

ORIENTAL INSTITUTE MUSEUM
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THE TUT-ANKH-AMUN ASTRONOMICAL INSTRUMENT
(Oriental Institute 12144)



Ebony; length: 27.0 cm; reign of Tut-ankh-Amun, 1334-1325 B.C.; from Thebes

Early History

If "wonderful things" had not been discovered in the tomb of Tut-ankh-Amun in 1922, his name would be almost completely unknown to the world. Egyptologists would know him chiefly as the ephemeral young king who initiated the conservative reaction against the unsuccessful religious revolution of his predecessor, the heretic Pharaoh Akh-en-Aten. By his third regnal year, Tut-ankh-Amun had begun in earnest a program of reconciliation and restoration. Neglected temples were re-opened, new statues of the gods were carved, and projects abandoned under Akh-en-Aten were completed. Among the many "monuments" which Tut-ankh-Amun commissioned was an inscribed wooden object, now Oriental Institute 12144, which was dedicated to the memory of Tuthmosis IV, an earlier king who had been dead for more than fifty years.

According to ancient Egyptian beliefs, each Pharaoh had a sacred responsibility to maintain Order against the constant threats of Chaos and Evil. By perpetuating the name of a revered predecessor, the reigning king drew spiritual strength from the power of the deified Royal Ancestors. In the inscription on this diminutive "monument" Tut-ankh-Amun named Tuthmosis IV as "the father of his father."

Nothing definite is known about the fate of this inscribed object between the time of Tut-ankh-Amun and its re-appearance about a century ago. Its "modern" history can be traced to the winter of 1886-1887, when it was acquired "in the neighbourhood of Thebes" by the Reverend Greville Chester, an Englishman who frequently wintered on the Nile. Chester sold the wooden rod to F.G. Hilton Price, a knowledgeable English collector who published a brief description of it, including the text of the hieroglyphic inscriptions, in a letter to the Society of Biblical Archaeology, dated November 12, 1887. The mysterious artifact was incomplete when Chester acquired it. Puzzled about its nature, Hilton Price suggested that it might once have been a pedestal for a statuette or a fragment from a piece of furniture.

In 1911, two years after the death of Hilton Price, his collection of Egyptian antiquities was sold at auction. In the sale catalogue, the enigmatic object was described as "A Scribe's Palette." It was purchased by the Reverend William MacGregor, another well-known British collector, who owned the piece until 1923, when financial reverses forced him to liquidate some of his assets. He sold the piece to Spink & Son Ltd., a London antique dealer.

On July 21, 1923, Professor James Henry Breasted, founding Director of the Oriental Institute, purchased the object for the Museum. While in Egypt the previous winter, Breasted had been invited by Howard Carter to examine the seal impressions in the recently discovered tomb of Tut-ankh-Amun. Stopping to browse in the London antique shop on his way home, Breasted's attention was drawn to the Tut-ankh-Amun object for its unique inscriptions which named both Tut-ankh-Amun and Tuthmosis IV. In one other dedicatory text, Tut-ankh-Amun called Amun-hotep III "his father." Here Tuthmosis IV (the father of Amun-hotep III) was referred to as "the father of his father." Breasted wondered if Tut-ankh-Amun's family relationships, disputed among Egyptologists, could now be established. Did the inscriptions on the wooden rod confirm the previously unknown parentage of King Tut-ankh-Amun? Breasted's excitement over this possibility was to be repeated several days later when he suddenly realized what the object really was!



A series of seemingly unrelated circumstances now enabled Breasted to identify the original purpose of the unusual inscribed rod. In the 1890s, Breasted had examined a complete ancient Egyptian astronomical instrument set in Berlin (Aegyptisches Museum, Inv. Nr. 14084 and 14085). The only one of its kind then known, the set was made between 685 and 525 B.C., during the rule of Dynasty 26. In 1916, Breasted used a line drawing of this equipment as an illustration of ancient Egyptian technology in the first edition of his textbook, Ancient Times.

More recently, in the spring of 1923, Breasted had met his old friend, George Ellery Hale in Egypt. Hale, an eminent astronomer, was working on a manuscript about early astronomical instruments; ancient Egyptian astronomical instruments became a topic for lively discussions between the two friends.

The inscriptions on the Tut-ankh-Amun object did not give any clues about the nature of the object itself, and because the object was incomplete, Breasted did not even know what he had bought until several days later. Then, the similarity to the astronomical instruments in Berlin struck him, and he realized that he had purchased for the Oriental Institute a part belonging to one of the oldest astronomical instruments known to have survived from antiquity, over 600 years older than the set in Berlin!

Description

Breasted identified his acquisition as a decorated handle used for holding the plumb line of an astronomical instrument. The dark, close-grained hardwood can only be ebony, imported into Egypt from tropical Africa, a material which is well-represented among contemporary objects found in the tomb of Tut-ankh-Amun.

One-line hieroglyphic texts are carved into the two long sides of the handle. Some hieroglyphs still retain traces of the yellow pigment with which they were originally filled, and at least one sign contains a bit of red. The pigments are probably ocher, commonly used by Egyptian artists and craftsmen for these colors.

A rectangular mortise was cut into the top of the handle near one end to receive the projecting tenon of a small vertical block, lost in antiquity, which served as the attachment of the plumb line. When the object was prepared for exhibition in May, 1933, the missing attachment block was replaced with a plain, modern replica, based on the design of an original block of this type, also in Berlin (Aegyptisches Museum, Inv. Nr. 14573). The Berlin piece, decorated for Amun-hotep III, is nearly contemporary with the Oriental Institute handle.

Translations of Inscriptions and Commentary

Side "A"

"The Good God who acted with his two hands on behalf of his father Amūn,
who placed him upon his throne,
King of Upper and Lower Egypt
(Neb-kheperu-Re^c),
Son of Re^c
(Tut-ankh-Amūn, Ruler-of-Upper-Egyptian-Heliopolis):
renewing the monument of the father of his father,
King of Upper and Lower Egypt (Men-kheperu-Re^c),
Son of Re^c (Tuthmosis IV), Glorious-of-Diadems),
given life like Re^c forever and ever."

Side "B"

"The Good God,
Lord of the Two Lands, Lord of Action, Lord of Diadems,
(Neb-kheperu-Re^c),
Son of Re^c, of his body, his beloved, Lord of every foreign land,
(Tut-ankh-Amūn, Ruler-of-Upper-Egyptian-Heliopolis):
renewing the monument of the father of his father,
Lord of the Two Lands (Men-kheperu-Re^c),
Lord of Diadems (Tuthmosis IV), Glorious-of-Diadems),
given life, stability and dominion,
so that he is joyful together with his Ka like Re^c forever."

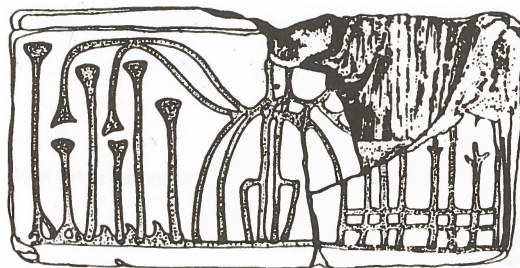
The Egyptologists of the Oriental Institute's Epigraphic Survey have discovered eight new texts in which Tut-ankh-Amun calls Amun-hotep III "his father" in the Colonnade of Luxor Temple. Tut-ankh-Amun's inscriptions on the astronomical instrument, naming Tuthmosis IV as "the father of his father" would seem to lend further support to this relationship, since Tuthmosis IV was the father of Amun-hotep III. Despite these important bits of evidence, these texts do not settle the vexing question of Tut-ankh-Amun's parentage. We know that he was indeed a king's son, but there is still no known inscription which gives the name of his father in a completely unambiguous way. The Egyptians employed few kinship terms; "father" can mean "grandfather," and "father of his father" can mean "ancestor" in a general sense. In the context of a dedicatory inscription like this one, these terms can designate a predecessor who is not even a blood-relative. The discovery of an inscription naming Tut-ankh-Amun as the son of King "X," **of his body** (the ancient Egyptian way of expressing paternity), would settle the question once and for all.

In a dedicatory inscription, the "monument" is the thing upon which the inscription appears, usually a building or a part of a building. A small, portable "monument" like the astronomical instrument would have been made for use in a building. The texts associate it with Tuthmosis IV. Breasted believed that this "building" was his tomb, No. 43 in the Valley of the Kings, and that the object had been placed there by Tut-ankh-Amun during a restoration of the tomb after robbers had broken into it. An ancient graffito indicates that the plundered tomb of Tuthmosis IV was restored in the reign of Hor-em-hab, but there is no evidence for an earlier restoration under Tut-ankh-Amun. The buried tomb of Tuthmosis IV was discovered in 1903, by Howard Carter. Since we know that the astronomical instrument had surfaced by 1887, it can only have come from the tomb if we posit an ancient robbery after which the thieves discarded objects of little intrinsic value **outside** the tomb. Hilton Price learned of the Theban origin of the piece from Chester, but the exact findspot cannot be established now with certainty. The well-preserved wood must have lain in a place which was safe from the destructive waters of the annual Nile inundation, perhaps the ruins of the Mortuary Temple of Tuthmosis IV where Petrie found a plumb bob in 1896, or another site on the West Bank.

Researched by
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Photograph by Jean Grant

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One end of the object is decorated with the sm3-hieroglyph, depicting the lungs and windpipe of an animal and meaning "to unite." This sign is intertwined with the two heraldic plants which symbolize the semi-legendary Predynastic kingdoms of Egypt: the papyrus for Lower Egypt (on the left side of the drawing) and the white water-lily for Upper Egypt. This emblem signifies the "Union of the Two Lands" of Upper and Lower Egypt.



Drawing by Joan Hives

Use

The ancient astronomical instrument set to which this handle belonged was a simple sighting device that enabled the observer to determine the moment when a given star crossed his meridian, an imaginary north-south axis using the North Star and the observer's location as its points of reference. A Y-shaped sighting stick was held close to the eye to provide a notch through which the observer squinted in order to sight the star. The plumb line, a cord weighted at the bottom with a plummet or plumb bob, enabled the observer to determine the vertical to his meridian, and thus afforded slightly greater accuracy of observation by providing a precise line at which the crossing of the star could be noted.

Our replica of a sighting stick is modelled after the intact example in Berlin (Aegyptisches Museum, Inv. Nr. 14084). The hieroglyphic inscription down the front of the Berlin piece identifies it as "an indicator (literally, a 'watching stick') for determining a festival and for placing all men in their hour(s) . . ." The plummet on exhibit, O.I. 10648, was acquired separately from the Tut-ankh-Amun handle; the two are displayed together with the replica of the sighting stick in order to suggest how a complete set might have looked. A pictograph showing the handle, cord and plumb bob of a complete set served as the hieroglyphic sign at the end of the Egyptian word for astronomical instrument, "mrh.t" (merhket).



Using simple tools such as these, and by keeping careful records of their star-observations, Egyptian astronomers were able to predict when a particular star would cross a meridian. The successive "hours" of the night, which varied in length according to the seasons, were marked by the appearance of certain bright stars, which were seen to cross the observer's meridian at a given time of the night. These observations could be used to determine the proper date for a festival to occur, as well as for telling time for the beginnings and ends of work-shifts, or "watches," in the temples on a twenty-four hour basis, so that "all men (could be) placed in their hour(s)."

With the help of instruments such as this one, the night sky served as a giant clock for the ancient Egyptian star-gazer. Their word for "astronomer" was "wnwty" (wenuty), literally, "hour-watcher." It is interesting to note that, in our own age of quartz and digital mechanisms, we refer to our portable timepiece as a "watch."