

Mechanical Engineering in Ancient Egypt, Part 87: Scepters Industry

Galal Ali Hassaan

Emeritus Professor, Department of Mechanical design & Production,
Faculty of Engineering, Cairo University, Egypt
galalhassaan@ymail.com

Abstract— The production of scepters in ancient Egypt is investigated as a step in the study of the evolution of mechanical engineering in ancient Egypt. The paper presents the different types of scepters used by the ancient Egyptians during the Old Kingdom, Middle Kingdom, New Kingdom and Late Period and how they used such scepters. The present location of the scepters and their evidences are assigned if known.

Index Terms— Mechanical engineering history, ancient Egypt, scepters industry, Old Kingdom, Middle Kingdom, New Kingdom, Late Period.

I. INTRODUCTION

The ancient Egyptians used different designs of staff manufactured from various materials. They used them to indicate royalty, nobility and high status. Besides staff was used in the ancient Egyptian society by normal people doing low-level works or just as a social tradition as will be dedicated throughout the paper.

Tassie (2008) in her Ph. D. Thesis presented a carved wooden image for Hesire, a High Official from Sakkara during the Second Intermediate Period shown holding a sceptre in both hands [1]. Oliveer (2008) in her Master of Arts Thesis presented panel images for a man holding sceptre in both hands from the Old and New Kingdoms, scene for Pharaoh Ramses III and two Deities holding long sceptre in their left hands, wooden statue of Wepawetemhet holding a long sceptre, statue of Akhenaten holding a flail sceptre and a scene for Queen Tawosret holding two flail sceptres in both hands [2]. Cooney (2011) in his Ph. D. Thesis presented a scene in the stela of In-Amun-nif-nebu with two Deities holding long sceptres, a scene from Ker stela with a figure holding a long sceptre, a scene in Ne stela with two figures one holding a flail sceptre and the other holding a long sceptre, a scene in Rudqmun stela with a Deity holding a long sceptre, a scene in Tofnakht stela with a Deity holding a long sceptre, a scene in the stela of the Chief of the Ma with a carved relief with a Deity folding a flail and long sceptres and a relief in Serapeum stela with two Deities holding long scepters [3]. Hassaan (2016) in their paper about human wooden statues in ancient Egypt during the Predynastic to the 13th Dynasty Periods presented a statue for Imhotep from the 3rd Dynasty holding a long sceptre, a statue for Kaaper from the 4th Dynasty holding a long sceptre, a statue of an offering bearer from the First Intermediate Period holding a long sceptre and

a statue for King Senusret I from the 12th Dynasty holding a long sceptre [4].

Hassaan (2017) in his study of non-stone, non-wooden human statues industry in ancient Egypt presented a copper statue for King Pepi I from the 6th Dynasty holding a long sceptre, gold statue for King Tutankhamun from the 18th Dynasty holding a long sceptre, a silver statue of a Deity from the 26th Dynasty holding a medium sceptre [5]. Gholy and Ibrahim (2017) in their study of scenes in private tombs of Post-Amarna Period in Thebes and Memphis presented a scene from tomb of Horemheb at Memphis showing a man

holding a long sceptre, a scene from Neferhotep tomb at Thebes showing a Royal image holding a flail sceptre [6]. Novakova (2017) in her paper about household of ancient Egyptian dignitary presented a wall relief for Ptahshepses in his chapel showing the owner holding a long sceptre [7].

Hassaan (2017) in his study of symbols industry in ancient Egypt presented a Was sceptre from the Late Period and an Osiris statue holding a Was sceptre from the 26th Dynasty [8]. Hassaan (2018) in his study about stela industry during the Early Dynastic to Middle Kingdom of ancient Egypt presented a stela for Senefereshempepy from the 6th Dynasty having a scene for the owner holding a long and short sceptres using both hands, a scene from Maaty stela from the First Intermediate Period showing Maaty holding a long sceptre, a relief in Meny stela from the 9th Dynasty showing the owner holding a long sceptre, a scene in Ipepi stela from the 11th Dynasty showing a Deity holding a long sceptre by both hands, a scene in Amenemhat stela from the 12th Dynasty showing the owner holding a flail sceptre [9].

Hassaan (2018) in his study of the stela industry in ancient Egypt during the Second Intermediate Period and New Kingdom presented a stela for Pharaoh Amenemhat I of the 18th Dynasty with a colored scene showing the Pharaoh holding a long sceptre and a Crook sceptre in both hands, Amenemope stela from the 19th Dynasty with a colored scene showing Pharaoh Amenhotep I of the 18th Dynasty holding a compound Flail-Crook sceptre [10]. Hassaan (2018) in his study of the stela industry in ancient Egypt during the Third Intermediate and Late Periods presented a wooden stela of Lady Aafenmut from the 22nd Dynasty with a colored scene showing a Deity holding a flail sceptre in both hands, a wooden stela of Lady Nekhhonsupakhered from the 21st/22nd Dynasties with a colored scene showing a Deity holding a Flail and a Crook sceptres in both hands, a wooden stela of Saiah from the 23rd Dynasty with a colored scene showing a Deity holding a long sceptre, a stela of Pharaoh Necho II from 26th Dynasty showing a carved Deity holding a long

sceptre and a granite stela with decree of Pharaoh Nectenabo I from the 30th Dynasty [11].

Belot (2018) in her Master of Letters about water symbolism in the ancient Babylonia and Egyptian cosmological cycles presented a colored relief from the ceiling of Hathor's temple at Dendara for a number of Deities holding long sceptres and two scenes from the Book of the Amduat for some Deities, one of them holding a long sceptre and another one holding a short sceptre [12]. Hassaan (2018) in his study of married couples authorization in the ancient Egyptian society presented a colored scene for Mayer Sennefer from the 18th Dynasty in his tomb holding a Crook-sceptre and a short sceptre in both hands (one in the right and another in the left), colored scene for Artisan Sennedjem from the 19th Dynasty in his tomb showing Sennedjem holding a Flail-sceptre, a colored relief for Uha from the First Intermediate Period showing him holding a long sceptre, a relief in Inhurnakht stela from the 10th Dynasty showing the owner holding short and long sceptres in both hands, a colored scene in Khety stela from the Middle Kingdom holding a short and long sceptres, a relief in Senjankhu stela from the 12th Dynasty showing the owner holding short and long sceptres in both hands and a relief in Djehutinefer from the 18th Dynasty showing the owner holding a short sceptre [13].

Strong (2018) her Ph. D. Thesis presented a scene from the tomb of Hori showing Hori holding a short sceptre, a banquet scene from the tomb of Huyu showing a man holding a short sceptre, an offering scene for Pharaoh Seti I showing a Deity holding a long Was-sceptre [14]. Wikipedia (2019) wrote an article about Was-sceptre where they presented some applications as how the ancient Egyptians used the Was-sceptre. This covered applications from the Middle Kingdom, 18th Dynasty and 19th Dynasty [15]. Dunn (2019) wrote an article about Was-sceptre. He outlined that Was-sceptre was one of the highly recognizable symbols in ancient Egypt. He presented the different types of the Was-sceptre in 2D and 3D forms [16].

II. SCEPTER USE DURING THE OLD KINGDOM

The Old Kingdom comprised the ancient Egyptian Dynasties from the 3rd to the 6th over a time span from 2686 to 2181 BC [17]. The use of various types of scepters during the Old Kingdom is clarified through the following examples:

- The first example is a panel relief for High Official Hesire during the reign of King Djoser of the 3rd Dynasty (2686-2613 BC) in display in the Egyptian museum at Cairo and shown in Fig.1 [18]. The relief showed Hesire holding a Medium-Sekhem-Scepter symbolizing power by his right hand and a Long Staff-Scepter by his left hand.
- The second example is a wooden statue from the Old Kingdom (2686-2181 BC) in display in the British Museum at London and shown in Fig.2 [19]. The statue depicts the owner holding a Long-Staff-Scepter by his left hand.

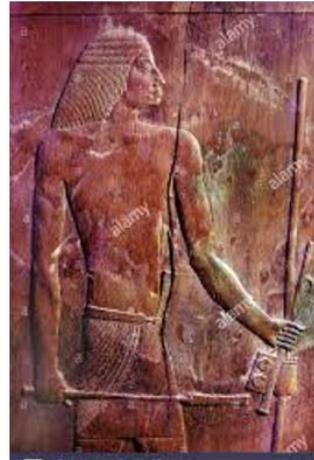


Fig.1 Panel relief from the 3rd Dynasty [18].



Fig.2 Statue from the Old Kingdom [19]

- The third example is a wooden statue for Kaaper, a Scribe and Priest during the 4th/5th Dynasties (2500 BC) in display in the Egyptian Museum at Cairo and shown in Fig.3 [20]. The designer showed the Scribe holding a Long-Staff-Scepter in his left hand.
- The fourth example is a relief in the tomb of Ptahshepses, Vizier during the reign of Niuserre, 6th King of the 5th Dynasty (2445-2421 BC) shown in Fig.4 [21]. The designer showed the Vizier holding a Medium-Sekhem-Scepter in his right hand and a Long-Staff-Scepter in his left hand.



Fig.3 Statue from 4th/ 5th Dynasties [20].

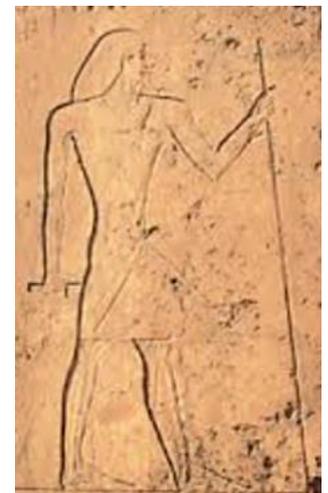


Fig.4 Tomb relief from 5th Dynasty [21]

- The fifth example is colored relief for Ptahhotep in his mastaba at Saqqara, Vizier during the reign of Djedkare Isesi, the 8th King of the 5th Dynasty (2414-2375 BC) shown in Fig.5 [22]. The designer showed the Vizier holding a long Staff-scepter in his right hand a short scepter in his left hand.
- The sixth example is a wooden statue of Metjetji, Official from the 5th/6th Dynasties (2371-2288 BC)

in display in the Brooklyn Museum at New York and shown in Fig.6 [23]. The designer showed Metjetji holding a long staff-scepter by his left hand.



Fig.5 Relief from the 5th Dynasty [22].



Fig.6 Statue from the 5th/6th Dynasties [23]

- The seventh example is a colored relief in the tomb of Mereruka at Saqqara, Vizier during the reign of King Teti, the founder of the 6th Dynasty (2345-2333 BC) shown in Fig.7 [24]. The designer showed the Vizier holding a long staff-scepter in his right hand and a short angle-scepter in his left hand.
- The eighth example is a colored relief in a Saqqara tomb from the 6th Dynasty (2300 BC) shown in Fig.8 [25]. The designer showed a man sitting in a River-boat and holding a medium staff-scepter by his left hand.



Fig.7 Relief from the 6th Dynasty [24].



Fig.8 Relief from the 6th Dynasties [25]

- The ninth example is a relief in the tomb of Kagemni at Saqqara, Vizier of King Teti, the founder of the 6th Dynasty (2345-2333 BC) shown in Fig.9 [26]. The designer showed the Vizier holding a Long-Staff-Scepter in his right hand and a Medium-Sekem-Scepter in his left hand.



Fig.9 Relief from the 6th Dynasty [26].

III. SCEPTER USE DURING THE MIDDLE KINGDOM

The Middle Kingdom of ancient Egypt comprised the 11th, 12th and 14th Dynasties over a time period from 2050 to 1710 BC [27]. The use of scepters was continued to be used in the ancient Egyptian society during the Middle Kingdom as will be depicted by the following examples:

- The first example is a colored scene in the stela of Khepy from the 11th/12th Dynasties (2124-1981 BC) in display in the Metropolitan Museum of Art at New York and shown in Fig.10 [28]. The designer showed Khepy holding a long staff-scepter in his left hand and a medium staff-scepter in his right hand.
- The second example is a stela of the Gatekeeper Maatice during the reign of Mentuhotep II, the 5th King of the 11th Dynasty (2061-2010 BC) in display in the Metropolitan Museum of Art at New York and shown in Fig.11 [29]. The designer showed Maatice holding a Flail-Scepter in his left hand.



Fig.10 Scene from the 11th/12th Dynasties [28].



Fig.11 Stela from the 11th Dynasty [29]

- The third example is a relief of a Deity in a Middle Kingdom tomb (2050-1710 BC) in display in Petrie Museum at London and shown in Fig.12 [30]. The designer showed the Deity holding a long Was-Scepter in its left hand.
- The fourth example is a stela of Amenemhat from the 12th Dynasty (1938-1875 BC) in display in the

Brooklyn Museum at New York and shown in Fig.13 [31]. The designer showed Amenemhat holding a Long-Staff-scepter in his right hand and a Medium-Sekhem-Scepter in his left hand.



Fig.12 Relief from the Middle Kingdom [30]. Fig.13 Stela from the 12th Dynasty [31]

- The fifth example is a wooden statue of Amenemhat II, the 3rd King of the 12th Dynasty (1929-1893 BC) in display in the Metropolitan Museum of Art at New York and shown in Fig.14 [32]. The designer showed the King holding a long Hook-Scepter in his left hand and a short one in his left hand.

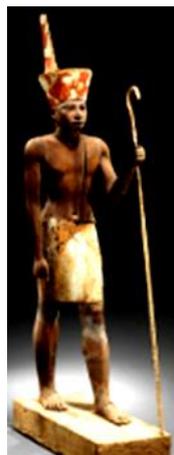


Fig.14 Wooden statue from the 12th Dynasty [32]

IV. SCEPTER USE DURING THE NEW KINGDOM

The New Kingdom of ancient Egypt comprised the 18th, 19th and 20th Dynasties over a time period from 1550 to 1069 BC [33]. As one of the great periods of the ancient Egyptian history, the use of scepters was continued to be used during the New Kingdom as will be depicted by the following examples:

- The first example is a colored scene in the stela of Djehutinefer, Overseer and Scribe during the 18th Dynasty (1552-1292 BC) in display in the Egyptian Museum at Cairo and shown in Fig.15 [34]. The designer showed Djehutinefer holding a Sekhem-Scepter in his left hand.
- The second example is a colored scene in the tomb of Amenhotep, the Gatekeeper of Amun during the 18th Dynasty (1550-1292 BC) shown in Fig.16 [35]. The designer showed a Deity holding a long

Was-Scepter in his left hand and an Ankh-Scepter in his right hand.

- The third example is a colored scene in the stela of Amenhotep I and his mother Queen Ahmose-Nefertari, 2nd Pharaoh of the 18th Dynasty (1524-1503 BC) in display in the Egyptian Museum at Turin and shown in Fig.17 [36]. The designer showed both the Pharaoh and his mother holding an Ankh-Scepter in their right hands, the Queen is holding a Flail-Scepter in her left hand and the Pharaoh is holding a Crook-Scepter in his left hand.
- The fourth example is a scene for Thutmose I, the 3rd Pharaoh of the 18th Dynasty (1543-1493 BC) in the temple of Hatshepsut at Thebes shown in Fig.18 [37]. The scene depicts the Pharaoh holding a Mace-Scepter and a Long-Scepter in his left hand.

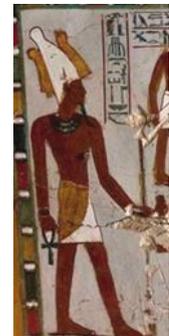
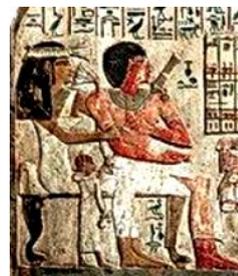


Fig.15 Stela scene from 18th Dynasty [34].

Fig.16 Tomb scene from 18th Dynasty [35]

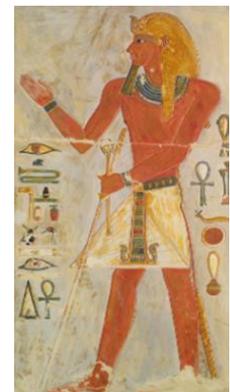


Fig.17 Stela scene from 18th Dynasty [36].

Fig.18 Temple scene from 18th Dynasty [37]

- The fifth example is a scene in the tomb of Thutmose III, the 6th Pharaoh of the 18th Dynasty (1479-1425 BC) shown in Fig.19 [38]. The scene depicts a Deity holding a long Was-Scepter in its left hand and an Ankh-Scepter in its right hand.
- The sixth example is a relief in the Red Chapel at Karnak showing Hatshepsut, the 5th Pharaoh of the 18th Dynasty (1479-1458 BC) with Deity Seshat as shown in Fig.20 [39]. The designer showed the Pharaoh and Seshat holding a Long-Was Scepter by her left hand for the Pharaoh and right hand for

Seshat. They are holding a Medium-Ground-Marker by their other hands.

- The seventh example is a 2.16 m length faience Was-Scepter for Amenhotep II, the 7th Pharaoh of the 18th Dynasty (1425-1398 BC) in display in the Victoria and Albert Museum at London and shown in Fig.21 [40].
- The eighth example is a catering scene in the tomb of Userhat, Royal Scribe during the reign of Amenhotep II, the 7th Pharaoh of the 18th Dynasty (1425-1398 BC) shown in Fig.22 [41]. The designer showed two catering drivers holding Medium-Staff-Sceptres in their right hands.

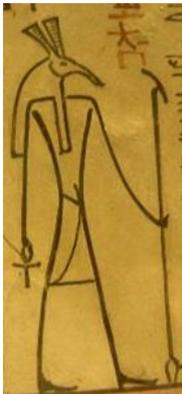


Fig.19 Tomb-scene from 18th Dynasty [38].



Fig.20 Temple relief from 18th Dynasty [39]



Fig.21 Faience scepter from 18th Dynasty [40].



Fig.22 Catering scene from 18th Dynasty [41]

- The ninth example is a colored offering scene in the tomb of Userhat, from the 18th Dynasty (1425-1398 BC) shown in Fig.23 [42]. The scene depicts an offering man using a Long-Staff-Scepter as a carrying pole on his shoulders.
- The tenth example is a colored scene in the tomb of Sennefer, Mayer of Thebes during the reign of Amenhotep II, 7th Pharaoh of the 18th Dynasty (1425-1398 BC) shown in Fig.24 [43]. The designer showed Sennefer holding a Long-Staff-Scepter by his right hand and Short-Sekhmet-Scepter by his left hand while his wife is holding a Short-Sekhmet-Scepter in by her left hand.



Fig.23 Tomb-scene from 18th Dynasty [42].

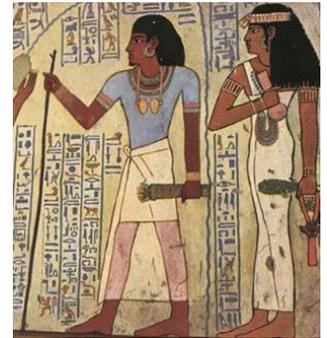


Fig.24 Tomb scene from 18th Dynasty [43]

- The eleventh example is a colored scene in the tomb of Nebamun, Scribe and Grain Accountant during the reign of Thutmose IV and Amenhotep III, Pharaohs of the 18th Dynasty (1398-1350 BC) shown in Fig.25 [44]. The scene depicts Nebamun holding a Long-Staff-Sceptre in his right hand and supervising a wine production process.

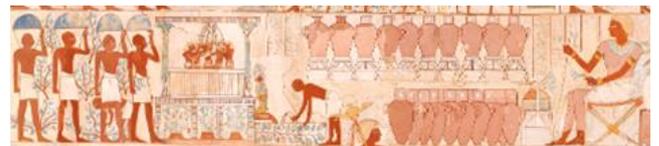


Fig.25 Tomb scene from 18th Dynasty [44].

- The twelfth example is a colored scene in the tomb of Nakht, Scribe and Astronomer of Amun during the reign of Thutmose IV, the 8th Pharaoh of the 18th Dynasty (1398-1388 BC) shown in Fig.26 [45]. The scene depicts Nakht holding a Long Staff-Sceptre in his right hand.

The thirteenth example is a grain harvesting scene in the tomb of Menna, Overseer of the Fields of Amun during the reign of Pharaoh Thutmose IV of the 18th Dynasty (1398-1388 BC) shown in Fig.27 [46]. The scene depicts a harvesting overseer holding a Long Staff-Sceptre in his both hand.

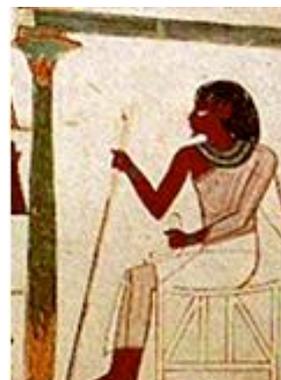


Fig.26 Colored scene from 18th Dynasty [45].



Fig.27 Colored scene from 18th Dynasty [46]

- The fourteenth example is a colored scene in the

tomb of Menna from the 18th Dynasty (1398-1388 BC) shown in Fig.28 [47]. The scene depicts Menna holding a long Stick-Scepter in his left hand and a Medium-Sekhem-Scepter in his right hand.

- The fifteenth example is a surveying scene in the tomb of Menna of the 18th Dynasty (1398-1388 BC) shown in Fig.29 [48]. The scene depicts a surveying overseer holding a Long Was-Scepter in his left hand.



Fig.28 Tomb scene from 18th Dynasty [47].



Fig.29 Tomb scene from 18th Dynasty [48].

- The sixteenth example is a statue of Akhenaten, the 10th Pharaoh of the 18th Dynasty (1351-1334 BC) in display in the Egyptian Museum at Cairo and shown in Fig.30 [49]. The designer showed the Pharaoh holding a Flail-Scepter in his right hand and a Crook-Scepter in his left hand.
- The seventeenth example is a colored scene for Tutankhamun, the 13th Pharaoh of the 18th Dynasty (1332-1323 BC) in his tomb and shown in Fig.31 [50]. The scene depicts the Pharaoh holding a Long-Staff-Scepter in his right hand and a Short-Ankh-Scepter in his left hand.



Fig.30 Statue from 18th Dynasty [49].



Fig.31 Tomb scene from 18th Dynasty [50].

- The eighteenth example is a relief in the golden shrine of Tutankhamun, the 13th Pharaoh of the 18th Dynasty (1332-1319 BC) in display in the Egyptian Museum at Cairo and shown in Fig.32 [51]. The

relief depicts the Pharaoh holding a Flail-Scepter in his right hand.

- The nineteenth example is a granite statue for Pharaoh Tutankhamun of the 18th Dynasty (1332-1323 BC) in display I the Egyptian Museum at Cairo and shown in Fig.33 [52]. The statue depicts the Pharaoh holding Flail and Crook Scepters by his left hand and a composite long Scepter by his right hand.



Fig.32 Shrine relief from 18th Dynasty [51].



Fig.33 Statue from 18th Dynasty [52].

- The twentieth example is a gilded wooden statue for Pharaoh Tutankhamun, of the 18th Dynasty (1332-1319 BC) in display in the Egyptian Museum at Cairo and shown in Fig.34 [53]. The statue depicts the Pharaoh holding a Long-Staff-Scepter in his left hand and a Medium-Mace-Scepter in his right hand.
- The twenty 1st example is the innermost coffin of Pharaoh Tutankhamun of the 18th Dynasty (1332-1323 BC) in display in the Egyptian Museum at Cairo and shown in Fig.35 [54]. The coffin depicts the Pharaoh holding Flail-Scepter in his right hand and a Crook-Scepter in his left hand.



Fig.34 Gilded wooden statue from 18th Dynasty [53].



Fig.35 Coffin from 18th Dynasty [54].

- The twenty 2nd example is a catering relief from the tomb of Horemheb at Saqqara, the last Pharaoh of the 18th Dynasty (1319-1292 BC) shown in Fig.36 [55]. The relief depicts a catering worker holding a Long-Staff-Scepter in his left hand and a Whip-Scepter.



Fig.36 Tomb relief from 18th Dynasty [55]

- The twenty 3rd example is a relief from the tomb of Pharaoh Horemheb of the 18th Dynasty (1319-1292 BC) at Saqqara shown in Fig.37 [56]. The relief depicts the Pharaoh sitting and holding a Long Staff-Scepter in his right hand.
- The twenty 4th example is a relief in a stela from the 19th Dynasty (1292-1186 BC) in display in Petrie Museum at London and shown in Fig.38 [57]. The relief depicts a Deity holding a Was-Scepter in its right hand.



Fig.37 Tomb relief from 18th Dynasty [56].



Fig.38 Stela-relief from 19th Dynasty [57]

- The twenty 5th example is a colored scene from the tomb of Neferrenpet, Vizier and High Priest of Ptah from Late reign of Pharaoh Ramses II to the reign of Pharaoh Seti II of the 19th Dynasty (1210-1197 BC) at Saqqara shown in Fig.39 [58]. The scene depicts the Vizier holding a Medium-Sekhem-Scepter in his right hand while his Wife is holding a Long-Was-Scepter in her right hand.
- The twenty 6th example is a relief in tomb of Iwrkhy, Army General during the reign of Pharaoh Ramses

II of the 19th Dynasty (1279-1213 BC) at Saqqara shown in Fig.40 [59]. The relief depicts the General holding a Staff-Scepter in his left hand.

- The twenty 7th example is a scene for the Kings List of Pharaoh Ramses II of the 19th Dynasty (1279-1213 BC) at Ramesseum shown in Fig.41 [60]. The scene depicts the Pharaoh Ramses II holding a Long-Sekhem-Scepter in his left hand a Long-Staff-Scepter in his right hand.
- The twenty eighth example is a statue for Pharaoh Ramses II of the 19th Dynasty (1279-1213 BC) in display in the Egyptian Museum at Turin and shown in Fig.42 [61]. The statue depicts the Pharaoh holding a Crook-Scepter in his right hand.



Fig.39 Tomb relief from 19th Dynasty [58].



Fig.40 Tomb relief from 19th Dynasty [59]



Fig.41 King scene from 19th Dynasty [60].



Fig.42 Statue from 19th Dynasty [61]

- The twenty ninth example is a colored scene in the tomb of Queen Nefertari, Great Royal Wife of Pharaoh Ramses II of the 19th Dynasty (died 1255 BC) shown in Fig.43 [62]. The scene depicts the Queen holding a Sekhem-Scepter in her right hand.



Fig.43 Scene from the 19th Dynasty [62].

- The thirtieth example is a statue for Twosret, the 8th Pharaoh of the 19th Dynasty (1191-1189 BC) shown in Fig.44 [63]. The statue depicts the Queen holding a Crook-Scepter in her right hand and a Flail-Scepter in her left hand.

The thirty first example is a scene of bread industry in the tomb of Ramses III, the 2nd Pharaoh of the 20th Dynasty (1186-1155 BC) shown in Fig.45 [64]. The scene depicts two workers holding a Long -Scepter in their left hands to keep their balance while working.



Fig.44 Pharaoh Statue from 19th Dynasty [63].



Fig.45 Scene from 20th Dynasty [64]

- The thirty second example is a relief in the tomb of Ramses IX, the 8th Pharaoh of the 20th Dynasty (1129-1111 BC) shown in Fig.46 [65]. The relief depicts the Pharaoh holding a Long -Hook-Scepter in his left hand.

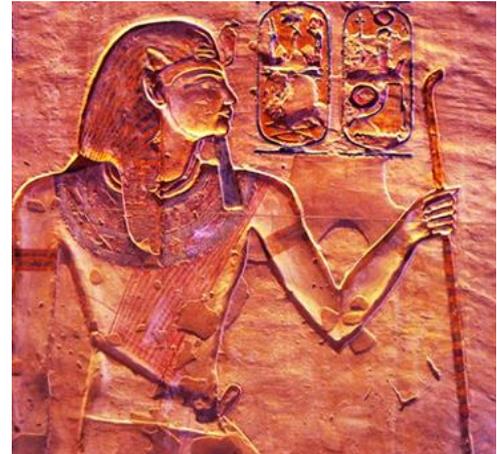


Fig.46 Relief in a tomb from the 20th Dynasty [65].

- The thirty third example is a scene in the tomb of Ramses X, the 9th Pharaoh of the 20th Dynasty (1111-1107 BC) shown in Fig.47 [66]. The relief depicts a Deity holding a Long -Was-Scepter in its right hand.



Fig.47 Scene in a tomb from the 20th Dynasty [66].

V. SCEPTER USE DURING THE LATE PERIOD

The Late Period of the ancient Egyptian history comprised the dynasties from 26 to 31 over a time period from 664 to 332 BC [67]. We have few examples depicting the use of scepters by the ancient Egyptians during the Late Period:

- The first example is a 1.05 m height gilded bronze statue for Osiris produced during the 26th Dynasty (664-525 BC) in display in the Rijksmuseum at Leiden and shown in Fig.48 [68]. The designer showed the Deity holding a Flail-Scepter in its right hand and a Crook-Scepter in its left hand.
- The second example is a 160 mm height amulet of a Was-Scepter from the Late Period (664-343 BC) in display in the Museum of Fine Arts at Boston and shown in Fig.49 [69]. The designer made his amulet simulating a Was-Scepter made from faience.



Fig.48 Pharaoh statue from 26th Dynasty [68].



Fig.49 Amulet from Late Period [69]

- The third example is a relief in the decree stela of Pharaoh Nectenabo I, the founder of the 30th Dynasty (379-361 BC) in display in the Egyptian Museum at Cairo and shown in Fig.50 [70]. The designer showed the Pharaoh holding a Was-Scepter once by his right hand and once by his left hand in the same relief.



Fig.50 Royal Decree stela from 30th Dynasty [70].

VI. SCEPTRE STATISTICS

- The paper covered 85 applications of the use of ancient Egyptians of scepters.
- Types: The used scepters covered in the paper had the types: Was, Staff, Sekhem, Flail, Crook, Ankh, Angle, Mace, Hook, Compound and Whip. Their frequency of use was measured by their percentage relative to total where the result is presented in Fig.51:

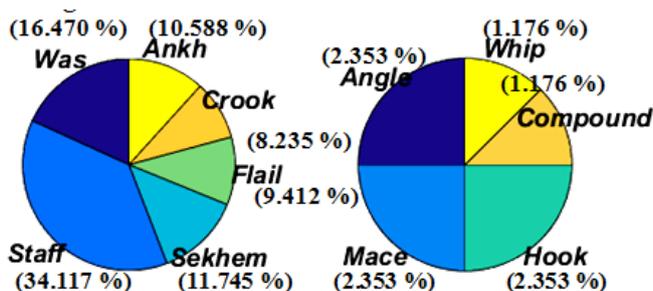


Fig.51 Statistics of scepters type.

- Length: The ancient scepters used scepters with length ranging between short and long. I classified the used length as: Short, Medium and Long. The frequent use of the three length classifications is presented statistically in Fig.52.

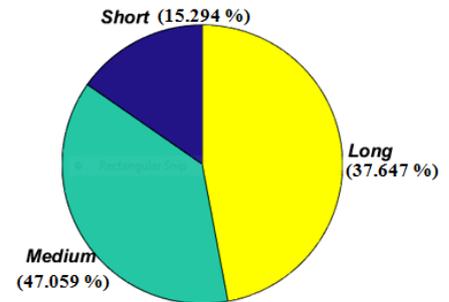


Fig.52 Statistics of scepters length.

- How to use?: The ancient Egyptians used scepters using their right hands, left hands, both hands or (rarely) on shoulders. The frequency of this way of use is measured by the statistics presented in Fig.53.

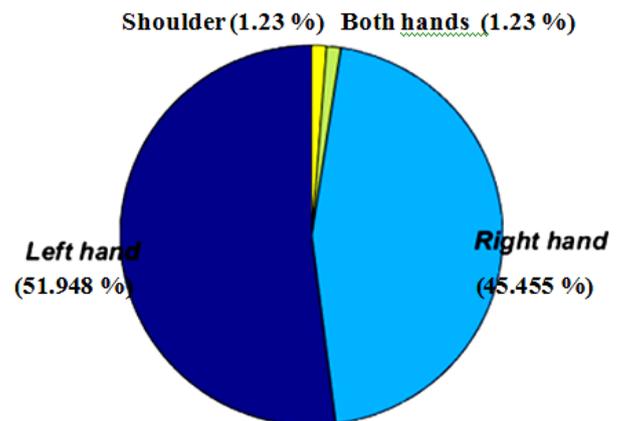


Fig.53 Statistics of scepters use.

VII. CONCLUSION

- The use of scepters in ancient Egypt during the Old, Middle, New Kingdoms and the Late Period was investigated.
- Scepters were used by all classes of people in the ancient Egyptian society especially by nobles and Royal personality.
- The ancient Egyptians used different types of scepters. The paper focused on eleven scepter types: Was, Staff, Sekhem, Flail, Crook, Ankh, Angle, Mace, Hook, Compound and Whip.
- The scepters used by them did not have a unique length. The research work presented classified three length ranges: short, medium and long.
- They used scepter using their right hand, left hand, both hands and on shoulder.
- Staff-Scepters appeared during 3rd, 4th, 5th and 6th Dynasties of the Old Kingdom carved on wood panels and accompanying wooden statues.

- Sekhem-Scepters appeared during the 3rd, 6th, 12th, 18th and 19th Dynasties of the Old, Middle and New Kingdoms.
- Angle-Scepters were used during the 6th Dynasty.
- Long scepters were used during the 3rd, 4th, 5th, 6th, 12th, 18th, 19th and 20th Dynasties.
- Flail-Scepters were used during the 11th, 18th, 19th and 26th Dynasties.
- Medium scepters were used during the 11th, 12th and 18th Dynasties.
- Was-Scepters were used during the Middle Kingdom, 18th, 19th, 20th and 30th Dynasties.
- Hook-Scepters were used during the 12th and 20th Dynasties.
- Ankh-Scepters were used during the 18th, 20th and 30th Dynasties.
- Crook-Scepters were used during the 18th, 19th and 26th Dynasties.
- Mace, Compound and Whip-Scepters were used during the 18th Dynasty.
- Fifty samples of different types of scepters were presented in the paper.
- 34.12 % of them were of the Staff-Type, next came the Was-Type (16.47 %), then the Sekhem-Type (11.75 %), then the Ankh-Type (10.59 %), then the Flail-Type (9.41 %), then the Crook-Type (8.24 %), then the Angle, Mace and Hook-Types (2.35 %). Then the Compound and Whip-Types (1.18 %).
- The ancient Egyptians produced scepters with length classified as Medium (47.06 %), Long (37.65 %) and Short (15.29 %).
- They used scepters using their left hand (51.95 %), right hand (45.46 %) and rarely using both hands and on shoulders (1.23 %).

REFERENCES

- [1] G. Tassie, "The social and ritual contextualization of ancient Egyptian hair and hairstyles from Predynastic to the End of the Old Kingdom", *Ph. D. Thesis*, Institute of Archaeology, University College London, p.143, 2008.
- [2] A. Olivier, "Social status of elite women of the New Kingdom of ancient Egypt: A comparison of artistic features", *Master of Arts Thesis*, University of South Africa, 2008.
- [3] W. A. Cooney., "Egypt's encounter with the West: Race, culture and identity ", *Ph. D. Thesis*, Department of Archaeology, University of Durham, 2011.
- [4] G. A. Hassaan, "Mechanical Engineering in ancient Egypt, Part XXXI: Human wooden statues (Predynastic to 13th Dynasty)", *International Journal of Engineering and Techniques*, vol.3, issue 1, pp.43-55, 2017.
- [5] G. A. Hassaan, "Mechanical Engineering in ancient Egypt, Part XXXVIII: Non-stones, non-wooden human statues industry", *World Journal of Engineering Research and Technology*, vol.2, issue 6, pp.109-124, 2016.
- [6] E. Ghaly and O. Ibrahim, "Reward ceremony scenes in private tombs of Post-Amarna Period in Thebes and Memphis", *International Journal of Heritage, Tourism and Hospitality*, vol.11, issue 1/2, pp.169-183, 2017.
- [7] V. Novakova, "The household of an Egyptian dignitary: The case of Ptahshepses", *PES*, vol.XIX, pp.95-109, 2017.
- [8] G. A. Hassaan, "Mechanical Engineering in ancient Egypt, Part 61: Symbols industry", *International Journal of Engineering and Techniques*, vol.3, issue 6, pp.693-702, 2017.
- [9] G. A. Hassaan, "Mechanical Engineering in ancient Egypt, Part 64: Stelae industry (Early Dynastic to Middle Kingdom)", *International Journal of Advanced Research in Management, Architecture, Technology and Engineering*, vol.4, issue 3, pp.1-9, 2018.
- [10] G. A. Hassaan, "Mechanical Engineering in ancient Egypt, Part 65: Stelae industry (Second Intermediate Period and New Kingdom)", *International Journal of Engineering and Techniques*, vol.4, issue 2, pp.42-53, 2018.
- [11] G. A. Hassaan, "Mechanical Engineering in ancient Egypt, Part 66: Stelae industry (Third Intermediate Period and Late Period)", *International Journal of Emerging Engineering Research and Technology*, vol.6, issue 6, pp.25-32, 2018.
- [12] M. Belot, "Survey and cross-cultural comparison of water symbolism in the ancient Babylonian and Egyptian cosmological cycles", *Master of Letters Research Degree Thesis*, Trinity College, University of Dublin, 2018.
- [13] G. A. Hassaan, "Mechanical Engineering in ancient Egypt, Part 75: Married couples authorization", *International Journal of Advanced Research in Management, Architecture, Technology and Engineering*, vol.4, issue 11, pp.1-14, 2018.
- [14] M. E. Strong, "Illuminating the path of darkness: social and sacred power of artificial light in Pharaonic Period Egypt", *Ph. D. Thesis*, Gisbon College, University of Cambridge, 2018.
- [15] Wikipedia, "Was-sceptre", <http://en.wikipedia.org/wiki/Was-sceptre>, 2019.
- [16] J. Dunn, "The was-sceptre (or staff)", <http://www.touregypt.net/Lectures/Was-sceptre.htm>, 2019.
- [17] Wikipedia, "Old Kingdom of Egypt", https://en.wikipedia.org/wiki/Old_Kingdom_of_Egypt, 2019.
- [18] Alamy, "One of six panels from the mastaba of Hesire", <https://www.alamy.com/one-of-six-panels-from-the-mastaba-of-hesire-a-high-official-of-king-image60299846.html>
- [19] British Museum, "Painted wooden male statue with a staff", https://britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=101506&partId=1&searchText=egypt&images=true&page=11, 2019.
- [20] J. Urban, "Chief Priest Ka-Aper", <https://www.pinterest.com/pin/290834088427318047/?lp=true>
- [21] Ancient Egypt, "Ptahshepses", <http://www.ancient-egypt.org/who-is-who/p/ptahshepses.html>, 2018.
- [22] Learning Lab, "Polychrome low relief in tomb of Ptahhotep", <https://learninglab.si.edu/resources/view/139286>
- [23] Brooklyn Museum, "Statue of Metjetji", <https://www.brooklynmuseum.org/opencollection/objects/3551>
- [24] Trek Earth, "The mastaba of Mereruka", <https://www.trekearth.com/gallery/Africa/Egypt/Delta/Giza/Saqqara/photo548002.htm>, 2018.
- [25] Stock Photo, "People on riverboat, relief in ancient tomb of Saqqara", <https://www.istockphoto.com/photo/people-on-riverboat-relief-on-ancient-tomb-of-sakkara-made-at-2300-bc-in-egypt-gm1138615326-304046053>, 2019.
- [26] Wikimili, "Kagemni", <https://wikimili.com/en/Kagemni>, 2019.
- [27] Wikipedia, "Middle Kingdom of Egypt", https://en.wikipedia.org/wiki/Middle_Kingdom_of_Egypt, 2019.
- [28] Metropolitan Museum, "Stela of Khety and his wife Henetca", <https://www.metmuseum.org/art/collection/search/591439>, 2019.
- [29] Metropolitan Museum, "Stela of the Gatekeeper Maatice", <https://www.metmuseum.org/art/collection/search/544005>, 2019.
- [30] Wikipedia, "Stela showing Isis sitting and holding a was-sceptre", https://en.wikipedia.org/wiki/Was-sceptre#/media/File:Stela_showing_%22Isis_the_Great_Goddess%22_sitting_and_holdin_g_a_was-sceptre._A_man._the_head_of_necropolis_workers.

- [adores her. From Egypt, Middle Kingdom. The Petrie Museum of Egyptian Archaeology, London.jpg](#)
- [31] Brooklyn Museum, "Stela of Amenemhat", <https://www.brooklynmuseum.org/opencollection/objects/4138>
- [32] Metropolitan Museum, "Guardian figure", <https://www.metmuseum.org/art/collection/search/543864>, 2019.
- [33] Wikipedia, "New Kingdom of Egypt", https://en.wikipedia.org/wiki/New_Kingdom_of_Egypt, 2019.
- [34] Web Facebook, "Stela of Djehutinefer and his wife Benbu", <https://web.facebook.com/CULTNAT/photos/a.306598898726/1015287351505872/?type=1&theater>
- [35] Maria Valdesogo, "A new ancient Egyptian tomb with typical funerary scene discovered", <http://www.mariarosavaldesogo.com/new-ancient-egyptian-tomb-discovered/>, 2019.
- [36] G. G. Singer, "Ahmose Nefertari, the woman in black", <https://terraantiquae.com/profiles/blogs/ahmose-nefertari-the-woman-in#.UVtLf6vwLUM>
- [37] Metropolitan Museum, "Thutmose I and his mother Seniseneb", <https://www.metmuseum.org/toah/works-of-art/30.4.137/>, 2019.
- [38] Wikipedia, "A Was scepter carried by Set in the tomb of Thutmose III", https://en.wikipedia.org/wiki/Was-sceptre#/media/File:Egypt_Mythology_Set.jpg
- [39] Brew Minate, "A scene of a royal foundation ceremony", <https://brewminate.com/the-location-of-cities-in-ancient-egypt/>
- [40] J. Dunn, "The Was-Scepter (or staff)", <http://www.touregypt.net/featurestories/was-scepter.htm>, 2019.
- [41] J. Dunn, "The tomb of Userhat (TT56)", <http://www.touregypt.net/featurestories/tt56.htm>, 2019.
- [42] Wikipedia, "TT56", <https://en.wikipedia.org/wiki/TT56>, 2019.
- [43] T. Villanueva, "Wall painting from the tomb of Sennefer", <https://www.pinterest.com/pin/221450506653417282/?autologin=true>
- [44] Metropolitan Museum, "Nebamun supervising Estate activities, tomb of Nebamun", <https://www.metmuseum.org/toah/works-of-art/30.4.57/>, 2019.
- [45] Wiki Art, "Agricultural scene from the tomb of Nakht", <https://www.wikiart.org/en/ancient-egyptian-painting/agricultural-scene-from-the-tomb-of-nakht-18th-dynasty-thebes--1390>
- [46] Nile Vikings, "Tomb of Menna, TT69", http://www.nilevikings.com/maps/tomb_menna.html
- [47] Trek Earth, "Harvest scene", <https://www.trekearth.com/gallery/Africa/Egypt/Inland/Luxor/Luxor/photo1048211.htm>, 2018.
- [48] Mathildas Diary, "The anthropology blog breaks 300 hits a day, and blond Egyptians", <https://mathildasdiary.wordpress.com/2008/06/26/so-the-anthropology-blog-breaks-300-hits-a-day-and-blond-egyptians/>, 2008.
- [49] Getty Images, "Statue of Akhenaten", <https://www.gettyimages.com/photos/akhenaten?sort=mostpopular&mediatype=photography&phrase=akhenaten>, 2019.
- [50] History, "Was King Tut buried in a hurry ?", <https://www.history.com/news/king-tut-photos-tutankhamen-tomb-restoration>, 2019.
- [51] H. Ollermann, "Scenes from the bottom register of the back wall of the little golden shrine from the tomb of Tutankhamun", <https://www.flickr.com/photos/menesje/43817737604>
- [52] Science Source, "Khonsu", <https://www.sciencesource.com/archive/Khonsu-SS2383309.html>
- [53] Tour Egypt, "KA statue of Tutankhamun", http://www.touregypt.net/egyptmuseum/egyptian_museumn6.htm, 2019.
- [54] M. Gannon, "King Tut's parents were cousins, not siblings", <https://www.livescience.com/27106-king-tut-parents-were-cousins.html>, 2013.
- [55] Musei Bologna, "Relief with a scene of work in the fields from tomb of Horemheb", <http://www.museibologna.it/ archeologicoen/percorsi/66288/id/74380/oggetto/71820/>
- [56] A. Puddu, "The sunken relief of Horemheb from his tomb at Saqqara", <https://www.pinterest.com/pin/501166264780160543/?lp=true>
- [57] Wikipedia, "Upper part of a stela showing a standing man adoring Ra-Horakhty", https://en.wikipedia.org/wiki/Was-sceptre#/media/File:Upper_part_of_a_stela_showing_a_standing_man_adoring_Ra-Horakhty_who_holds_a_was-sceptre._19th_Dynasty._From_Egypt_-_The_Petrie_Museum_of_Egyptian_Archaeology,_London.jpg
- [58] Greg, "Tomb of Neferenpet (TT178), Late reign of Rameses II", <https://www.pinterest.com/pin/513199320023213228/?lp=true>
- [59] Ancient Pages, "Unusual scenes painted on the walls inside Egyptian tomb of General Iwrkhy", <http://www.ancientpages.com/2018/05/10/unusual-scenes-painted-on-the-walls-inside-egyptian-tomb-of-general-iwrkhy-discovered/>
- [60] Wikipedia, "Ramesseum king list", https://en.wikipedia.org/wiki/Ramesseum_king_list, 2017.
- [61] Dreams Time, "Statue of Ramesses II", <https://www.dreamstime.com/stock-photo-statue-ramesses-ii-image13076930>, 2019.
- [62] J. Stewart, "Scene in the tomb of Nefertari in the Valley of the Queens", <https://www.vpr.org/post/timeline-peripatjau-trumpeting-thief#stream/0>, 2019.
- [63] Real History, "Ancient man and his first civilization, Egypt-5", http://realhistoryww.com/world_history/ancient/Egypt_3.htm
- [64] Eli, "Ancient Egyptian bread of Ramses III", <http://www.ancientrecipes.org/ancient-egyptian-bread-of-rams-es-iii/>, 2018.
- [65] J. Lee, "Exploring the Valley of the Kings: A visitor's guide", <https://www.planetware.com/egypt/thebes-valley-of-the-kings-egy-qena-valkng.htm>, 2019.
- [66] The Ancient Pharaohs, "The ancient Egypt", <https://the-ancient-pharaohs.blogspot.com/2017/02/kv18-tomb-of-rams-es-x-kv19-tomb-of.html>, 2017.
- [67] Wikipedia, "Late Period of ancient Egypt", https://en.wikipedia.org/wiki/Late_Period_of_ancient_Egypt, 2019.
- [68] Flickr, "Osiris", <https://www.flickr.com/photos/jankunst/8701762089/in/pool-443927@N22>, 2012.
- [69] J. A. Lansberry, "Was Sceptre", <http://www.joanannlansberry.com/fotoart/mfa/was-mfa.html>
- [70] Wikipedia, "Nectanebo I", https://en.wikipedia.org/wiki/Nectanebo_I, 2019.

DEDICATION



I dedicate this research work to my friend, the great Egyptologist Engineer Chris Dunn for his great efforts in

exploring the outstanding technologies of the ancient Egyptians that could help them in producing amazing products and structures.

BIOGRAPHY



Galal Ali Hassaan:

- Emeritus Professor of System Dynamics and Automatic Control.
- Has got his B.Sc. and M.Sc. from Cairo University in 1970 and 1974.
- Has got his Ph.D. in 1979 from Bradford University, UK under the supervision of Late Prof. John Parnaby.
- Now with the Faculty of Engineering, Cairo University, EGYPT.
- Research on Automatic Control, Mechanical Vibrations, Mechanism Synthesis and History of Mechanical Engineering.
- Published more than 260 research papers in international journals and conferences.
- Author of books on Experimental Systems Control, Experimental Vibrations and Evolution of Mechanical Engineering.
- Chief Justice of the International Journal of Computer Techniques.
- Member of the Editorial Board of a number of International Journals including IJARMATE.
- Reviewer in some international journals.