

THE BRONZE DOORS OF REKHMIRE (Thebes, Upper Egypt, Eighteenth Dynasty, c.1460 BC)

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Summary

The tomb of Rekhmire, the Grand Vizier of king Thutmose III, is located in Thebes, Egypt. On the western wall of its chapel is "the Panel with the Two Doors". This painting shows the casting of these bronze doors for the temple of Amun. However, this mural has a religious meaning related to the 'Realm of the Dead in the west' (America). It appears to show the discovery of the sailing routes to this continent in the Fourth and Fifth Dynasties, and the copper and tin trade with Upper Michigan and Bolivia, respectively. It can be shown, that the "Two Doors" encode an overall export of 18 million copper ingots (290 thousand ton) from Upper Michigan, and 1.8 million tin ingots (29 thousand ton) from Bolivia, until the time of Reckmire (c.1460 BC). (The mass of the Standard Ingot was 16 kg.) The Phaistos Disc of Crete of the same date confirms this metal trade.

Introduction

The Tomb of Rekhmire is one of the most interesting monuments on the West Bank of the River Nile at Luxor (ancient Thebes). Located on the southeastern slope of the Sheikh Abd el-Qurna hill, it is one of the largest of the private tombs. Rekhmire was a vizier, the highest ranking official under the Pharaohs Thutmose III (c.1485-1431 BC), and probably Amenophis II, during a period when Egypt's empire stretched to its farthest extent and was at the peak of her prosperity (Eighteenth Dynasty). He was responsible for the area of Upper Egypt extending from Aswan north to Assiut. In addition, he was also the mayor of Thebes at the 'knee' of the River Nile (at 26°N), and the Steward of the Temple of Amun at the Karnak Complex. The explanation of his duties as a vizier found within his tomb is one of the most important administrative texts of the New Kingdom. Except for a brief mention on an ostrakon and papyrus, all that we know of Rekhmire comes from his tomb (Ref.1).

Like most private tombs, Rekhmire's is fairly simple (T-shaped), consisting of a courtyard leading into a vestibule which is 20 meters wide (66 feet) and then a long chapel that is 25 meters in length (82 feet). The chapel is certainly the most interesting part of the tomb, with a ceiling that is three meters (10 feet) at its entrance but rises to eight meters (27 feet) at its rear. It therefore provides some 300 square meters of space for the fine decorative program. However, this program begins in the vestibule with an archaic style similar to Middle Kingdom tombs, and extends into the chapel where the work is exceptional. Multiple themes deal with common elements found in tombs, including the Opening of the Mouth ritual and the Beautiful Feast of the Valley festival, but also include absolutely unique scenes, giving us a complete and detailed account of many aspects of daily life. These paintings also have a high state of preservation with good color (Ref.1).

While the quality of work in the Chapel is outstanding, regrettably, the ceiling is so high that it is difficult for tourists to see the decorations on the upper part of the chamber at its rear. Entering the Chapel, we find on the western wall six registers with scenes of Rekhmire supervising the gathering and preparation of food stuffs allotted to the temple. Next, there are eight registers with scenes representing the types of labor carried out by craftsmen who worked for

Amun's temple. These include potters, carpenters, decorators, goldsmiths, sculptors and masons (Ref.1).

The Two Doors

A painting in the center of the western wall depicts the sequence of actions performed by foundry workers who are in the process of casting two bronze temple doors. The painting consists of several sections (panels), which show the supply of the raw materials, furnaces for melting the metals, and the casting of bronze (Refs.2,3). A part of one panel is shown in Fig.1.

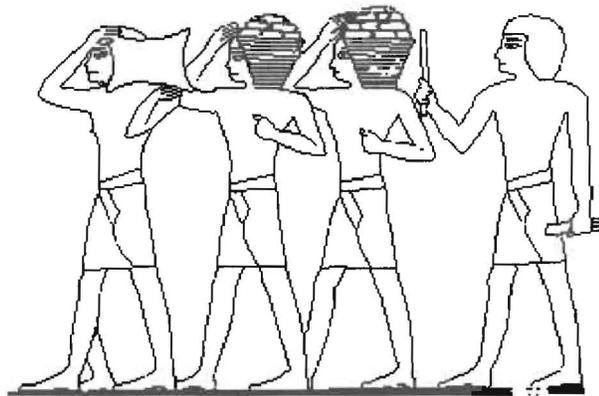


Fig.1 The right part of the 'Panel with the Two Doors': the supply of some raw materials for casting bronze. (Tomb of Rekhmire, Thebes, c.1460 BC, drawing: Ref.2, courtesy A. Dollinger)

The man at the right side of Fig.1 is a kind of supervisor, who directs the two men in front of him to a place to unload the content of their bags, which appears to be charcoal. The man at the left side clearly carries a copper ingot. The other part of the panel is shown in Fig.2.



Fig.2 The left part of the 'Panel with the Two Doors': the casting of a bronze door. (Tomb of Rekhmire, Thebes, c.1460 BC, modified, different source: Ref.4, courtesy R.H. Wilkinson)

Note, that the two men at the left side of Fig.1 are identical to the two men at the right side of Fig.2. So, in reality Figs.1&2 form together one long section (panel) stretching from right to left. - The third man at the right side of Fig.2 bends forward to take a commodity, which probably will be some tin, necessary for making the alloy of bronze. The two other workers are busy at what appears to be a high mould of clay in the shape of a door. The big crucible with the molten metal is lifted off the fire with two poles, and the liquid bronze is poured through one of the funnels into the clay mould (Ref.2).

Top Part

The top part of the whole panel is interesting. The caption above Fig.1 (not shown) reads in Egyptian hieroglyphs:

"Carrying asiatic copper which his Majesty has brought after his victory over Retemu in order to cast the two doors of the temple of Amun at Luxor, to cover their surface with gold after the fashion of the horizon. - It is the mayor of Thebes and vizier Rekhmire who ordered thus." (After a German translation taken from 'Pharaos Volk' by T.G.H. James, Ref.2)

The two huge doors, shown in red in Fig.2, strongly resemble the hieroglyph of a door (Ref.4, p.147). However, the short sides of the doors also resemble the ends of the sky hieroglyph (Ref.4, p.127). So, it is for sure that these doors have a religious meaning. These are the holy doors to "the Realm of the Dead in the west, at the other side of the Ocean, to the Land where the Sun sets!" - The three workers at the left side of the doors carry bronze knives in an aggressive manner. The number three means 'a multitude of them.' So, they all defend this religion, and with it the King as the substitute of the SunGod. It illustrates the power of the Pharaoh, and they are all willing to work for him! - Note, that the three knives also resemble the hieroglyph of 'the field' (Ref.4, pg.125). It is symbolic for the 'Field of Reeds' in the west, the domain of the god Osiris in the 'Underworld'.

Geography

The panel was painted on the western wall. Each of the rectangular doors resembles the hieroglyph for 'a body of water.' (Ref.4, p.137). So, the two doors represent the eastern and western Ocean, respectively. The two doors also represent the (known) hieroglyph for "two islands above each other" (with rounded corners, Ref.5, pg.166). So, the two doors represent South and North America, respectively. In these days America was a colony of Egypt!

The rectangular doors suggest these continents were discovered in the Fourth Dynasty, which is correct. All men wear aprons made of four parts, and the liquid bronze is poured in the fourth funnel, twice confirming it. Fig.1 shows four men in an upright position, confirming it, too. The fifth man (Fig.2) bends downwards, suggesting the discovery of America by the 5th King Menkaure, which is correct. The length / width ratio of the doors equals about five, confirming it. - It also suggests the discovery of all crossings of the Atlantic Ocean in the Fifth Dynasty, which is correct. The two doors suggest the discovery of the two southern Crossings by the 2nd King Sahura, which is correct (Fig.3). The two men pouring bronze confirm it. The two men carrying charcoal confirm it, too.

On the clay mould for the bronze door appear to be a total of 16 funnels, encoding the Cape Verde Islands, at 16°N. It was the start of the Southern Crossing, with the wind and the current, to South America. The three workers with their knives symbolize the three island groups of the Azores in the middle of the Ocean. These were important for the Return Route, with the wind and the current, to the Mediterranean (Refs.8-15).

Metal

The two doors have a total of $4+4=8$ sides, encoding Keweenaw Peninsula, Upper Michigan, 8° above the West Azores, at $39+8=47^\circ\text{N}$. The $7+1=8$ people shown on the panel confirm it. It was the center of copper mining in North America. However, there are a total of $6+3=9$ workers on the panel, corresponding with Isle Royale, Lake Superior, at $39+9=48^\circ\text{N}$. The 9 islands of the Azores confirm it. They also encode the density of copper, 9 g/cm^3 (nine times heavier than water).

The three workers with their knives at the left side show that $3/5$ (or 60%) of the copper was transported along the Mississippi River to the south, and the two large doors at the right side encode a ratio of $2/5$ (or 40%) of the copper brought via the Saint Lawrence River to the east. So, the panel appears to give valuable information about these trading routes. The two doors show people were aware of the existence of the island of Bermuda, at $30+2=32^\circ\text{N}$. Finally, almost all the copper was shipped (as ingots) to the West Azores.

Isle Royal is located 18° above the Nile Delta, at $30+18=48^\circ\text{N}$. The Eighteenth Dynasty confirms it. It encodes the tin mines near the present town of Oruro, Bolivia, at 18°S . However, the man who bends forward to take some tin encodes the far more important mining area just east of Lake of Poopó, near the present town of Potosi, Bolivia, at $18+1=19^\circ\text{S}$. His square bag symbolizes South America. The tin was transported (as ingots) along the coast to the north, and from the Pacific to the Atlantic. The $6+3=9$ workers on the panel encode the isthmus of Panama, at 9°N , as well as the nine islands of the Azores. (Refs.9,16-22)

Overall Export

The big question is: What was the overall export of metal from America until the time of Reckhmire (c.1460 BC)? The two bronze doors have together $4+4=8$ sides. It suggests an overall export of 20 million 'bronze ingots' (a number of 8 figures). The 8th line of the text of the papyrus about the Installation of the Vizier Reckhmire reads: "Lo, he is the copper that shields the gold of his masters house", which confirms it (Ref.6).

However, the lower door points to a copper ingot carried by one of the workers. In the Old World bronze was made by alloying the copper with 10% tin. (The origin of the words 'tin' and 'ten' are even related.) So, the bronze doors consist of 90% copper. As a result the answer will be: the overall export was $0.90 \times 20 = 18$ million copper ingots.

Copper ingots with masses varying from 10 to 30 kg have been found by archaeologists. So, the problem is to establish the weight of the "Standard Ingot" according to this particular painting. For a long time past both noble metals (silver and gold) were weighed in units of carats, corresponding with 0.20 gram. The carat is the constant mass of a seed of the St. John's bread or carob tree (*Ceratonia siliqua*). The two doors have together $4+4=8$ sides, and the length / width ratio of each of the doors equals 5 (see above). So, the Standard Ingot will have a mass of 80,000 carats (a number of five figures), or $80 \times 0.20 = 16$ kg.

Now we are in a position to calculate the overall export of copper from Upper Michigan until the time of Reckhmire. This export was $18 \times 16 = 290$ million kg or 290 thousand tons of copper. - The export of tin from Bolivia was 10%, or 1.8 million tin ingots. There are 7 people at the bottom of the panel, confirming the seven figures of this number. They also encode the density of tin, 7 g/cm^3 (seven times heavier than water). These ingots have a total mass of 29 million kg or 29 thousand tons of tin.

The mass of the Standard Ingot is confirmed in the literature. However, the overall export of copper and tin is confirmed, too! The Phaistos Disc of Crete has the same date as these murals in the tomb of Rekhmire: c.1458 BC. It mentions the same export: 18 million copper ingots and 1.8 million tin ingots. Both values symbolize the back side of the planet Earth (America, the 'Underworld'), at an approximate distance of 18 Moiras, or 180°, from Egypt at the time of the Eighteenth Dynasty! (Refs.9,16-23)



Fig.3 King Sahure (at the right side) as god of the sea (the waves). He discovered the two southern crossings of the Atlantic. The sailing distances of 2 Moiras= 20 degrees over open sea were the longest crossings ever accomplished. (Pyramid temple of Sahure in Abusir, near Cairo, c.2500 BC) (Ref.7)

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