft materials. These materials undergo cleaning, drying, cutting, braiding, and shaping to form the final product. Therefore, we can translate the verb «*sp*» literally as «to frap», «to bind», or «to tie» for papyrus boats, and as «to assemble» or «to join» for wooden boats. As a result, the translation «to build»[82] or «to construct»[83]should be ruled out, contrary to the translations proposed by many scholars[84].

## 2. Other Verbs Related to Boatbuilding in Weni's Autobiography

Indeed, Weni possessed a distinct narrative style when recounting his autobiography. When detailing King Merenre's directive to construct three barges and four tow-boats from Nubian acacia wood during his 5th expedition to the 1st Cataract, Weni employed a comparable approach. Utilizing a succinct yet evocative abbreviation, Weni crafted concise and expressive sentences devoid of unnecessary length, digression, or redundancy. His narrative unfolded with sequential phrases, exemplifying his ability to convey complete thoughts effectively, as follows:

(*1*) *ḥ3b <wi> ḥm=f r š3d mr 5 m Šmʿ.w r ỉr.t wsḫ.t 3 s3ṯ 4 m šnd n W3w3.t* «His majesty sent (me) to excavate five canals in Upper Egypt and to build three *wsḫ.t*-boats and four *s3ṯ*-boats of acacia wood of Wawat».

(*2*) *sṯ ḥḳ3.w ḫ3s.wt n(y).w ỉrṯt W3w3.t ỉ3m Mḏ3.t ḥr sṯ(3) ḫ.t* (*i*)*r=s*(*n*) «Then the foreign chiefs of Irtjet, Wawat, Yam, and Medja drew the timber for them«.

(*3*) *ỉw ỉr.n=ỉ mr-ḳd n rnp.t wʿt* «I did it all in one year».

(*4*) *mḥ.w 3tp.w m m3ṯ ʿ3 wr.t r* (*mr*) *ḫʿ*(*i*)*-nfr-Mr*(*i*)*-n-Rʿ* «Floated, they were loaded with very large granite blocks for the Pyramid «Mernere-appears-in-splendor»[85].

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[77] TRESSON 1919: 38.

[78] JONES 1988: 222 [76].

[79] LICHTHEIM 1973: 21; STRUDWICK 2005: 356.

[80] OSING 1977**:** 174; KLOTH 2002: 183.

[81] HOFMANN 2002: 232.

[82] GRIFFITH 1894: 17; DAVIES, CRUM & BOULENGER 1902: 11; BREASTED 1906: 149 § 323; NEWBERRY 1942: 65; LANDSTRÖM 1970: 62; WARD 2000: 9.

[83] BOREUX 1925: 129; CLARKE & ENGELBACH 1930**:** 34; MEEKS 1981: 319 [78.3454]; JONES 1988: 222 [76].

[84] MASPERO went too far as he translated it «embark». MASPERO 1888: 9.

[85] Text: SETHE 1903: 108, 13-109, 7. Compare: MARIETTE 1880b: 84, PL.45 (46-49); ERMAN 1882: 25-26; BRUGSCH 1891: 1477 [1-6]; TRESSON 1919: 7 [47-49]. Translations: ERMAN 1882: 25-26; MASPERO 1888: 9-10; GRIFFITH

Strikingly, Weni only used the conventional terms always mentioned in ancient Egyptian texts: «*ir*» and «*st3*», but in his own style. When his contemporary Sabni - overseer of foreigners and keeper of secrets of the doorway of Upper Egypt[86] - used «*ir*» in a similar context, he used it directly, without resorting to any rhetorical method, as follows:  *iw h3b.n <wi> ḥm n nb(=i) r ir.t wsḏ.ty (ꜥ3.ty) m W3w3.t r s:ḫdi tḫn.wy ꜥ3(.wy) r ỉwn.w ..... iw ir.n(=i) wsḏ.ty (ip)tn r ḥz.t w(i) ḥm n nb(=i) ḥr=s* «The majesty of (my) lord sent (me) to build two great barges in Wawat, in order to convey two great obelisks to On. … I made the two barges so that the majesty of my lord rewarded me for it»[87]. Similar to Sabni, Djadjay of the very end of the Old Kingdom[88], Thethi[89], and Henu[90] of the 11th dynasty also used (*ir*) in a similar way.

Regarding  , whether pronounced as «*sti*» meaning «to supply the wood for boatbuilding»[91], or «*st3*» denoting «drag«, «pull«, «tow», and «pull a boat»[92], it represents just one phase out of a long chain of operations that boatbuilding undergoes. Consequently, it cannot be translated in any logical context to mean «build» or «construct», particularly boats, since Weni linked this term to the wood itself and not the boat, which underscores this interpretation. It is evident that the intended meaning of this term is pulling or dragging, as it can be applied to various activities, such as moving statues, transporting the deceased to the cemetery, conveying funerary furniture, pulling sledges, ships, papyrus, wine, wood, and cattle[93].

While Weni's autobiography stands out for its stylistic eloquence compared to his contemporaries and non-contemporaries, the term  alone is not sufficient to fully describe the construction of any boat. Even if we accept translations, such as «fell (the

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1894: 18; BREASTED 1906: 149-150 § 324; BOREUX 1925: 130; STRACMANS 1935: 514; GARDINER 1961: 97; LICHTHEIM 1973: 21-22; ROCCATI 1982: 197 § 188; WARD 2000: 9; KLOTH 2002: 181-182; SIMPSON 2003: 407; GRIMAL 2005: 167; STRUDWICK 2005: 356-357; ESPOSITO 2019: 40.

[86] *S3bni* possesses ownership of tomb N°.35a situated in Qubbet el-Hawa at Aswan, dating back to the conclusion of Pepi II's reign. This particular *S3bni* is distinct from the more renowned expedition leader sharing the same name. There's a possibility that this individual could be Pepynakht Heqaib's son, given the proximity of this chapel to Pepynakht's, with inscriptions adorning the sides of the entrance. STRUDWICK 2005: 339-340 (N°.244).

[87] ROCCATI 1982: N[r].45, 214-215; HABACHI 1984: 40-41, FIG.16; LICHTHEIM 1988: 9, N[r]. 4, 17-18; KLOTH 2002: 31 (Dok. 67), 182; STRUDWICK 2005: 339.

[88] An inscription on a door jamb (?) found in debris west of tomb 104 of *Dmḏ*, at Hamra Dom (al-Qasr wa es-Saiyad), on the eastern bank of the Nile, at the mountain of al-tariff, Qena. KLOTH 2002: 39 (Dok. 85), 182; STRUDWICK 2005: 350.

[89] An inscription on a stela (BM 614). BLACKMAN 1931: 56-57, PL.VIII (Line 11); SCHENKEL 1965: 150; KLOTH 2002: 182, N°.675.

[90] Inscription N°.114 in Wadi Hammamet. COUYAT & MONTET 1912: 83 [14-15].

[91] ERMAN & GRAPOW (eds.): *Wb* 1971: vol.4, 365, 10.

[92] ERMAN & GRAPOW (eds.): *Wb* 1971: vol.4, 351-353; FAULKNER 1986: 255; JONES 1988: 225 (97).

[93] HASSAN 1943: 175-177, FIG.122; MOUSSA & ALTENMÜLLER 1977: 62 [Sz.6.4.], TAF.16; BROVARSKI 2001: 44-54, FIG.38; KATERINA 2012: 8-75.

wood)» by Maspero, Griffith, and Ward[94] «cut« by Lichtheim and Strudwick[95], «furnished (the timber) » by Kloth[96], these translations fall short in capturing the complexity of boatbuilding. The intended meaning of boatbuilding seems to be somewhat elusive and not adequately conveyed by the term  alone.

But why did Weni resort to using this precise term? Why did he ignore the verb *ỉr*, or other terms, such as *ȝḫ*, *ȝḫw* (verb used for 'constructing' a boat), *ỉr dpt* (build, construct boat), *ỉzp* (hew wood with ax, build boat), *mḏḥ* (hew, build boat), *nḏr* (hew wood 'for boatbuilding'), *ḥwsi* (build 'boat'), *zmȝ* (make ready a boat), *šd dšr*, and *šd m ḏsr* (to build a boat)[97], and others? The exact reason for Weni's choice remains unknown; perhaps it reflects his personal stylistic preference. Nevertheless, we must acknowledge and consider the translations of this term, encompassing meanings such as «cut», «draw», «fall», «furnish», and potentially even «build». The interpretation of these meanings hinges on the specific context within the text.

## V. NAUTICAL ANALYSIS

Following the linguistic analysis of the text, several issues have surfaced that require further clarification or validation. Others must be either confirmed or refuted to achieve a comprehensive understanding. This process is essential for extracting all available information when assessing from a nautical perspective. We shall commence by presenting the boatbuilding process, and sequences deduced from excavated materials, accompanied by relevant texts and iconographies. Subsequently, we delve into discussions regarding the construction location, methods, timeframe, and navigation period.

### 1. Boatbuilding Process in Ancient Egypt: Insights from Direct and Indirect Evidence

The process commences with the felling of trees in the forests, followed by the removal of stems and branches using an ax. Subsequently, a pull saw is employed to fashion boards, which are then carved into planks using adzes. Boatbuilding in Egypt is characterized by the carving of planks to achieve the desired shape, as the hull planks of Egyptian ships and boats are notably thicker compared to other shipbuilding traditions, which rely on thinner planks bendable by force, fire, or steam. Upon completing the shaping of each plank, one or more craftsmen commence mortise cutting on each side of the plank using a chisel and hammer.

The boat construction initiates by laying a central strake and inserting the tenons into the mortises opened at its sides. Subsequently, planks are alternatively added on both sides, along with the tenons[98], until the hull mounting process is complete. Following the

[94] MASPERO 1888: 10; GRIFFITH 1894: 18; WARD 2000: 9.

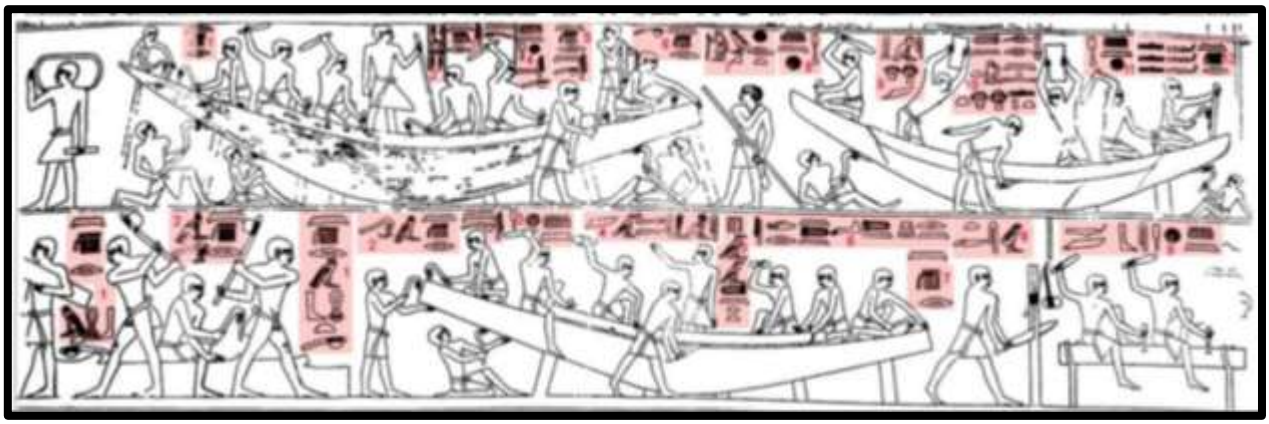
[95] LICHTHEIM 1973: 22; STRUDWICK 2005: 357.

[96] KLOTH 2002: 181.

[97] JONES 1988: 208 [1], 210 [8] & [10], 215-216 [39] & [42], 218 [57], 222 [77], 228 [115].

[98] The tenons play an important role in fixing the planks in place and in maintaining the general shape of the ship before placing the beams and sewing the hull.

planking, transversal beams, integral to the ship's deck and serving as the primary transverse strengthening element, are incorporated by the builder. Except for stone-carrying ships that had complex ribs or frames to strengthen the inner structure of the ship, the inclusion of stiffening ribs in other boats is at the discretion of the builder. The construction concludes with the chief craftsman reviewing the ship's dimensions, quality, and accuracy of work, ensuring final finishing touches are made, including adzing and smoothing the surface before painting the ship[99] **[FIGURE 13]**.



**[FIGURE 13]: Saqqara, 5th dynasty. The mastaba of Ty p.5 (osirisnet.net) Accessed on (23/01/ 2024)**

In the Old Kingdom, the boatbuilding process typically concluded with the transverse sewing of its planks together, contrasting with the later Mediterranean building traditions where sewing was done longitudinally. This practice was inherited from the manufacturing method of papyrus boats. However, it remains unclear at which stage the sewing channels, which open into the sides and inner faces of the planks, are cut. Were they created simultaneously with the opening of the mortises or after the completion of the ship's mounting? In the latter scenario, the hull is disassembled to create the channels, after which the planks are reassembled, with ropes inserted inside the channels[100].

Numerous insights were gleaned from the construction and navigation experiment of a replica vessel named «Min of the Desert»[101], which emulates Egyptian seagoing ships and approximates construction technology from the early second millennium BC. Although the reconstruction is theoretical due to the absence of extant ships to replicate, the full-scale replica draws upon all available scientific evidence, including physical remains and representations such as the Punt relief. Measuring 20 meters in length and five meters in width, the construction of the replica spanned eight months. The construction involved the labor of five workers, averaging ten hours per day, and excluded the initial phases of tree felling, trunk trimming, and log preparation[102].

[99] The painted wall of the tomb of the official Ty from the 5th dynasty bears the most detailed scene of the process of building boats and gives the best example of these building sequences.

[100] For more information on the characteristics of ancient boatbuilding. ABD EL-MAGUID 2009: 307-310.

[101] ABD EL-MAGUID documented and supervised the construction of this *replica* during the year 2008.

[102] WARD 2012: 223; WARD et al. 2012: 287-292.

It became evident that sewing channels could not be cut until after the planks were shaped and the ship's walls were mounted because the process of matching the planks is complex, requiring meticulous alignment to eliminate gaps between the strakes. If a mismatch occurs, the upper plank is removed, and its side is smoothed until it fits properly, potentially altering the shape and position of previously cut sewing slots. Consequently, cutting the channels can only occur after the boat has been fully mounted and its quality ensured. The sewing process occurs at the conclusion, as the builder passes ropes through the channels from one side of the ship to the other. Certainly, the insertion of tenons for pre-assembly, ensuring the planks remain in place, occurs with the addition of each plank.

## 2. Boatyard

In his nautical activities, Weni briefly spoke about the types of boats, their dimensions, timber, tonnage, and the itineraries of his five expeditions. However, not a single mention was made about the boatyards. Importantly, no mention was made of the boatyard that hosted the construction of Hatnub. In the midst of these difficulties, one notices several important indications, shedding light on this issue. In his inscription, Weni alluded that: «[His] majesty sent me to Hatnub to bring a great offering table … I had cut for it a *wsḫ.t*-barge of acacia wood … Assembled in 17 days …«. In fact, this description necessarily implies - without dispute - that Hatnub was the scene of all the operations: «the destination», «cutting off the offering table«, «falling trees», «boatbuilding», and «the point of departure». There is some evidence supporting this implication.

Firstly, acacia trees spread in the area. Hatnub, like other ancient Egyptian towns and cities scattered along the banks of the valley and in the Delta, was overgrown with acacia trees[103]. Acacia was one of the local wood trees that had already been recorded in quantities in Middle and Upper Egypt as early as the Old Kingdom[104]. In Egypt, acacia trees grew in the Nile Valley, in some desert wadis, and in the oases of the western desert[105]. Hence, Weni would not exert much effort to obtain the wood necessary to build his boat.

Secondly, Hatnub is a region of the Eastern Desert, spreading over several square kilometers, the core of which is 16.4 km southeast of Amarna (Kom el-Nana). Thus, Hatnub contains relatively well-preserved traces of a network of ancient roads connecting the quarries with the Nile Valley[106]. Archaeological research suggests that the northwestern end of the ancient stone road, linking Hatnub with the Nile Valley, terminates in some form of harbor adjacent to the modern villages of Hagg Qandil and Hawata[107]. Today, the remains of this harbor would be buried beneath modern cultivation[108]. Undoubtedly, the

[103] DIXON 1974: 205.

[104] KILLEN 1994: 7.

[105] GALE, GASSON, HEPPER & KILLEN 2000: 335; DEGLIN 2011: 85-87, FIGS.1-2; BARD & FATTOVICH 2018: 95-96.

[106] Enmarch & Gourdon, Quarry epigraphy at Hatnub. Https:// livrepository.liverpool .ac.uk /3093960/1/Hatnub%20 Graffiti %20 article .pd. Accessed on (03/02/ 2024).

[107] SHAW 2013: 521-523.

[108] SHAW 2005: 435-436.

entirety of this facility linked the alabaster quarries of Hatnub to the Nile River, facilitating extensive transportation and mobility for stonecutters, lumberjacks, carpenters, or others who were assigned to carry out the mission of cutting the offering table and building the boat.

Thirdly, the construction of a boat would require a spacious place with water, equipment, living quarters, and logistics services. These conditions applied to Hatnub. In addition to the water of the Nile, around the quarries, and along the main road, there are also extensive remains of cairns, dry-stone huts, and windbreaks used by the ancient population working there[109].

This theory is also supported by several pieces of evidence. The first indication of the connection between boatbuilding and quarries comes from a graffito dating back to the reign of King Teti, the first ruler of the 6th dynasty. This graffito mentioned the 15th nome of Upper Egypt as the location for boatbuilding, alongside quarries. It stated, «60 men were making [boats (?)] in the 15th nome of Upper Egypt«[110]. Additionally, a graffito at Hatnub from the reign of Pepi II, successor to Merenre, further supported this connection. The graffito mentioned boats named «*ḥꜥw*» and described the construction of a barge, indicating the involvement of boatbuilding activities in the quarries themselves[111].

The intense activity of extracting alabaster from Hatnub during the 6th dynasty is undeniable. The current Hatnub Mission cataloged 23 epigraphic features, along with another 13 possible compositions dating back to the same period[112]. Given this activity, it is reasonable to assume the presence of a dedicated boatbuilding area at Hatnub. This area likely lies close to the harbor or the *R³-mw*, as revealed by King Merenre's inscriptions (DS 17, 19). According to Gourdon, this could correspond to the pier from which blocks extracted from the «P Quarry» were loaded onto the Nile for transportation[113]. The presence of a boatyard adjacent to the harbor or pier would provide workers with optimal conditions to successfully complete their tasks.

## 3. Caulking

It became imperative to examine the potential use of caulking in this boat after a group of scholars, as stated above, took turns interpreting «*sp*» with caulking because of its different determinatives. We previously rejected this interpretation from a linguistic perspective, and we reiterate our rejection from the standpoint of ancient boatbuilding traditions. Before delving into the reasons for our rejection, it is prudent to offer the reader a definition of caulking from maritime dictionaries: «Term of wooden construction: the

[109] ENMARCH & GOURDON, *Quarry epigraphy at Hatnub*. Https://livrepository.liverpool .ac.uk/3093960 /1/Hatnub%20 Graffiti%20 article.pdf. (Accessed on 03/02/ 2024).

[110] ANTHES 1964: 18-19, TAF.9, Gr.1; STRUDWICK 2005: 145.

[111] ANTHES 1964: 20-21, TAF.10, Gr.4; STRUDWICK 2005: 148.

[112] ENMARCH & GOURDON, *Quarry epigraphy at Hatnub*. Https://livrepository.liverpool.ac.uk/3093960/1/ Hatnub %20Graffiti%20article.pdf. Accessed on (03/02/ 2024).

[113] GOURDON, *Les inscriptions rupestres de Hatnub*. File:///C:/Users/dell/Downloads/Hatnoub_inscriptions_ IFAO_University_ of. pdf. Accessed on (03/02/ 2024).

action of filling by force, with oakum then covered with pitch, the seams of the planking and the strakes of a deck in order to make them watertight»[114]. This definition underscores two key points: Firstly, caulking applies specifically to wooden boats and secondly, it involves a forceful action that necessitates tools for its execution. Regarding the first point, papyrus boats were not concerned with caulking. As for the second point, neither caulking mallets nor caulking chisels were depicted in related scenes or mentioned in their legends. Furthermore, caulking did not appear in boatbuilding techniques until the early 5th century AD; no caulking material was discovered between the seams of ships, found in the Mediterranean and its surroundings, constructed via the «shell-first» method[115]. Driving the caulking material could potentially damage the mortise and tenon network crucial for the boat's strength[116]. The same cautionary method applied to sewing material.

**[FIGURE 14] - Caulking process © Photo taken by Mohamed Abd El-Maguid**

It is understandable that these scholars could make that mistake, given the lack of awareness about the «shell-first» building technique before the discovery and study of the Kyrenia ship approximately half a century ago. Vandier attempted to link the activity depicted in the Rahotep relief with Herodotus' phrase translation, «They caulk the interior joints with papyrus», assuming that bundles of papyrus were stuffed inside the boat and sewn[117]. However, Haldane and Shelmerdine challenged this assumption, as well as the

[114] DICTIONNAIRE GRUSS DE MARINE 1978: 64.
[115] ABD EL-MAGUID 2009: 275.
[116] BASCH 1986: 187-198.
[117] VANDIER 1969: 666.

common translation of the text, both from lexicographical and archaeological perspectives, and correctly translated it as «They bind in the seams from within with papyrus»[118].

Therefore, the verb «*sp*» does not directly imply caulking, but there is a possibility that it refers to a process of water tightening or waterproofing, acknowledging that no hull is entirely impervious to water leakage. Water tightening can be achieved by inserting papyrus stalks between the planks before lashing them together. These stalks not only expand to prevent water infiltration but also aid in securely tightening the lashing ropes[119]. Evidence uncovered by Ward revealed imprints left in the coating beneath the GB 10 hull in Abydos, as well as long plant fibers lodged between the strakes, likely bundles of reeds or grass used to watertight the hull. Traces of wooden laths, similar to those found in the Khufu boat, were also discovered inside the hull[120], indicating a technique known as luting[121].

Waterproofing is accomplished by saturating, tying ropes with bitumen, asphalt, tar, or resin or pouring them over areas prone to leakage, such as the seams between planks. Servin rightly dismissed the idea of pouring pitch or resin onto a papyrus boat, arguing it would add weight and affect buoyancy[122]. Moreover, papyrus boats do not require this method, as the papyrus swells shortly after launch, preventing surface leakage. In contrast, Ward observed a thin layer of black substance for wooden boats in areas with knots, scarves, and the edges of mortises in El-Licht boat fragments[123]. Additionally, Creasman noted traces of old tar or pitch on the tenons of Dahshur boats displayed in the Egyptian Museum[124]. Abd El-Maguid distinguished the same substance on some fragments from Wadi Gawasis. These were archaeological evidence from the Middle Kingdom, but we have textual evidence from the New Kingdom on the application of asphalt in boatbuilding. The reference originates from the Egyptian-Hittite correspondence found in the Bogazkoy archives. The correspondence involves a letter sent by Ramses II to Hattousil III regarding the construction of a ship replicating another sent by Ramses. In this communication, the pharaoh suggests applying asphalt, *i.e.*, mineral pitch, both inside and outside the ship to ensure the hull is waterproof and prevent ships from sinking[125].

In short, this verb was employed to describe a construction phase for both papyrus and wooden boats. While this phase might not involve caulking, it likely pertained to water tightening or waterproofing. However, it seemed improbable that this process was considered one of the two main construction processes by Weni. In any scenario, this process could be completed in just two days rather than requiring seventeen days.

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[118] HALDANE & SHELMERDINE 1990: 535-539.
[119] LAURES 1989: 266-267.
[120] WARD 2003: 21.
[121] STEFFY 1994: 275.
[122] SERVIN 1948: 82.
[123] HALDANE 1988: 146.
[124] CREASMAN 2005: 62.
[125] POMEY 2006: 239-241.

## 4. Construction Duration

Upon examining the text linguistically, Weni's description lacked details regarding the boat's construction phases. He simply utilized two terms to encompass the entire process. However, these two terms are insufficient for delineating the stages of constructing the hull.

As previously discussed, the verb «*šˁ*» did not present translation issues, unlike the verb «*sp*», but it did introduce confusion in interpretation. We must ponder the meaning behind «I cut for it a barge». Did Weni refer to cutting the acacia trees, or was he including all cutting operations? As previously outlined, the boat construction process involved various cutting activities during hull mounting. In the former case, «*šˁ*» would indicate tree cutting, with «*sp*» comprising the remaining building processes. In the latter case, «*šˁ*» would encompass all cutting activities, while «*sp*« would specifically denote hull assembly.

We face two main groups of scholars; one translates «*sp*» with «to assemble»[126], and the other translates it- erroneously- with «to build»[127]. One wonders how they missed the impossibility of building such a barge in only 17 days. From his perspective, Landström suggested that the time frame for building a barge might not be exceptionally short, considering the extensive experience of the builders. However, he speculated that «the timber can very well have lain ready, hewn into planks and perhaps in traditional standard shapes, waiting for Weni's arrival»[128]. If this theory holds true, a question arises: Were these planks sourced from a nearby location or retrieved from a warehouse at Hatnub's boatyard? The latter option aligns with a well-known tradition mentioned in papyri from the New Kingdom, where boat parts were ordered from one boatyard's warehouse to another[129]. In either case, this hypothesis divided the operation into two stages: one occurring before Weni's arrival and the other after his arrival, with the latter undoubtedly corresponding to the assembly phase.

As previously demonstrated, the experiment involved the construction of a boat, less complex and approximately one-third the size of Weni's barge, because it was not designed to transport heavy cargoes like stones and required eight months of construction (excluding the stages preceding the shaping of the planks). Given this timeframe and the nature of boat construction, it is improbable that simply increasing the number of workers would have significantly reduced the duration, as it is unfeasible to install two planks in the hull simultaneously.

Ultimately, we propose that the most plausible interpretation is that Weni used the verb «*šˁ*» to encompass the entire process of wood preparation, particularly considering that most phases involve cutting actions, whether conducted before or after his arrival. In

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[126] ERMAN 1882: 24-25, 29; BREASTED 1906: 149, №. g; TRESSON 1919: 38; STRACMANS 1935: 514; LICHTHEIM 1973: 21; OSING 1977: 173-174; JONES 1988: 222 [76]; HOFMANN 2002: 228, 232; KLOTH 2002: 183; SIMPSON 2003: 406; STRUDWICK 2005: 356; SERVAJEAN 2018: 207-208.

[127] GRIFFITH 1894:17; BOREUX 1925: 129-130; CLARKE & ENGELBACH 1930: 34; NEWBERRY 1942: 65; GARDINER 1961: 97; MEEKS 1981: 319 [78.3454]; ROCCATI 1982: 196-197 §187; GRIMAL 2005: 167; WARD 2000: 9.

[128] LANDSTRÖM 1970: 62.

[129] GLANVILLE 1931: 105-21; GLANVILLE 1932: 7-41.

this scenario, «*sp*» would denote the final mounting of the hull, which includes its assembly, primarily with ligatures, in accordance with the tradition during the Old Kingdom. For a barge of this dimension, the 17 days as a timeframe for this phase is within the realm of reason.

## 5. Navigation Duration

The reference to seventeen days not only serves to determine the duration of the ship's assembly but also underscores Weni's capability to deliver the ship to its destination within this timeframe.

To assess the validity of this timeframe, we must examine the average speed of Egyptian boats and the typical number of navigation hours per day. Considering the distance between the Nile in front of the Hatnub quarries and Memphis, which is approximately 180 miles[130] or 156.5 nautical miles, we can estimate the feasibility of completing the journey within 17 days.

Egyptian antiquities do not provide direct evidence to accurately determine the speed of boats, whether on the Nile or at sea. Instead, the texts mention the duration of a journey, as recorded in Weni's autobiography or the records of Wenis' causeway[131]. These durations include various factors such as sailing and stopping times, favorable and adverse wind conditions, navigation with or against the current, and traversing both hazardous and non-hazardous waters.

In his assessment of the Punt expedition in the Red Sea journey, Kitchen proposed an average speed of 3 knots. With an estimated the sailing day of 8 to 9 hours, Kitchen approximated a minimum distance of 25 nautical miles traveled per day[132].

The experience of navigating «Min of the Desert» in the Red Sea, between Safaga and Marsa Alam, provides some valuable insights. In 2009, an amateur rowing team, primarily consisting of women, achieved a steady speed of 2.5 knots while rowing upwind. However, this exercise was of short duration (10 to 15 minutes) and not sustained for hours. While sailing in the prevailing winds of the Red Sea, the average speed reached 7 knots[133]. Nevertheless, daily navigation periods did not exceed 5 hours to ensure the capacity of anchoring in safe spots or shelters.

Of course, ancient sailors did not measure navigation in terms of speed but rather by the distance traveled. Navigation on rivers allowed for easier tracking of distance covered compared to navigation on the open seas. As a result, sailors typically measured distances during sailing days. A standard day of navigation, known as a 17-hour day (diurnal navigation), was used for relatively short voyages, while a full 24-hour day was employed for longer journeys spanning multiple nights. According to Herodotus' estimation, a day's

130 FISCHER 1975: 34.

131 FISCHER 1975: 34-35.

132 KITCHEN 1971: 196.

133 WARD 2012: 224; WARD et al. 2012: 290-291.

navigation in a straight line, with favorable winds, equated to a distance of 700 stades[134], which is approximately 70 nautical miles.

The voyage to Memphis typically took place in «the third month of the «*šmw*«, coinciding with the river's lowest level, as described by Weni: «when there was no water on the sandbanks». This month corresponds to January for Krauss[135] or May for De Jong[136] in the current calendar[137]. We completely excluded that the navigation was carried out on a full-day basis, as it required light to monitor the course of the river, emerging islands, and sandbanks. We also ruled out that Weni used the full diurnal time because the duration of sunshine in Egypt in that period averaged 13 hours at maximum. Moreover, he might be forced to stop at stations for various reasons, whether protocol or practical. The number and duration of stopovers and the weather conditions encountered could reduce the daily navigation hours. We estimated that the navigation time would not have exceeded 10 hours in any case, with an average of around eight hours per day. This accounts for departure and docking maneuvers, meal breaks, navigating difficult areas, and preparing the ship for different methods of propulsion[138].

Considering all the figures provided, one might wonder why Weni took pride in the duration it took him to transport the table to its designated location. This is especially pertinent when contrasting it with the account of delivering columns from the granite quarries in Aswan to King Wenis' funerary complex in just seven days. In this instance, the distance between Aswan and King Wenis' funerary complex was three times greater than that between Hatnub and Memphis[139]. According to Somaglino, even during periods of low water, the duration of seventeen days for transportation appeared to be quite lengthy and not something a dignitary would typically boast about. She suggested that these seventeen days likely included multiple stages of the transportation process, such as moving the blocks from the quarries to the river, navigating downstream, and finally placing the blocks at the burial site[140]. But, we do not follow this suggestion.

Essentially, Kitchen's speed estimates and the outcomes of the «Min of the Desert» experiment cannot be directly applied because they pertain to boats under sail, which is not suitable for upwind navigation. However, we can utilize the resulting speed from the rowing experiment with two conditions in mind. Firstly, adjustments are necessary to accommodate a professional crew, warranting an increase in the speed rate. Secondly, that rowing was conducted in short bursts rather than continuously for eight hours a day. As assumed in our estimation and Kitchen's, the speed to ensure sustainability throughout the

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134 POMEY 1997: 33.

135 KRAUSS 2006: 370.

136 DE JONG 2006: 438.

137 SOMAGLINO believes that this statement is exaggerated, since this date falls approximately during January, at a time when the waters were not yet at their lowest level. SOMAGLINO 2014: 128.

138 On the difficulties of navigating the Nil. COOPER 2011: 189–210.

139 FISCHER 1975: 34.

140 SOMAGLINO 2014: 144.

day must be reduced. If we adopt an average speed of 2 knots, the journey would only take 10 days.

Traveling in low water against the wind must have been particularly difficult, and the enormous dimensions of the barge aggravate the problem. The stats of Willoks[141] in 1904 gave an average velocity during the water short supply of 0.85 m/s[142]. Utilizing this speed, equivalent to 1.652 knots, and the eight hours/day navigation brings us to a 12-day voyage. Regrettably, journeying downstream presents its own set of challenges. Without a vessel maintaining a favorable velocity compared to the water, steering becomes practically impossible. Specifically, a barge left to drift aimlessly on the water would quickly veer sideways to the current, leading to unpredictable and hazardous movements. The crew has to sail the boat slower than the current so it does not become ungovernable. Herodotus described what the ancient Egyptians did to slow and steer their boats when navigating downstream. Their method involved adding a small raft in front and an anchor at the rear, working in tandem to correct its course[143]. As a result, the average speed would decrease to approximately 1 knot, leading to the completion of the voyage in 17 days.

## VI. CONCLUSION

The king commanded the noble Weni to journey to the quarries of Hatnub and retrieve an offering table for placement in his funerary complex. Weni departed from Memphis to Hatnub, located south of Minya, to fulfill his lord's directives. Upon arrival, he instructed the quarrying of the sacrificial table from the alabaster quarries while simultaneously commissioning the construction of a sizable barge, from wsx.t type, suitable to transport the required table. Exploiting the abundance of acacia trees in central and southern Egypt, he procured wood for his vessel and proceeded with its construction. In his narrative, Weni employed only two verbs to delineate the shipbuilding process: one (*šˁ*) for all tasks related to timber cutting, from felling trees to fashioning mortises for the tenons and channels for the sewing in the planks, and another (*sp*) for assembling the hull planks. It was this phase that lasted 17 days. The vessel embarked from a pier, likely adjacent to the boatyard, during the dry season when the Nile's water levels were at their lowest.

Through a meticulous analysis of the inscription and a comparison with other relevant terms in Weni's autobiography, the study highlighted the importance of understanding the literal and contextual significance of boatbuilding terminology for accurate interpretation. This scrutiny revealed that Weni's narration was characterized by a wonderful style and a special presentation of sentences beyond the known meanings of some traditional verbs in the Egyptian language, leaving the reader to visualize those implied meanings. This feature is not limited to our two verbs but also includes two others: *ir* and *sṯi*/*sṯȝ*, specific words and implied meanings.

Weni used all these verbs rhetorically. He chose not to document his instructions to the workers regarding the construction of the boats, nor did he depict the various stages of labor and the strenuous effort he exerted to demonstrate his loyalty and dedication to serving the king, as was customary in such texts. Suddenly, we are confronted with boats floating on the Nile, indicating

[141] WEHAUSEN et al. 1988: 304.

[142] COOPER has adopted a velocity of 1.1 knots following Philips, yet we opt to maintain Willoks' statistics. This decision is based on his pre-1902 study origins, unaffected by the construction of the Aswan Low Dam, in contrast to Philips, who published his figures in 1924. COOPER 2011: 189-210.

[143] WEHAUSEN et al. 1988: 304-305.

that Weni traversed all stages of construction, from selecting the forest for felling acacia trees to transportation, timber cutting, preparation, shaping, carving, building, assembling, and beyond.

Undoubtedly, this dominant method in the inscription falls within the framework of rhetoric by deletion—a common linguistic phenomenon across human languages. Deletion involves selectively choosing essential elements of speech while omitting surplus details, such as letters, words, sentences, or repetitive elements. It may also entail excluding elements that the listener can infer, thereby enhancing the eloquence and beauty of speech. In contrast, some of his contemporaries used the same terms directly in a similar context without resorting to rhetoric. This difference in approach highlighted individual variations in expression among ancient Egyptian writers, even when discussing common subjects.

Caulking's potential use in a boat, suggested by scholars who interpreted a term ambiguously, was discussed. We argued against this interpretation linguistically and historically, stating that caulking was not a practice in ancient boatbuilding traditions, especially for papyrus boats. Instead, we suggest the possibility of a process for water tightening or waterproofing using materials like papyrus stalks and bitumen. Evidence from archaeological findings and textual references supports this idea, indicating the use of plant fibers and substances like tar or pitch in boat construction. Thus, while the term may describe a construction phase related to water tightening or waterproofing, it is unlikely to be one of the main construction processes mentioned in Weni's text.

The text analysis revealed a lack of detail regarding the boat's construction phases, using only two aforementioned terms to describe the entire process. The interpretation of these terms, «*šˁ*» and «*sp*», introduced confusion, with scholars divided on their meanings. Some translated «*sp*» as «to assemble», while others mistakenly translated it as «to build». The feasibility of building such a barge in only 17 days was questioned, with speculation that pre-cut timber might be prepared before Weni's arrival. The most plausible interpretation suggests that «*šˁ*» encompasses the entire process of wood preparation, while «*sp*» denotes the final mounting (i.e., the assemblage) of the hull, which could feasibly take 17 days for a barge of this size.

According to Weni's account, the journey lasted 17 days. This duration suggests that the boat's speed slightly exceeded one knot. To assess this, the average speed of Egyptian boats and typical navigation hours per day were examined. While ancient records did not provide direct evidence of boat speeds, estimations were made based on similar expeditions and experimental data. Considering factors like wind conditions and navigation methods, it's estimated that daily navigation hours would not exceed 10, with an average of around 8 hours. Despite the challenging conditions of low water and upwind and downstream navigation, calculations suggested that the journey from Hatnub to Memphis could be completed in approximately 17 days, as stated by Weni.

The collaborative efforts of the authors, drawing on their respective scientific backgrounds in Egyptology and maritime archaeology, have been instrumental in unraveling the complexities of Weni's expedition. By combining linguistic analysis with nautical perspectives, the study bridged the gap between textual interpretations and practical maritime knowledge, offering a holistic view of ancient Egyptian seafaring activities. The integration of archaeological studies and maritime archaeology has not only enriched our understanding of Weni's expedition but has also highlighted the interdisciplinary nature of historical research, emphasizing the importance of diverse perspectives in reconstructing the past.

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