

**ANNALES**  
**DU SERVICE DES ANTIQUITÉS**  
**DE L'ÉGYPTE**

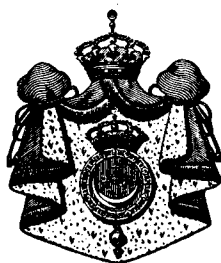
SERVICE DES ANTIQUITÉS DE L'ÉGYPTE

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TOME XLVIII



LE CAIRE  
IMPRIMERIE DE L'INSTITUT FRANÇAIS  
D'ARCHÉOLOGIE ORIENTALE

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MCMXLVIII

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TOME XLVIII  
(PREMIER FASCICULE)



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MCMXLVIII

**BRIDGES IN ANCIENT EGYPT**  
**WITH A REPORT**  
**ON A NEWLY EXCAVATED BRIDGE**  
**FROM THE OLD KINGDOM, GIZA**

BY

OSMAN R. ROSTEM

The idea of constructing bridges over ditches or canals, if ever it occurred to the Egyptians, did not apparently appeal to their taste and thus bridges were very rare. It is moreover supposed that the word *bridge* did not exist in their language <sup>(1)</sup>. It seems that it was easier to them to slip out of their scanty dress and ford or swim a canal, or perhaps they found it safer to cross in a boat, than walking on an overhanging log. At present a peasant may be seen taking a short cut across a canal rather than walking a little distance and pass over a bridge. Moses, the arch-performer of miracles, who “was learned in all the wisdom of the Egyptians” <sup>(2)</sup>, did not think of providing his hordes with a bridge which could have been as miraculously produced and destroyed as the parting of the waters. But the aim of Moses was to drag the Egyptians to the bottom of the sea!

Apparently, the only example known to the past generation of Egyptologists was a simple representation at Karnak of a bridge spanning a

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<sup>(1)</sup> MONTET, *La vie quotidienne en Égypte*, p. 168. — <sup>(2)</sup> *Acts*, VII, 22.

canal near the eastern frontiers of the country : « Les ponts étaient rares ; on n'en connaît jusqu'à présent, qu'un seul sur le territoire égyptien, encore ne sait-on s'il était long ou court, en pierre ou en bois, supporté d'arches ou lancé d'une volée. Il franchissait, sous les murs mêmes de Zarou, le canal qui séparait le front oriental du Delta des régions désertes de l'Arabie Pétrée ; une enceinte fortifiée en couvrait le débouché du côté de l'Asie. » <sup>(1)</sup>

Another Egyptian representation of two bridges dates from the same period. In the scenes of Ramesses' great achievements in the famous battle, the city of Kadesh is shown surrounded by two moats crossed by two bridges.

Some kind of bridge was probably used to give access to the fortresses of Nubia which were surrounded by ditches. Steindorff gives an interesting reconstruction of the western gateway to the fortress of Aniba in which a wooden bridge is shown <sup>(2)</sup>. Emery and Kirwan also show a drawbridge in connection with Kuban fort <sup>(3)</sup>.

No actual remains of the above mentioned bridges were found, but remains of a bridge from the XVIIIth dynasty were found at Tell El-Amarna. The main street in Akhetaten passed between the Royal House and the Palace which were connected by a bridge spanning the road. The bridge had three openings and the lower parts of the piers were cleared by the excavators of the site <sup>(4)</sup>.

This is not the only example of actual remains of a bridge known at present. At Dahshur a small bridge with an opening of about 2 metres by 2 m. 50, built in limestone from Tura, is included in the brickwork of the causeway of the pyramid of Amenemhat III <sup>(5)</sup> (XIIth dyn.).

Five bridges from the Old Kingdom (IVth dyn.) existed in the pyramid area at Giza. Two of them, shown in the map of Perring <sup>(6)</sup>, were

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<sup>(1)</sup> MASPERO, *L'Archéologie égyptienne*, Paris 1887, p. 35 ; fig. 39.

<sup>(2)</sup> STEINDORFF, *Aniba II*, Blatt 9, Abb. 19.

<sup>(3)</sup> EMERY and KIRWAN, *The Excavations and Survey between Wadi Es-Sabau and Adindan*, vol. I, fig. 7 et 8.

<sup>(4)</sup> PENDLEBURY, *Tell El-Amarna*, London 1935, p. 38 et 88.

<sup>(5)</sup> MORGAN, *Fouilles à Dahchour en 1894-1895*, fig. 144, p. 99 et 100.

<sup>(6)</sup> A. VYSE and J. S. PERRING, *Operations*.

contained in the causeway of Khufu. These two bridges, if not already destroyed, may be located somewhere in the village of Nazlet El-Samman. Two other small bridges, spanning the channel in front of the valley temple of Khafra, can still be seen almost free from damage.

The fifth bridge, also shown in Perring's map, has been lately excavated by the author on behalf of the Antiquity Department. It is built in a stone wall, probably an extension causeway<sup>(1)</sup>, running eastward from the base of the cliff south of the modern cemetery.

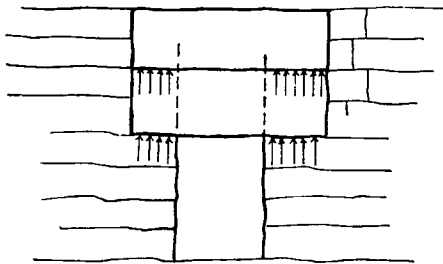
Three gigantic limestone slabs, from local quarries, span an opening 3 metres wide and 7 metres long. Two of the slabs measure each about 7 metres long, 2 metres broad and 1 m. 50 thick, with about 2 metres of their length resting on the masonry on each side. The third slab has the same dimensions except with regard to the breadth which is 3 metres. The excavations were carried down to a depth of about 5 metres below the lower surface of the spanning slabs, at which level Nile mud, wet with subsoil water, was encountered. The sides of the passage present a very coarse surface; either it was never finished or perhaps it was faced with some sort of casing. Fragments of granite found in the debris suggest a casing, but the construction gives very insignificant indications to make this suggestion probable. Water had certainly flowed through the opening in its present state, as traces of corrosion due to water are visible on the southern side from which it came.

The top of the causeway was apparently two courses higher than the upper surface of the slabs. To reach this level over the bridge two blocks of stone having the same length as the slabs were laid over them. This continuous uniformly distributed load exerts less bending stresses in the middle part of the slabs than those caused by a load consisting of separate small blocks laid one beside the other. The upper blocks, having their ends resting over the bearing area of the abutments and their weight being thus directly transmitted to the masonry, are practically independent from the slabs which carry almost nothing of their weight (figs. *a* and *b*).

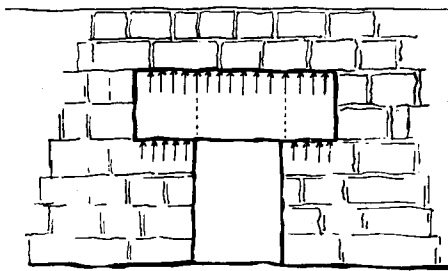
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<sup>(1)</sup> According to Baedeker (édition 1929, p. 148) this wall is "the remains of a wall (perhaps the ancient town wall), with a gate-way".

Since it was much easier to transport, lift up and lay in place the smaller blocks we can safely conclude that, in adopting the more difficult but



a



b

Figs. a and b.

usually connects the two towers of a pylon over the doorway can be considered as a kind of bridge.

sounder practice, the builders knew quite well the advantages of loading the bridge in the manner explained above.

At Aswan remains of an arched construction, known as the Baths of Cleopatra, can be seen jutting out into the river from the eastern bank. A corresponding mass of masonry, much dilapidated, suggests that both were heads of an ancient bridge, which, however, could not have been earlier than the Roman period <sup>(1)</sup>.

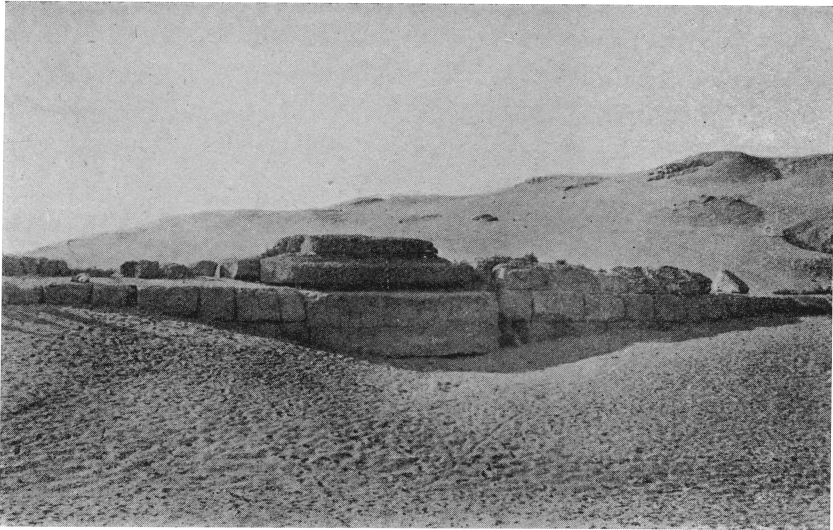
In conclusion, we may mention that, from an architectural point of view, the passage that

Osman R. ROSTEM.

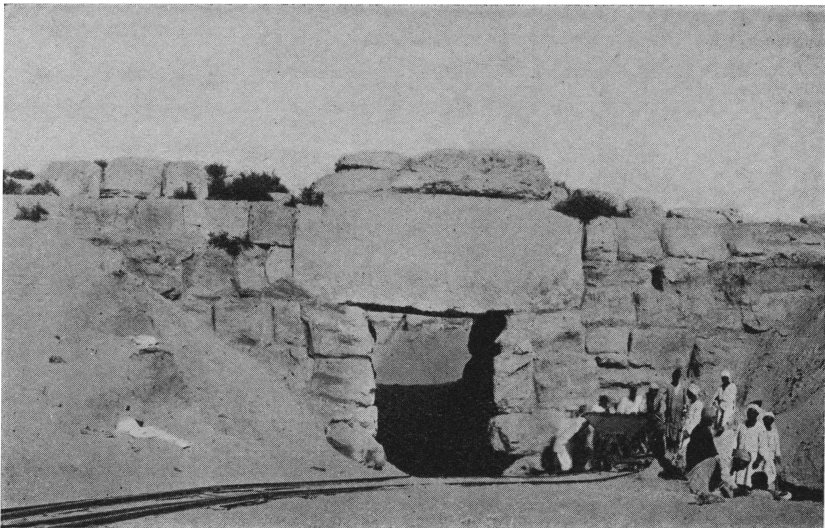
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<sup>(1)</sup> For further study of this building see MORGAN, *Catalogue des Monuments et Inscriptions de l'Égypte antique*, p. 45-47.

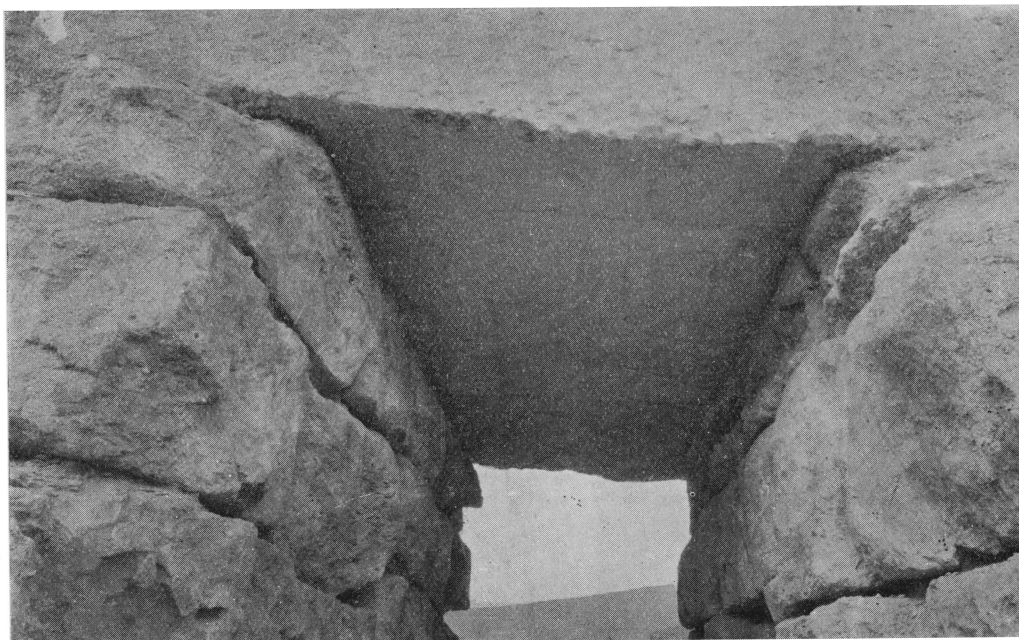




The bridge before excavation. North side.

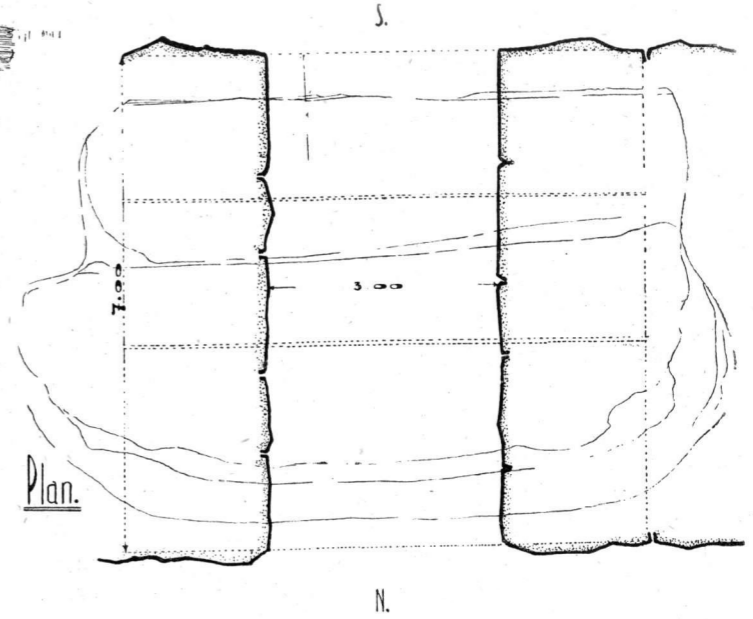
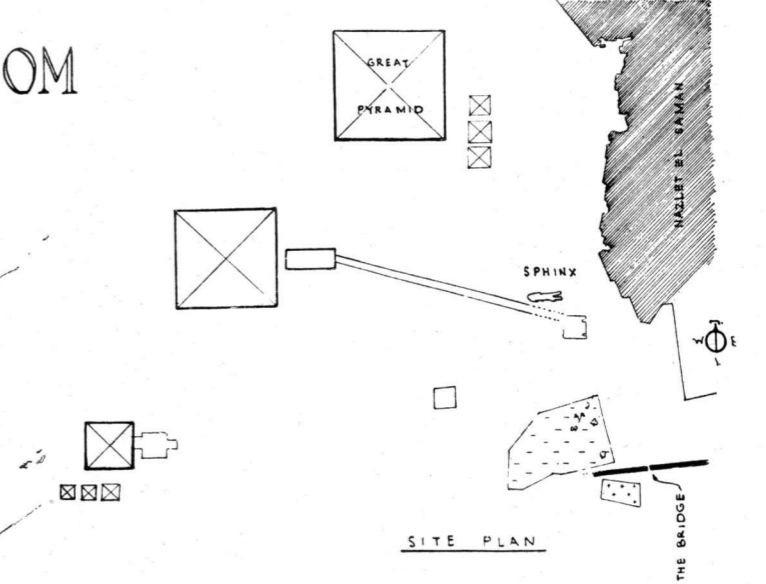
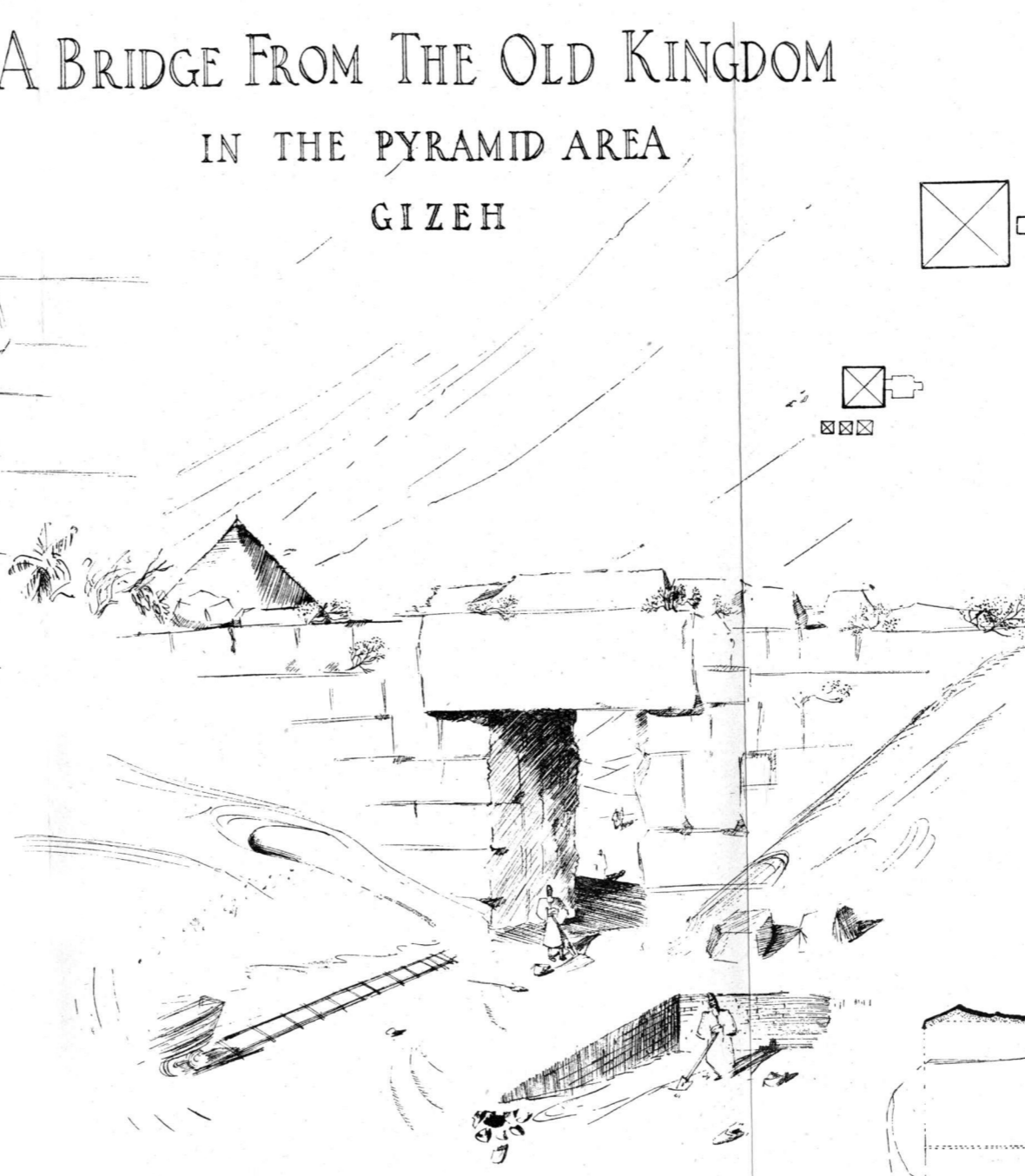
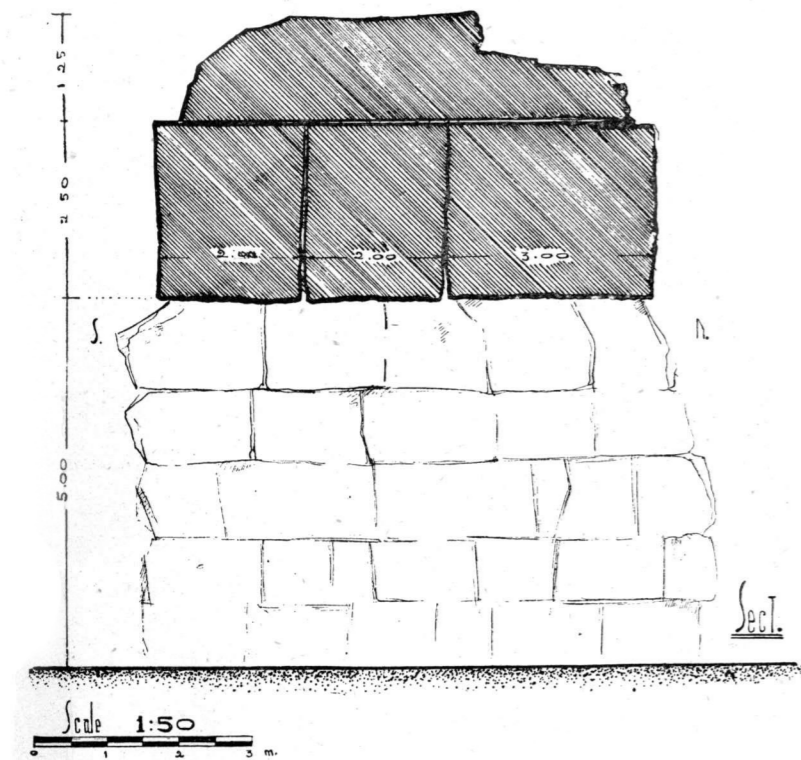
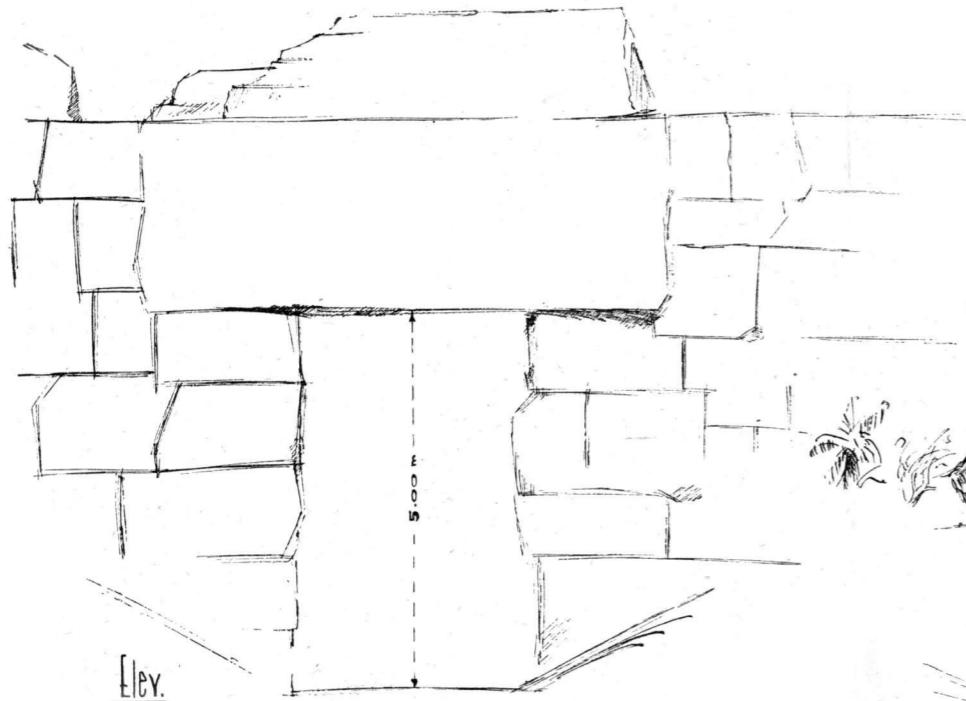


The bridge after excavation. South side.



View showing underside of the slabs.

# A BRIDGE FROM THE OLD KINGDOM IN THE PYRAMID AREA GIZEH



Drawn by the architect Kemal Eff. El-Mallakh.