

**MECHANICAL ENGINEERING IN ANCIENT EGYPT, PART 109:
CIVILIZATION RIGHTS III (RIGHTS 10 TO 13)**

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ABSTRACT

The paper is the third paper in a series of papers about ‘*civilization rights*’. It investigates four of the ‘*civilization rights*’ from the point of view of the author. The investigated ‘*civilization rights*’ covers: labeling of displayed artifacts, lighting of displayed artifacts, return of ancient Egyptian mummies from abroad to Egypt and the non-ethical actions against the ancient Egyptian mummies. The investigation of the four ‘*civilization rights*’ are supported by typical examples from local and foreign museums.

KEYWORDS: Mechanical engineering in ancient Egypt, ancient Egyptian civilization, civilization rights, civilization rights 10 to 13.

INTRODUCTION

Civilization rights is a new archaeological topic introduced by Prof. Ahmed Rashed^[1] and investigated by the author in a previous two papers of this research series about mechanical engineering in ancient Egypt (Parts 107 and 108).^{[2],[3]} Part 107 presented a general introduction for the subject highlighting the ‘documentation techniques’ in ancient Egypt and the ingratitude of the ancient Egyptian civilization.^[2] In part 108, the author introduced the second paper about the ‘*civilization rights*’ introduced nine civilization rights from the point of view of the author including: ‘tomb robbery’, ‘antiquities smuggling’, ‘antiquities dedication’, ‘education and edification’, ‘sources of illegal weapons’, ‘antiquities theft

gangs', 'heritage court', 'unfair excavation contracts' and 'attack on Egyptian monuments'.^[3]

Hayes (1946) in his book about the scepter of Egypt presented a large number of antiquities in display in the Metropolitan Museum of Art. He a limestone relief for King Djoser from the 3rd Dynasty, an alabaster sistrum of King Teti from the 6th Dynasty, an alabaster cup of Queen Ankhes-en-Pepy from the 6th Dynasty, basalt statue of King Senusret I from the 12th Dynasty, Sphinx of King Senusret III from the 12th Dynasty.^[4] Manuelian (1996) in his book about studies in honor of William Kelly Simpson presented a number of Royal antiquities in display in a number of world museums. He presented the well-known bust statue of Queen Nefertiti in display in the Egyptian Museum in Berlin, head of a colossal statue of King Menkaure from the 4th Dynasty and a face of King Senusret III from the 12th Dynasty in display in the Museum of Fine Arts.^[5] Teeter (2003) in her book about the treasures of ancient Egypt from the collections of the Oriental Institute University of Chicago presented a number of antiquities from its collections. Some of the institute collections are: granodiorite statue for Pharaoh Amenhotep III from the 18th Dynasty, red quartzite colossal statue for Pharaoh Tutankhamun from the 18th Dynasty and limestone relief for Pharaoh Seti I and his son Ramses II from the 19th Dynasty.^[6]

Tomorad (2005) in his paper about the Egyptian antiquities in Croatia stated that there are 4034 artifacts in the Croatian Museum, 3141 of them in the Archaeological Museum in Zagreb. The antiquities collections in Croatia included a funeral stele for Prince Kai and his wife from the Middle Kingdom, head of a King from the Middle Kingdom and a bronze statuette for a kneeling Pharaoh.^[7] Cosmacini and Piacentitni (2008) outlined that the first radiological study of an Egyptian mummy was performed in 1895 by Flinders Petrie. They added that the imaging techniques from simplest to the most sophisticated are fundamental in the study of the Egyptian mummies.^[8] Ajmat et al. (2011) explored the relationship between the exhibition of artwork in museums and the role of lighting and the environmental conditions. They presented surveys conducted in museums in Argentina and Spain under indoor conditions.^[9] Swaney (2013) examined issues related to the exhibition of Egyptian mummies in the American museums. As case studies, the author examined the Egyptian galleries in the Metropolitan Museum of Art, the Milwaukee Public Museum and the Oriental Institute of the University of Chicago. She presented Egyptian mummies from the Manchester Museum, coffins in the Metropolitan Museum of Art from 19 to 26 Dynasties,

mummy with coffin at the Milwaukee Public Museum with unwrapped face, mummy and coffin at the Oriental Institute of Chicago.^[10]

Ikram, Kaiser and Walker (2015) in their book about Egyptian bioarchaeology presented collective papers about a large number of ancient Egyptian mummies including : burials under the temple of millions of years of Amenhotep II , bioarchaeology of Akhenaten, studying Egyptian mummies in the field from Egypt to Lithuania: Marija mummy and its radiological investigation, resolving a mummy mismatch, Egyptian bioarchaeology and ancient identities, understanding ancient human/environmental interactions.^[11] Hassaan (2016) investigated the production of stone vessels during the Predynastic to Old Kingdom Periods. He presented an inscribed alabaster vase for King Unas of the 5th Dynasty in display in the Louvre Museum at Paris, an alabaster vessel for King Pepi I of the 6th Dynasty in display in the Walters Art museum at Baltimore.^[12] He investigated also the stone vessels produced during the Middle Kingdom to the Third Intermediate Periods where he presented an obsidian kohl pot for Princess Sithathoryunet from the 12th Dynasty in display in the Metropolitan Museum of Art, an anhydrite jar for Pharaoh Thutmose III of the 18th Dynasty in the Metropolitan Museum of Art, a travertine canopic jar for Pharaoh Nesibanebdjedet from the 21st Dynasty in display in the Metropolitan Museum of Art.^[13] He investigated the pottery industry during the Middle to New Kingdoms where he presented a pottery jar from the Palace of Amenhotep III in display in the Metropolitan Museum of Art.^[14] He investigated also the faience industry during the Middle to 3rd Intermediate Periods where he presented a faience canopic jar for Pharaoh Thutmose IV in display in the Museum of Fine Arts at Boston, faience vessel for Pharaoh Amenhotep III of the 18th Dynasty in display in the Walters Art Museum.^[15]

Hassaan (2017) in his investigation of the symbols industry in the New Kingdom presented a sphinx for Pharaoh Ahmose I from the 18th Dynasty in display in the National Museum of Scotland, a colored scene for Pharaoh Hatshepsut from the 18th Dynasty in display in the Royal Ontario Museum of Canada, a sphinx for Pharaoh Hatshepsut in display in the Metropolitan Museum of Art, a colossal statue for Pharaoh Amenhotep II from the 18th Dynasty in display in the Louvre Museum, a faience sphinx for Pharaoh Amenhotep III from the 18th Dynasty in display in the Metropolitan Museum of Art, a statue for Queen Tye, Great Royal Wife of Pharaoh Amenhotep III in display in the Louvre Museum, a relief for Pharaoh Akhenaten (as a sphinx) from the 18th Dynasty in display in the Museum of Fine Arts, a

statue for Pharaoh Ramses II from the 19th Dynasty in display in the Metropolitan Museum of Art, a granite bust for Pharaoh Ramses II in display in the British Museum, a pendant for Pharaoh Ramses II in display in the Louvre Museum and a statue for Pharaoh Ramses IV from the 20th Dynasty in display in the British Museum.^[16] Besides, the author investigated the human stone statues during the 18th Dynasty where he presented a limestone statue for Pharaoh Hatshepsut in display in the Metropolitan Museum of Art, a granite kneeling statue for Pharaoh Hatshepsut in display in the Metropolitan Museum of Art, a statue head for Pharaoh Thutmose IV in display in the Louvre Museum, a colossal granite head for Pharaoh Amenhotep III in display in the British Museum, limestone bust for Queen Nefertiti, Great Royal Wife of Pharaoh Akhenaten in display in the Egyptian Museum at Berlin, a pair statue for Pharaoh Akhenaten and Queen Nefertiti in display in the Louvre Museum, a colossal statue for Pharaoh Tutankhamun in display in the Oriental Institute Museum at Chicago, a limestone statue for Pharaoh Horemheb and one of his wives in display in the British Museum.^[17] The author in his investigation of the non-stone, non-wood human statues of ancient Egypt presented a copper kneeling statue for Pharaoh pepi I from the 6th Dynasty in display in the Brooklyn Museum at New York, a bronze statue for Pharaoh Seti I from the 19th Dynasty in display in the Metropolitan Museum of Art, a kneeling bronze statue for Pharaoh Necho II from the 26th Dynasty in display in the Brooklyn Museum and a bronze statue for Pharaoh Amasis II from the 26th Dynasty in display in the Metropolitan Museum of Art.^[18] In the author's investigation of the alabaster products during the Middle and New Kingdoms of ancient Egypt presented an alabaster canopic jar for Princess Sithathoryunet from the 12th Dynasty in display in the Metropolitan Museum of Art, an alabaster amphora for Pharaoh Amenhotep II from the 18th Dynasty in display in the Metropolitan Museum, an alabaster goblet for Pharaoh Akhenaten and his wife Nefertiti from the 18th Dynasty in display in the Metropolitan Museum, an alabaster statue for Pharaoh Akhenaten in display in the Egyptian Museum at Berlin, an alabaster statue for Pharaoh Akhenaten in display in the British Museum, an alabaster sarcophagus for Pharaoh Seti I of the 19th Dynasty in display in the Soane Museum at London and an alabaster ushabti for Pharaoh Siptah from the 19th Dynasty in display in the Metropolitan Museum.^[19]

Hassaan (2018) in his investigation of the stela industry during the Early Dynastic to Middle Kingdom of ancient Egypt presented a sandstone stele for King Djet from the 1st Dynasty in display in the Louvre Museum, a basalt stele for King Qa from the 1st Dynasty in display in the Pena Museum at Pennsylvania, a granite stele for King Raneb from the 2nd Dynasty in

display in the Metropolitan Museum, a granodiorite stele for King Peribsen from the 2nd Dynasty in display in the British Museum, a limestone stele for Princess Nefertabet from the 4th Dynasty in display in the Louvre Museum.^[20] During his investigation of the stela industry during the 2nd Intermediate Period and the New Kingdom presented a limestone stele for Pharaoh Ahmose I from the 18th Dynasty in display in the Museum of Fine Arts, dream stele for Pharaoh Thutmose IV from the 18th Dynasty reproduced in the Rosicrucian Egyptian Museum at San Jose, a sandstone stele from Bentresh (sister in law of Pharaoh Ramses II) in display in the Louvre Museum, a sandstone stele for Pharaoh Ramses II in display in the Brooklyn Museum.^[21] Xu, Yan, Chen and Chen (2021) investigated a design for museum interactive lighting system and presented samples of spot lighting, continuous exposure of exhibits when no one is watching, improper setting of key lighting, and improper setting of local lighting. They presented a human-computer interaction lighting design based on motion capture technology.^[22]

Khalil, Metawi and Kandil (2022) investigated the numbering and labeling of heritage artifacts and presented a simple guide to label museum objects and labeling techniques according to type and shape. They presented new techniques such as barcoding, data matrix coding and radio frequency identification.^[23] Wikipedia (2023) defined a ‘museum label’ as a label describing an object exhibited in a museum. They suggested that a museum label tends to list: artist’s name, artwork’s name, year of completion, material used description and dimensions. They presented the first known museum label from the Ennigaldi-Nanna’s Museum dated to 530 BC.^[24]

Civilization rights

The research work presented in this paper continues the research work presented in part 108 of the series of research papers prepared by the author about mechanical engineering in ancient Egypt.^[3] Here, civilization rights from 10 to 16 will be presented and investigated.

Right 10: Labeling museum antiquities probably

- Antiquities are displayed in museums to be seen, understood and appreciated by visitors.
- If the antiquities are not labeled, it will be a great deficiency in the displaying process.
- It is a sole responsibility for the officials of each museum and the ministry of antiquities to satisfy the objectives of antiquities display in the museums.

- We may have a great civilization that produced outstanding antiquities but we are unable to display them properly because we are not well educated, trained and attained good experience in antiquities labeling.
- But, who says we have deficient display of our antiquities. Here are few examples:
 - Fig.1 shows a triad statue for King Menkaure from the 4th Dynasty in display in the Egyptian Museum at Cairo.^[25]
 - Fig.2 shows two statues statue for Prince Rahotep and his wife from the 4th Dynasty in display in the Egyptian Museum at Cairo.^[25]



Figure 1: Triad statue for King Menkaure from the 4th Dynasty.^[25]



Figure 2: Statues of Prince Rahotep and his wife from the 4th Dynasty.^[25]

- The Royal statue of King Menkaure (may) have a miniature label in front of it. This of course did not follow any recommendation for antiquities labeling.
- The wonderful statues of Prince Rahotep and his wife don't have any label. The ancient Egyptian artist was able to embody the rigor of the Prince and the beauty of his wife. But their grandchildren could not introduce them to their visitors.
- Fig.3 shows a large number of objects in display in a gallery hall in Sharm el-Sheikh National Museum.^[26]
- Fig.4 shows a display for four twin statues, single statue and a stele in the Hurghada Museum on the Red Sea.^[27]



Figure 3: Displays in Sharm el-Sheikh National Museum.^[26]



Figure 4: Statues display in Hurghada Museum.^[27]

- The display in Fig.3 is for animals, birds, canopic jars and mummies. The collection is huge but the display is really bad. Nothing saying what is this and from what age?. In short words, there are no labels.
- The display in Fig.4 reflects one side of the social life in ancient Egypt and one type of their documentation means presented in the first paper of this series about ‘*civilization rights*’.^[2] The visitor will not see any label on any of the six artifacts.
- Fig.5 shows a Royal sphinx in display in Alexandria National Museum.^[28]
- Fig.6 shows a twin statue for Weshka and his family in display in Alexandria National Museum.^[29]
- Who’s this King in Fig.5? .. Who’s Weshka in Fig.6?. No body knows because there are no labels.
- To clarify more the need to labeling as a ‘civilization right’ we present the display of artifacts in other well-known international museums:
 - Fig.7 shows a part of a panel display of artifacts in the Petrie Museum at London.^[30]
 - All the objects are labeled.
 - The labels are relatively large sometimes covering the whole width of the artifact or even more.
 - Extensive data are recorded in the labeling card.

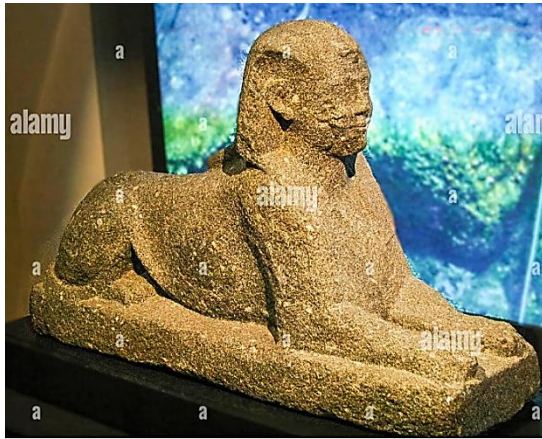


Figure 5: Pharaoh sphinx in Alexandria National Museum^[28]



Figure 6: Twin statue in Alexandria National Museum.^[29]

- Fig.8 shows a lion statue in display in the Egyptian Museum at Turin, Italy.^[31]
 - The label was set directly beside the base of the statue in an inclined position.
 - The label length is about 25 % of the statue's length.
 - The label was documented in two colors in two columns and nine lines per column.
- Fig.9 shows a hawk mummy in display in the Australian Museum.^[32]
 - The label was set directly in front of the mummy on the horizontal plane of the display.
 - The label length is about 37.4 % of the statue's length.
 - A coding label of about 17.4 % was used to identify the display.
 - The label was documented in one color in one column and three lines.



Figure 7: Panel display of artifacts in the Petrie Museum at London.^[30]



Figure 8: A Lion statue in the Egyptian Museum at Turin.^[31]



Figure 9: Hawk mummy in the Australian Museum.^[32]

Right 11: Following an efficient scheme for antiquities lighting in the museums

- Museum lighting is a science and technology museum authorities have to know and apply if they love their civilization. But, what is the present situation in some of the Egyptian museums?. Here are few examples:
- Fig.10 shows colossal statues in display in the Egyptian Museum in Cairo.^[33]



Figure 10: Colossal statues in the Egyptian Museum in Cairo.^[33]

- The lighting is not uniform on the main statues in the center.
- At both sides of the main statues the lighting is very poor.
- Fig.11 shows a sarcophagus in display in the Egyptian Museum in Cairo.^[34]
- The light is concentrated only on two parts of the object.
- The rest is completely un-lighted.
- One more example from the Egyptian Museum in Cairo is shown in Fig.12 for a standing Queen.^[34]

- The light source was set in the right side of the statue.
- The light sources in the top of the display hall did not experience any effect on the statue.
- The label was set in a dark area without any light source.



Figure 11: Sarcophagus in the Egyptian Museum in Cairo.^[34]



Figure 12: Queen's statue in the Egyptian Museum in Cairo.^[34]

- An example of the lighting scheme in Alexandria National Museum is shown in Fig.13.^[35]
 - The heads are not lighted probably. The heads are shaded on the chests giving dark zones.
 - The size of the label is good, however its lighting is not reasonable making it difficult to read by the visitor.
- An example from Hurghada Museum is shown in Fig.14.^[27] The display is for a standing stone statue and a stele.



Figure 13: Twin statue in the Alexandria National Museum.^[35]



Figure 14: Display in Hurghada Museum.^[27]

- The lighting scheme is really bad.
- The lower part of both objects is in a relative darkness..
- Even the top part of the stele is not clear enough to be identified.
- If this is the lighting situation in the Egyptian Museums, what is about the other international known museums?. Here are some examples.
- In all the presented examples, the researcher feels that there is a lighting scheme followed and hence no need to comment on the displays.
- Fig.15 shows the display of an ancient Egyptian colossal bust in the British Museum.^[36]
- Fig.16 shows an ancient Egyptian scribe statue in display in the Louvre Museum.^[37]
- Fig.17 shows an ancient Egyptian family statue in display in the Metropolitan Museum of Art.^[38]

Right 12: Return all Egyptian mummies from abroad to Egypt

- A mummy is defined as a dead human where soft tissues and organs have been preserved by exposure to chemicals (or other means).^[39]
- How mummies are exhumed from their burials?. There are two main means for this.
- Through archaeological excavation missions.
- Through tomb robbers.
- The result of both activities is getting the mummies out of their graves.
- Because of the dignity of the dead human given to him by his creator (ALLAH), all heaven-laws restrict the exhumation process and don't make it common.^{[40] - [42]}



Figure 15: Colossal bust in the British Museum.^[36]



Figure 16: Scribe statue in the Louvre Museum.^[37]



Figure 17: Triad family statue in the Metropolitan Museum of Art.^[38]

- Because of the indulgence in allowing the exhumation of graves, the Egyptian mummies were transferred through smuggling to most of the world's museums without any respect to dignity of the ancient Egyptian diseases.
- Here are some examples of this crime and ingratitude of the 'Egyptian civilization':
 - Fig.18 shows a coffin and mummy in display in the Egyptian Museum of Berlin.^[43]
 - The coffin is probably the middle (or external) coffin of the disease.
 - The head was completely un-rapped reflecting the non-esthetical behavior of the museum authorities.
 - Most probably the disease is a woman.
 - Where is the dignity of the human dead?.
 - Where are the Egyptian antiquities authorities to stop such tragedy against the ancient Egyptians?
 - Fig.19 shows a coffin for Nes-mut-aat-neru from the 23rd Dynasty of the Egyptian Third Intermediate Period in display in the Museum of Fine Arts of Boston.^[44]
 - The coffin is the internal one and represents the disease in her full dress and beauty.
 - It is a master piece of the ancient Egyptian art during the Third Intermediate Period.
 - Sure who let this coffin and probably its mummy to fly from Egypt to USA did not love the 'ancient Egyptian civilization'.
 - The 12th civilization right encourages the Egyptian authority to return those mummy-antiquities to their original burial in Egypt.



Figure 18: Coffin and mummy in the Egyptian Museum of Berlin.^[43]



Figure 19: Coffin from the 23rd Dynasty in the Museum of Fine Arts.^[44]

- Fig.20 shows a coffin and mummy of Lady Nephthys from the 12th Dynasty of the Middle Egyptian Kingdom in display in the Metropolitan Museum of Art.^[45]
 - The external coffin is simple in design and decoration.
 - The internal coffin is complete and rapped.



Figure 20: Coffin and mummy in the Metropolitan Museum of Art.^[45]

- Fig.21 shows a coffin lid for Pensenhor from the 22nd Dynasty of the Third Intermediate Period in display in the British Museum.^[46]
 - The cover is completely covered by funeral text and scenes with sophisticated decorations for the disease head and chest.
 - This high level art can be displaced in its original burial without extracting the mummy.
 - Finally this ‘civilization right’ can be supported through presenting the number of Egyptian mummies in some museums outside Egypt. Table 1 gives such information.



Figure 21: Coffin lid in the British Museum.^[46]

Table 1: Number of mummies in some museums outside Egypt.

Museum	Location	Number of mummies	Reference
Egyptian Museum in Turin	Italy	116	[47]
Louver Museum	France	20	[48]
Metropolitan Museum of Art	USA	116	[49]
Oriental Institute, University of Chicago	USA	23	[50]
Museum of Fine Arts	USA	140	[51]
Montreal Museum of Fine Arts	Canada	80	[52]
Rijks Museum in Leiden	Netherlands	31	[53]
World Museum in Liverpool	UK	20	[54]
Egyptian Museum in Berlin	Germany	60	[55]

Right 13: Stop all non-ethical actions against all Egyptian mummies

- Dead dignity is violated since it is extracted from its grave.
- The objective of this ‘*civilization right*’ is to preserve the dignity of the dead’s anywhere.
- The enemies of civilizations anywhere not only exhume the graves and extract the human deeds, sell them, display them in museums and display galleries but also un-wrap them in an extremely criminal behavior. Here are some examples from the New Kingdom and from the Late Period.:
- The examples from the 19th and 20th Dynasties are all Royal for Pharaohs: Seti I, Ramses II, Merneptah and Ramses V. The four mummies are in display in the National Museum of Egyptian Civilization in Cairo.
- The first example is the mummy of Seti I, 2nd Pharaoh of the 19th Dynasty (1290-1279 BC) shown in Fig.22.^[56]



Figure 22: Mummy of Pharaoh Seti I from the 19 Dynasty.^[56]

- ✚ This Pharaoh has a huge decorated alabaster sarcophagus in display in Sir John Soane's Museum in London.
- ✚ A Royal artifact has to go back to his tomb in Luxor.
- ✚ The mummy is un-wrapped in an un-ethical way showing his face and hands. Why? .. Is this the respect of the dignity of a dead-human?.. Is this the respect of the dignity of the ancient Egyptian Pharaohs?.
- ✚ The ancient Egyptians mummified and wrapped their elite rich carefully and put inside nested coffins as shown in Fig.23 for a diseased woman.^[57]
- ✚ This action reflects the utmost respect of 'death' in the ancient Egyptian society and the degree of dignity respect of their dead persons.
- ✚ Now, if we compare both activities in Figs.22 and 23 we can feel the great difference between old and modern Egyptian nations.
- ✚ This '*civilization right*' asks all national and foreign authorities to stop this crime against our dead.. against our civilization.



Fig.23 Ancient Egyptian burial practice.^[57]

- The second example is the mummy of Ramses II, 3rd Pharaoh of the 19th Dynasty (1279-1213 BC) shown in Fig.24.^[58] Sorry Great Pharaoh for what your grandsons did with your body without any sign of ethics and morality. Let us present some of his achievements during 66 years of his reign:
 - ✚ He participated in military campaigns with his father (Pharaoh Seti I) gaining military and kingship experience before being a Pharaoh.^[59]
 - ✚ Egypt was at its highest power and glory during his 66 years reign.^[59]
 - ✚ He was the father of 80 sons and 60 daughters and called ‘*father of the nation*’.^[60]
 - ✚ He constructed the ‘*Ramesseum Temple*’ to be a great library housed about 10,000 papyrus scrolls (books).^[60]
 - ✚ His architecture engineers and technicians lived in Deir el-Medina carved out two wonderful tombs in the mountain for him and his wife Nefertiti.^[60]
 - ✚ He led battles against Nubians, Syrians, Libyans and Hittites (Turkish Empire) to secure the Egyptian borders.^[59]
 - ✚ In 1281 BC, his majesty captured the ‘*Sherden Sea Pirates*’ (Mediterranean sea now) who were a major threat to ancient Egypt’s maritime business.^[59]
 - ✚ The ‘*Egyptian Empire*’ during the New Kingdom including his era was stretched from Syria in the North to Sudan in the South and from Jordan in the East to Libya in the West.^[61]
 - ✚ His achievements need books to present in depth which is left to special studies and research by the lovers of the Egyptian civilization.
 - ✚ This is the Great Pharaoh, Ramses II whom crazy grandsons un-wrapped his body without any respect to his dignity and greatness.
- The third example is the mummy of Merneptah, the 4th Pharaoh of the 19th Dynasty (1213-1203 BC). His mummy is shown in Fig.25 in display in the Egyptian Museum for Civilization in Cairo.^[62] Some tips from his history.
 - ✚ He was the 13th son of Pharaoh Ramses II and the 4th child of Queen Isetnofret I.^[63]
 - ✚ By year 40 of his age, he was appointed as the ‘*Overseer of the Army*’.^[63]
 - ✚ In year 55, he was appointed as a ‘*Crown Prince*’.^[63]
 - ✚ In year 60, he ascended the throne of Egypt.^[64]
 - ✚ In his 5th year of reign, he fought the Libyans on the West borders of Egypt.^[63]
 - ✚ In 1209, he led a 6-years battle against a combined Libyan –Sea People force of 9400 Men.^[65]

- ✚ Before his 5th year of reign, he led a military campaign to suppress a revolt in Palestine documented in the Karnak and his stele.^[65]
- ✚ He constructed a 'funerary temple' in Luxor and a 'Royal Palace' in Memphis.^[65] Fig.26 shows an inscribed stone block from his palace transferred to the Petrie Museum of London.^[66] It is a Royal Artifact and has to be returned to Egypt, to its original location in his palace (if known).
- ✚ In 1907, his mummy (shown in Fig.25) was un-wrapped by G. Elliott Smith during the British colonialism of Egypt. No ethics and no respect to the dignity of the Egyptian Pharaoh. This is a good project for the 'Civilization Rights Institute' to lead a claim to wrap the Pharaonic mummies again and set them inside their coffins.
- ✚ In 1980, his mummy was X-ray examined by James Harris and Edward Wente (during the reign of President Anwar El-Sadat).^[63] The mummies of the ancient Egyptians were set in laboratories for experimentation. This right claims the immediate stop of this un-respective behavior against the Egyptian Pharaohs and our civilization.
- The fourth example is the mummy of Ramses V, the 4th Pharaoh of the 20th Dynasty (1149-1145 BC). His mummy is shown in Fig.27 in display in the Egyptian Museum for Civilization in Cairo.^[67] Some tips from his history:
 - ✚ He was the son of Pharaoh Ramses IV and his wife Duatentapet.^[67]



Figure 24: Mummy of Ramses II.^[58]



Figure 25: Mummy of Merneptah.^[62]

- ✚ His mummy was un-wrapped on June 25, 1905 (during the British colonialism of Egypt).^[67]
- ✚ His un-wrapped mummy is now in the National Museum of Egyptian Civilization.^[68]

- ✚ He continued building the temple of his father Ramses IV in Deir el-Bahri and supervised the building of his tomb KV9.^[67]
- ✚ He has an obelisk model inscribed by his cartouche which is now in display in the Archaeological Museum of Bologna, Italy and shown in Fig.28.^[69]
- ✚ He sent mining expeditions to Sinai for the ‘turquoise stone’.^[70]
- ✚ He expanded the ‘Khunsu Temple’ at Karnak built by his father Ramses IV.^[70]
- ✚ He commissioned a large ‘mortuary temple’ in the West bank of Thebes.^[70]



Figure 26: Inscribed block from Royal Palace of Merneptah in Display in Petrie Museum.^[66]



Figure 27: Un-wrapped mummy of Ramses V.^[67]



Figure 28: Obelisk of Ramses V in Bologna, I Italy.^[69]

- The last example is an ancient Egyptian mummy of Asru, elite lady from the 25th / 26th Dynasties in display in the Manchester Museum and shown in Fig.29.^{[71], [72]}
- ✚ The head was completely un-wrapped by the museum authorities in a clear sign of the non-ethical behavior of those keeping mummies in their museums.
- ✚ Museum officials do not know the sanctity of the dead, especially women.
- ✚ This mummy represents an active open letter to the Egyptian authorities: ‘*How you leave me like this and I am an elite Egyptian woman lived during the days of the greatest civilization in the world*’.



Figure 29: Mummy of an elite woman from the 25/26 Dynasties in display in the Manchester Museum.^[72]

CONCLUSION

- This paper is the third research paper in a series of four papers on the new subject about '*civilization rights*'.
- The second paper of this series presented nine '*civilization rights*' from 1 to 9.
- Here, the third paper in this series '*civilization rights*' from 10 to 13'.
- The 10th '*civilization right*' handled the need to label properly the museum antiquities. It presented examples on improper labeling in some local Egyptian Museums and other examples on proper labeling from Petrie Museum, Egyptian Museum at Turin and Australian Museum.
- The 11th '*civilization right*' introduced the need for efficient lighting scheme in the National Egyptian Museums. It highlighted good lighting schemes for displayed artifacts from the British Museum, Louvre Museum and the Metropolitan Museum of Art.
- The 12th '*civilization right*' introduced the need to return all Egyptian mummies to Egypt. It presented examples of the ancient Egyptian mummies in the Egyptian Museum of Berlin, the Museum of Fine Arts, the Metropolitan Museum of Art and the British Museum and counted 606 mummies in 9 museums outside Egypt.
- The 13th '*civilization right*' investigated the non-ethical actions against the ancient Egyptian mummies. It presented the un-wrapping of Pharaohs: Seti I, Ramses II, Merneptah (from the 19th Dynasty), Ramses V (from the 20th Dynasty) and the mummy of an elite woman (from the 25th/26th Dynasties).

REFERENCES

1. Rashed, A. Y. (2021), "Towards the universal declaration of civil rights (1)", Al-Ahram Al-Ektisadi, No.2723, October 31.
2. Hassaan, G.A. (2023), "Mechanical engineering in ancient Egypt, Part 107: Civilization rights I". World Journal of Engineering Research and Technology, vol.9, issue 6, pp.1-22.
3. Hassaan, G.A. (2023), "Mechanical engineering in ancient Egypt, Part 108: Civilization rights II (rights 1 to 9)". International Journal of Engineering and Techniques, vol.9, issue 2, pp.1-11.
4. Hayes, W.C.. (1946), "The scepter of Egypt, Part 1", New York, October 19.
5. Manuelian, P.D., Editor (1996), "Studies in honor of William Kelly Simpson", Museum of Fine Arts.
6. Teeter, E. (2003), "Ancient Egypt: Treasures from the collection of the Oriental Institute", Oriental Institute Museum Publications 23, The Oriental Institute, Chicago.
7. Tomorad, M. (2005), "The Egyptian antiquities in Croatia", Archaeology of Egypt / Egyptology, vol.2, issue 1, pp.1-33.
8. Cosmacini, P. and Piacentini, P. (2008), "Notes on the history of the radiological study of Egyptian mummies: from X-ray to new imaging techniques", La Radiologia Media, vol.113, pp.615-626.
9. Ajmat, R. et al. (2011), "Lighting design in museums: exhibition versus preservation", WIT Transactions on the Built Environment, vol.118, pp.195-206.
10. Swamey, M.M. (2013), "The living dead: Egyptian mummies and the ethics of display ", Thesis of the Degree of Master of Arts, Graduate School of Arts and Science, New York University.
11. Ikram, S., Kaiser, J. and Walker, R., Editors (2015), "Egyptian bio archaeology", Side stone Press, Leiden.
12. Hassaan, G.A. (2016), "Mechanical engineering in ancient Egypt, Part XIII: stone vessels (Predynastic to Old Kingdom Periods)", International Journal of Recent Engineering Science, vol.9, pp.14-24.
13. Hassaan, G.A. (2016), "Mechanical engineering in ancient Egypt, Part XIV: stone vessels (Middle Kingdom to Third Intermediate Period)". International Journal of Engineering and Techniques, vol.2, issue 2, pp.139-148.
14. Hassaan, G.A. (2016), "Mechanical engineering in ancient Egypt, Part X: pottery industry (Middle and New Kingdoms)", International Journal of Science and Engineering, vol.2, issue 4, pp.7-18.

15. Hassaan, G.A. (2016), "Mechanical engineering in ancient Egypt, Part XV: faience industry (Middle Kingdom to Third Intermediate Period)", International Journal of Recent Engineering Science, vol.26, pp.1-9.
16. Hassaan, G.A. (2017), "Mechanical engineering in ancient Egypt, Part 60: symbols industry", International Journal of Advanced Research in Management, Architecture, Technology and Engineering, vol.3, issue 12, pp.1-10.
17. Hassaan, G.A. (2017), "Mechanical engineering in ancient Egypt, Part XXXV: human stone statues in the 18th Dynasty", World Journal of Engineering Research and Technology, vol.3, issue 1, pp.1-15.
18. Hassaan, G.A. (2017), "Mechanical engineering in ancient Egypt, Part XXXVIII: non-stone, non-wood human statues industry", International Journal of Engineering and Techniques, vol.3, issue 1, pp.43-55.
19. Hassaan, G.A. (2017), "Mechanical engineering in ancient Egypt, Part 50: alabaster products (Middle and New Kingdoms)", International Journal of Engineering and Techniques, vol.3, issue 3, pp.145-160.
20. Hassaan, G.A. (2018), "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.
21. Hassaan, G.A. (2018), "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.
22. Xu, L., Yan, S., Chen, Z. and Chen, X. (2021), "Design of the museum interactive lighting system based on digital twin technology", Hindawi Scientific Programming, vol.2021, Article ID 4824417, 8 pages.
23. Khalil, H., Metwalli, R. and Kandil, D. (2022), "Numbering methods applied on artifacts in some museums and cultural heritage illustrations", International Journal of Multidisciplinary Studies in Architecture and Cultural Heritage, vol.5, issue 2, pp.80-92.
24. Wikipedia (2023), "Museum label", http://en.wikipedia.org/wiki/Museum_label .
25. Vanilla Papers (2023), "10 must be seen in the Egyptian museum", <https://vanillapapers.net/2022/07/10/egyptian-museum-guide/>
26. The Archaeologist (2021), "Meet the new Sharm el-Sheikh National Museum in Sinai",
27. <https://www.thearchaeologist.org/blog/meet-the-new-sharm-el-sheikh-national-museum-in-sinai-egypt>

28. Trip Advisor (2023), "Hurghada museum", https://www.tripadvisor.com/Attraction_Review-g297549-d20053944-Reviews-Hurghada_Museum-Hurghada_Red_Sea_and_Sinai.html
29. Alamy (2005), "Egypt, Alexandria National Museum, a sphinx", <https://www.alamy.com/egypt-alexandria-national-museum-a-sphinx-found-during-franck-goddios-underwater-excavations-and-displayed-in-his-exhibitions-image338422231.html>
30. Wikipedia (2022), "Alexandria National Museum", https://en.wikipedia.org/wiki/Alexandria_National_Museum
31. Wikipedia (2022), "Petrie museum of Egyptian archaeology", https://en.wikipedia.org/wiki/Petrie_Museum_of_Egyptian_Archaeology
32. Alamy (2023), "Egyptian artifacts in Turin, Northern Italy", <https://www.alamy.com/stock-photo-egyptian-artifacts-in-turin-northern-italy-136324390.html>
33. Australian Museum (2021), "Animal mummies in ancient Egypt", <https://australian.museum/learn/cultures/international-collection/ancient-egyptian/animal-mummies-in-ancient-egypt/>
34. Paliparan (2021), "Visiting the museum of Egyptian antiquities in Cairo", <https://paliparan.com/2021/07/18/egyptian-museum-cairo/>
35. Buffay, P. (2016), "Six areas of improvement for the Egyptian museum in Cairo", <https://thetravellingsquid.com/2016/08/09/improvement-for-the-egyptian-museum-in-cairo/>
36. Dreams Time (2023), "Alexandria images from the National Museum", <https://www.dreamstime.com/photos-images/alexandria-egypt-museum.html>
37. Wikipedia, "File: British Museum, E.086", https://it.wikipedia.org/wiki/File:British_Museum_Egypt_086.JPG
38. Louvre, "Journey along the Nile", <https://www.louvre.fr/en/explore/visitor-trails/journey-along-the-nile>
39. Metropolitan Museum (2023), "Statue of two men and a boy", https://www.metmuseum.org/art/collection/search/544683?searchField=All&sortBy=relevance&deptids=10&high=on&ft=* &offset=0&rpp=40&p;pos=32
40. Wikipedia (2023), "Mummy", <https://en.wikipedia.org/wiki/Mummy>

41. Fatwa Committee (2020), "Fatwa on exhumation 1970, Islamic Religion Council of Singapore ", <https://www.muis.gov.sg/officeofthemufti/Fatwa/Fatwa-on-Exhumation-1970-English>
42. Jewish Virtual Library (2023), "Disinterment", <https://www.jewishvirtuallibrary.org/disinterment>
43. Diocese of Norwich, "Exhumation", <https://www.dioceseofnorwich.org/churches/buildings/churchyards/exhumation/>
44. Dreams Time (2023), "Egyptian mummy in museum in Berlin Germany", <https://www.dreamstime.com/editorial-photo-egyptian-mummy-museum-berlin-germany-capital-city-vibrant-city-filled-cultural-activities-such-as-museums-image98114636>
45. Museum of Fine Arts (2023), "Ancient Egyptian mummies", <https://mfa.org/media/audio/8965>
46. Metropolitan Museum (2023), "Coffins and mummy of the lady Nephthys", <https://www.metmuseum.org/art/collection/search/590947> , 2023.
47. British Museum (2023), "Egyptian death and its afterlife: mummies", <https://www.britishmuseum.org/visit/family-visits/museum-missions/egyptian-death-and-afterlife-mummies>
48. Egyptian Museum in Turin (2019), "A first assessment of the conservation of the mummified human remains in the museo egizio in Turin in the framework of the mummy conservation project", <https://rivista.museoegizio.it/article/a-first-assessment-of-the-conservation-of-the-mummified-human-remains-in-the-museo-egizio-in-turin-in-the-framework-of-the-mummy-conservation-project/>
49. Chalet Couleurs de France (2023), "The mummies of the Louvre", <https://www.chaletcouleursdefrance.com/the-mummies-of-the-louvre/>
50. Kids Q and A (2004), "Mysterious mummies", Metropolitan Museum of Arts.
51. Marie, M. (2022), "Art Institute of Chicago launches 'life and afterlife in ancient Egypt' exhibition", <https://www.egypttoday.com/Article/4/112881/Art-Institute-of-Chicago-launches-Life-Afterlife-in-Ancient-Egypt>
52. Museum of Fine Arts (2023), "Mummies", <https://www.mfa.org/gallery/mummies>
53. Montreal Museum of Fine Arts (2023), "Egyptian mummies", <https://www.mbam.qc.ca/en/exhibitions/egyptian-mummies-exploring-ancient-lives/>
54. Raven, M.J. and Taconis, W.K., Editors (2005), "Egyptian mummies", Brepols, Turnhout Publishers.

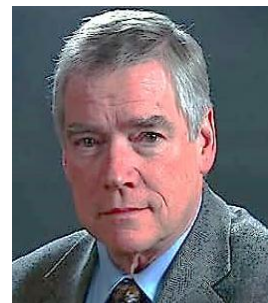
55. Ellis, A.(2020), “A mummy story from Liverpool”, <https://www.mummystories.com/single-post/abbeyellis>
56. Artv, S., “Behind the scenes of the Egyptian museum”, <https://seeartv.com/en/the-berlin-egyptian-museum-behind-the-scenes.html>
57. Egyptian Museum, “Mummy of Seti I”, <https://egypt-museum.com/mummy-of-seti-i/>
58. Penn Live (2022), “Ancient Egyptian mummy child ever to be found with bandage”, <https://www.pennlive.com/life/2022/01/ancient-egyptian-mummy-child-first-ever-to-be-found-with-bandage.html>
59. Wikipedia (2023), “Ramses II”, https://en.wikipedia.org/wiki/Ramesses_II
60. Memphis Tours (2023), “What are some facts about Ramses II”, <https://www.memphistours.com/egypt/Egypt-Wikis/Egypt-History/wiki/Ramesses-II#:~:text=After%20the%20death%20of%20his,Syrians%2C%20Libyans%2C%20and%20Hittites.>
61. PBS (2006), “Ramses II”, <https://www.memphistours.com/egypt/Egypt-Wikis/Egypt-History/wiki/Ramesses-II#:~:text=After%20the%20death%20of%20his,Syrians%2C%20Libyans%2C%20and%20Hittites.>
62. Mark, J.J. (2017), “Egyptian empire”, https://www.worldhistory.org/Egyptian_Empire/#:~:text=The%20empire%20stretched%20from%20modern,to%20Libya%20in%20the%20west
63. Egypt Museum, “Mummy of Merneptah”, <https://egypt-museum.com/mummy-of-merneptah/>
64. Wikipedia (2023), “Merneptah”, <https://egypt-museum.com/mummy-of-merneptah/>
65. Ahmed, T.(2022), “Facts famous rulers of ancient Egypt and history of Egyptian Pharaohs”, <https://hurghadalovers.com/the-king-merenptah/>
66. Britannica, “Merneptah King of Egypt”, <https://www.britannica.com/biography/Merneptah>
67. UCL (2001), “The palace of Merneptah at Memphis”, <https://www.ucl.ac.uk/museums-static/digitalegypt/memphis/palaces/merenptah.html>
68. Indenile, M.(2021), “Mummy Monday: Ramesses V”, <https://melissaindenile.com/2021/07/26/mummy-monday-ramesses-v/>
69. Wikipedia (2023), “Ramesses V”, https://en.wikipedia.org/wiki/Ramesses_V#:~:text=His%20mummy%20is%20now%20on,of%20Egyptian%20Civilization%20in%20Cairo

70. Commons Wikimedia (2020), “Ramesses V obelisk, Bologna”, https://commons.wikimedia.org/wiki/File:Ramesses_V_obelisk_Bologna.JPG
71. NMEC (2021), “Ramses V”, <https://nmec.gov.eg/mummies-hall/ramses-v/>
72. Mummipedia Fandom, “Asrue”, <https://mummipedia.fandom.com/wiki/Asru>
73. Stienne, A. (2016), “The Egyptian mummy in UK museums; cultural histories and object biographies”, *Techne* (online), vol.44, pp.40-44.

DEDICATION

Engineer CHRISTOPHER DUNN

- British citizen from Manchester.
- Immigrated to USA in 1969.
- A practicing mechanical engineer in UK and USA.
- Started writing research papers on ancient technologies in 1984.
- The author of ‘*The Giza power plant: technologies of ancient Egypt*’ published in 1998.
- The author of ‘*Lost technologies of ancient Egypt: Advanced engineering in the temples of the Pharaohs*’ published in 2010.
- The author of ‘*Giza: The tesla connection: Acoustical science and the harvesting of clean energy*’ published in 2023.
- Mr. Dunn is a sincere lover of the ancient Egyptian civilization who is keen to visit Egypt and spend sometime between its monuments and heritage.
- I have the honor to dedicate this research work to him and hope my efforts will complete his work and clarify the sophistication of the mechanical engineering technologies used by the ancient Egyptians.



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 respectively.
- 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 300 research papers in international journals and conferences.
- Author of books on Experimental Systems Control, Experimental Vibrations and Evolution of Mechanical Engineering.
- Member of the Editorial Board of a number of International Journals including the WJERT journal.
- Reviewer in some international journals.