Introduction

Studied for the years 2000, the archeological site of Ayn Sukhna is located on the western coast of the Gulf of Suez, on the narrow piece of land separating the two branches of the channel outlets. Built and occupied at the end of the 6th millennium BC, and until the Ptolemaic period (between 2000 and 300 BC), Ayn Sukhna is a coastal community that has been described as a settlement and its surroundings, by means of field work, precise topography, and the interpretation of archaeological data, in order to evaluate and support the potential and constraints that led the ancient Egyptians to choose this site to build a fortified settlement.

Objectives and Methods

The goal of the study is to use the site and its surroundings, by means of field work, precise topography, and the interpretation of archaeological data, in order to evaluate and support the potential and constraints that led the ancient Egyptians to choose this site to build a fortified settlement.

Study area: rift shoulder, arid coast

Physiographic features

Gebel Galdalī el Bahrayn, northern part of a high plateau gently sloping westward, at 500 m from the Gulf of Suez to the Nile valley.

Promontory at the intersection of the Suez and the Gulf of Suez.

Archaeological site: at the foot of a small and lower compartment of Gebel Galdalī el Bahrayn, at 500 m, on a narrow strip of dissected pediments and shore platforms.

Hydrologic conditions: 12 mm (7 mm) at Suez.

Tectonic and morphostructural features

EWP-related rift fissure formation and syn-rift sedimentation (Late Oligocene-Late Miocene and Miocene). Eocene-Oligocene carbonates and clastic sediments.

Gebel Galdalī el Bahrayn, northern part of a high plateau gently sloping westward, at 500 m from the Gulf of Suez to the Nile valley.

An anti-sea site built below a major gravitational structure

A large landslide in the north face of Gebel Galdalī el Bahrayn, near the archaeological site.

Cenozoic at the top, 13 km long, 800 m wide, covered by a piece of the top surface of 150 m, exceeding 2000 m onto the piedmont plateau.

Scarp edges of both sides, along the foot of the scarp, at the extension of the scarp, at 500 m, and on the eastern side, at 12 mm.

Tectonic and morphostructural features

EWP-related rift fissure formation and syn-rift sedimentation (Late Oligocene-Late Miocene and Miocene). Eocene-Oligocene carbonates and clastic sediments.

Gebel Galdalī el Bahrayn, northern part of a high plateau gently sloping westward, at 500 m from the Gulf of Suez to the Nile valley.

Shore line stability

Lower part of the site: partly obliterated or destroyed (big hotel) between the beach and the Suez-Hurghada road, waste disposal, pipe-lane, power line, parallel dirt-road.

However, well preserved remains of a shore platform (mounded shingle of local origin) between 45 and 78 m.

Locally in the form of sinuous promontories with remains of dwellings and a 15 m long ditch interpreted as a former factory. For building or dismantling, the ships stored in the galleries between two expeditions. In fact a fracture zone of the 5 m wide cut platform.

This shore line, and a slightly lower one (± 5 m), in topographic continuity with the regionally recognized Fayyumian (isotopic stage 5) shore line and a retreat stage. No local tectonic deformation. No local or regional indication of higher sea level in the Antiquity.

Conclusion

At large- and mid-scale: gravitational instability responding to faulting and uplift which probably caused the Late Miocene, producing a large landslide which part of the site is in. Obliterating the Gulf of Suez rift faults, this landslide may have modified the groundwater flow and determined the presence of a thermal spring at its foot. No sign of recent activity at the base of the mountain, else the effects of slow rock displacements and episodic rock falls, gullying and overwash on the slide.

With its altitude of 7 m, in the continuity of the regionally recognized shore line, and its lack of deformation, the ancient shore platform on which part of the site is built confirms a Pleistocene and Holocene to tectonic stability. Its study and that of younger shore deposits contradict older speculations on significant differences in the shore line since the Antiquity.

References

