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Polish Archaeology in the Mediterranean 3, 39-48

1992

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POLISH-EGYPTIAN RESTORATION PROJECT AT MARINA EL-ALAMEIN IN 1991

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The mission¹ which acted from April 1 until June 30, 1991, started immediately upon the close of activities by the archaeological mission directed by Prof. W.A. Daszewski.² Work was carried in sector "1" of the excavations in the necropolis³ (Fig. 1).

Tombs appearing on the necropolis of Marina el-Alamein fall into two classes: either underground chambers cut in soft limestone rock and provided with more or less elaborate above-ground structures or stone structures built over shallow pit-graves and containing loculi for further burials; they were often

¹ The mission included: Mr. Jarosław Dobrowolski, architect, head of the mission, Mr. Jan Burmas, architect, and Mr. Stanisław Wężyk, restorer-stonecutter; the latter two participated thanks to the kind consent of the Ateliers for Conservation of Cultural Property (PKZ).

The effective operation of the mission was possible thanks to the concerted efforts of many people in the Egyptian Antiquities Organization. We are especially indebted to: Prof. Muhammad Ibrahim Bakr, Chairman of the EAO; Dr. Ali Hassan, General Director of the Pharaonic Section, Dr. Ali Khuli, General Inspector of the Western Delta and Dr. Kamal Fahmi who later replaced him at this post; to Mr. Faisal el-Ashmawi, Director of the Marsa Matruh Inspectorate and also to Dr. Ahmad Gaber, Chief Engineer of the EAO and to Mr. Hassan Shehata and Mr. Kamal Gamaa at Kom el-Dikka, Alexandria, who supervised the delivery of materials, equipment and manpower. Mr. Ezzat el-Hamahmy, Chief Inspector of the Area and Mr. Khalid Gabra Yunis, representing the EAO at the site should also be mentioned.

² See above, pp. 29-38. Prof. W.A. Daszewski who supervises the project at the site, is the author of a general concept for the restoration.

³ J. Dobrowolski, Polish-Egyptian Restoration Project at Marina el-Alamein, *PAM II*, 1989-90, (1991), pp. 44-47.

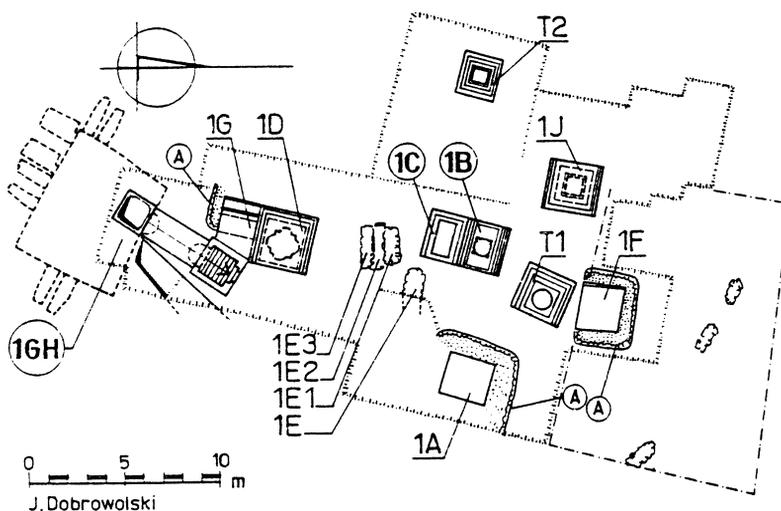


Fig. 1. Location of restored tombs T 1B, T 1C and T 1GH within the complex excavated by the Polish Mission. a – sand-retaining walls around later tombs.

surmounted with funerary monuments of some kind, usually in the form of a pillar or column. Soft local limestone was used as the building material.

Among the tombs restored in 1991, tombs T 1B and T 1C belong to the latter, and T 1GH to the former category.

TOMBS T 1B AND T 1C

Restoration of these monuments was the main task of the season. The tombs form one complex and presumably belonged to a single family. They were discovered in 1987 and explored

in this and subsequent seasons.⁴ The demands of an envisaged restoration were kept in mind all through the exploration.

Tomb T 1B was dated to the beginning of the 1st century AD, T 1C appears to be at least one generation later. Tomb T 1B was built over an oblong rock-hewn pit covered with roughly cut stone slabs (Fig. 2, 1B.LS1). The pit contained the earliest burial in this grave. The tomb built over it comprised two chambers. The northern one (1B.LN) containing a corpse, laid originally inside a wooden casket in a shallow rock-cut pit, was definitely closed by the time of construction. The southern chamber (1B.LS), where other bodies were later deposited, had a side opening closed with a stone slab. (This pattern was rather typical of the necropolis of Marina el-Alamein: five similar double or tripartite tombs have already been located, in all cases the earliest burial was set in a chamber closed by the time of construction.) The lower part of this tomb, containing the chambers, formed a stepped base supporting a huge pillar approximately 4.50 m high. The pillar was decorated with corner pilasters.⁵ The capitals were of a very simplified form, typical of the site (cf. Fig. 2). They supported a simplified entablature featuring an elaborate cornice. The pillar was topped with a two-stepped pedestal, most probably originally surmounted with a statue. Of this, alas, no traces remain.⁶

⁴ W.A. Daszewski *et alii*, Excavations at Marina el-Alamein 1987-88, *MDAIK* 46, 1990, pp. 15-51; id., Marina 1990, *PAM* II, 1989-90, (1991), pp. 31-37.

⁵ The shape of this tomb was not exceptional: very similar blocks were found reused in walls of side rooms of mausoleum S 6 in the western part of the cemetery.

⁶ Many sculptures and fragments were found nearby (cf. Daszewski 1990, Pl. 14), but they cannot be ascribed to particular tombs. In the ruins of nearby houses some fragments of bronze statues were found by the Egyptian mission.

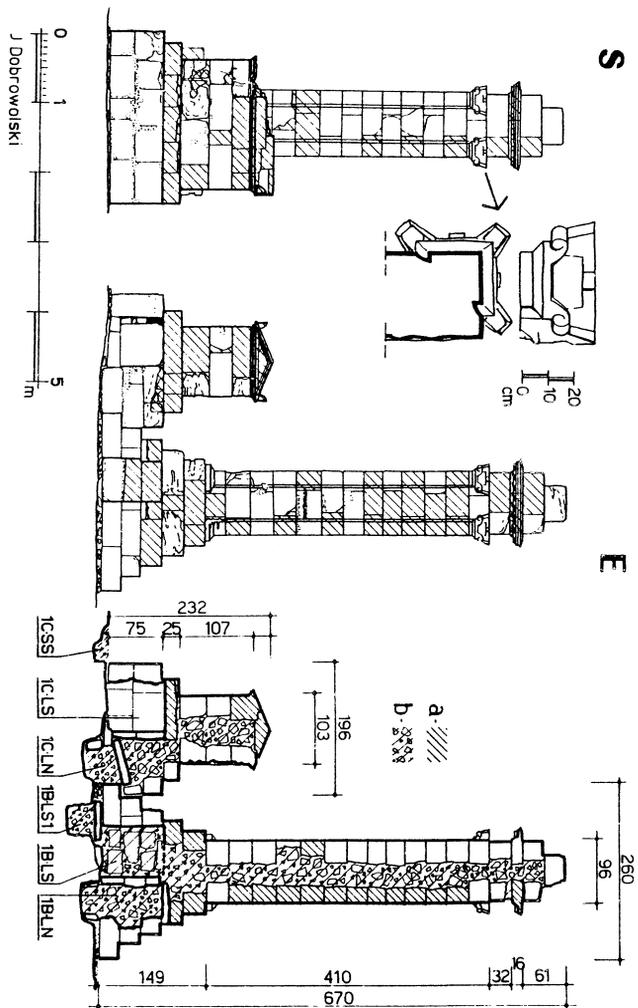


Fig. 2. Tombs T 1B and T 1C after restoration. Views from the south (S) and from the east (E), cross-section, a – new stone blocks, b – fill of stone rubble and mortar.

Tomb T 1C was added to the southern side of T 1B, presumably when the latter's capacity was reached (indeed 13 skeletons were found in its northern chamber). It follows the earlier tomb's pattern: in the stepped base the northern chamber (resting partly on T 1B's base) was sealed at the time of construction (1C.LN), while the southern one was left open for later burials (1C.LS). The monument on top of the base varies greatly, for it takes on the form of a sarcophagus built of ashlar masonry. This is the only known instance of this kind of a tomb at the cemetery and actually the only one known so far from Egypt. Thus, it was decided to reconstruct the monument, regardless of its very poor state of preservation.

Both tombs were toppled by an earthquake in late Antiquity. The upper parts of T 1C were crushed by the falling pillar of T 1B. The stone blocks that were covered with sand soon afterwards were found fairly well preserved. Those, however, that remained exposed were almost completely destroyed by erosion. The stepped bases of both tombs were preserved, though their upper parts were also much damaged.

As the preserved parts permitted a complete and reliable theoretical reconstruction of the monuments, it was decided to reerect the tombs, supplementing the missing elements with new stones. Studies for the theoretical reconstruction of tomb T 1B were prepared in 1987 by Grzegorz Majcherek, of T 1C in 1991 by the author.

The goal was to reerect the monuments using original elements and placing them in their original position within the structure. Wherever new stone blocks had to be introduced, they were given a different surface finish to distinguish them from original ones. Helwan limestone was used for the new blocks.

Even though the original ashlar stones were of good quality, the bases of both tombs were never particularly sound structures. For example, the northern chamber of T 1B was covered

with surprisingly thin stone slabs, with the rest of the layer's height filled with rubble and mortar. Moreover, these slabs rested on a rather unstable structure of overhanging blocks.

Heavy damage was then caused by the earthquake, which toppled the superstructures and by prolonged erosion. It was decided that the bases of both tombs required radical reinforcing to bear the weight of the superstructures to be reconstructed. To this end all voids under the foundations, including grave-pits, were filled with stone rubble and mortar. Chambers 1B.LN, 1B.LS and 1C.LN were likewise filled with stone blocks, rubble and mortar, thus creating a solid foundation block resting directly upon bedrock. All loose joints were filled with mortar. Chamber 1C.LS was covered with new stone blocks. The original slabs were irregular and of different dimensions, the course was leveled with small stones and mortar. This pattern was followed in the reconstruction.

The burial pit adjoining tomb T 1C to the south (1C.SS) was filled in with gravel to prevent the wall sliding into it. Heavy brown gravel was used for this purpose, to distinguish the fill from the original strata.

Meanwhile all original blocks of the superstructures were transported to the location prepared for the stonecutter's workstand. Their position within the structure was checked and new blocks were cut and adjusted before reinstallation. Finally, the monuments were reerected upon the reinforced bases. Tomb T 1B was reconstructed in a way probably resembling the original way of its construction, to a large extent using wooden scaffolding and a pulley. Each course of stones was positioned and adjusted using wooden wedges, the inside was then filled with stone rubble and liquid mortar. Its full penetration was ensured by plastic air-releasing tubes that were later removed (originally the superstructure has been filled inside with stone rubble set in weak mortar with a heavy admixture of ash).

Altogether 50% of the stone blocks from the pillar of T 1B were missing, including one pilaster base and two quarters of the cornice. 14 blocks in the base had to be replaced (c. 18%).

In tomb T 1C a similar proportion of stones was preserved, amounting to the replacement of 10 blocks in the base and 12 blocks in the sarcophagus-like superstructure. In the sarcophagus all the original stones were re-assembled, but only the front tympanum was fully reconstructed, while parts of the back, including the gable, were left missing.

Generally, there was a marked difference in craftsmanship between tombs T 1B and T 1C, the latter being more hastily and less precisely built. The restoration retained this slight difference in the appearance of the two structures,

UNDERGROUND TOMB T 1GH

This small hypogeum was discovered in 1990. Typically for the necropolis, a straight stairway (in this case covered with a barrel vault) led to the burial chamber. The usual sunken courtyard was reduced to a light/ventilation shaft built over an opening in the chamber's ceiling.⁷ During the excavations of 1990 the chamber was partly explored through the shaft, in 1991 further cleaning of the staircase had to be halted for safety reasons. During the restoration season of 1991 the staircase was gradually cleaned of sand and protected.

While the stone vault was well preserved, the walls of the rock-hewn staircase were badly eroded and cracked. It was decided to fill the voids with concrete of crushed limestone and lime mortar, i.e. in a form most resembling the original monolithic rock. Loosened joints in the vault were filled in.

⁷ Cf. W.A. Daszewski, 1991, cross-section on p. 33.

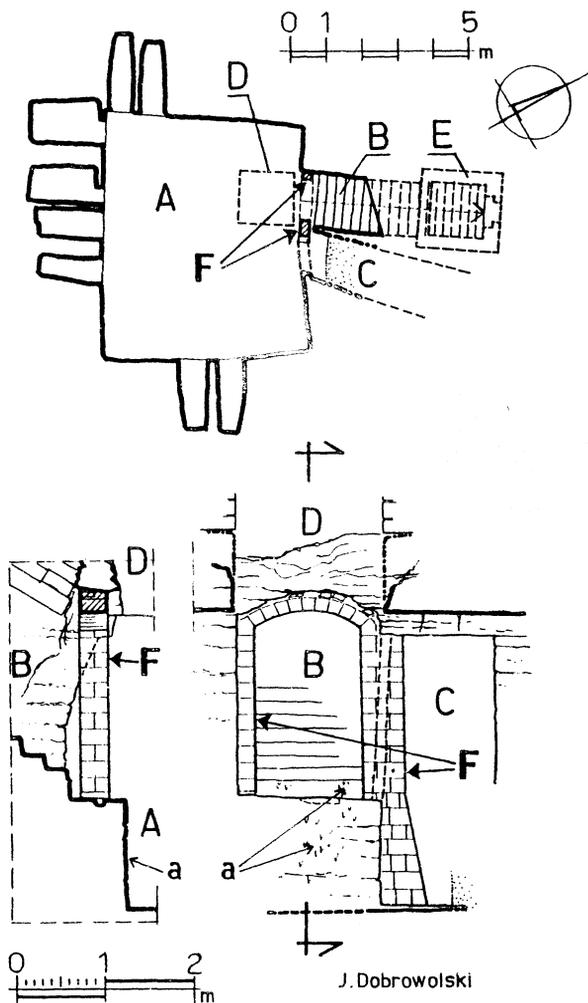


Fig. 3. Protective structures in tomb T 1GH. A – burial chamber, B – vaulted staircase, C – later entrance (uncovered corridor), D – light/ventilation shaft, E – aboveground entrance pavilion (fragmentarily preserved), F – protective structures built in 1991, a – traces of original steps which were cut off.

When the staircase was cleared it was found that the stairs that originally ended within the chamber, were at a later date shortened, creating a very high step separating the staircase from the chamber. Apparently the staircase was no more in use by that time and was blocked with large stone slabs (these were found nearby). A new entrance led through an uncovered corridor that joined the chamber at an angle, just beside the original entrance (Fig. 3). The cause and purpose of this change remains unknown. Cutting the corridor weakened this part of the tomb structurally and subsequent cracking and erosion caused serious damage to the walls of the staircase and especially to the rock-cut lintel over the entrances (eventually the lintel came to rest upon a slanting and much cracked wall only a few centimeters thick).

Immediate protection was necessary. It was decided to build a pillar supporting the chamber's ceiling between the entrances. This pillar also supports an arch strengthening the lintel over the original entrance. Small blocks of local limestone were used.

This solution has the disadvantage of altering the original appearance of the tomb. On the other hand, it immediately provided necessary protection to the endangered structure. It relies exclusively on traditional materials of known durability and complies fully with the demand that preservation works be reversible: the protective structures do not affect the original monument, being merely added to it.

The light/ventilation shaft was also disassembled. Its blocks were prepared for reassembly and stored nearby, while the rock underneath was cleared and prepared for protecting in the same way as the walls of the staircase. These measures prevented the entrance part of the tomb from collapsing and enabled its safe exploration. It should be noticed, however, that the ceiling of the chamber itself remains dangerously cracked and requires structural protection.

OTHER WORKS

Some limited works were also carried out with a look toward the future opening of the site to the public. A layer of sand was removed from the area north of the explored sector. It was found not to contain any sizeable monuments. This area has to be cleaned down to the bedrock, to restore the original flow of rainwater towards the sea and away from excavated structures.

In some instances foundations of later structures, found higher, were exposed when earlier tombs were excavated. These had to be protected against sand being blown away from underneath. It was decided that while the area should generally be cleared down to bedrock, upon which the earliest tombs were constructed (e.g. T 1, T 1B), the level around later structures should remain corresponding to the period of their construction. Later tombs were thus surrounded by low sand-retaining walls built of irregular stones. Mortar of different color was used to distinguish these walls from ancient structures. They were built around tombs T 1A, T 1F and south of T 1G (cf. Fig. 1). This work will be continued progressively with the continuation of excavations.