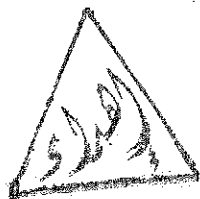


**EGYPTIAN COPPER - OBJECTS  
IN THE 4. AND 3. MILLENNIUM B.C.**



**ABO EL - EYOUN BARAKAT**



**Egyptian copper- objects  
in the 4. and 3. millennium B.C.**

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Abo El-Eyoum Barakat

**Ore copper sites**

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Ore copper is to be found in Egypt in two sites:

In Sinai<sup>1</sup> and in the east desert, between the valley of Nile and the Red Sea<sup>2</sup>. The evidence of the obtaining and smelting of the ore copper from the above mentioned sites are as follows:

1.) The existence of the old mining with the settlements of the workers, old remains of slag, smelting furnaces and one casting for bullions.<sup>3</sup>

2.) Inscriptions near these minings, left from decomposition-expeditions, for example a relief dated in the time of the king Semer-khet (middle of the first dynasty) and the stelae of an

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<sup>1</sup>- W.M.F. Petrie, *Researches in Sinai*, pp. 18,19,27; J. Ball, *The Geog. and Geol. of West-Central Sinai*, pp. 11,13,163,188; T. Barron, *The Topog. and Geol. of the Pen. of Sinai (Western Portion)*, pp. 40-5; and *Mines and Quarries Department, Egypt, Report on the Mineral Industry of Egypt, 1922*, pp. 36,38.

<sup>2</sup>- T. Barron and W.F. Hume, *Topog. and Geol. of the Eastern Desert of Egypt, Central Portion*, pp. 33,259; and W.F. Hume, *A Prelim. Report on the Geol. of the Eastern Desert of Egypt*, pp. 41,56.

<sup>3</sup>- W.M.F. Petrie, *op. cit.* p. 51.

official his name is Hor from the eleventh dynasty, who was ordered to obtain the copper from Nubia.<sup>4</sup>

The most sites of decomposition sites were in Wadi Maghara and Serbit el-Chadim in Sinai. Doubtless, they were not only for ore copper, but also for turquoise (to be used for pearls and trinkets during the old and the middle kingdoms and the Badari-time too). But more, in the new time, they are the sites to obtain the decomposition of turquoise.<sup>5</sup>

The ore copper in Maghara as well as in Serabit is of green Carbonat (Malachit) with a pinch of blue Carbonat (Azurite) and a little pinch of Sitikat (Chrysocolla).<sup>6</sup>

The earliest evidences of the Import of copper to Egypt are from the 18th and 19th dynasties to be dated. The copper should be imported in that time from:

a.) Rethenu<sup>7</sup> and Djahi<sup>8</sup> in Syria.

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<sup>4</sup>- Alan Rowe, Three New Stelae from the South-Eastern Desert, *Annales du Service des Antiquites de l'Egypt*, XXXIX (1939), pp. 188-91.

<sup>5</sup>- W.M.F. Petrie, *op. cit.*, 145-62.

<sup>6</sup>- J. de Morgan, *Recherches sur les origines de l'Egypt*, pp. 216-39; J. Ball, *op. cit.*, pp. 190-91; and T. Barron, *op. cit.*, pp. 166,208.

<sup>7</sup>- J.H. Breasted, *Ancient Records of Egypt*, V (Index), pp. 11,447,471,491,509,790.

<sup>8</sup>- *op. cit.*, II, pp. 459.460.462.490

b.) Arrapakhtitis in western Asia<sup>9</sup> (which is now to be situated in Kirkuk, between the two arms of the Zap-river in Mesopotamia).

c) Asia.<sup>10</sup>

d.) "The land of God"<sup>11</sup> (a name for enlarger different sites to be situated, inclusive the lands in western Asia, the eastern desert in Egypt and the land of Punt.

e) Isy<sup>12</sup>, which was situated at Zypern, but Wainwright shows that it could not be Zypern, but a land in the north of Syria.<sup>13</sup>

#### The decomposition of copper:

Ore copper, principal Malachit, should proceeds for a long time from stratification on the surface without to state the practice of decomposition under the earth to pursue. To take out the ore implement of flint is to be sufficient.<sup>14</sup> However, to serve shafts

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<sup>9</sup>9- op. cit., p. 512.

<sup>10</sup>10- op. cit., pp. 45,104,175,614,755; III, 217,537,910.

<sup>11</sup>11- op. cit., II, p. 274.

<sup>12</sup>12- op. cit., pp. 493,511,521.

<sup>13</sup>13- G.A. Wainwright, Alashia=Alasa; and Asy, in Kilo, XIV, 1915, pp. 1-36.

<sup>14</sup>14- W.M.F. Petrie, op. cit., pp. 48-9.61.161.

to follow the thread of copper under the earth, chisel of copper must be used in later periods. These chisels of copper were already known from the late predynastic period. In the mines of Sinai, Petrie had found the evidence of employment of chisels of copper to cut the rock.

### The smelting process

It is proved, that during the earliest periods, the employment of copper was in tiny mass and only from pure metal. But there is no doubt, that smelting of ore was known in all the following periods. Probably, the impulse to it was the Malachit. In the Badari-time and later Malachit was used to make eye-paint and for glazing pearl of steatite, to look like turquoise. Lucas pretended, that sub-metallic copper at first was to find out from by-product of varnish process and he accepted, that this was elder as the knowledge of metallic copper. Furthermore he tried to fancy that as well the invention of the varnish as the discovery of metallic copper to come from the old Egyptians. But these two informations are now only hypothesis.

### Smelting from the metals:

In the predynastic period, the smelting of the ore copper was started by reducing and sorting the ore copper. Then the ore was mixed with charcoal and in a flat hole, surrounded by stone walls. The remains of one of these holes was found in Sinai.

In the old kingdom the metal was found in a crucible over the fire. One to six workmen, sitting in a circle blowing the glowing fire with blow pipes, are to be seen in the relieves (Ti and Mera).<sup>15</sup> The crucible, which was erected from mud, after the

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<sup>15</sup> P. E. Newberry, The life of Rekhmara, Pl. XVIII.

illustration, has a cylindrical diffusion with a round aurage. It has, in one side sideward conceal to jut out and ended in a small opening. This small opening was smeared with mud during the smelting process and opened after that to pure off the metall.

After taking off the glow stew-pan from fire, a workman let the smelting mass through the outlet hole and flowing of metal in a shell.

In the later time, they found out, that the copper is easier and simple to fashion, if it is in liquid condition to shed in the model of founding. Petrie described these models of founding in the following manner: They were from thick pieces of mud smoothed with fine mud and ash. Equally, stone models founding were used.

The earliest example of copper founding is the axe head from the middle predynastic time, which was found by Brunton. This axe head was inspected from Carpenter. He concluded, that it was made by the model of founding and later hammered either cold or during it was hot<sup>16</sup>. From the Middle kingdom, some models of burned mud were found in the ruins in the town Illahun.

By means of hammering, the metal became hard too. The hammering of metals to plates was exhibited in the relief: "Ti and Mera", where two or augmenter workmen sitting in front of a flat stone and in equable rhythm to swing the stone hammer.<sup>17</sup>(Fig 1)

<sup>16</sup>16- H.C.H. Carpenter, An Egyptian Axe head of Great Antiquity, Nature, 130, (1932), pp. 625-6

<sup>17</sup>17- LD II, 49b.

### Copper findings:

Copper is one of the earliest metals that was used from the Ancient Egyptian. Even in the prehistory time, which relates to the middle of the 4. millennium B.C. the metal was used. In that time, the skin of animals, in which the body of the deceased was warped, was stitched together with nails of copper.

The earliest objects of copper, which were found, are pearls and pins, dated in the time of Badari culture <sup>18</sup>( ca. 3 600 B.C.) and furthermore during the earliest predynastic time. (Fig.2) In addition there are many other objects which were finished of copper such as bracelets, small chisel for the wood working, finger-rings, harpoon-heads (refinishing operation from the models of the bone-harpoons), small instruments, pins, tweezers and other small objects.<sup>19</sup> The copper findings from the middle predynastic time were scanty, small and bad finished.<sup>20</sup>(Fig 3)

Towards the end of the predynastic time, the Egyptians were in the possession from practical copper article and during the

<sup>18</sup>18- G. Brunton and G. Gatton-Thompson, *The Badarian Civilization*, pp. 7,27,33,41.

<sup>19</sup>19- D. Randall-McIver and A.C. Mace, *El Amarah and Abydos*, pp. 16,18,20,21,23,24, E.R. Ayrton and W.L.S. Loat, *Predynastic Cemetery at El Mahasna*, pp. 18,19,21,32,33; and W.M.F. Petrie and J.E. Quibell, *Naqada and Ballas*, pp. 14,20-4,27-9,45,47,48,54.

<sup>20</sup>20- H.C.H. Carpenter, *op. cit.*, pp. 615-6.



earliest dynastic period there are heavy axe-heads, broad-axes, chisels, knives, daggers, spears, instruments and ornaments as well household -objects (shells, cans) and already in frequent employment.<sup>21</sup>

Generally, the predynasty copper-objects that were found are very little. Then the tombs were already in the early time robbed because of metal-objects.

The numerous copper- findings from the first dynasty which were found by Petrie in the royal tombs or Cenotaph in Abydos were notable. Just so Emery had found a big quantity from copper-objects in the tomb from the king Djer in Saqqara (1.dyn.) : 121 knives, 7 saws, 68 pots, 32 hairpins, 262 pins, 15 drills, 79 chisels, 75 rectangular copper-plates, 102 broad-axes and 75 picks.<sup>22</sup>(Fig 4)

In addition to the findings of Petrie and Emery there are some objects which were found. Shells in other forms, two in Tarkhan and one in Abydos, were found by Petrie.(Fig. 5)

From the IV. dynasty to be mentioned, for example the copper-objects from the tomb Hetepheres in Giza<sup>23</sup> and another pot with convex form and short neck from Abydos. The earliest examples of water bowl and outlet pot with bend

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<sup>21</sup>21- W.B. Emery, A Preliminary Report on the First Dynasty Copper Treasure from North Saqqara, *Annales du Service*, XXXIX (1939), pp. 427-37.

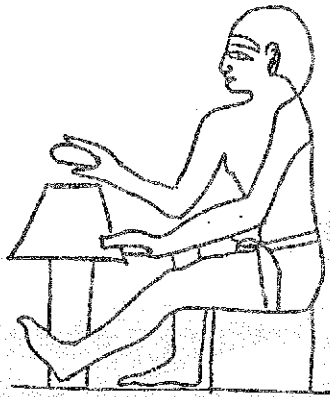
<sup>22</sup>22- loc. cit.: see also Radwan, *Die Kupfer und Bronzegefäße Ägyptens (von den Anfängen bis zum Beginn der Spätzeit)* 1983

<sup>23</sup>23- G.A. Reisner, *The Tomb of Hetep-heres*, *Bull. Mus. of Fine Arts*, Boston, XXV (1927), p. 31.

high socket were found in the tomb of the king Kha-sekhemui  
in the 2. dynasty.<sup>24</sup>

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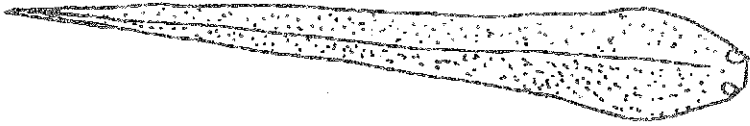
<sup>24</sup>24- Royal Tombs II, pl. IX.



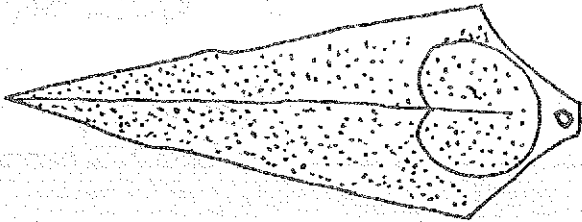
(Fig. 1) (L.D. II 49)



Naqqada II. (El Amarah)



Naqqada II.

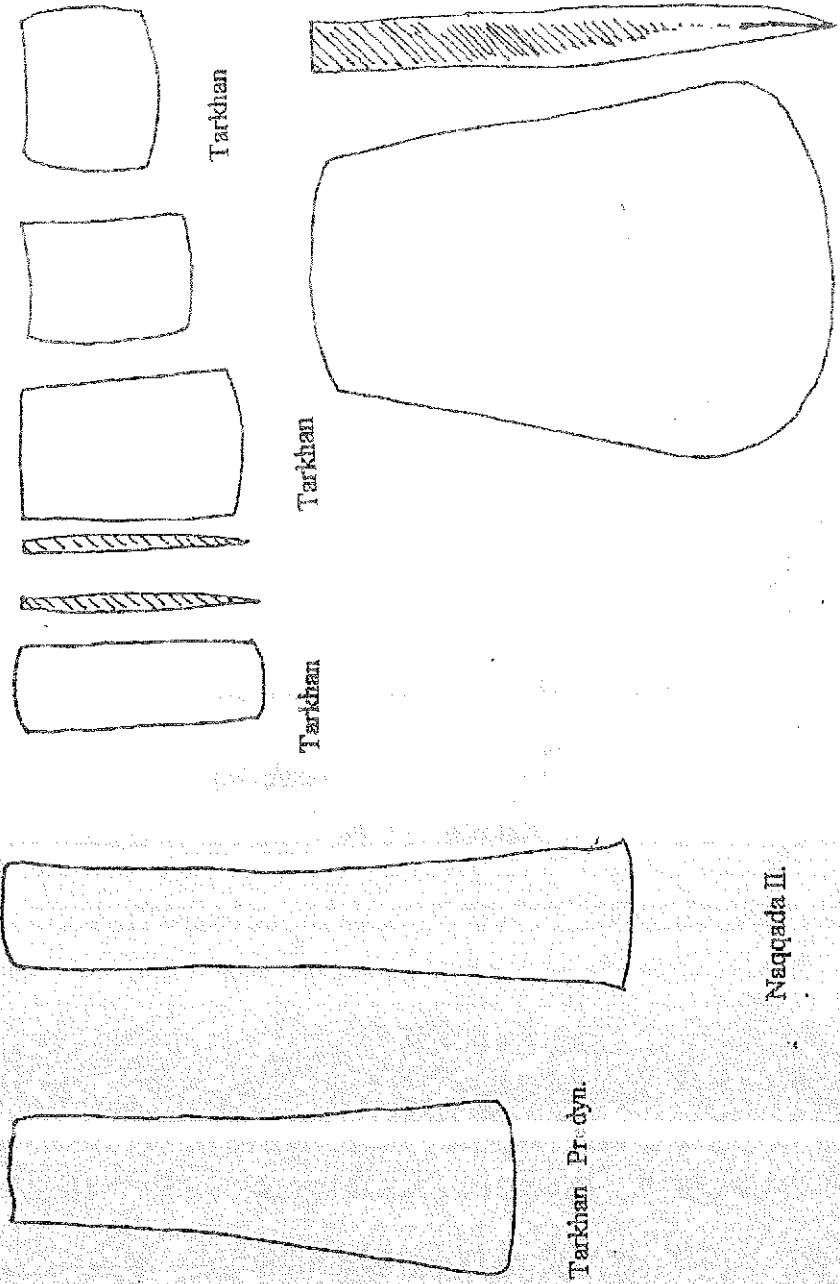


Naqqada II. (El Amarah)



Naqqada I. (Naqqada)

(Fig. 2)



Tarkhan

Tarkhan

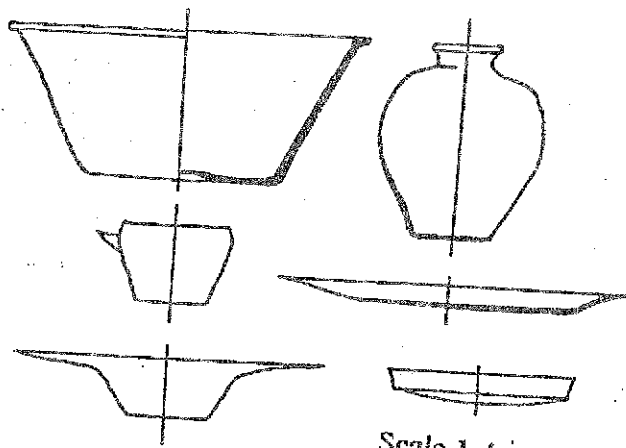
Tarkhan

Hammer

Tarkhan Pr. dyn.

Naqqada II.

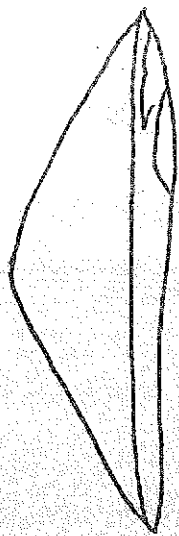
(Fig. 3)



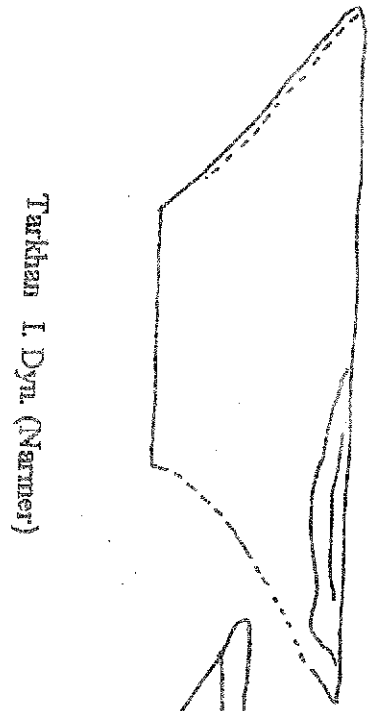
Scale 1-4

Saqqara 1. Dyn.

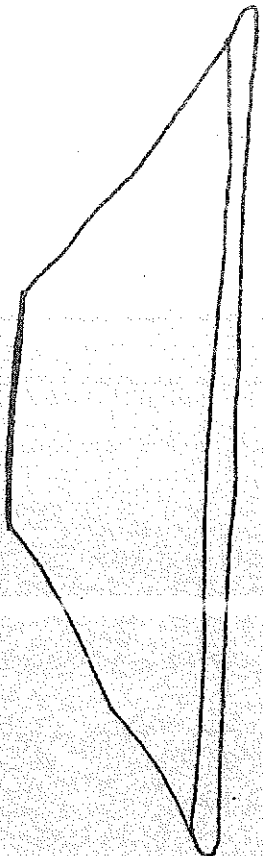
(Fig. 4)



Abydos I. Dyn.



Tarkhan I. Dyn. (Nemes)



Tarkhan I. Dyn. (Nemes)

(Fig. 5)