



**Ayn Sukhna and Wadi el-Jarf: Two newly discovered  
pharaonic harbours on the Suez Gulf**

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# Ayn Sukhna and Wadi el-Jarf: Two newly discovered pharaonic harbours on the Suez Gulf

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For the past ten years, our knowledge of seafaring expeditions through the Red Sea towards the Sinai or the distant land of Punt has seen considerable progress due to the fieldwork conducted at port sites like Mersa Gawasis near the modern town of Safaga (Sayed 1977; Bard and Fattovich 2007) and Ayn Sukhna on the northern part of the Suez Gulf. A third harbour site was discovered in 2010 in Wadi el-Jarf to the south of the coastal town of Zafarana (Fig. 1). This important series of embarkation points demonstrates evidence for seafaring activities throughout the whole pharaonic period. The aim of this paper is to give an indication of the way two places situated on the western coast of the Suez Gulf—Ayn Sukhna and Wadi el-Jarf—were used in antiquity.

## Ayn Sukhna

Ayn Sukhna is located on the western bank of the Suez Gulf, 120km east of the modern city of Cairo. The Arabic name of the site reflects the presence of a hot water spring which emerges at the foot of the Gebel el Galāla el Bahariya overlooking the site and flowing directly into the nearby sea (Fig. 2). The excavation and study of the archaeological remains, which were first brought to attention in 1999 by Professor Mahmud Abd el-Raziq (Abd el-Raziq 1999), have been conducted on a yearly basis since 2001 by a joint team from the Institut français d'archéologie orientale and the University of Paris-Sorbonne.<sup>1</sup> It has been gradually established, during the course of these investigations, that the site was occupied extensively for more than a millennium during the pharaonic period, from the Old Kingdom to the New Kingdom. The latest finds clearly indicate the existence at the site of a port, similar to that of Mersa/Wadi Gawasis farther south, which seems to have been used mainly to cross over to the southern part of the Sinai Peninsula on the other side of the gulf (Fig. 3).

The site's most apparent feature, from the outset, has been an inscription-bearing rock wall dominating the area where the archaeological vestiges are concentrated (Fig. 4). The pharaonic period that is best represented among the inscriptions is the Middle Kingdom, with several official reports on missions undertaken at the site providing the specific year of a pharaoh's reign. The most ancient of these engraved stelae bears the name of the last king of Dynasty 11, Mentuhotep IV (c. 2000 BC, Fig. 5). Beneath the ruler's full-length representation and titulary, three columns of text outline the expedition:

<sup>1</sup> The excavations are co-directed by Mahmud Abd el-Raziq, Ismaelia University, Georges Castel, Ifao and Pierre Tallet, Paris-Sorbonne University.

*Rnpt-zp 1: jwṯ mšꜥ n nswt; ṯnw n mšꜥ pn 3000 n s r jnt mfkꜣt, bjꜣ, ḥsmn( ?), jnw nb(w) nfr(w) n ḥꜣst.*

Year 1, arrival of the king's men; workforce: 3000, to bring back turquoise, copper,<sup>2</sup> bronze (?) and other fine products of the desert (Abd el-Raziq et al. 2002, figs 10–11).

The text affords some idea of the size and importance of the site, which seems to have harboured large expedition crews, judging from the figures mentioned. Another stela found next to this document provides congruent evidence: it mentions 4,000 men recruited for the same purpose a few years later, in the 7th regnal year of Amenemhet I, successor to Mentuhotep IV and founder of Dynasty 12 (Abd el-Raziq et al. 2002, 42–43, fig. 12). Even more significant is the mention of turquoise, a gemstone that ancient Egyptians could find only in South Sinai. The inscription therefore seems to point to a close connection between Ayn Soukhna and the Sinai Peninsula, which is corroborated by two other documents:

1. A hieratic inscription from year 9 of Sesostris I (Amenemhet I's successor) indicates that an official was sent to the 'mining land,' a phrase which, at the time, referred specifically to the mining zone in Sinai (Abd el-Raziq et al. 2002, 57–58, fig. 28).
2. An inscribed stela from year 2 of Amenemhet III, towards the end of Dynasty 12 (c. 1850 BC) lists the names of several officials on an expedition which took them through Ayn Soukhna (Abd el-Raziq et al. 2002, 44–47, fig. 13). One of them, Ity, son of Isis and 'repeller of scorpions'—a rare enough title—is also mentioned on two inscriptions dating from the same year found at Wadi Maghara, the heart of the Sinai mining zone (Gardiner et al. 1955, pl. 10, no. 23; pl. 11, no. 24) (Fig. 6).

From the start, the epigraphic data thus suggested that the newly discovered site was indeed a stopping-off point on the route to the other side of the Suez Gulf. It did not however, at this stage, provide any evidence of a seafaring route, as the troops might also have made their way around the gulf to reach their destination.

Excavations undertaken at the site gradually yielded some answers to this pending question. Ten galleries carved into the sandstone mountain were found at the foot of the engraved rock face. They are all roughly on the same level (14m above sea level) and share many common features: they are very rectilinear, some 2.5m wide and 2m high, of a length ranging from 15 to 20m. Most of them were fitted out with a sturdy access ramp and originally had a door. The entrances to three of these galleries were even enclosed in a well-built, rectangular, lean-to structure, measuring 13 x 4m (Fig. 7). The building was accessed through a door facing east, opening onto a large hallway; the roof was upheld by wooden columns whose insertion holes in the ground are still visible. All of this shows that the galleries were meant to be used as both living and storage quarters. The collected archaeological data suggests that most of the galleries were used extensively throughout the Middle Kingdom. Abundant ceramic material

<sup>2</sup> It looks as though the word *bjꜣ* might be followed by *ḥsmn* (amethyst, bronze or natron) here, but this is debatable since the signs that make up this second word could also be construed as determinatives related to the first word.

dating to Dynasty 12 has been found, with some objects still bearing hieratic inscriptions in ink (Fig. 8). The most interesting finds for the interpretation of the site, however, were made in galleries G2 and G9, right next to the east wall of the lean-to building: two large limestone anchors, of a coarser shape than those at Wadi Gawasis, were unearthed in the entrance to gallery G9 (Fig. 9). When the two galleries were investigated, they were found to hold the charred remains of two Middle Kingdom ships, which had been carefully dismantled and stored according to a very specific layout (Fig. 10): up to five layers of large cedar planks, measuring some 10cm thick and 30cm wide, were stacked in three parallel rows. They all bear traces of a type of fastening that combines mortise and tenon joints with ligatures and is characteristic of Egyptian shipbuilding technique. The systematic use of double joints, which probably helped strengthen the overall structure, seems to have been a specific feature of seagoing vessels: in any case, the boat remains found at Ayn Sukhna share this characteristic with similar boat vestiges from Mersa Gawasis dating to the same period. The timbers were laid out on wooden rods which may have been parts of the rowing equipment. From a detailed analysis of the vestiges by Patrice Pomey (which is still underway), it can be concluded for the present that these were the remains of two distinct boats, both 14 to 15m long.

The latest developments in the excavation however, provide new insight into these findings. While it could be surmised that the site had also been used under similar conditions in previous periods of Egyptian history—at times when the site seems to have been densely occupied and when the storage gallery system was probably initially created—two official inscriptions now provide substantial evidence of prior occupation. These inscriptions were discovered in 2009 and 2010 in storage galleries G6 and G1, which had not been excavated until that time because they were in a poor state of conservation.

The first text was found 3m into gallery G6, on the left wall which had been smoothed over with plaster coating. The inscription was written in black ink on a surface which can be estimated to be around 65 x 40cm in size (Fig. 11). Unfortunately, only a small part of the document remained intact when it was discovered, the upper part of the wall having collapsed in antiquity. What remains seems to have been distributed between at least six columns separated by vertical lines, although the bottom of the composition, which displays horizontal annotations, may have followed a different organization. The writing and what can be observed of the ‘layout’ of the various elements are reminiscent of the meticulous grid-like framework of the Abusir papyri used to record the accounts of the royal mortuary temples towards the end of Dynasty 5. A few other fragments of the text were found on flakes of plaster lying at the foot of the wall. These are significant since they disclose the name of the king who ordered the expedition, Djedkare-Isesi, the eighth and penultimate sovereign of Dynasty 5 (c. 2400 BC), whose sealings had already been discovered at the site during previous field seasons. Although it is impossible to reconstitute the whole document, its structure is quite clear: following the king’s titulary, which begins with his Horus name, is a short narrative detailing the main aspects of the expedition, i.e., the means of transportation, the itinerary and the goods that were brought back. The last section was probably devoted to recording the different categories of staff. One of the noteworthy features of the document is the recording of *kbnt*-boats, a ‘Byblos’ type of vessel which Egyptians seem to have used particularly for long seafaring expeditions (Tallet 2010b). To date, this is the most ancient

mention of such boats in any Egyptian document.

A similar find was made during the January/February 2010 field season in the largest gallery which had suffered more instances of collapse than any of the other galleries over the years. A few meters into the gallery, the wall on the right had been filled in with rocks and stones and then smoothed over with plaster during the Old Kingdom. On the prepared surface, yet another expedition commemoration text was inscribed in black ink. Most of the text has not been preserved, but what has been bears the date of the seventh census of the reign of King Isesi (around year 14 of his reign), thus providing the date of a previously unknown expedition to the Sinai. The top line of the text also shows the name of an expedition leader, one Sed-Hetepi, and furnishes one of the first distinct attestations of the imaged toponym used to refer to the Sinai Peninsula in ancient Egypt, 'the Terraces of turquoise' (*ḥtjw mfk3t*). Fortunately, the same official is also attested in another source found in the Sinai itself: IS 10, mentioning a 1,400-strong expedition, which was discovered in the Wadi Maghara (Gardiner et al. 1952, no. 19, pl. 9; completed by Edel 1983, 158–63).

The discoveries made during the last two field seasons at the Ayn Sukhna site thus confirm the role of this settlement in the organization of seafaring expeditions on the Red Sea as early as the Old Kingdom. They can be clearly connected with the material that was brought to light in the mining area itself in the South Sinai, and especially with the Wadi Maghara, which holds most of the carved Old Kingdom inscriptions found in the region.

### Wadi el-Jarf

Wadi el-Jarf is located 24km south of Zafarana at the foot of Mount Galâlâ which lies nearby the Wadi Deir leading to Saint Paul's Monastery, 5km from the present day Red Sea shore (Fig. 12). J. G. Wilkinson, at the beginning of the 19th century, already mentioned antique remains at this place including a large complex of galleries (Wilkinson 1832). During the 1950s, French pilots in the Suez Gulf rediscovered the site and named it 'Rod el-Khawaga' (Bissey 1954, 266). An extensive study was initiated but had to stop quickly due to the political circumstances of the time. The result of this survey was the discovery, near the galleries described by Wilkinson, of large settlements and a wharf extending from the site into the Red Sea. Furthermore, the ceramic evidence collected on the site suggests a date going back to the pharaonic period and, more accurately to the Old Kingdom. Ginette Lacaze and Luc Camino recently published part of François Bissey and René Chabot-Morisseau's archives (Lacaze and Camino 2008). This publication was the starting point for a new study of these installations which began in June 2011.<sup>3</sup>

<sup>3</sup> The Wadi el-Jarf excavations are co-directed by Pierre Tallet (University of Paris IV La Sorbonne) and El Sayed Mahfouz (University of Assiut), with the strong involvement of Grégory Marouard (Oriental Institute, University of Chicago) and Damien Laisney (Maison de l'Orient et de la Méditerranée). The French Foreign Office, the CNRS, the IFAO and the generosity of the Aall Foundation support this research. A more complete report on the discovery of this site will be shortly published in the *Bulletin de l'Institut Français d'Archéologie Orientale* 112 (Tallet et al., forthcoming).

The main aim of the mission was first of all to make an extensive survey and to draw a topographical map of the archaeological zone. This covers a 5km area from east to west, from the last rocky hills of the oriental desert to the coast of the Suez Gulf. The objective was also to answer the many questions we had about the use of the site, its general position and organisation, in order to draw a comparison between the Wadi el-Jarf and the other harbours on the Red Sea: Ayn Sukhna and Mersa Gawasis.

Thanks to the topographical map of the installations that was drawn during this campaign, we are now able to have a more precise knowledge of the various components of the site. Its main part is the huge complex of galleries that were cut in the bedrock during pharaonic times: twenty-five are obvious (some of them being open at the time of their modern discovery) and the existence of five more is most probable (Figs 13, 14). They are located around a small limestone hill and along a side wadi. When those galleries were cut, the material extracted remained on the site creating zones of waste that can still be seen. Nearby, other deposit zones were observed around sparse settlements. The evidence of burnt sherds in those deposits and the find of one pottery kiln in the galleries area suggest significant pottery production activity on the site.

On the eastern part of the site, topping the last sandstone hills above the large shore of the Red Sea, settlements were probably located in a zone dedicated to dwellings. One of those buildings was regularly reused. It shows rectangular camps and cells organized following an Old Kingdom pattern. Ceramic evidence from a large dry stone building located half way to the sea also dates to the Old Kingdom. Inside this building, long cells, oriented north-south, were found but the function of the building remains unknown. In any case, measuring 60 x 30m, it stands out as the largest structure from pharaonic times ever found on the Red Sea shore. On the coastal part of the site, the remains of what appears to have been a small tower were found. It was once again associated with a rectangular dwelling zone. The wharf mentioned by the pilots from Suez lies 200m to the east of this last structure and is mostly underwater today (Figs 15, 16).

On this first campaign, the galleries complex was the main concern of the mission, standing out as the remarkable feature of the site. At first, it was stated that those galleries might be a series of storage places linked with seafaring expeditions, like it is at Ayn Sukhna and at Mersa Gawasis. An extensive excavation of the area including G3 to G6 galleries and their entrance was undertaken. Studying these galleries showed clearly how carefully they had been built. Each gallery could be securely blocked-up, thanks to heavy sandstone rocks (Fig. 17). This device recalls the plugs that were commonly used in Old Kingdom pyramids to seal the way to the burial chamber. It is quite surprising to notice the use of such a monumental system for the temporary storage of material. Pieces of wood, cloth and organic parts were discovered in this very place and were probably part of the material that was originally stored in the galleries (Figs 18, 19). Some of the wooden pieces can be clearly identified as parts of large ships, among which a remarkable floor frame 2.75m in diameter discovered in the blockage of gallery G5 (Fig. 20). A fragment of papyrus still bearing remains of a hieratic inscription—unfortunately unreadable—was found at the same place. Nevertheless, it opens new perspectives for the future study of the site.

Between these entrances was a large paved terrace creating a tidy esplanade, perhaps

needed to prevent water from entering the storage galleries. All galleries were carefully dug in the rock (Fig. 21). G3 is one of the longest galleries with a length of 34m. The average gallery is around 2m in height and 2.5m in width. On the left side of gallery G3, 5m away from the entrance, the remains of a painting are still to be seen. It shows an official standing with a commanding stick and is topped with a hieroglyphic inscription giving his names and functions: the scribe of the Fayum Idu, *ḥꜥ n Ḥ-ryy Jdw* (Fig. 22). It is reminiscent of the galleries at Ayn Sukhna where inscriptions referring to seafaring expeditions starting there were found at the entrances to several galleries. It also gives a clue as to the identity of the place of departure for Red Sea expeditions at that time, which were probably following the desert tracks of the Wadi Araba from the Fayum area and the Nile valley.

The material found in the complex of galleries is abundant and probably indicative of what was originally stored in them. We primarily found pieces of wood, tenons, ropes, pieces of sail and a few artefacts that had been used in ships, such as oars. Among this deposit, large storage jars, certainly made on the site itself, were discovered. They are very often marked with big red hieroglyphic signs that could spell either names of the boats used at this place, or names of the teams of sailors involved in the expeditions (Fig. 23).

The campaign was able to produce a precise map of the L-shaped wharf from the shore thanks to the use of a tacheometer. Today, this wharf is partly out of the water at low tide. Underwater exploration enabled us to discover twenty-one stone anchors which corroborate our interpretation of the site as a harbour. For the first time, anchors similar to those known throughout the pharaonic period were found *in situ*, in the shelter of the structure south of its east-west axis. After cleaning, pictures of these anchors were taken. It is most probable that those anchors were intended as a permanent anchorage for boats visiting the harbour (Fig. 24). Near the anchors, large, locally made storage jars, similar to those discovered in the galleries, confirm that the harbour and galleries were in use at the same period, which leads us to believe that Wadi el-Jarf is most probably the oldest harbour ever found in the world. Through the pottery evidence, it can probably be dated back to Dynasty 4, c. 2600 BC.

At the end of this first campaign, most of our primary hypotheses were proven correct. From the pottery evidence, it appears that Wadi el-Jarf was indeed a starting point for seafaring expeditions during the Old Kingdom and more specifically under the first reigns of Dynasty 4. The site is built very like the coastal settlements of Ayn Sukhna and Mersa Gawasis, but clearly on a larger scale. From Wadi el-Jarf, the ships were likely to reach the mining zone of South Sinai where a landing point has been discovered at El-Markha/Tell Ras Budran for the same Old Kingdom period: El-Markha is facing Wadi el-Jarf on the eastern coast of the Suez Gulf (Mumford 2006; see also Mumford in this *BMSAES* issue). The remarkable extension of Wadi el-Jarf leads us to think that it was not only used as a starting point to Sinai but certainly also as a long-distance, seafaring harbour, possibly to reach the mysterious land of Punt in the southern part of the Red Sea. This newly discovered port in Wadi el-Jarf shows in any case, if such proof was still needed, that the history of the Red Sea in the pharaonic era has not yet been fully written, and that current exploration of already known sites, and the possible discovery of others in the area, are still likely to have profound repercussions on our knowledge in this domain.

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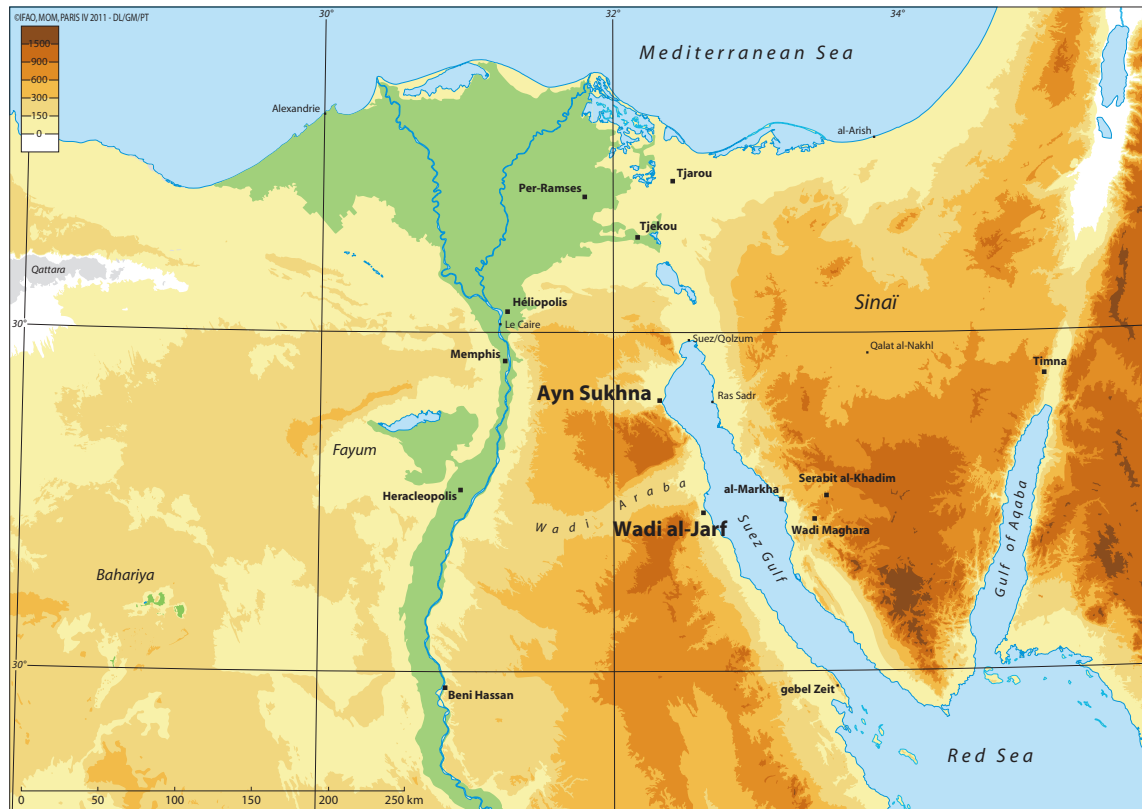


Fig. 1: Map of Egypt with location of the sites of Ayn Sukhna and Wadi el-Jarf (drawing D. Laisney).



Fig. 2: Ayn Sukhna, the hot spring.

AYN SOKHNA GENERAL MAP

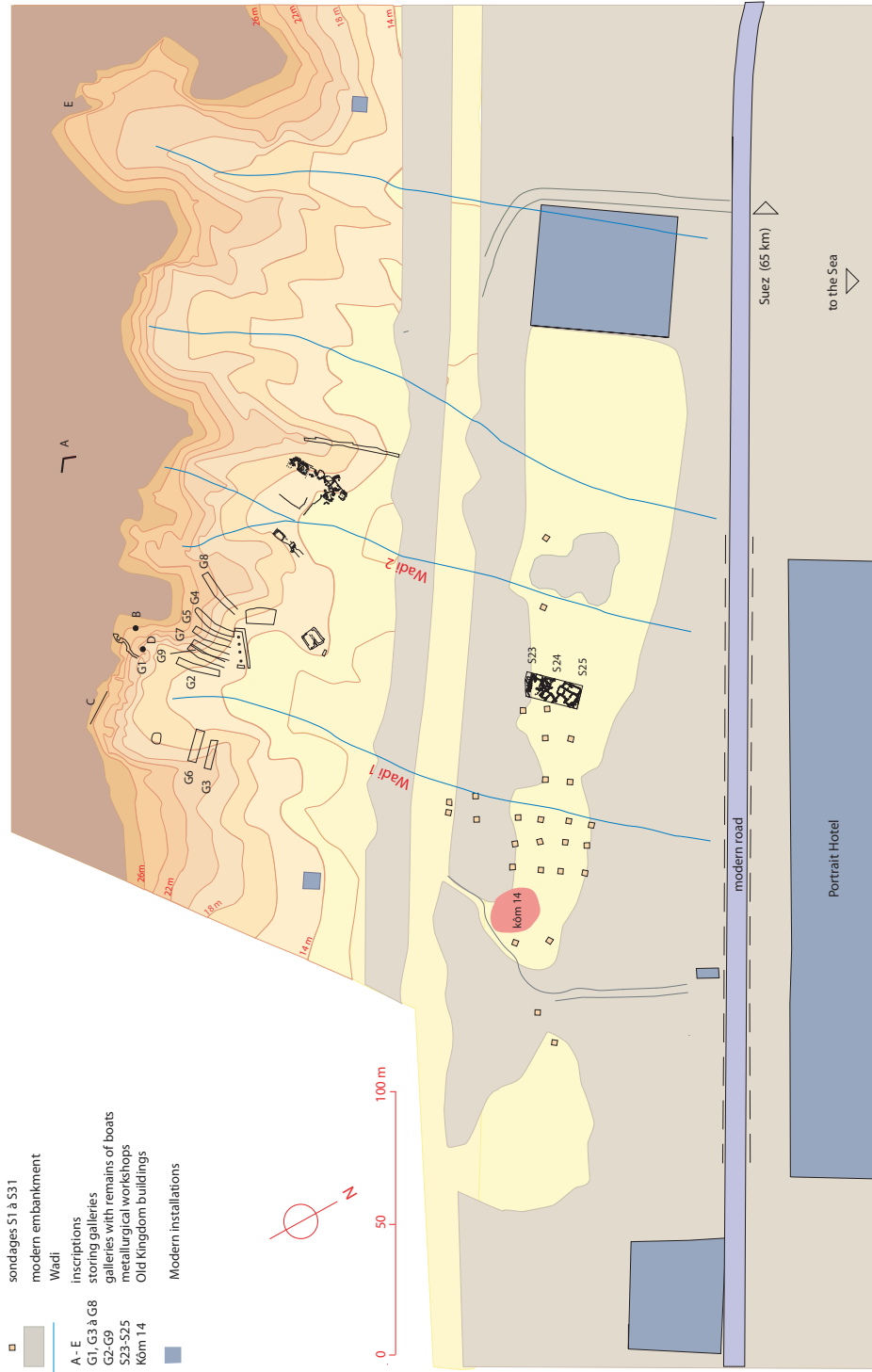


Fig. 3: Ayn Sokhna, topographical map (drawing G. Castel).



Fig. 4: Ayn Sukhna, the inscribed rock wall.

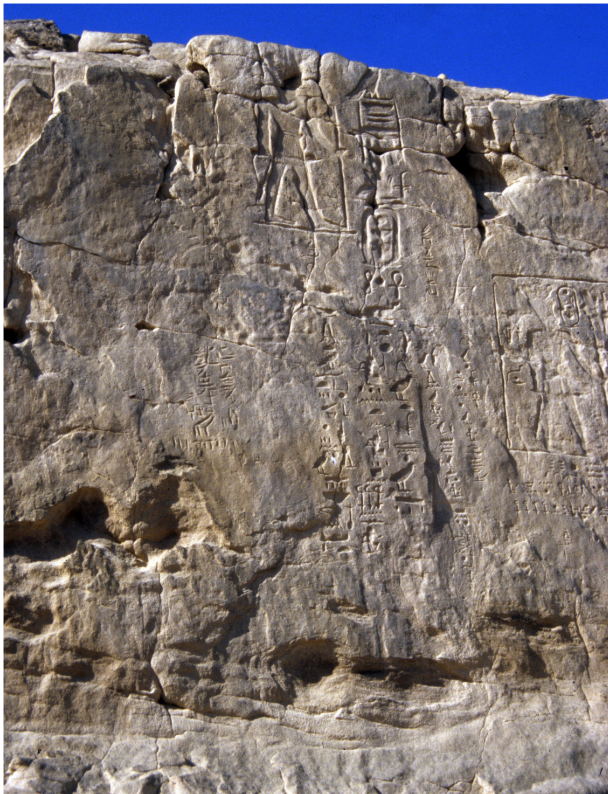


Fig. 5: Ayn Sukhna, inscription of Mentuhotep IV.



Fig. 6: Ayn Sukhna, inscription of Amenemhet III.



Fig. 7: Ayn Sukhna, the lean-to structure.



Fig. 8: Ayn Sukhna, hieratic inscription on a late Middle Kingdom jar with the name of the Assistant of the Treasurer (*hry-ꜥ n jmy-r hmt*) Iki.



Fig. 9: Ayn Sukhna, anchors at the entrance to gallery G9.



Fig. 10: Ayn Sukhna, burnt remains of dismantled ships from the Middle Kingdom.

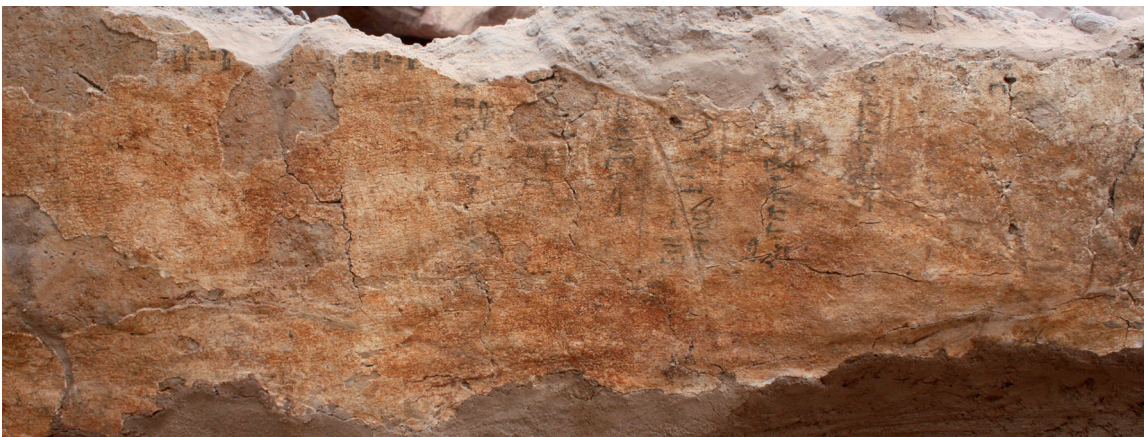


Fig. 11: Ayn Sukhna, Old Kingdom hieratic inscription at the entrance to gallery G6.



Fig. 12: Wadi el-Jarf, general map of the site (drawing D. Laisney).

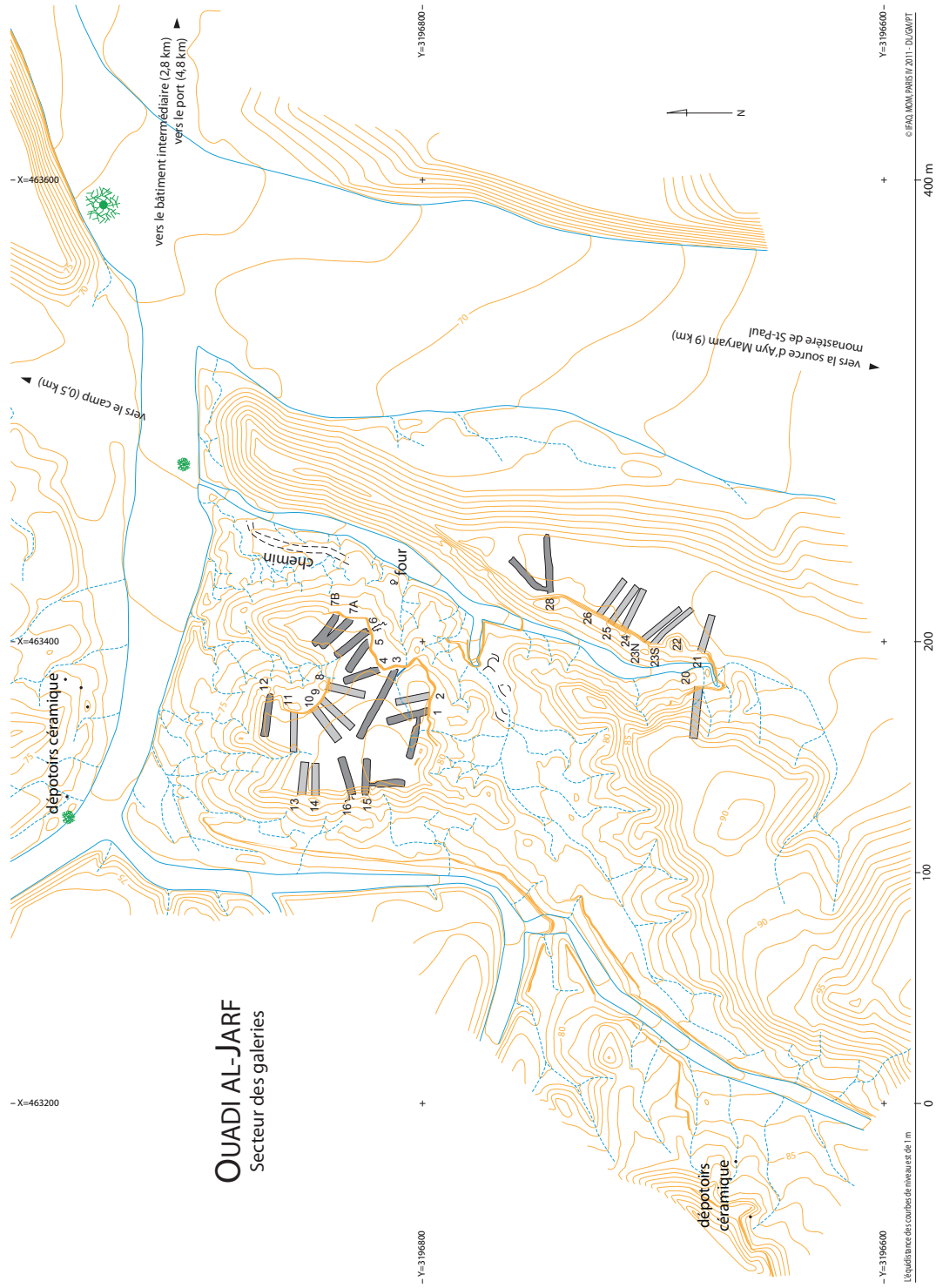


Fig. 13: Wadi el-Jarf, map of the galleries (drawing D. Laisney).





Fig. 14: Wadi el-Jarf, the galleries area.

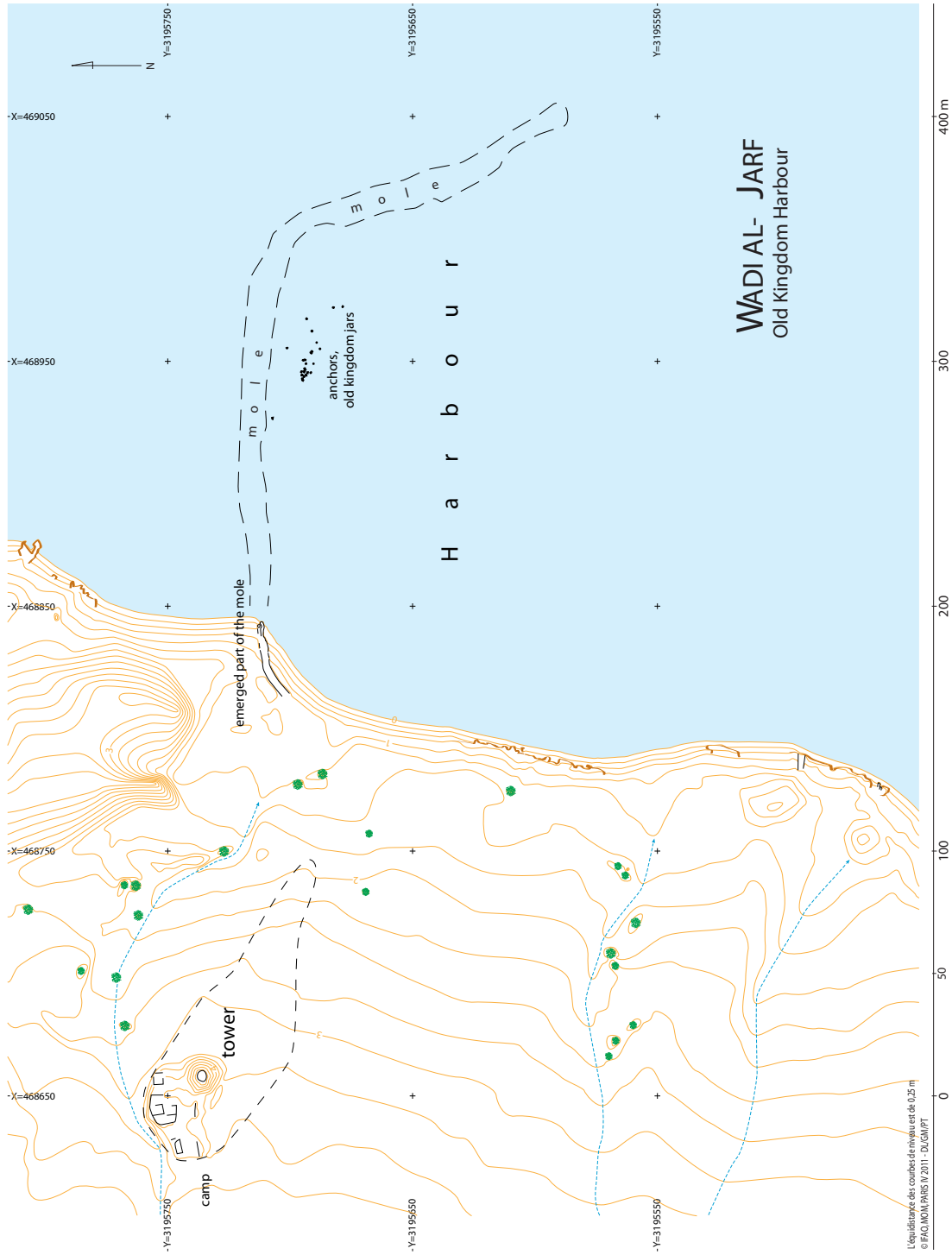


Fig. 15: Wadi el-Jarf, map of the wharf (drawing D. Laisney).



Fig. 16: Wadi el-Jarf, photo of the wharf at low tide.



Fig. 17: Wadi el-Jarf, entrance to galleries G5-G6.



Fig. 18: Wadi el-Jarf, pieces of worked wood, oar, tenons, pieces of wooden boxes, ropes.



Fig. 19: Wadi el-Jarf, fragment of an oar from gallery G3.



Fig. 20: Wadi el-Jarf, floor frame of a boat (entrance to gallery G5).



Fig. 21: Wadi el-Jarf, inner part of gallery G3.



Fig. 22: Wadi el-Jarf, inscription of the scribe of the Fayum Idu (gallery G3).



Fig. 23: Wadi el-Jarf, fragments of big storage jars with red inscriptions (gallery G3).



Fig. 24: Wadi el-Jarf: Old Kingdom anchor.