

MECHANICAL ENGINEERING IN ANCIENT EGYPT, PART XXXI: HUMAN WOODEN STATUES (PRE-DYNASTIC TO 13th DYNASTY)

Prof. Dr. Galal Ali Hassaan*

Emeritus Professor, Department of Mechanical Design & Production, Faculty of Engineering,
Cairo University, Egypt.

Article Received on 12/10/2016

Article Revised on 01/11/2016

Article Accepted on 21/11/2016

***Corresponding Author**

**Prof. Dr. Galal Ali
Hassaan**

Emeritus Professor,
Department of Mechanical
Design & Production,
Faculty of Engineering,
Cairo University, Egypt.

ABSTRACT

This is the 31st research paper exploring the evolution of Mechanical Engineering in Ancient Egypt. The paper investigates the production of human wooden statues in ancient Egypt starting from the Predynastic Period up to the 13th Dynasty. The design of the wooden statues, the used raw material, date and present location are investigated. The clothing and headdress of the statues is highlighted and the beauty aspects associated with some wooden statues. The analysis outlined

also the degree of sophistication of the used mechanical technology producing amazing statues.

KEYWORDS: History of mechanical engineering, ancient Egypt, human wooden statues, Predynastic to 13th Dynasty.

INTRODUCTION

This is the 31st research paper in a series aiming at exploring the evolution of mechanical engineering in ancient Egypt through the different activities of their wonderful civilization. The ancient Egyptians used different materials for the production of their human statues such as wood, ivory, clay, pottery, faience, brass, bronze and stone. This paper concentrates only on wooden statues over the ancient history of Egypt from Predynastic to the 13th Dynasty of the Second Intermediate Period.

Dunham, 1958 presented a series of lectures on the history of the Egyptian Department and the excavations in Egypt of the Harvard-Boston Expedition given in the Museum of Fine Arts of Boston. He presented some wooden statues from the 5th, 12th, 13th and 18th Dynasties.^[1] Smith, 1960 wrote a book about ancient Egypt as represented in the Museum of Fine Arts covering a time span from Predynastic to Late Periods. He presented sculpture figures from mud, clay, ivory and pottery from the Predynastic Period. He presented also a wooden statue of Mehy and Methethy from the Old Kingdom, Wepwawpt-em-hat a King from Kerma from the Middle Kingdom, small statues from Bersheh and a wooden dwarf from the New Kingdom.^[2] Harvey, 1991/1992 reassessed a wooden statue in the Walters Art Gallery and assigned it to the Middle Kingdom instead of the New Kingdom. Her work was based on comparisons with similar statues in other collections.^[3] Harvey, 1994 in his Ph.D. Thesis examined and discussed 217 wooden statues from the Old Kingdom. She presented a Catalogue A for 127 statues placed in a chronological order and a Catalogue B for 75 statues. She established a criteria for dating statues without external dating criteria or provenance.^[4] Blanchette, 2003 in his study on the deterioration in historic and archaeological woods from terrestrial sites presented the case of wooden statues from Saqqara (2340 BC) where two types of decay were found. He showed that the decay caused extensive damage and resulted in severe weakening of wood strength.^[5] Nureldin, 2008 in his article about medicine in ancient Egypt presented a number of statues for Ne-Srt-Re from the Old Kingdom, Amenhotep son of Hebu, Imhotep, Ptah and Amun.^[6] Harvey, 2009 stated that wood was a widely used material for sculpture in ancient Egypt from the earliest times. She presented wooden statues for Ka-aper from the 4th/5th Dynasties, Metjetji from the 6th Dynasty, female offering bearer from tomb of Meketre of the 11th Dynasty, gardian statue from tomb of Pharaoh Tutankhamun of the 18th Dynasty, head of Queen Tiye from the 18th Dynasty and two statues for Isis and Nephthys from the Late Period.^[7] Cralowicz, 2011 in his article about the Predynastic and Early Dynastic Periods of Egypt in Tell El-Farkha presented some ivory figurines, golden figure for a Predynastic ruler from the Eastern Kom.^[8] El-Sherbiny, 2015 in her M. Sc. Thesis established a dendrockronological record for ancient Egypt through the analysis of ancient Egyptian artefacts identifying the main types of wood resources with the highest dendrockronological potential for ancient Egypt Periods. Among the wooden artefacts she studied was the statue of Ka-aper of the Old Kingdom and a wooden statue of Pharaoh Tutankhamun of the 18th Dynasty.^[9] Wikipedia, 2016 wrote an article about Kaaper or Sheikh el-Balad who was an ancient Egyptian scribe and priest lived during the Late 4th Dynasty and Early 5th Dynasty. They presented his wooden statue located in the Egyptian

Museum at Cairo of 1.12 m length and carved from sycamore wood. His eyes were made from rock crystal and copper plates.^[10]

Predynastic Period

Ancient Egyptians produced human statues of miniature nature from very early times using local materials such as bone, ivory, clay, pottery and wood. Because our research work in this part concentrated on wood statues, the materials other than wood will be considered in the next part, part XXXII. We have only one example of wooden statue from Naqada I/Naqada II (3700-3200 BC) in display in the Egyptian Museum at Cairo and shown in Fig.1.^[11] The eyebrows were marked in black and the eyes were produced from the lapis lazuli semi-precious stone with black pupil in both eyes.



Fig 1: Wooden statue from Naqada I/Naqada II.^[11]

Old Kingdom

The Old Kingdom of ancient Egypt comprised the 3rd to 6th Dynasties over a time span from 2686 to 2181 BC.^[12] During the Old Kingdom, wooden statues became to take a full-size of the human being with elaborated means of painting and decorating the statues as will be illustrated in the following examples.

- Fig.2 shows a statue for architect Imhotep, the builder of King Djoser pyramid (second King of the 3rd Dynasty 2414-2375 BC).^[13] The statue shows Imhotep wearing a white short Schenti, colored headdress and holding a square stick in his left hand.
- The second example is a wooden statue of Kaaper or Sheikh Al-Balad from the 4th Dynasty (2540-2505 BC) in display in the Egyptian Museum at Cairo and shown in Fig.3.^[14] He is wearing a short Schenti and holding a straight stick in his left hand.

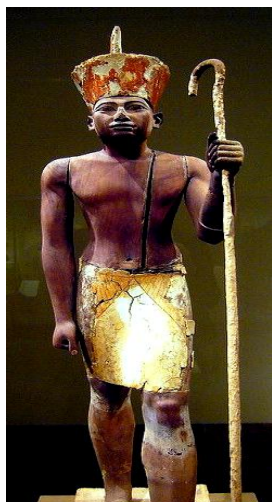


Fig.2 Wooden statue of Imhotep from the 3rd Dynasty.^[13]



Fig.3 Wooden statue of Kaaper from the 4th Dynasty.^[14]

- Fig.4 shows another example of the wooden statues in the 4th Dynasty where it belongs to Kaipunesut (2528-2520 BC) in display in the Metropolitan Museum of Art at NY.^[15] It is carved from wood and painted. Its length is 1.5 m.
- The third example of wooden statues in the 4th Dynasty belongs to a man and his wife in display in the Louvre Museum and shown in Fig.5.^[16] It is carved from acacia wood, painted and decorated.



Fig.4 Wooden statue of Kaipunesut from the 4th Dynasty.^[15]



Fig.5 Wooden statue of a man and his wife from the 4th Dynasty.^[16]

Now, we move to the 5th Dynasty of the Old Kingdom where we have a number of examples of wooden statues:

- The first example is for Perhemofret (2450-2300 BC) in display in the Egyptian Museum at Berlin and shown in Fig.6.^[17] The statue shows Perhemofret striding and wearing a short Schenti.
- The second example from the 5th Dynasty is for Vizier Rashepses, the Vizier of King Djedkare (2414-2375 BC) in display in the Imhotep Museum at Saqqara, Badrashin, Egypt and shown in Fig.7.^[18] The Vizier is wearing a cap headdress, the wood is painted and the elements of his face were carved in a very professional way by a well experienced artist. He looks as if his photo was taken by a digital camera not carved from wood. This example reflects the personality of the ancient Egyptians and how they could master the Mechanical Engineering Technology in their times and manufacture amazing products.



Fig.6 Wooden statue of Perhemofret from the 5th Dynasty.^[17]



Fig.7 Wooden statue of Vizier Rashepses from the 5th Dynasty.^[18]

- The third example from the 5th Dynasty is for Prince Senedjemimbemehy, from the reign of King Unas (2353-2323 BC) in display in the Museum of Fine Arts at Boston and shown in Fig.8.^[19] The prince is wearing cap headdress while he is statue was completely naked while some researchers see that he might be dressed.^[19]
- The last example from Late 5th Dynasty and Early 6th Dynasty is for Metjetji (2371-2288 BC) in display in the Brooklyn Museum and shown in Fig.9.^[20] He is wearing a long white Schenti decorated by white lines. He is striding and not wearing any headdress as clear from hid zoomed view in Fig.9.



**Fig.8 Wooden statue of Senedjemibmehy
from the 5th Dynasty.^[19]**



**Fig.9 Wooden statue of Metjetji
from the 5th/6th Dynasty.^[20]**

Now, we move the 6th Dynasty of the Old Kingdom where we have four examples of wooden statues.

- The first example from the 6th Dynasty is for Kaimsenuwy, the Overseer of Granary of King Titi (2345-2333 BC) in display in the Metropolitan Museum of Art and shown in Fig.10.^[21] The overseer is wearing a short Nemes headdress, Schenti and a thin pectoral around his neck.
- The second example for the wooden statues in the 6th Dynasty is for the porter Niankh Pepi from the reign of King Pepi I (2331-2287 BC) in display in the Egyptian Museum at Cairo and shown in Fig.11.^[22] It is carved from wood painted and decorated by plaster pectoral and Schenti. The porter is carrying two bags one in his front supporting it by his right hand and one on his back holding it by his left hand. The design and production are very elaborated ones showing the embrace of Mechanical Engineering and Art.
- The third example is a wooden statue for an official from the 6th Dynasty (2300-2181 BC) sold in the sale 1561 at London on 10th October 2014 for 70831 US \$ and shown in Fig.12.^[23] Its length is 314 mm. He is wearing a long Schenti and a cap headdress as shown in the zoomed head of the statue.
- The last example from the 6th Dynasty is for a man (2246-2150 BC) shown in Fig.13.^[24] The statue is carved from wood and painted with different colors showing a short black Schenti and a short Nemes headdress. The statue is still shining as it is produced today not from more than 4150 years.



Fig.10 Wooden statue of Kaimsenuwy from the 6th Dynasty.^[21]



Fig.11 Wooden statue of Niankh Pepi from the 6th Dynasty.^[22]



Fig.12 Wooden statue of an official from the 6th Dynasty.^[23]



Fig.13 Wooden statue of a man from the 6th Dynasty.^[24]

First Intermediate Period

The First Intermediate Period of Egypt comprises the 7th to 9th Dynasties over a time span from 2181 to 2055 BC.^[25] We have four examples of wooden statues illustrating the development of this industry in Egypt during this period.

- The first example is for courtier Ihy (200-2100 BC) in display in the Metropolitan Museum of Art and shown in Fig.14.^[26] Ihy is wearing a medium schenti and a short decorated Nemes headdress.
- The second example is for a female offering bearer (2181-1797 BC) shown in Fig.15.^[27] It is manufactured from wood, gesso and polychrome painting. It has an overall length of 482 mm. She is an old woman carrying a basket, wearing a long tunic and having a short-cut hair.



Fig.14 Wooden statue of Courtier Ihy from the 1st Intermediate Period.^[26]

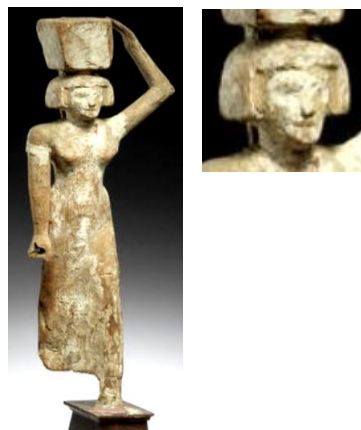


Fig.15 Wooden statue of an offering bearer from the 1st Intermediate Period.^[27]

- The third example is for a woman from the 9th/10th Dynasties (2150-2100 BC) shown in Fig.16.^[28] The statue was carved from wood, then painted. The woman is standing with both hands extending vertically and wearing a long Tunic. Her hair was cut short as men hair-styles.
- The last example is for Wepwawetemhat from the First Intermediate / Medium Kingdom Period (2140-1991 BC) in display in the Museum of Fine Arts at Boston.^[29] He is wearing a short Schenti, holding a long stick in his left hand and wearing a short decorated Nemes headdress.



Fig.16 Wooden statue of woman from the 9th/10th Dynasties.^[28]



Fig.17 Wooden statue of an offering bearer from the 1st Intermediate Period.^[29]

Middle Kingdom

The Middle Kingdom of Egypt comprises both the 11th and 12th Dynasty over a time span from 2000 to 1700 BC.^[30] The development of wooden statues during the Middle Kingdom is investigated through the following presentations.

Dynast 11

- The first example from the 11th Dynasty is for a female offering bearer (2140-1991 BC) in display in the Museum of Fine Arts at Boston and shown in Fig.18.^[31] It is manufactured from painted wood showing the lady wearing a sleeveless long Tunic and with her naked hair. The overall length of the statue is 863 mm.
- The second example from the 11th Dynasty is for nobleman Khety (2134-1991 BC) which is a private collection shown in Fig.19.^[32] The statue was manufactured by wood carving, providing gesso layer, then painting. IT shows Khety wearing a medium Schenti, a cap headdress and a small bag hanged from the Schenti top edge as clear in the zoomed parts in Fig.19. Its overall length is 285 mm.



Fig.18 Wooden statue of an offering bearer from the 11th Dynasty.^[31]



Fig.19 Wooden statue Nobleman Khety from the 11th Dynasty.^[32]



- The third example is for a female offering bearer (2033-1900 BC) in display in the Louvre Museum at Paris shown in Fig.20.^[33] The artist showed the lady carrying a vase on her right hand and supporting a basket on her head using her left hand.. He shown the details of her body with her natural hair without headdress. These design are very difficult to produce because the too many details in the statue, but they did it.
- The fourth example is for lady Djehutynakht from the Late 11th Dynasty/Early 12th Dynasty (2110-1961 BC) in display in the Museum of Fine Arts at Boston and shown in Fig.21.^[34] This is a wonderful statue showing the lady standing with her hands set vertically in their normal positions, wearing a long Tunic and a long headdress. The carver didn't used any layer between the wood and painting. He made the painting transparent and showed the wood layers for the decoration process of the Tunic.



Fig.20 Wooden statue of an offering bearer from the 11th Dynasty.^[33]



Fig.21 Wooden statue of Djehutynakht from the 11th/12th Dynasties.^[34]



Dynasty 12

- The first example from the 12th Dynasty is for the Priestess Imertnebes (1985-1773 BC) in display in the Leiden Museum of Antiquities at Leiden and shown in Fig.22.^[35] The wood is carved and painted providing a necked shining image, the eyes and eyebrows were defined and marked with black color and her hair was covered by a patterned brown headdress as clear in the zoomed head of the statue.
- The second example of wooden statues from the 12th Dynasty is for a bearing woman (1981-1975 BC) in display in the Metropolitan Museum and shown in Fig.23.^[36] This is one of the most wonderful wood statues produced so far in ancient Egypt. The wood is carved, gesso layered and then painted. The woman is carrying a 3-colored basket on her head supported by her left hand, carrying a decorated duck in her right hand, wearing a dark-green headdress and an amazing long Tunic. The Tunic is decorated by a very nice and difficult patterns. The carver displayed the beauty of the Egyptian woman through the open eyes. This straight nose and small mouth.
- The third example is a wooden statue for King Senwosret I, the second King of the 12th Dynasty (1971-1926 BC) in display in the Metropolitan Museum of Art and shown in Fig.24.^[37] The statue shows the King wearing a short Schenti, the white crown of upper Egypt and holding a square long stick in his left hand.
- The fourth example from the 12th Dynasty is for Steward Senebi (1950-1900 BC) in display in the Metropolitan Museum of Art and shown in Fig.25.^[38] The Steward is striding, wearing a medium Schenti and holding his right hand.

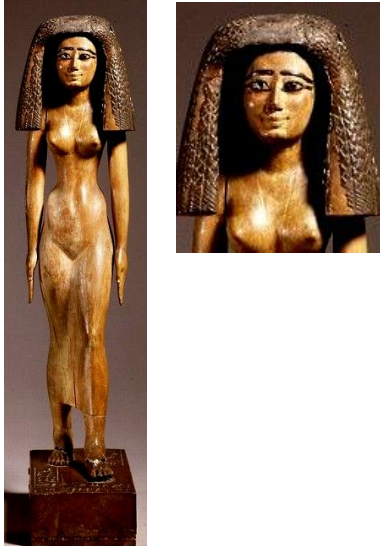


Fig.22 Wooden statue of Imertnebes from the 12th Dynasty.^[35]



Fig.23 Wooden statue of a bearing woman from the 12th Dynasties.^[36]

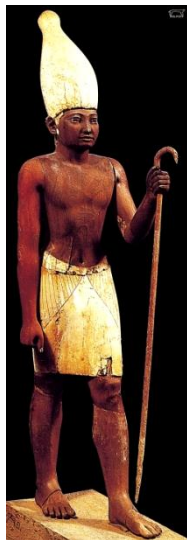


Fig.24 Wooden statue of Senwosret I from the 12th Dynasty.^[37]



Fig.25 Wooden statue of Steward Senebi from the 12th Dynasties.^[38]

- The last example of wooden statues in the 12th Dynasty is for a standing woman (1330 BC) in display in the Walters Art Museum at Baltimore (USA) and shown in Fig.26.^[39] The artist showed the woman wearing a Tunic, headdress, bracelet in hands and legs and a necklace.



Fig 26: A wooden statue for a woman from the 12th Dynasty.^[39]

Second Intermediate Period

The Second Intermediate Period of ancient Egypt comprises the 13th to 17th Dynasties over a time span from 1802 to 1550 BC.^[40] The only example of wooden statues available here is for King Hor (1777-1775 BC), the 15th King of the 13th Dynasty in display in the Egyptian Museum at Cairo and shown in Fig.27.^[41] The well experienced carver represented the King wearing a Nemes headdress and having a thin long beard. The two hands above the head of the king is a symbol for the soul 'Ka' which leaves the body after death.^[42]



Fig.27 A wooden statue of King Hor from the 13th Dynasty.^[41]

CONCLUSION

- The production of wooden statues in the Predynastic to Second Intermediate Periods of ancient Egypt was investigated.

- Wooden statues appeared in Naqada I/Naqada II of the Predynastic Period. .
- The ancient Egyptians used lapis lazuli to make the statues eyes during the Predynastic Period.
- Great development took place in the production of wooden statues during the Old Kingdom.
- They produced multi-colours wooden statues since the 3rd Dynasty of the Old Kingdom.
- Wooden statues of dressed men with Schenti and headdress started during the 3rd Dynasty and continued up to the Second Intermediate Period (the last period in the present study).
- Wooden statues of dressed women with Tunic and headdress appeared since the 4th Dynasty of the Old Kingdom and continued until the end of the Middle Kingdom.
- Some of the wooden statues appeared completely naked during the 5th , 11th and 12th Dynasties .
- Women wooden statues with headdress appeared during the 4th Dynasty and continued up to the 12th Dynasty.
- The ancient Egyptians designed and produced men wooden statues with cap, Nemes and Crowns headdress.
- They used the symbol 'Ka' with the statue of Pharaoh Hor from the 13th Dynasty of the Second Intermediate Period.
- They carved the wood, layered by gesso and painted using wonderful colours could sustain for thousands of years.
- Some of the designs were marvellous as they are designed using ACAD and manufactured using CNC machines !.

REFERENCES

1. Dunham, D. (1958), "The Egyptian Department and its excavations" Museum of Fine Arts, Boston.
2. Smith, W. (1960), "Ancient Egypt as represented in the Museum of Fine Arts, Boston", Museum of Fine Arts, Boston.
3. Harvey, J, (1991/1992), "A Late Middle Kingdom wooden statue from Assiut in the Walters Art Gallery", The Journal of Walters Art Gallery, Vol.49/50, pp.1-6.
4. Harvey, J. (1994), "A typological study of Egyptian wooden statues of the Old Kingdom", Ph.D. Thesis, University College London.

5. Blanchette, R. (2003), "Deterioration in historic and archaeological woods from terrestrial sites", in "Art, Biology, conservation: Biodeterioration of work of art", Koestler, R. et. Al. (Editors), The Metropolitan Museum of Art, 328-347.
6. Nureldin, A. (2008), "Medicine in ancient Egypt", *The Heritage of Egypt*, 3(3): 15-34.
7. Harvey, J. (2009), "Wooden statuary", *UCLA Encyclopedia of Egyptology*, November, [.http://escholarship.org/items/65m484sn](http://escholarship.org/items/65m484sn)
8. Cialowicz, K. (2011), "The Predynastic/Early Dynastic Period at Tell El-Farkha", in Teeter, E. (Editor), "Before the pyramids, the origins of Egyptian civilization", *Oriental Institute Museum Publication 33*, University of Chicago.
9. El-Sherbiny, H. (2015), "Studies in Dendro-Egyptology: The laboratory of tree-ring research, Egyptian wooden collection", M.Sc. Thesis, The Graduate College, The University of Arizona.
10. Wikipedia (2016), "Kaaper", <http://wikipedia.org/wiki/Kaaper>
11. MacDougall, M. "5000 year old wood statues", www.pinterest.com/pin/567946202986976309/
12. Wikipedia, (2016), " Old Kingdom of Egypt", https://en.wikipedia.org/wiki/Old_Kingdom_of_Egypt
13. Myra, W., "Imhotep-Egypt who built the first pyramid", www.pinterest.com/pin/555279829040639369/
14. Museum Syndicate, "Statue of Kaaper", www.museumssyndicate.com/item.php?item=27334
15. Metropolitan Museum of Art, " Statue of Kaipunesut", www.metmuseum.org/art/collection/search/543998
16. Carmen, M., "Statue of a man and woman", www.pinterest.com/pin/408701734904866847/
17. Alamy, "Wood statue of Perhemofret, 5th Dynasty", www.alamy.com/stock-photo-wooden-statue-of-perhernofret-ancient-egyptian-5th-dynasty-c2450-2300-60243358.html
18. Mohedin, A. and Shilling, R., "Old Kingdom wooden statue of Vizier Rashepses", www.touregypt.net/featurestories/imhotepmuseum19.htm
19. Woods, C., "Who's who of viziers in the Old Kingdom", <http://www.ancientluxor.com/ww-viz-5.html>
20. Ward, J., "Statue of Metjetji", www.pinterest.com/pin/407435097510547912/
21. Staton, A., "Dynasty 6 wooden statue of Kaiemsenuwy", www.pinterest.com/pin/485825878522934165/

22. Pinterest, "Porter statue, Niankh Pepi", www.pinterest.com/pin/307722587014851594/
23. Christies, "An Egyptian painted wood figure of an official",
[http://www.christies.com/lotfinder/Lot/an-egyptian-painted-wood-figure-of-an-5826747-
details.aspx](http://www.christies.com/lotfinder/Lot/an-egyptian-painted-wood-figure-of-an-5826747-details.aspx)
24. Fernandez, M., "An Egyptian wood figure of a man",
<https://www.pinterest.com/pin/354799276867717074/>
25. Wikipedia (2016), "First Intermediate Period of Egypt",
https://en.wikipedia.org/wiki/First_Intermediate_Period_of_Egypt
26. Judy, W., "Statue of courtier Ihy, Egypt", www.pinterest.com/pin/448248969139824916/
27. Stone Finder, "An Egyptian wood figure of a female offering bearer",
www.pinterest.com/pin/137641332334992007/
28. Olin, "Figure of a woman, period: Dynasty 9/10",
www.pinterest.com/pin/68820700531833403/
29. Hegab, A., "Wooden statue of Wepwawetemhat",
<https://www.pinterest.com/pin/405886985151818713/>
30. Wikipedia, (2016) "Middle Kingdom of Egypt",
https://en.wikipedia.org/wiki/Middle_Kingdom_of_Egypt
31. Museum of Fine Arts, "Statue of a female offering bearer",
<http://www.mfa.org/collections/object/statue-of-a-female-offering-bearer-53>
32. Ancient Artifacts, "Painted wood statue of the nobleman Khety",
<https://www.pinterest.com/pin/383720830733046254/>
33. Alexandra, "Offering bearer – early Middle Kingdom",
<https://www.pinterest.com/pin/234820568045293634/>
34. Weprin, R., "Statue of lady Djehutynakht",
<https://www.pinterest.com/pin/420664421419662335/>
35. Shogren, N., "Wooden grave statue of priestess Imertnebes",
www.pinterest.com/pin/47780446019579267/
36. Metropolitan Museum, "Estate figure",
www.metmuseum.org/art/collection/search/544210?img=1
37. Casas, R., "Wooden statue of Senwosret I, 12th Dynasty",
www.pinterest.com/pin/10133167886136364/
38. Machissack, A., "Statue of Steward Senebi",
www.pinterest.com/pin/413205334544457783/

39. Belova, L., "Standing woman, Egyptian sculptor",
<https://www.pinterest.com/pin/409053578625350252/>
40. Wikipedia (2016), "Second Intermediate Period of Egypt",
https://en.wikipedia.org/wiki/Second_Intermediate_Period_of_Egypt
41. Wikipedia (2016), "Hor", <https://en.wikipedia.org/wiki/Hor>
42. Wikipedia (2016), "Ancient Egyptian concept of the soul",
https://en.wikipedia.org/wiki/Ancient_Egyptian_concept_of_the_soul

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 about 200 research papers in international journals and conferences.
- Author of books on Experimental Systems Control, Experimental Vibrations and Evolution of Mechanical Engineering.
- Chief Justice of International Journal of Computer Techniques.
- Member of the Editorial Board of a number of International Journals including the WJERT journal.
- Reviewer in some international journals.
- Scholars interested in the author's publications can visit:
<http://scholar.cu.edu.eg/galal>

