Seafaring Expeditions to Punt in the Middle Kingdom

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Seafaring Expeditions to Punt in the Middle Kingdom

Excavations at Mersa/Wadi Gawasis, Egypt

By

Kathryn A. Bard
Rodolfo Fattovich†

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In memoriam
Rodolfo Fattovich†, 1945–2018

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Preface

In June 1998, Rodolfo Fattovich† and I were directing excavations on Bieta Giyorgis Hill, Aksum, Ethiopia, when a border war broke out with Eritrea. The border is 50 km from Aksum, and we had to leave quickly after a bomb was dropped in Aksum. Not knowing if we would ever return to excavate at Aksum, Rodolfo suggested that we investigate the northern end of the Red Sea trading circuit, and in March 2001 we went to Mersa/Wadi Gawasis, Egypt, for a quick look around – to see if there was potential for investigations at the ancient harbor site. Rodolfo and a small team of Italian archaeologists began survey and test excavations at Mersa/Wadi Gawasis in December 2001 – but without the Americans, who were advised not to go to Egypt then, following the 9/11 terrorist attacks in the U.S. A small American team joined the Italian archaeologists there in December 2003, and the project expanded each field season, up to the last one in December 2010-January 2011.

The initial intent of the project at Mersa/Wadi Gawasis was to see if there was any archaeological evidence from the southern Red Sea region, especially potsherds of cultures there, which might help in identifying where Punt was located. We thought that we would spend two or possibly three field seasons at WG, as we called the site. But then on Christmas morning, 2004, Chen Sian Lim and I found the opening to Cave 1, and three days later, Chiara Zazzaro found the opening to Cave 2 – with two steering oar blades from an ancient ship lying just inside the cave's mouth. Until that point, no one had any idea that there were man-made caves at the site – and the discovery of these caves (eight altogether) completely changed the scope of investigations at WG.

Over ten field seasons at WG the finds were truly astonishing: well preserved ship timbers and tenon fastenings, an estimated 26 coils of intact papyrus rope/riggings at the rear of Cave 5 (the "Rope Cave"), where they had been left by sailors ca. 3800 years ago, as well as food and equipment used on the seafaring expeditions to Punt. Found lying face-down in a deposit of windblown sand outside the entrance to Cave 2 was the intact Stela 5, describing expeditions to Punt and Bia-Punt (the mine of Punt) during the reign of Amenemhat III of the 12th Dynasty. And where was Punt located? Andrea Manzo has identified potsherds excavated at WG of cultures located in eastern Sudan, Eritrea, and the western and southern coasts of Yemen. Fragments of ebony, a hard, dark wood that was imported from Punt, were identified at WG by Rainer Gerisch, as was obsidian, which came from both sides of the southern Red Sea region. Outside the entrance to Cave 6, 43 wooden cargo boxes had been emptied and left there. Two of these cargo boxes had hieroglyphic inscriptions describing their contents, "of the wonderful things of Punt," and the year in which this

expedition took place (Year 8 of King Amenemhat III), as recorded by the royal scribe Djedy – which read like a kind of package label.

In January 2009 a full-scale replica of an ancient Egyptian seafaring ship was successfully sailed on the Red Sea and filmed by French filmmaker Stephane Bégoin. Cheryl Ward had used the evidence of ship timbers and fastenings that were excavated at WG to design this ship, which she named the "Min of the Desert," after the Egyptian god in whose domain the ancient harbor of *Saww* (modern WG) was located.

The tale of piecing together these remarkable finds at WG, in order to understand how the ancient harbor functioned and operated in a trading network that extended from Lebanon to Eritrea, is described in this book, the culminating legacy of Rodolfo Fattovich's forty-five years of excavating in northeast Africa. Those of us who worked with him at WG are grateful for his inspiration – and the wonderful moments of shared discovery at WG.

Kathryn Bard
Natick, Massachusetts
Good Friday, April 30, 2018

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Africa and the Orient/IsIAO, Rome, Italy), architect (2005–2006, 2006–2007); Rebecca Mountain, assistant paleoethnobotanist (2010–2011); Pasquale Musella (National Archaeological Museum, Naples, Italy), conservator (2006–2007, 2007–2008, 2009–2010); Carla Pepe (University "Suor Orsola di Benincasa," Naples, Italy), archaeologist (2005–2006, 2006–2007); Cinzia Perlingieri (UNO), archaeologist, ceramic analyst and illustrator (2001, 2001–2002, 2002–2003, 2003–2004, 2004–2005, 2005–2006, 2006–2007); Rosanna Pirelli (UNO), Egyptologist (2002–2003, 2004–2005, 2005–2006, 2006–2007); Gwendoline Plisson (Sorbonne, Paris, France), archaeologist (2005–2006, 2006–2007); Fathma Selim (Qena University, Qena, Egypt), Egyptologist (2001–2002); Abdel Moneim Sayed (University of Alexandria, Alexandria, Egypt), Egyptologist (2001–2002); Talbot Easton Selby (Coastal Carolina University, Conway, SC), photographer (2010–2011); Tracy Spurrier (BU), archaeologist (2006–2007, 2007–2008, 2009–2010); Matthew Tesch (Carnegie Mellon University, Pittsburgh, PA), assistant computer scientist (2010–2011); Stefano Tilia (Trerre, Rome, Italy), surface surveyor (2001–2002, 2002–2003, 2004–2005, 2005–2006, 2006–2007, 2007–2008, 2009–2010, 2010–2011); André Veldmeijer (PalArch Foundation, Amsterdam, the Netherlands), rope analyst (2006–2007, 2007–2008); Benjamin Vining (BU), geophysicist (2005–2006, 2006–2007); John Wallace-Jones (Norwich, UK), ceramic illustrator (2007–2008, 2009–2010, 2010–2011); Sally Wallace-Jones (Norwich, UK), ceramic analyst (2007–2008, 2009–2010, 2010–2011); Cheryl Ward (Florida State University, Tallahassee, 2005–2006; Coastal Carolina University, Conway, SC, 2009–2010, 2010–2011), nautical archaeologist; Howard Wellman (Wellman Conservation LLC, Halethorpe, MD), conservator (2009–2010, 2010–2011); Cornell Wright (Carnegie Mellon University, Pittsburgh, PA), assistant computer scientist (2010–2011); Chiara Zazzaro (UNO, 2001–2008; University of Exeter, Exeter, UK, 2009–2011), archaeologist (2001–2002, 2002–2003, 2003–2004, 2004–2005, 2005–2006, 2006–2007, 2007–2008, 2009, 2009–2010, 2010–2011).

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CHAPTER 1

Egyptian Long-distance Trade, Pharaonic Expeditions and Direct Control of Sources of Raw Materials in Northeast Africa and the Sinai in the Middle Kingdom

1 Introduction

After a period of breakdown of the centralized state in the late third millennium BC (the First Intermediate Period), Egypt was reunified as a result of warfare. The victors of this warfare were kings of the later 11th Dynasty, whose power base was in the south, in Thebes. This reunified state is known as the Middle Kingdom, with control of the large territorial state consolidating in the 12th Dynasty. The accomplishments of this dynasty are many, including a number of seafaring expeditions sent to the land of Punt in the southern Red Sea region from their harbor of *Saww* at Mersa/Wadi Gawasis.

In the early Middle Kingdom the reunified state began to expand its activities outside the Nile Valley and abroad, especially for the exploitation and/or trade of raw materials used to make elite artifacts and tools, as well as timbers with which to build large boats – all not available in Egypt. Copper and turquoise mines were actively exploited by expeditions in southwestern Sinai, where extensive mines date to the Middle and New Kingdoms (Kemp 2006b: 141–142; O'Connor 2006: 226). Cedar was imported in large quantities from Lebanon, and was used to make coffins for high status officials (Berman 2009), as well as to build seafaring ships that have been excavated at Egypt's harbor on the Red Sea at Mersa/Wadi Gawasis (Bard and Fattovich 2007). Since Old Kingdom times Byblos was an important trading center in the Levant and continued to be so in the Middle Kingdom (see Kemp 2006b: 144–147; Montet 1928: 274–279; Redford 1992: 71–97). In the Middle Kingdom rulers there even took Egyptian titles ("mayor," "governor") (Grajetzki 2006: 136) (Figure 1).

* Much of this chapter was first published as a chapter in: K.A. Bard and R. Fattovich. 2015. "Egyptian Long-Distance Trade in the Middle Kingdom and the Evidence at the Red Sea Harbor at Mersa/Wadi Gawasis," in *Walls of the Prince: Egyptian Interactions with Southwest Asia in Antiquity. Essays in Honour of John S. Holladay Jr.,* E.B. Banning and T.P. Harrison, eds., pp. 1–10. Leiden: Brill. This chapter, however, represents more recent findings and updates of the data.

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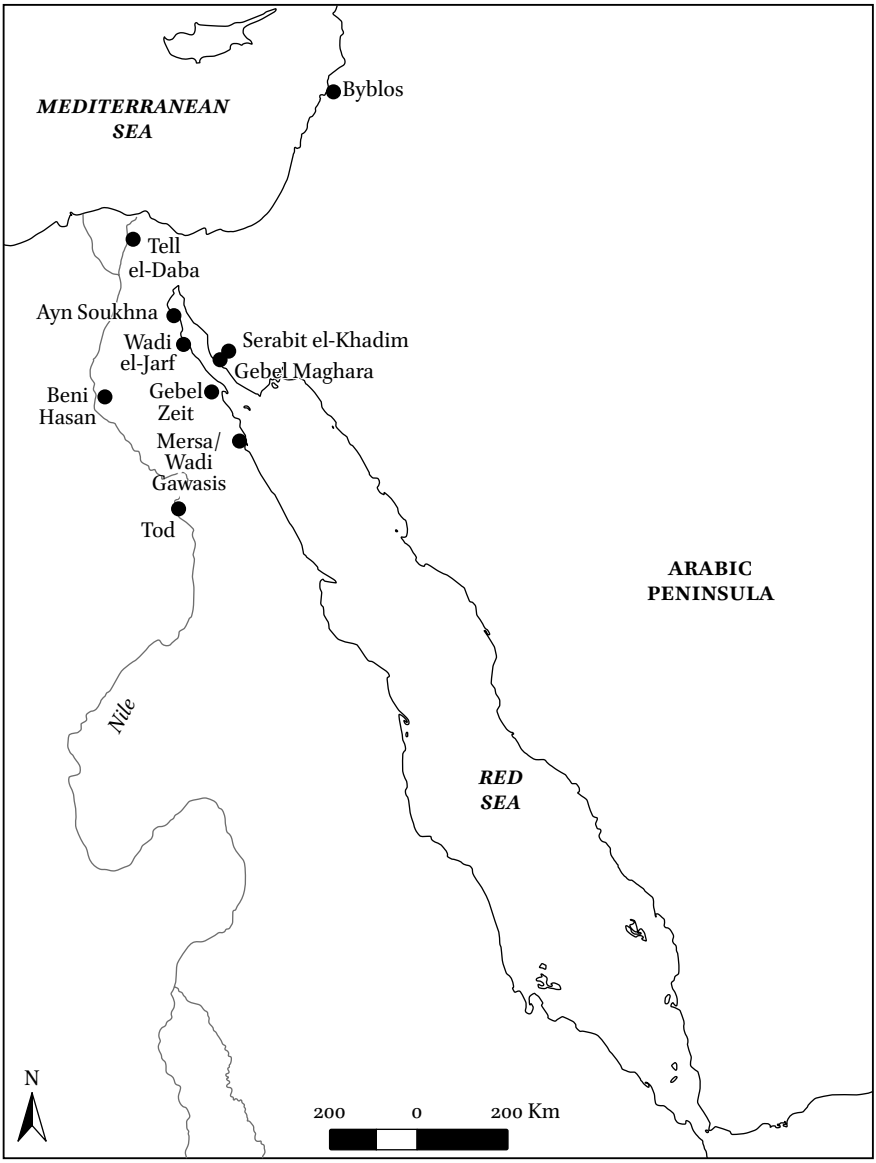

FIGURE 1 Map of Egypt and West Asia with sites mentioned in this chapter. MAP BY LUISA SERNICOLA.

Contact with the Levant is also evidenced in the Canaanite pottery found at sites in the Delta in northern Egypt (Bietak 1991: 28–29). The so-called Tod Treasure, a votive deposit of four bronze chests excavated in the Temple of Montu at Tod in Upper Egypt, shows the wide extent of connections with the

Near East. The chests were dedicated by Senusret I and contained gold and silver ingots; silver artifacts; lapis lazuli from Afghanistan; seals and amulets from the Aegean, Levant and Mesopotamia; and silver cups which are probably Minoan (see Pierrat-Bonnefois 2008).

Foreign/long-distance trade was conducted not only by Egyptians: Asiatics were also coming into Egypt. At Tell el-Dab'a in the northeastern Delta archaeological evidence indicates the increasing presence of Syro-Palestinian Middle Bronze Age peoples in an Egyptian city in the late 12th and 13th Dynasties (Bietak 1996). At Beni Hasan in Middle Egypt there is the well known scene of 37 *'Amu* (men, women and children) in the 12th Dynasty tomb of Khnumhotep II (Tomb 3; Newberry 1893), who was nomarch of the Oryx nome – and "Overseer of the Eastern Desert" during the reign of Senusret II. Much has been written about this scene, which usually has been described as a caravan of Asiatics (or Beduin/Eastern Desert nomads; see Franke 1991: 56; Shaw 1998: 248). Their principal product of trade ("gifts": Franke 1991: 56) was galena (lead sulphide) used for eye paint, which may have been obtained at Gebel Zeit in the Eastern Desert. If these *'Amu* were Asiatics, their route to Gebel Zeit would have required a long detour to the south of the eastern Delta, their entry point into Egypt, and then desert tracks to the Nile Valley (Aufrère 2002: 211).

The galena mines at Gebel Zeit are located to the north of Mersa/Wadi Gawasis. According to Shaw (1994: 111), it is not clear whether the exploitation of raw materials outside the Nile Valley was always a royal monopoly, and he makes a distinction between low-level exploitation of mineral resources by individuals, such as may be represented in the Beni Hasan scene, and large-scale expeditions for stone and metals for elite purposes, such as the seafaring expeditions to Punt, the scale of which could only have been undertaken by the state.

To the south of Egypt's border with Nubia, however, Egypt faced a major competitor for access to resources in Upper Nubia and beyond – the Kerma kingdom, which had become a powerful polity in Upper Nubia by ca. 2050 BC (and possibly earlier: see Bonnet 2004: 72). Thus, in Lower Nubia the Egyptians built more permanent facilities of control in the 12th Dynasty than had existed earlier in the Old Kingdom (Figure 2).

To the southeast of the Kerma kingdom was the land of Punt, known in ancient Egyptian texts, which was the source of several important raw materials, including elephant ivory, ebony and incense, as well as gold and exotic live animals (see Kitchen 1993). Where Punt was located will be discussed in Chapter 7 (see Kemp 2006b: 136–137), but it was probably a region on the African side of the southern Red Sea. In the later Old Kingdom (5th Dynasty) a seafaring expedition was sent to Punt by King Sahura, as known from information

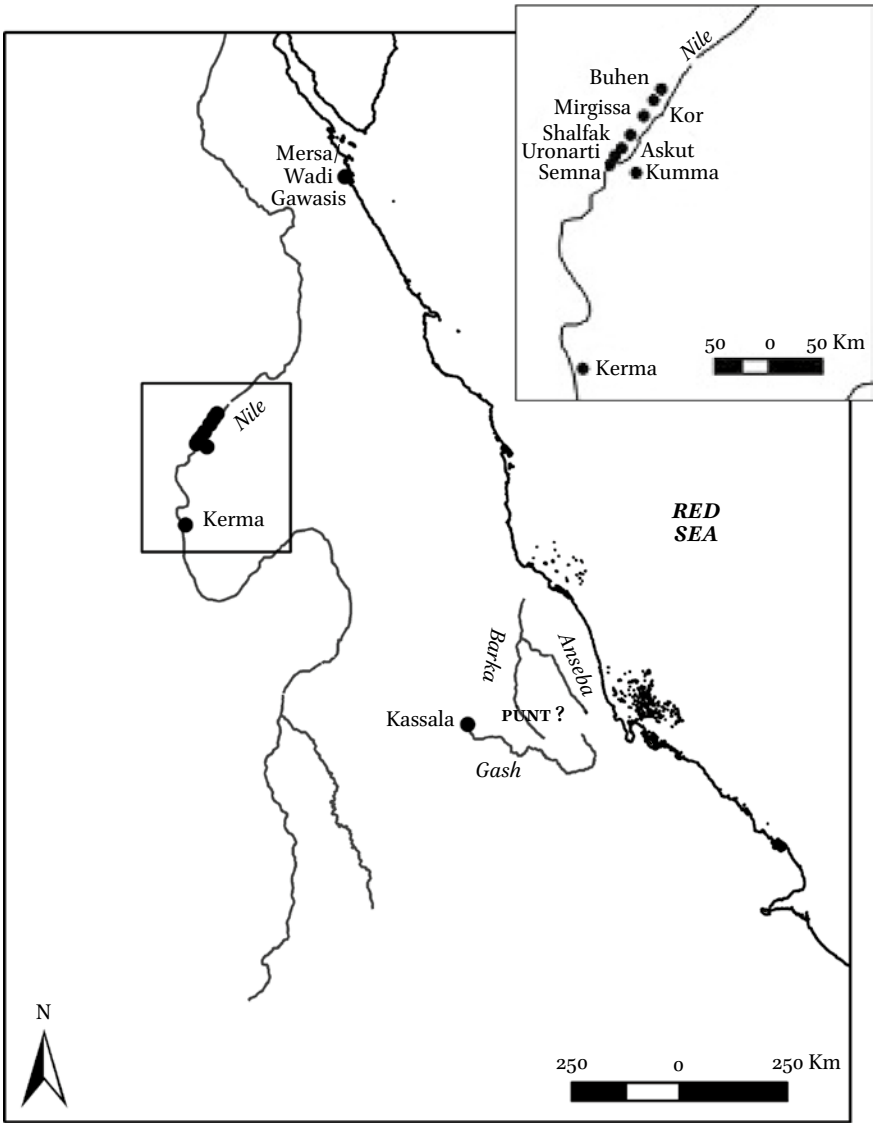

FIGURE 2 Map of Nubia and Punt.
MAP BY LUISA SERNICOLA.

recorded on the Palermo Stone king list and reliefs recently restored from this king's pyramid causeway (see El Awady 2006, 2009). The sea route of Sahura's expedition may have been a response to the rise of Nubian polities of some scale in the later Old Kingdom (see Manzo 1999: 17–20; O'Connor 1986: 43, 47–48). But it was certainly easier to acquire the products of Punt via overland

routes, despite the problems presented there by Nubian polities in the later Old Kingdom. On the façade of his Aswan tomb at Qubbet el-Hawa, the 6th Dynasty nomarch Harkhuf recorded his four expeditions to Yam, during which he had to deal with different Nubian groups (see Dixon 1958; Edel 1955; Goedicke 1981; Kadish 1966; Kemp 2006b: 126, 129–130; O'Connor 1986: 29–35). Although Harkhuf did not go to Punt, he mentions bringing back a pygmy "just like the pygmy which (8) the seal-bearer of the god Werdjededba brought back from the land of Punt, in the time of Izezi" (i.e., King Djedkara Isesi, late 5th Dynasty) (Strudwick 2005: 332). Harkhuf's dwarf was acquired in Yam. Although Cooper (2012) has argued for locating Yam in the Western Desert near Gebel Uweinat, it is more likely that it was located along the Upper Nile in the Shendi region, to the north of Khartoum (Kitchen 2004: 25; O'Connor 1986: 35).

By Middle Kingdom times, however, overland routes via the Upper Nile were controlled by the Kerma kingdom, and desert tracks to the east of Upper Nubia were probably also under Kerma control, as suggested by the evidence of a fortified Kerma Classic site ca. 17 km to the east of Kerma (Bonnet and Reinold 1993: 32). The desert to the east of Upper Nubia may also have been dominated by nomadic peoples who posed a potential threat to Egyptian overland travel there (Bard and Fattovich 2013: 5; Manzo 2010b: 1555–1556). Clearly the Nubians of both river and desert regions posed a military threat to Egyptians (O'Connor 1993: 26, 30–31). This was the most important reason that seafaring expeditions to obtain the exotic raw materials of Punt and Bia-Punt (the "mine" of Punt) were sent from the Egyptian harbor at Mersa/Wadi Gawasis on the Red Sea in the 12th Dynasty. That such seafaring expeditions were very risky ventures is strongly suggested in the Middle Kingdom literary work, "The Tale of the Shipwrecked Sailor" (see Lefebvre 1949: 29–40), not to mention the difficult logistics of getting ships and equipment from the Nile Valley to the Red Sea, but this route seems to have been chosen in order to bypass the Kerma polity on the upper Nile.

The large-scale state organization and logistics that were required to mount seafaring expeditions from Mersa/Wadi Gawasis to Punt and/or Bia Punt are the subject of this book, but such expeditions also need to be understood in terms of their historical and cultural contexts, especially the different strategies for obtaining desired raw materials. Because of the scale of the Punt seafaring expeditions, they could only have been organized by the state – by decree of the king, as indicated by inscriptions on stelae that have been excavated at Mersa/Wadi Gawasis. Organizing these projects was an effective government bureaucracy – a characteristic of the ancient Egyptian state that is particularly evident in the Middle Kingdom. The expeditions to Punt/Bia-Punt were conducted mainly by the military, as indicated by the stela of the early

12th Dynasty vizier Intef-iker (Antefoker) found there by Abdel Monem Sayed (1977: 170). But the textual and archaeological evidence also points to different means by which the 12th Dynasty Egyptians exploited natural resources outside the Nile Valley or obtained resources by trade/exchange.

Beyond the cultural and historical context of geopolitical relations in northeast Africa and southwest Asia during the Middle Kingdom, there are also ideological dimensions to Egyptian exploitation of resources and the importation of exotic raw materials. The Egyptian king commanded vast resources, both human and material, and these resources were focused on specific projects within the Egyptian belief system, especially the construction of royal mortuary monuments and cult temples. The large-scale procurement of exotic resources and raw materials, which in the Middle Kingdom required the construction of huge forts in Nubia and the organization of long-distance seafaring expeditions in the Mediterranean and Red Sea, as well as mining/quarrying expeditions outside the Nile Valley, were also important to the status and role of the king.

Kingship in ancient Egypt had an important ideological component. As the king was the nominal high priest of all temples, it was necessary not only to build and refurbish temples, but also to donate statues and cult objects to them. And incense, some of which came from Punt, was necessary in the ceremonies of all temples – both cult and mortuary. The burning of incense in these temples was a metaphor for communication with the gods, through which Egypt, its king and people were ensured prosperity and the favor of the gods.

Other exotic raw materials that came from Punt and elsewhere, such as gold, ebony, elephant ivory and turquoise, were crafted in Egypt into prestige goods which were the highly desired artifacts of living persons – the king, elites and temple personnel. Such "preciousities" also provided royal legitimacy for the Crown through patronage and display (Smith 2004: 215). And many of these craft goods were also valued for use in the Egyptian afterlife – as tomb goods. One of the most important beliefs in ancient Egypt was that of a "good burial," which is evidenced not only in the many tombs and burials, but also in grave goods, some of which were made of costly imported materials not found in the Egyptian Nile Valley. How these and other exotic raw materials were procured by the Egyptians in the Middle Kingdom reflects expeditions that greatly varied in scale and organization.

2 Mining Turquoise and Copper in the Sinai

In the Middle Kingdom turquoise was mined at Serabit el-Khadim and Gebel el-Maghara in southwestern Sinai (Kemp 2006b: 141). To the west of Serabit

was the most important copper mining/smelting area at Bir Nasib, and copper mining was the most important activity in the region (Rothenberg 1979: 161–166). According to Aston, Harrell and Shaw (2000: 62), perhaps copper and malachite mining was the main focus at Serabit el-Khadim and Wadi Maghara, while turquoise was only "a convenient by-product of this mining."

Inscriptions at Serabit el-Khadim indicate that all of the kings of the 12th Dynasty sent mining expeditions there: the most were sent during the reign of Amenemhat III (27 expeditions; see Chartier-Raymond *et al.* 1994: 75). According to Rothenberg (1979: 164), this king was the "first great copper king," whose name appears on stelae of expeditions which mention copper and in areas of workers' camps in the Maghara region where copper slag has been found. Rothenberg (1979: 164) also thinks that Amenemhat III's extensive copper mining expeditions would have necessitated recruiting "local labour," in addition to the Egyptian workers on the expeditions (see also Kemp 2006b: 141).

Although much Egyptian mining activity took place in southwestern Sinai during the 12th Dynasty, as indicated by the epigraphic record, the settlement evidence is much less than would be expected (Bloxam 2006: 291). The region has been the focus of a number of investigations, beginning in the early 20th century, when texts on stelae and rock faces were recorded (Gardiner, Peet and Černy 1955), and mines and other archaeological evidence were located (Petrie and Currelly 1906). In the 1970s the region was investigated by Israeli archaeologists (Rothenberg 1979), and in the 1990s by a team of French archaeologists (Chartier-Raymond *et al.* 1994). The French investigations cite numerous small settlements in the region, and give a detailed description of a settlement located on a plateau in which there were three different areas: an open area with circular enclosures to the south of the shrine/temple, an industrial area, and a fortified camp with small structures of dry stone or stone with sand mortar. The site could not be dated by the French archaeologists because of a lack of ceramics on the surface, but they believe that it was contemporary with structures near the Middle Kingdom temple (Chartier-Raymond *et al.* 1994: 59–61).

Egyptian beliefs are also in evidence at the loci of their expeditions: in the form of temples to Egyptian deities at larger sites, such as Serabit el-Khadim, and shrines at smaller ones. The temple complex at Serabit el-Khadim was dedicated to the goddess Hathor, "the Lady of Turquoise." In the early 12th Dynasty it began as a small temple and enclosure wall, built during the reign of Senusret I. A small chapel and two rock-cut rooms were added and modified by subsequent kings of this dynasty (Valbelle and Bonnet 1996: 100–112; 174–180).

Compared to the 12th Dynasty Egyptian fortresses in Nubia, which were large and well fortified, planned communities, the settlement at Serabit el-Khadim,

aside from the temple complex, consists of much more insubstantial structures in small groupings. The small houses at Serabit are made of locally obtained rock, which is a much more simple construction technique than the mud-bricks used for the Nubian fortresses. It is also likely that mud, chaff and water were not available in large quantities for making mud-bricks in the region of the Sinai mines.

Even during the 45-year reign of Amenemhat III, whose expeditions were the most numerous of a ruler of the 12th Dynasty, according to inscriptions at Serabit el-Khadim, this would average only one expedition every two years – not enough to warrant the construction of any large-scale permanent installations for a large workforce. According to Sadek (1980–5: 104), commemorative texts of expeditions in the Sinai list smaller numbers of workers than those of expeditions in the Wadi Hammamat, where major stone quarrying would have required large numbers of workmen to move heavy loads (Shaw 1994: 113). What is noteworthy at the Serabit el-Khadim settlement, however, is the need for defensive architecture, in terms of its location on top of cliffs with abrupt drops as well as the construction of a wall of stone blocks with a restricted entrance point, as a kind of zone of refuge in case of attack (Chartier-Raymond *et al.* 1994: 61).

3 The Harbor Site at Ayn Soukhna

At the site of Ayn Soukhna on the Gulf of Suez, ca. 120 km from the Cairo region, French archaeologists have excavated evidence of a Middle Kingdom harbor site from which boats crossed the Gulf of Suez, for expeditions to the mines in southwestern Sinai (Abd el-Raziq, Castel and Tallet 2004: 11, 14). The site was also used extensively during the Old Kingdom (Abd el-Raziq *et al.* 2012: 6; Abd el-Raziq, Castel and Tallet 2016: 41–43), and in the 18th Dynasty (Abd el-Raziq, Castel and Tallet 2016: 45–46). Ten rock-cut galleries were used for storage, and a large free-standing structure dating to the Old Kingdom contained evidence of facilities for butchering, baking and cooking (Abd el-Raziq *et al.* 2012: 5–6, 8–9). Numerous copper workshops at the site, for reduction and smelting, date to the Middle Kingdom (Abd el-Raziq *et al.* 2012: 7–8).

A number of rock-cut inscriptions also have been recorded at Ayn Soukhna (Abd el-Raziq *et al.* 2002; Tallet 2012: 148–151). From the late 11th Dynasty is an inscription from Year 1 of the reign of Mentuhotep IV, about an expedition of 3,000 men concerned with bringing back turquoise, copper, and "all the good products of the desert" (Bard's translation from the French; Abd el-Raziq *et al.*

2002: 40–41). Another inscription at Ayn Soukhna records an expedition of 4,000 men during the reign of Amenemhat I (Abd el-Raziq *et al.* 2002: 42; see also Tallet 2015: 38–39), the succeeding king and first king of the 12th Dynasty. The large numbers of workmen recorded in these inscriptions probably do not represent the actual numbers of workers at the site, but most likely include workmen who continued on expeditions to the Sinai.

Inscriptions at Ayn Soukhna of other expeditions from the 12th Dynasty include expeditions during the reigns of Senusret I (Year 9) and then only later during the reign of Amenemhat III (Abd el-Raziq, Castel and Tallet 2004: 11–12; Tallet 2015: 38, 61). Tallet (2015: 64–66) proposes that Ayn Soukhna ceased to be used in the early 12th Dynasty, when there is evidence of the burning of two boats there, at which point Mersa Gawasis, where the names of all 12th Dynasty kings beginning with Senusret I are found on artifacts, was used for the Punt expeditions, and possibly those to the Sinai.

It has been suggested that in the later Old Kingdom, when there is historical/textual evidence of seafaring expeditions to Punt, that the Ayn Soukhna harbor also was used for expeditions to Punt, and two inscriptions at this harbor, of expeditions during the reign of Djedkara Isesi, mention the use of a type of ship for long-distance seafaring (*kenebet*) (Abd el-Raziq, Castel and Tallet 2016: 44). Pieces of obsidian, which originated in the southern Red Sea region, also have been discovered in a number of places at the site, especially in levels in gallery G1 that date to the Old Kingdom (Abd el-Raziq, Castel and Tallet 2016: 45). If Ayn Soukhna had been used as a harbor for sending seafaring expeditions to Punt in the Old Kingdom, however, some specific inscriptional evidence of Punt expeditions would be expected there, as is so evident at Mersa/Wadi Gawasis, and the obsidian tools(?) could have been brought to Ayn Soukhna indirectly – and not necessarily via seafaring expeditions to Punt. Given a lack of inscriptional evidence for seafaring expeditions to Punt in the Old Kingdom, at both Ayn Soukhna and Mersa/Wadi Gawasis, as well as strong archaeological evidence at both sites (for late Old Kingdom evidence at Mersa/Wadi Gawasis, see Perlingieri 2007a: 110, 116), the location of the Egyptian harbor(s?) for seafaring expeditions to Punt in the Old Kingdom remains uncertain.

Another ancient Egyptian harbor at Wadi el-Jarf, about 100 km to the south of Ayn Soukhna, has been excavated recently by French archaeologists, but all of the evidence there points to its use during the reign of Khufu and briefly during the reign of Khafra in the 4th Dynasty (Tallet 2015: 46–54; Tallet and Marouard 2016). Unlike the (later) harbor at Ayn Soukhna, which was used during the Old and Middle Kingdoms to access the mined resources in the

Sinai, the Wadi el-Jarf harbor, which has well preserved evidence – including the oldest known "bureaucratic" accounts in Egypt (Tallet and Marouard 2014: 8), had a much more limited period of use.

4 Mining Galena at Gebel Zeit

Galena was an important mineral that was used in ancient Egypt for eye paint, from Predynastic to Coptic times – for over 4,000 years (Lucas 1989: 80, 243). Galena mines, which were actively exploited from the 12th Dynasty into the New Kingdom, were located in the mountain range of Gebel Zeit on the Gulf of Suez, opposite the southern tip of the Sinai (Castel and Soukiassian 1989: 7–9). The earliest certain expedition there was during the reign of Amenemhat III of the later 12th Dynasty (Castel and Soukiassian 1989: 8), the king who also sent the most frequent mining expeditions to the Sinai. Excavated by French archaeologists, the mining complex at Gebel Zeit consists of two sites. Thirty gallery-mines are associated with Site 1, which also has evidence of a settlement, probably used as the "base camp," and sanctuary (Castel and Soukiassian 1989: 138). Site 2, ca. 4 km to the south of Site 1, is much larger and is where the main galena mines were exploited (Castel, Soukiassian and Pouit 1999: 334, 337).

The earliest areas of habitation at Site 1 consist of rock shelters that had been created from mined galleries. These rock shelters collapsed during periods of abandonment and terraces formed along the narrow wadi in which they are located. Later occupation took place on these terraces, which continued to build up in strata through time (Castel and Soukiassian 1989: 29–31, 138; Castel, Soukiassian and Pouit 1999: 335). The sanctuary, located in the middle of this settlement, dates to different periods, and is also layered through time. The earliest sanctuary (Middle Kingdom) was made in a natural cave, but only the terrace of the New Kingdom (latest) sanctuary, consisting of a roughly oval-shaped, dry stone wall with a deposit of (earlier) broken stelae in the northwestern end, has been completely excavated (Castel and Soukiassian 1989: 33, 139; Régen and Soukiassian 2008: 1–5).

The mining site was probably frequented only by small groups of miners, especially since fresh water and local edible resources were very limited (Castel and Soukiassian 1989: 8). Mining done at the site was on a small scale. For example, work in the lower galleries of Mine 399 at Site 2 would have required only 10–15 workers (Castel and Soukiassian 1989: 139).

Because of the poor quality of the local stone at Gebel Zeit, there are no rock-cut inscriptions of expeditions. But the small scale of the galena mining

expeditions may also explain why there is only evidence of small stelae, especially those made of faience, which were brought to the site from the Nile Valley (Castel and Soukiassian 1985: 293; Régan and Soukiassian 2008: 48–49).

5 Mining Gold and Quarrying Stone in the Wadi Hammamat

In the Middle Kingdom gold mines were exploited in the Wadi Hammamat (Shaw 1994: 109), and quarrying expeditions were sent primarily to quarry greywacke (*bekhen* stone), which was the most widely used hard stone in Egypt after granite and granodiorite (Harrell 2002: 239). There are over 500 rock-cut inscriptions in this wadi, which was a major route across the desert from the Nile Valley in Upper Egypt to the Red Sea – of traders and other travelers, as well as mining/quarrying expeditions, ranging in date from late prehistoric times through the Roman Period (Harrell 2002: 238).

Many of the Wadi Hammamat inscriptions are associated with the greywacke quarry site, about 75 km east of Qift/Coptos. This quarry was (re)-discovered by members of the Napoleonic expedition in the early 19th century and a report was first published in the *Description de l'Égypte* (Harrell 2002: 238–239). One of the most impressive quarry inscriptions from the Middle Kingdom records an expedition during the reign of Senusret I with 17,000 men (Goyon 1957: 17–20, 81–85). According to the inscription, this expedition quarried 60 sphinxes and 150 statues (Simpson 1959: 29). Bloxam (2006: 292) observes, however, that with overbuilding and later destruction [from mining activities] areas of Middle Kingdom planned settlements at mining sites are not visible, and there is a discrepancy between numbers of men listed in the epigraphic record and the actual evidence of settlements. The movement of heavy loads from the Wadi Hammamat quarry site would have required "large numbers of unskilled corvee-laborers" (Shaw 1994: 113), as reflected in this inscription, but probably the number of quarry workers there for any length of time would have been lower, with a large number of workmen required only for the transport of the monumental statues to the Nile Valley.

Also in the Wadi Hammamat is the inscription of Henu, the Great Steward and Chief Treasurer of Mentuhotep III of the 11th Dynasty – about an expedition (in Year 8) on the "Great Green" (Red Sea) to the "God's Land" (Couyat and Montet 1912/1913: 81–84, No. 114). The expedition of 3,000 men begins at Coptos, and while crossing the desert to the Red Sea 15 wells had to be dug. Then the ships were constructed at the sea shore and dispatched. When they returned, Henu brought to the king "every product that he found on the shores of the God's Land" (Punt), as well as blocks of stone for temple statues. Scholars have

debated whether Henu actually went on the seafaring expedition to Punt or went to the stone quarry after the ships were launched, and Bradbury (1988) provides a convincing argument for the latter case, based in part on the known (modern) surface currents in the Red Sea. Thus, the inscription suggests that a seafaring expedition to Punt was combined with a quarrying expedition for stone in the Wadi Hammamat, and in all likelihood the harbor location for the seafaring expedition was at Mersa/Wadi Gawasis (although there is no textual evidence of Henu or Mentuhotep III at the site), with the return route to the Nile Valley via the Wadi Hammamat (Bradbury 1988: 133).

6 Nubian Resources and Egyptian Occupation

Some of the most impressive works of Middle Kingdom architecture are the chain of fortresses that was built first in Lower Nubia in the early 12th Dynasty by Senusret I, and then later during the reign of Senusret III in the Second Cataract region as far south as Semna (see Kemp 2006a: 231–242; Kemp 2006b: 130–135; Williams 1999). These fortresses were permanent fortified settlements for thousands of Egyptian soldiers, officials and other personnel – and their construction represents state projects on an enormous scale. The forts were the loci of the occupying Egyptian army, but this type of imperialism also had economic motives: "for the extraction of local resources and the smooth flow of luxury goods from the south" (Smith 1995: 175). In Lower Nubia the fortresses kept the local population under control (Grajetzki 2006: 135), and access to gold and copper mines to the east of the Nile in Lower Nubia was protected (Trigger 1976: 67). Perhaps most importantly, the Egyptian frontier in the Second Cataract region was protected (see Williams 1999: 438).

At the northern end of the Second Cataract region was the huge fortress at Buhen, with both inner and outer defensive walls of mud-brick (the latter of which measure 420 m x 150 m, and 5–5.5 m thick; Emery, Smith and Millard 1979: 5, 21–27, Plates 2, 3) – the largest of these fortified settlements. Buhen was a large, very well fortified town, and perhaps as many as 2,000 men were housed there (S.T. Smith 1995: 41, although H.S. Smith estimates about half this number). Inside the Buhen fortifications was a settlement laid out in a north-south grid, which represents a high degree of state planning. Structures at Buhen included a command building/garrison headquarters, military barracks, storerooms and a temple (Emery, Smith and Millard 1979: 8–11; see also Kemp 2006a: 232–233). Within the inner fort there is evidence of a number of industries, including brick-making; and stone-, copper-, leather- and wood-working (Emery, Smith and Millard 1979: 94–95). Buhen also had

three major cemeteries used in the Middle Kingdom and 2nd Intermediate Period (Randall-MacIver and Woolley 1911; its ceramics have been re-dated by S.T. Smith 1995: 123–126), when it was no longer under Egyptian control. The scale of this enormous fortress, along with the construction of an entire chain of fortresses in Nubia as far south as the Second Cataract region, indicate a much different type of Egyptian occupation in Nubia in the Middle Kingdom than what is represented at their Red Sea harbor of *Sawu*.

To the south of Buhen were the forts of the Second Cataract region: Mirgissa, Askut, Shalfak, Uronarti, Semna West, Semna South, and Kumma. These forts were certainly militarily important in a strategic region, but the movement of communications, and goods and materials from the south was also of crucial importance to the Egyptian state (Adams 1977: 183–186; Kemp 2006a: 238; S.T. Smith 1991, 1995: 8, 41–44). Gold mines also were located in the region to the east of the Nile: evidence of processing gold ore has been found at Askut and gold weights are known from Askut and Uronarti (S.T. Smith 1991: 111–114, 129). The Semna Dispatches, which were found in western Thebes, not only demonstrate the monitoring of movements of people locally, but also the movement of goods by Nubians from farther south of the Second Cataract region (see Smither 1945; S.T. Smith 1995). How important this river traffic was is indicated by the construction of a 2 km long, mud-lined slipway through the cataracts at Mirgissa, so that boats could be pulled by sledges, bypassing the worst rapids (Vercoutter 1970: 13–15).

The Semna Dispatches, however, raise questions about what products were coming down the Nile (and/or via desert tracks) and from where farther south, the volume of such trade, and how reliable it was (see Kemp 2006b: 135–136). Trigger (1982: 5) suggests that during the Middle Kingdom supplies of African raw materials traded by Kerma were delivered through the Egyptian frontier at Semna. But relations between Egypt and Kerma (and local Nubians) were not those of friendly neighbors, which mutually profited from trade and exchange, as is known from the history of the following Second Intermediate Period and early New Kingdom, and the need for the Egyptians to build the extensive chain of fortresses in Nubia was mainly the result of control of the Upper Nile in Middle Kingdom times by the Kerma kingdom (see Kemp 2006b: 130–174).

Whatever the Nubians were trading with the Egyptians in the Second Cataract region, the Egyptians still needed to obtain raw materials from regions farther south and east in Africa, i.e., the land of Punt. And by bypassing Kerma control of the land routes to Punt, and/or Kerma middlemen who might have been involved in such trade – and avoiding open hostilities with Kerma – the Egyptians in the 12th Dynasty sailed to Punt/Bia-Punt directly from the Egyptian harbor on the Red Sea.

7 The Harbor at Mersa/Wadi Gawasis in the Context of Mining/Quarrying Expeditions and Interrelations in Northeast Africa in the Middle Kingdom

The construction of pyramids in ancient Egypt, both in the Old and Middle Kingdoms, does not represent a state that marshalled its resources economically, and instead these enormous tomb and temple complexes had major ideological implications in the society. That such projects could be accomplished is first due to the control of huge agricultural surpluses, the foundation of the state's economy, and secondly, to its ability to marshal large labor forces, all the resources needed for the workforce, and all the materials, tools and supplies to build the monuments. The pyramids were huge symbolic structures, reflecting the ideology of the king and his position with the gods, and the role of the king – in both life and the afterlife. Although ideology dictated the *raîson d'etre* for the pyramids, the organization of pyramid construction, as reflected in the finished product, was probably done as efficiently as possible – using very simple technology – in order to accomplish the enormous project.

State expeditions in the Middle Kingdom – to mining regions and to Punt – also seem to have been organized efficiently according to the scale, nature and difficulty of the undertaking. On one end were the small-scale mining operations at Gebel Zeit for the pigment used for eye paint (galena), while large expeditions could be organized to quarry stone for monumental statues in the Wadi Hammamat.

The seafaring expeditions to Punt and Bia-Punt from the harbor of *Saww* represent the latter type of state-organized expedition, which required the marshalling of many resources from different regions in the Nile Valley (wood, linen, rope, food, pottery/containers, and all equipment) as well as beyond: cedar for boat timbers from Lebanon and copper for ship fastenings, probably from the Sinai. Large numbers of men also would have been conscripted to carry all of this across the desert to the harbor site.

But in Nubia during the Middle Kingdom, another policy was enacted which went well beyond temporary military expeditions to extract or obtain resources. The control of Lower Nubia and the Second Cataract region became the major concern of the state outside its borders, hence the construction of the chain of fortresses there, representing permanent occupation – and an enormous investment of the state on a full-time basis. That the state in the 12th Dynasty could build these enormous fortresses in Nubia – and royal pyramids – and send large- and small-scale expeditions to extract stones and minerals – and send seafaring expeditions to Punt from Mersa/Wadi Gawasis – demonstrates its real brilliance: the organization of the state bureaucracy to plan, conduct and accomplish many different types of projects.

In terms of understanding mining/quarrying projects, Shaw (1994: 114–115) lists some prominent aspects of ancient Egyptian mining and quarrying sites: (1) the nature of the material procured, (2) how much of it was processed *in situ*, (3) the distance from sources of food and water, (4) the perceived need for a constant supply of the material, (5) risk of attack, (6) the stability of the Egyptian socio-economic system at the time, (7) composition of the workforce, and (8) the primary destination of the material and its intended uses. All of these aspects are useful for a discussion of the nature of activity – and its evidence – at Mersa/Wadi Gawasis.

What we have excavated at Mersa/Wadi Gawasis from 2001 to 2011 mainly represents the aftermath of seafaring expeditions: what was left at the site at the end of return voyages from Punt and/or Bia-Punt. The focus of excavations has been shrine structures along the sea shore, and to the west an inland area of a fossil coral terrace overlooking the lower Wadi Gawasis. On top and along the western edge of the fossil coral terrace there is evidence of temporary shelters (tent circles and light structures with post-holes), but the most important evidence of use in this sector of the site are rock-cut storerooms/man-made caves and galleries along the western slope of the terrace, overlooking what was once a large harbor embayment. At the foot of this terrace is a large industrial area, to the south of which is a beach area with evidence of two phases of camps. There is no evidence, however, of permanent architecture and full-time occupation at the harbor.

Unlike the evidence of mining/quarrying expeditions, where workers spent considerable time at the sites, expeditions to Mersa/Wadi Gawasis only used the site as a staging/return point, as the procurement of raw materials was elsewhere – in Punt and/or Bia-Punt. No raw materials were processed at the site: ships were reconstructed there and then later disassembled, after the products of Punt had been unloaded and packed for transport by caravan to the Nile Valley. Little food was available at the harbor, so emmer wheat and barley to make bread (and probably beer?) were brought from the Nile Valley. Since what is today the lower Wadi Gawasis was filled with salt water 4,000 years ago, forming a natural lagoon/harbor, fresh water had to be brought from a distance, probably from where there is evidence of a "Greco-Roman station" and well – and Middle Kingdom pottery, ca. 9 km from the harbor site. (The Greco-Roman station is located in the Wadi Gasus 7 km inland from the coast at Mersa Gasus, which is 2 km north of Mersa Gawasis: Sayed 1977: 141–146.)

Commemorative stelae or rock-cut inscriptions about the directors and organization of expeditions were left at some sites, while offering stelae for individuals are also found. At Mersa/Wadi Gawasis, the quality of the local rock (fossil coral and conglomerate) prevented the carving of inscriptions from

expeditions, as are found at Serabit el-Khadim in the Sinai, Ayn Soukhna, or at the Wadi Hammamat stone quarries. But unlike at Gebel Zeit, both large and small stelae have been excavated at Mersa/Wadi Gawasis, suggesting, like the stone quarrying inscriptions in the Wadi Hammamat, the large scale of the seafaring expeditions to Punt and Bia-Punt, which were major undertakings of the state bureaucracy.

Unlike the geopolitical problems in Nubia – one of the major reasons for building the fortresses there in the 12th Dynasty – there was no threat of the Kerma polity at Mersa/Wadi Gawasis, nor was there the potential threat of indigenous peoples in large numbers, such as the C-Group in Lower Nubia. There seems to have been no institutional intent in the 12th Dynasty to have permanent facilities at the harbor, and unlike the Nubian forts, settlement evidence at Mersa/Wadi Gawasis consists only of temporary camps. Possibly the long galleries (Caves 2, 3, 4, 5) excavated into layers of conglomerate at the southern end of the western terrace, were temporary barracks for soldiers, as Manzo (2010f) has suggested, but the more long-term use of these structures was as storerooms. Resources – food, fresh water, and all other necessities for daily life – were lacking at the harbor site, probably the major reason why there were no permanent facilities. Thus, many of the necessary resources were brought by caravan through wadis of the Eastern Desert, and such difficult logistics of supply would have discouraged more full-time occupation at the harbor.

The harbor was located a long distance from the Nile Valley, and the movement of goods, materials and people there was difficult, unlike river traffic by boat between Egypt and Nubia. But like the forts in Nubia, expeditions to Punt and Bia-Punt from Mersa/Wadi Gawasis required a great deal of state organization of resources, as well as logistical planning of the expeditions themselves. Thus, the seafaring expeditions to Punt/Bia-Punt certainly represent a stable socio-economic system – and a very well organized bureaucracy.

In terms of the composition of the workforce for the Punt and Bia-Punt expeditions, the stela of the vizier Intef-iker that Abdel Monem Sayed found at Wadi Gawasis lists 3,576 men of different statuses on an expedition during the reign of Senusret I (Sayed 1977: 170). There is no archaeological evidence, however, of so many people ever having used the site. Large numbers of workers were certainly needed to transport the disassembled ships, equipment, food, and trade goods across the desert to the Red Sea by donkey caravan, and to reconstruct the ships at the harbor, as is also seen in the stone quarrying expeditions in the Wadi Hammamat. But the actual seafaring expeditions would not have consisted of thousands or even hundreds of men – the size and number of ships used on an expedition certainly would have limited the size of the expedition force. Possibly the seafaring expeditions were combined with mining expeditions in the Eastern Desert by those who transported the goods

and materials across the desert to the harbor site, but did not set sail to Punt/Bia-Punt, as is suggested in the Henu inscription in the Wadi Hammamat. A number of gold mines in use in the Old and Middle Kingdoms are located in the central Eastern Desert, between the desert route from Qena to the Red Sea – and Mersa/Wadi Gawasis – to the north, and the Wadi Hammamat to the south (Klemm, Klemm and Murr 2002: 223), and possibly some of the expedition workers went on to mine gold in this region. Given the limited resources at *Saww*, it is unlikely that a very large work force would have waited there for several months until the ships returned from Punt/Bia-Punt, and perhaps the seafaring expeditions were organized so that workers returned to the harbor after a calculated period of time to help the sailors disassemble the ships and carry the best preserved timbers and goods from Punt back to the Nile Valley.

The primary destination of the products of Punt/Bia-Punt was not the harbor site, but the Nile Valley, for elite use: to make royal and elite craft goods (in ebony, elephant ivory, gold, obsidian), as well as incense used in temple and mortuary ceremonies. The evidence of these seafaring expeditions at Mersa/Wadi Gawasis is therefore partial, but enough to generate unique information about these expeditions – the existence of a large, sheltered harbor; historical texts about specific expeditions; ship remains and equipment; food; and actual materials brought back from Punt: obsidian, ebony, and ceramics from what are today eastern Sudan, Eritrea, and Yemen.

CHAPTER 2

Archaeological Investigations at Mersa/Wadi Gawasis

1 The Pharaonic Harbor at Mersa/Wadi Gawasis

The ancient pharaonic harbor of *Saww*, today the site of Mersa/Wadi Gawasis (26°33"26'N, 34°02"11'E) (26°33"26'N, 34°02"11'E), is located at the mouth of Wadi Gawasis, about 23 km south of the modern town of Safaga and 50 km to the north of Quseir (Figure 3). The site occupies the top of a Holocene low coral terrace (ca. 2–4 m above main sea level along the seashore and a Terminal Pleistocene higher terrace (ca. 4–6 m above main sea level) to the west of the former one along the northern end of the Wadi Gawasis (Figure 4).

Mersa/Wadi Gawasis was discovered in the early 1920s by George W. Murray (1925), who identified the site with the Ptolemaic-Roman port of Philoteras/Aenum (Jackson 2002: 80, 96–97; Sidebotham, Hense and Nouwens 2008: 168). The site was visited in the late 1940s by Leo Tregenza, who recorded about twenty structures, most of them along the edge of the coral terrace, and two possible inscriptions engraved on conglomerate slabs. According to Tregenza, these inscriptions were written in hieroglyphs and Greek (Tregenza 1958: 182–183).

In the 1970s the site was investigated in two field seasons by Professor Abdel Monem A.H. Sayed of the University of Alexandria. On the basis of the epigraphic evidence, including the "shrine-stela" of the official Ankhu and the fallen stela of Antefoker (Intef-iker) associated with another structure, and the occurrence of several anchors and a few fragments of ship timbers, Sayed suggested that Mersa/Wadi Gawasis was the pharaonic port of *S3ww*, the starting point for Red Sea expeditions in the 12th Dynasty (Sayed 1977: 173–178).

After visiting the site in the late 1970s, Alessandra Nibbi questioned Sayed's identification of Mersa/Wadi Gawasis with the port of *S3ww* (Nibbi 1981: 69). In her opinion, the bay could be used as a temporary harbor, but not as a port because of the absence of any visible evidence of a settlement. Nibbi also suggested that the stone structures that Sayed had excavated, associated with the stelae of Ankhu and Antefoker, were burials, not small shrines (Nibbi 1981: 70). Honor Frost, a maritime archaeologist who visited the site in 1991, questioned how the site of Mersa/Wadi Gawasis functioned as a port (Frost 1996). In 1994 Cheryl Ward conducted an underwater survey at Mersa Gawasis, but did not find any archaeological evidence (Ward 1996).

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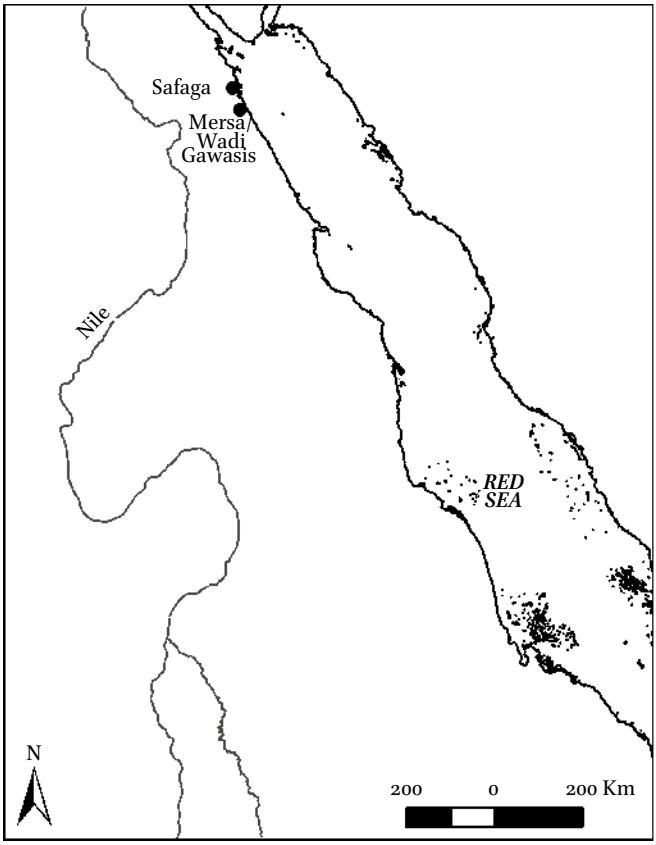

FIGURE 3 Map of Red Sea coast.
MAP BY LUISA SERNICOLA.

FIGURE 4 Satellite image © Google Earth showing location of Mersa/Wadi Gawasis.

The most recent archaeological investigations at Mersa/Wadi Gawasis were conducted by a joint project of the University of Naples "L'Orientale" (UNO) and Boston University (BU), in collaboration with the Italian Institute for Africa and the Orient (IsIAO), Rome, under the direction of Rodolfo Fattovich (UNO/IsIAO) and Kathryn Bard (BU). These excavations expanded on the earlier work at the site by Sayed, and have provided new and additional information about the ancient harbor, including its geological and environmental setting.

2 Archaeological Investigations at Mersa/Wadi Gawasis

The archaeological site of Mersa/Wadi Gawasis occupies an area of about 650 m (east-west) by 320 m (north-south), and is delimited by the seashore to the east, and the Wadi Gawasis to the south and west. A paved coastal road and a railroad divide it into eastern, central and western sectors. The eastern sector of the site, along the sea shore ("Mersa Gawasis"), and the western sector, between the railroad and the wadi ("Wadi Gawasis"), are still well preserved. The central sector of the site, between the paved road and the railroad, has been almost completely destroyed by the construction of the railroad in the 1980s (Figure 5).

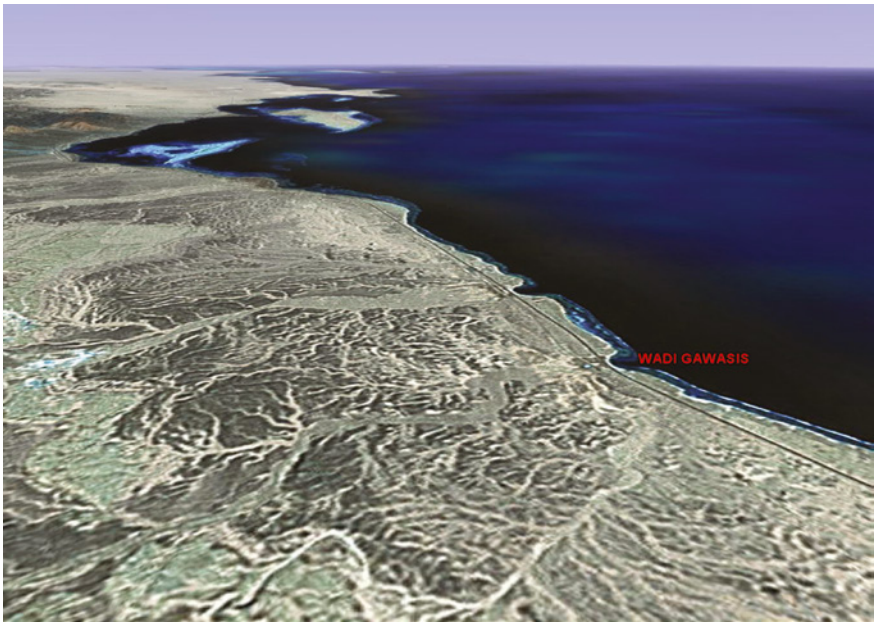

FIGURE 5 DEM of Mersa/Wadi Gawasis by Stefano Tilia.

Sayed's investigations in the mid-1970s included excavations of structures at the edge of the fossil coral terrace and test excavations on the southwestern slope of the terrace. Sayed found potsherds with painted (hieratic) inscriptions and inscribed stelae recording expeditions to Bia-Punt from a locality called *S3ww* during the reigns of Senusret I (ca. 1956–1911 BC), Amenemhat II (ca. 1911–1877 BC), Senusret II (ca. 1877–1870 BC) and Senusret III (ca. 1870–1831 BC).[1] Calibrated radiocarbon dates of three samples taken from pieces of wood, rope, and halfa grass found at the site, however, suggested a longer use of the site, from the late 3rd to mid-2nd millennia BC (Sayed 1983: Fig. 1). Sayed also uncovered some carved, round-topped anchors (see Frost 1979, 1985), and a fragment of carved cedar timber with a mortise, most likely from a ship (Sayed 1980: 156–157).

Sayed's discovery of the Ankhu monument in the central sector of the site was particularly significant. This structure consisted of a base of two limestone anchors laid flat, on the top of which were three limestone blocks arranged perpendicularly. Texts inscribed on the three upright blocks recorded an expedition to Bia-Punt during the reign of Senusret I, of the "Overseer of the audience-chamber," Ankhu (Sayed 1977: Fig. 2). Another stela of Senusret I's vizier Antefoker (Intef-iker) was found in the western sector of the site. This stela recorded an expedition of 3,756 men to Bia-Punt (Sayed 1977: 169–173).

The UNO/IsIAO and BU expedition conducted investigations at the site from 2001–2002 to 2010–2011 (see Bard 2011; Fattovich 2008, 2012a; Bard and Fattovich 2007, 2010b, 2010c, 2012; Bard, Fattovich and Manzo 2013). Seventy-four trenches and test pits were opened on the top of the fossil coral terrace at Mersa Gawasis, and on the top, along the slope and at the base of the coral terrace at Wadi Gawasis (Figure 6). Three test trenches (WG 11, WG 13, and WG 14) also were excavated in sand deposits at the southern base of the terrace, but resulted to be recent accumulations of sand with few archaeological materials.

Seven trenches (WG 12, WG 20, WG 23, WG 29, WG 58/59 and WG 60) were opened at Mersa Gawasis where eleven mounds (Features 1 – 11) are visible along the edge of the coral terrace (Bard and Fattovich 2007: 31). All mounds had been partially excavated by Sayed, and some of them had already been disturbed when he arrived at the site in 1976 (Abdel Monem Sayed personal communication: January 2001). Six of these mounds were re-investigated by the UNO/ISIAO and BU expedition, confirming that these were man-made features, which most likely were used for ceremonial activities (Bard and Fattovich 2007: 39–44; Fattovich, Manzo, and Zazzaro 2009: 1–2).

1 In this book we have used the chronology published in Shaw 2000: 479–483.

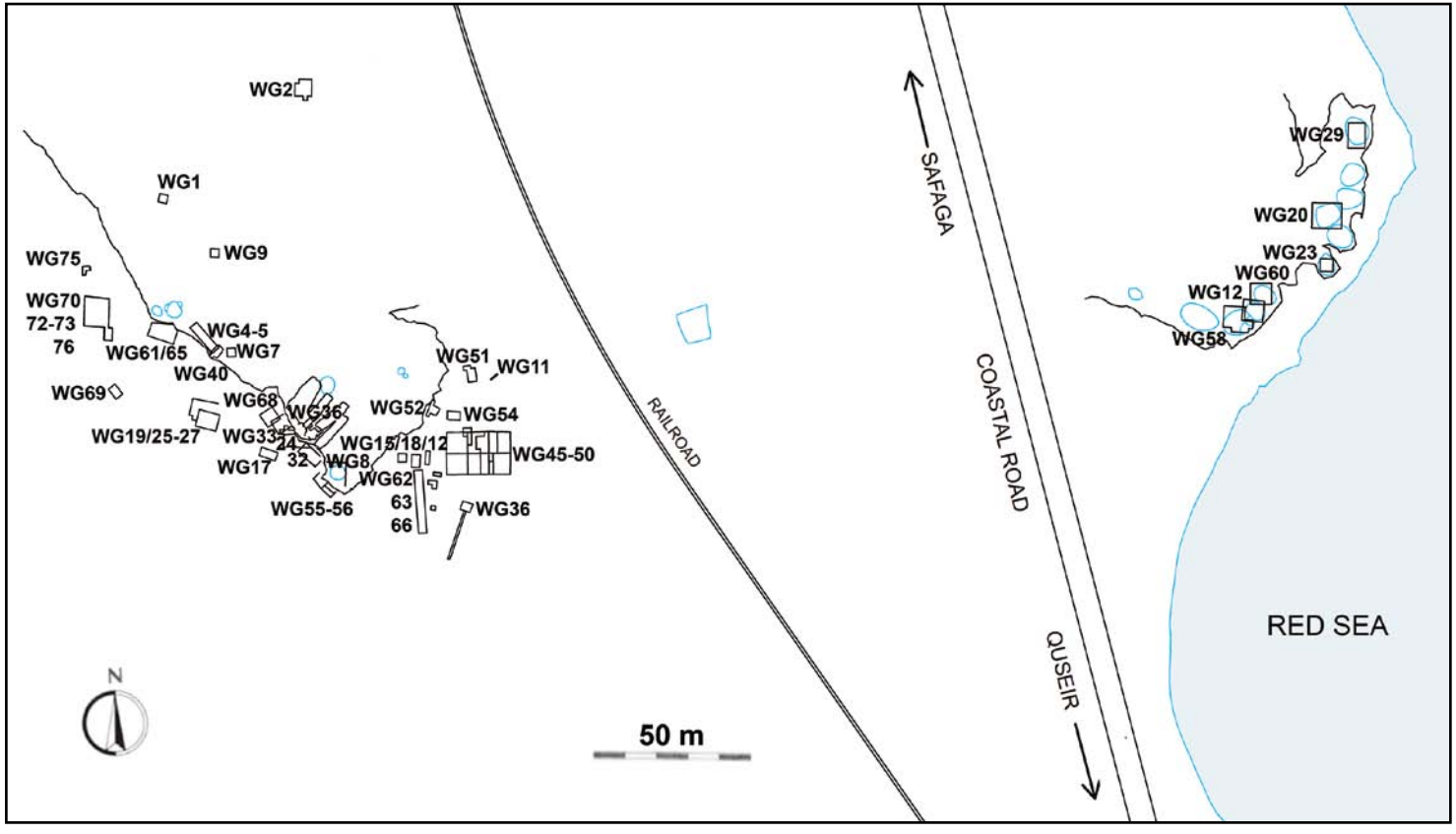

FIGURE 6 Map of Mersa/Wadi Gawasis with location of excavation units.
PLAN BY STEFANO TILIA.

Nine trenches (WG 1, WG 2, WG 3/6, WG 4/5, WG 7, WG 8, WG 9) were opened on the top of the coral terrace at Wadi Gawasis, in an area where 24 small circular pits, four stone structures and some concentrations of potsherds were visible on the surface (Bard and Fattovich 2007: 31–32). The stone structures had been excavated earlier by Sayed, and one of them was associated with the stela of Antefoker (Sayed 1977). The UNO/IsIAO and BU excavations demonstrated that the circular pits were the foundations of small huts or tents and the concentrations of ceramics were associated with these light shelters. Two stone structures, including the one originally associated with Antefoker's stela (WG 8), were reinvestigated. The recorded evidence supported Sayed's interpretation that these structures were ceremonial monuments (Bard and Fattovich 2007: 44–50).

Twenty trenches (WG 10, WG 15, WG 18, WG 35, WG 36, WG 37, WG 38, WG 42, WG 45/46/47/48/49/50, WG 51, WG 52, WG 54, WG 57, WG 63/66) were opened along the southern terrace slope and at the base of the terrace at Wadi Gawasis, where a mound of discarded fragments of storage jars was visible on the surface (Bard and Fattovich 2007: 32). In this area (on the slope of the northern edge of Wadi Gawasis and beneath a huge rock), Sayed had found unfinished stone anchors, a copper chisel, ostraca recording Punt, "terra cotta pipes" (bread molds), and ash and food remains, suggesting an occupation area for craftsmen and laborers (Sayed 1978: 70–71, 1983: 24–28). A natural rock-shelter with evidence of a constructed mud-brick platform and many potsherds of storage jars was also investigated along the southern slope of the coral terrace (WG 74; Fattovich, Bard and Ward 2011: 78). The UNO/IsIAO and BU excavations demonstrated that this area was where ships were landing and expedition members were camping (Bard and Fattovich 2007: 50–54, 2008: 25–29, 2010c: 9–10).

Eighteen trenches were opened along the western terrace slope at Wadi Gawasis (WG 16, WG 17, WG 21, WG 24, WG 28, WG 31, WG 32, WG 33, WG 39, WG 40, WG 53, WG 55, WG 56, WG 61, WG 64, WG 65, WG 67, WG 71), in an area where most of the surface was covered with potsherds and cobbles (Figure 7). Two isolated rock-cut chambers (Cave 1/WG 28, Cave 8/WG 67), six man-made galleries (Cave 2/WG 24/64, Cave 3/WG 39, Cave 4a/4b, Cave 5, Cave 6, Cave 7) associated with niches for stelae, and a small shrine (WG 56) were discovered in this area. Inside Cave 5 an estimated 26 well preserved coils of rope from ships were found (Veldmeijer and Zazzaro 2008: 21). A mud-brick floor associated with Canaanite potsherds and hearths was found on the top of the deposit covering the entrance to Cave 3 (Bard and Fattovich 2008: 16–17: 54–73; Manzo 2008: 51). Excavations along the western slope of the terrace in WG 31 and WG 40 demonstrate that parts of the western terrace were used for camping, with evidence of hearths; ceramics for cooking, eating and

FIGURE 7 General view of the western terrace and slope at Wadi Gawasis.

drinking; bird, fish and mammal bones, including a spiral ram horn; mollusc shells; dom palm nuts; and deposits of woven mats (Bard, Fattovich and Ward 2011: 2–4). Microstratigraphic excavations of two hearths was conducted at WG 61/65, demonstrating reuse of these hearths at different times (Bard, Fattovich and Ward 2011: 4–6).

Nine trenches were opened at the base of the western terrace slope (WG 19/25/26/27/44, WG 22, WG 34, WG 69, WG 70), in an area where many fragments of bread molds and wide areas of charcoal and ash were visible on the surface (Bard and Fattovich 2007: 73–76, 2010c: 9; Fattovich and Bard 2007: 23–25). These excavations demonstrated that this area was used for making ceramic platters and stone tools, as well as for food production (Bard and Fattovich 2007: 245–246).

Five more trenches (WG 70/72/73/76 and WG 75) were opened to the northwest of the production area. At WG 70/72/73/76 three mud-brick ramp structures and a small platform of coral rocks were recorded (Bard, Fattovich and Ward 2011: 6–9). They were associated with a great quantity of wood debris and hearths, suggesting that carpentry activity was practiced in this area. A test excavation (WG 75) was opened about 20 m to the north of these structures. The deposits in this trench were completely sterile, suggesting that the features recorded in WG 70/72/73/76 were all located at the northwestern limit of the site (Bard, Fattovich and Ward 2011: 12).

The UNO/IsIAO and BU excavations at Mersa/Wadi Gawasis demonstrate that the site was associated with maritime activity during the Middle Kingdom (Bard and Fattovich 2007, 2010c; Bard 2011; Fattovich 2012a). Excavations in the western sector of the site at Wadi Gawasis provided much evidence of seafaring expeditions in the 12th Dynasty: ship timbers; anchors; ropes; cargo boxes; administrative seals; inscribed stelae, ostraca and papyrus; ceramics; lithics; and plant and animal remains (see Chapter 3).

3 Evidence of Ships and Cargo Boxes

Ninety-five timbers from the hull, deck and rudders of ships, together with several tenons, dovetails and copper strips used as fastenings were recorded outside and inside the entrances of the rock-cut galleries, and were examined by maritime archaeologists Cheryl Ward (Coastal Carolina University), Chiara Zazzaro (UNO), Claire Calcagno (BU and the Massachusetts Institute of Technology) and Mohamed Abd El-Maguid (Supreme Council of Antiquities, Alexandria) (Ward 2007; Zazzaro 2007c, 2007d; Calcagno and Zazzaro 2007, 2008; Ward and Zazzaro 2010; Ward and Zazzaro 2011b: 14). The timbers included two couples of blades from two rudders, one crutch, one beam, one knife-shaped hull plank, 37 hull and deck planks, and several fragments of tenon and dovetail fastenings, which provided crucial information about the technology of ship building (Ward, Zazzaro and El-Maguid 2010).

Most timbers showed evidence of barnacle and shipworm infestation, which confirmed that they were discarded after the return of the ships to the harbor and were recycled as components of ramps to the rock-cut galleries and other structures (Ward and Zazzaro 2007: 143–146). Better preserved timbers, on the contrary, were scraped and cleaned to be used again, as can be inferred from a great quantity of wood debris associated with rough lithic tools (mainly scrapers) outside Cave 7 (Ward and Zazzaro 2007: 143–146; Lucarini 2008: 56). The different sizes of the rudder blades (1.75/2.0 m and 3.25/4.2 m in length) pointed to the use of large and very large ships for expeditions (Zazzaro 2007c; Ward and Zazzaro 2010: 33–35; Ward, Zazzaro and El-Maguid 2010).

Seventeen anchors of limestone or conglomerate were recorded on the western slope and at the southern base of the terrace at Wadi Gawasis, where some were used to reinforce the entrance to rock-cut rooms and galleries (Zazzaro 2007d; Zazzaro and El-Maguid 2007: 33–34; Fattovich, Manzo and Zazzaro 2009: 2–3). Several other anchors were associated with the ceremonial structures at Mersa Gawasis. Most likely, these anchors were not used in the sea, except for one limestone anchor with traces of use in the sea (a pitted surface) from the southern base of the terrace (Zazzaro 2007d: 158). The recorded

anchors range between 1.05 and 0.21 m in length, suggesting that some of them were probably made for small boats (Zazzaro 2007d: 161–163).

An estimated 26 coils of rope were found in Cave 5 and several hundred fragments of cordage, sometimes with knots, were recorded in the western sector of the site. The coils from Cave 5, about 1 m long and 0.6 m wide, were carefully stored on the floor of the gallery to be used or reused in an expedition that never happened (Zazzaro 2007a: 194–195, 2008b; Veldmeijer and Zazzaro 2008; Borojevic and Mountain 2011c; see also Borojevic and Mountain 2013).

Forty-three wooden cargo boxes were found piled together on the western slope of the terrace in front of Caves 5 and 6 (Zazzaro and Manzo 2007: 165–168; Manzo 2007c). These boxes were used to carry commodities from Punt, as the same inscription, recording the "wonderful things of Punt" and Year 8 of Amenemhat IV, was found on two boxes (Mahfouz 2007a; Mahfouz and Pirelli 2007: 47–48; see Chapter 4).

4 Sealings, Stelae and Ostraca

Five hundred and nine clay sealings, often with seal impressions, were excavated near the cargo boxes in front of Cave 6 and outside Cave 8, ca. 80 m to the north of the entrance to Cave 6. They were examined by Andrea Manzo (UNO) and Rosanna Pirelli (UNO). Several sealings from the area of the cargo boxes had the impression of the boxes and pegs on the inside, suggesting that the boxes were carefully sealed in Punt before the return voyage, pointing to careful administrative control of the commodities. The cargo boxes were later opened at the harbor site where the cargo was transferred to more suitable containers for overland transport to the Nile Valley. Although scarab impressions were found on a number of the sealings, only one scarab seal was excavated at the site, outside the entrance to Cave 8 (Fattovich and Bard 2007: 18–19; Manzo 2010e; Manzo and Pirelli 2006, 2007).

Twenty-eight stelae were found along the western slope of the terrace, and one (Stela 25) was found on top of the terrace (see Mahfouz 2007c, 2010: 28–30; Mahfouz and Manzo 2008: 30–33; Mahfouz and Pirelli 2007: 48–49; Pirelli 2007a). They were recorded and studied by Elsayed Mahfouz (University of Asyut) and Rosanna Pirelli. Most of the stelae had been placed in specially cut niches, which had been carved in the wall of the coral terrace between the entrances to the complex of rock-cut galleries (Caves 2–6; Bard and Fattovich 2007: 58–60). Two large niches had been carved above the entrance to Cave 4 for two large monumental stelae, which most likely included a large granite stela, the surface of which was completely eroded, found on the slope of sand below (Fattovich and Bard 2007: 19). One stela was also found outside the

entrance to Cave 8, but this stela was probably associated with a constructed mound above on the top of the terrace (Bard and Fattovich 2010a: 11).

Most of these stelae had round tops; a few were rectangular in shape. They range in dimensions from 10.5 cm x 8.6 cm x 5 cm to 72 cm x 74 cm x 10 cm. Two small stelae had never been inscribed, and probably had been brought uninscribed from the Nile Valley (Mahfouz and Pirelli 2007: 48; Bard, Fattovich and Ward 2011: 1).

Thirteen stelae still preserved some evidence of the original inscriptions, recording expeditions to Punt and/or Bia-Punt, dedication to gods and/or the "offering formula." Only Stela 5 was well preserved: it recorded an expedition(s) to Punt and Bia-Punt during the reign of Amenemhat III (Pirelli 2007a: 219–221). Six inscribed stelae (including Stela 5) record the names of Senusret II, Senusret III and Amenemhat III, supporting the interpretation that the area in front of the rock-cut galleries was mainly used in the later 12th Dynasty (Mahfouz 2007c, 2010: 28–30; Mahfouz and Manzo 2008: 30–33; Mahfouz and Pirelli 2007: 48–49, Pirelli 2007a).

Seventeen ostraca, including one with the name of Amenemhat III (Ostracon WG 101; Mahfouz 2007b: 225–226), two wooden tags, seven fragments of papyrus and one inscribed cloth were excavated at Wadi Gawasis. The ostraca mainly recorded quantities of food (Mahfouz 2007b, 2008, 2010: 31; Mahfouz and Pirelli 2007: 49; see Chapter 4). One fragment of a papyrus preserved a few lines of a private letter (Mahfouz and Manzo 2008: 34–35), suggesting that some personal contacts were maintained between the officers of the expedition and people in the Nile Valley.

5 Ceramics

Egyptian ceramics were found almost everywhere at Mersa/Wadi Gawasis, and were studied by Cinzia Perlingieri (UNO) 2001–2002 to 2006–2007, and Sally Wallace-Jones (Norwich, UK) 2007–2008 to 2010–2011. Many of the ceramics are middle- and large-size jars, which reflect the specific logistical requirements of the expeditions (Perlingieri 2007a, 2007b; Wallace-Jones 2008, 2010; Wallace-Jones and Imbrenda 2011; see also Wallace-Jones 2018).

A few Canaanite ceramics were also recorded at the harbor site, in assemblages dating to the late 12th–early 13th Dynasties. They include one handle from a jar, 24 fragments of rims and bases of at least five medium-sized bottles and a few fragments of a Middle Bronze Age Canaanite amphora (Wallace-Jones 2008: 47–48, 51, 2010: 21, Wallace-Jones and Imbrenda 2011: 15).

Seventy-nine foreign potsherds from regions in the southern Red Sea also were excavated at Mersa/Wadi Gawasis and were examined by Andrea Manzo

(UNO). These potsherds suggest that the Punt expedition ships were sailing as far as the coast of Yemen and Eritrea (Manzo 2007a, 2007b, 2008, 2010c).

6 Stone Tools

Lithic tools were frequent at the harbor site and were examined by Giulio Lucarini ("La Sapienza," Rome) (see Lucarini 2007a, 2007b, 2008). The lithics can be ascribed to two different traditions. The first tradition is characterized by big, opportunistic tools, such as rough scrapers, perforators and blades, which frequently occur in the Nile Valley and northern Sudan (Lucarini 2007a: 211). The second tradition is characterized by microlithic tools, mainly perforators associated with shells and fish bones, as well as a fragment of a wiped bowl and Middle Kingdom potsherds. Tools of the second tradition were excavated in a deep stratum at the southern base of the terrace and possibly can be ascribed to coastal peoples frequenting the site when the Egyptians were there (Lucarini 2007a: 211–212).

7 Plant and Animal Remains

Plant and animal remains were collected in excavated strata outside and inside the rock-cut caves and galleries, and at the base of the southern and western slopes of the coral terrace. Plant remains were examined by Ksenija Borojevic (BU) and Rainer Gerisch (Free University, Berlin), and include cereal grains and chaff, mangrove leaves and a huge quantity of charcoal, providing evidence about the environment of the site, diet of the members of the expeditions and fuel for the hearths (Borojevic 2010; Borojevic and Gerisch 2007, 2008; Borojevic and Mountain 2011b; Gerisch 2010).

Animal remains that were examined by Alfredo Carannante and Carla Pepe (University "Suor Orsola Benincasa," Naples, Italy) in 2006–2007 and 2007–2008 consisted of sea shells, fish bones, and donkey coprolites and mandibles (Carannante and Pepe 2007a, 2007b; Carannante 2008; Borojevic *et al.* 2010).

8 Environmental Context of the Harbor Site

Preliminary geological investigations were conducted by Abdel Moneim Mahmoud (Ain Shams University, Cairo) in the 2001–2002, 2002–2003 and 2003–2004 field seasons. Also early in the investigations, Magaly Koch (BU) analyzed a satellite image of the site (Landsat 5 TM, January 1, 1987), which demonstrated that the surroundings of Mersa/Wadi Gawasis consist of Cretaceous, Tertiary

and Quaternary rock formations. Quaternary formations include conglomerates, sand and wadi deposits, and coral reefs, which form a sequence of three coralline and gravel terraces as a consequence of eustatic sea level changes, coastal erosional processes and tectonics (Bard and Fattovich 2007: 33–36). Further geological investigations in 2007–2008 by Mohamed Badr (Egyptian Geological Survey & Mining Authority, Cairo) demonstrated that the site is located within a fault/fracture system with two primary orientations: from NNW-SSE to NW-SE, and NE-SW, associated with the Red Sea rift and dating to the late Pleistocene/early Holocene (Badr 2008: 2–3).

A sequence of four Late Pleistocene/Early Holocene faces, represented by a series of carbonate reef strata interbedded with siliciclastic deposits, also has been identified at the site and includes (1) an early conglomerate terrace at the base, (2) a stratum of calcareous sand, (3) raised coral reef limestone, and (4) an alluvial conglomerate terrace at the top (Bard and Fattovich 2007: 33, Badr 2008: 2–3).

Archaeological investigations were also complemented by geological field studies with auger cores, pulse auger cores and wash borings, conducted by Duncan FitzGerald (BU) and Christopher Hein (BU) in 2006–2007, 2007–2008 and 2009–2010 in the wadi to the south and west of the site (FitzGerald and Hein 2007, 2008; Hein and FitzGerald 2010; Hein *et al.* 2011). Geological investigations, supported by the study of shells from the cores, demonstrated that the mouth of the wadi was a wide bay with a lagoon, providing the ancient Egyptians with an open, protected harbor when the site was used. The paleo-bay was formed in the Early Holocene as a consequence of a high stand of the sea level, about 1.0 m above the modern mean one, and was connected to the sea through a channel, about 10 m deep and 150 m wide (Figure 8) (Hein *et al.* 2011).

FIGURE 8
Map of the paleo-bay at Mersa/Wadi Gawasis.
COURTESY OF CHRISTOPHER HEIN.

Most likely, the paleo-bay occupied a maximum area of 560,000 sq m, with a depth of approximately 8 m in the 6th millennium BC. Beginning in the 5th millennium BC the bay has been progressively buried by a sequence of eolian and river sediments related to wadi floods, as a consequence of more rainfall to the Wadi Gawasis watershed and greater wadi activity than today. In the 3rd millennium BC slower infilling rates due to increasing aridity along with slowly falling sea levels allowed for the existence of a stable, shallow lagoon. In the 2nd millennium BC the sea level was about 0.5 m to 0.85 m higher than the present one, and thus could provide enough deep water for safe navigation in the lagoon. The process of bay infilling continued up to about AD 1000, when the bay was completely closed (Hein *et al.* 2011: 688–689).

Although the ancient coastline inside the lagoon has not been precisely identified, geoarchaeological investigations by Trina Arpin (BU), conducted in 2004–2005, 2005–2006 and 2006–2007 (Arpin 2007a, 2007b), together with a geophysical survey conducted by Glen Dash and Benjamin Vining (BU) in 2005–2006 and 2006–2007 (Vining 2007a, 2007b), were helpful in identifying the ancient shore line. These investigations suggested that the shore of the ancient lagoon (at WG 36) was about 10 m from the western base of the upper terrace and about 50 m to the south of the southern terrace (Arpin 2007a: 92; see also Bard and Fattovich 2007: 53–54, Fig. 6).

Relating to the ancient shore line, test-pits were opened at the base of the western coral terrace under the supervision of Alfredo Carannante (Bard and Fattovich 2008: 27). The study of charcoal by Rainer Gerisch revealed that the shore of the lagoon was originally covered with mangroves (*Avicennia marina*), which were destroyed during the course of site occupation, as can be inferred from the quantity of local grey mangroves used as a fuel at the site (Borojevic and Gerisch 2007: 44, 2008: 70–71; Gerisch 2007: 175, 2010: 55–56).

A well at Bir Umm Al-Huwaytat, about 7 km to the west of the sea shore along the Wadi Gasus, could have provided expeditions with fresh water. This well was used in Greco-Roman times, when a watering station was built at the site (the "Greco-Roman station," Sayed 1977: 141–146), and the ancient coastal road (Via Nova Hadriana) passed close to it (Sidebotham, Hense and Nouwens 2008: 42–50). The occurrence at Bir Umm Al-Huwaytat of circular features similar to tent features visible at Wadi Gawasis, and many Middle Kingdom potsherds, recorded by the UNO/IsIAO and BU expedition in 2001 and 2010 (Bard *et al.* 2001: 4; Manzo 2011: 222, 2013), together with the evidence of two inscribed, early 12th Dynasty stelae recording Punt and *Saww*, discovered at this site in the mid-1800s (Nibbi 1976; Sayed 1999: 866–867), indicate that this source of fresh water was also used during the Middle Kingdom, at the same time as the harbor at Mersa/Wadi Gawasis.

Finally, gold, galenite (galena), lead and copper mines are all located within a radius of 10 km of Mersa/Wadi Gawasis, mainly in the surroundings of Bir Umm Al-Huwaytat, suggesting that use of site could also be associated with the exploitation of mineral resources (Manzo 2011: 223, Fig. 10).

9 Chronology of the Harbor Site

Archaeological and textual evidence integrated with radiometric dates provide a solid chronology for the use of Mersa/Wadi Gawasis as a harbor in pharaonic times (Bard and Fattovich 2007: 241–243, 2012: 109–110).

The pottery typology and stratigraphic sequence demonstrate that the harbor was used in both the early and late 12th Dynasty (ca. 1985–1773 BC), and in the early 13th Dynasty (ca. 2055–1650 BC). Main pottery types are Nile B1, Nile B2, Nile C, marl AV3 and marl C and its variant, especially marl C compact. Typical vessels include hemispherical cups, shallow bowls and plates, beer and water jars, and large *zir*s (Sally Wallace-Jones personal communication: January 2017; see also Perlingieri 2007a; Wallace-Jones 2008, 2010: 17–22, 2018 Wallace-Jones and Imbrenda 2011: 14–18).

A few excavated potsherds, most likely dating to the late Old Kingdom/First Intermediate Period and late Second Intermediate Period/early New Kingdom, suggest that the harbor may have been used in these periods, as well (Perlingieri 2007a: 110, 114–115).

Old Kingdom/First Intermediate Period ceramics were collected at the base of the deposit in Cave 1, cut in the western wall of the upper terrace at Wadi Gawasis, suggesting that this was the earliest man-made feature at the site. They included fragments of Nile C open medium- to small-sized bowls with a flattened inflected rim and sharp profile, Nile B1–2 medium-sized collared jars with a restricted orifice and thickened rim, a Nile B1 collared medium-sized jar with a slightly projecting direct rim, and a Nile B1 high-necked jar, with slightly projecting high neck with a thickened rim (Perlingieri 2007a: 110).

Late Second Intermediate Period/early New Kingdom ceramics were excavated mainly in the upper stratum of the deposit at the entrance of a rock-cut gallery (Cave 2) on the western side of the terrace at Wadi Gawasis, and were associated with blades of a ship-rudder. They included fragments of Nile B1 small unrestricted hemispherical bowls with a direct rim decorated with red paint at the top; Nile B1 medium-sized, restricted bowls decorated with alternating red and black painted lines, which presumably covered the upper part of the vessel; Nile B1 small flat-based bowls; Nile B1 small round-based unrestricted bowls, usually of a brown uncoated ware or sometimes of fine marl

yellowish-greenish clay; Nile B1 small round-based unrestricted bowls, usually of a brown uncoated ware or sometimes of fine marl yellowish-greenish clay; a Marl A3 slightly restricted bowl, with a discontinuous profile and a slightly everted rim; Marl A3 medium-sized jars with a short cylindrical neck and rounded everted rim; a Marl A2 medium-sized bottle, with a very everted neck, and exterior thickened rim; a Marl A3 large-sized jar with a rounded everted rim; and a Marl A3 medium-sized restricted bowl with vertical handles (Perlingieri 2007a: 114–115).

The inscribed stelae, wooden boxes and ostraca, including the stelae that Sayed (1977, 1983) recorded in the mid-1970s, demonstrate concentrated use of the harbor throughout most of the 12th Dynasty, during the reigns of Senusret I (ca. 1956–1911 BC), Senusret II (ca. 1877–1870 BC), Senusret III (ca. 1870–1831 BC), Amenemhat III (ca. 1831–1786 BC), and Amenemhat IV (ca. 1786–1777 BC). An inscription from Bir Umm Al-Huwaytat, recording a seafaring expedition during the reign of Amenemhat II (ca. 1911–1877 BC) (see Sayed 1999), suggests use of the harbor during the reign of this king as well (see Chapter 4).

Fourteen samples of charcoal, timber and shells were submitted to the Laboratory of the Institut française d'Archéologie orientale (IFAO), Cairo, for radiocarbon dating (Table 1). Five samples of charcoal were from archaeological contexts (IFAO 205, 206, 207, 213, 214). A sample of wood (*Cedrus libani Loud*) was from a timber used to reinforce the entry to the rock-cut gallery Cave 2 (IFAO 211). Four samples were from geological test-pits in the wadi sediments (IFAO 208, IFAO 209, IFAO 210, IFAO 212).

Five samples (IFAO 206, 207, 211, 213, 214) provided radiocarbon dates which are consistent with the use of the harbor in the first half of the 2nd millennium BC.

Two samples (IFAO 206, 207) were collected inside the gallery Cave 3, and suggest that the cave was used during the whole Middle Kingdom (ca. 2055–1650 BC). The dating of sample IFAO 207 is consistent with the ceramics, which point to a use of the gallery-cave in the late 12th to early 13th Dynasties (Perlingieri 2007b: 27–28), and with the revised radiometric chronology of the first king of the 13th Dynasty, Wegaf (see Bronk Ramsey *et al.* 2010: 1556; Dee 2013: Table 5, p. 286). The dating of sample IFAO 206 possibly suggests an earlier use of the gallery-cave in the late 11th to early 12th Dynasties (Bronk Ramsey *et al.* 2010: 1556; Dee 2013: 286). It is possible, however, that a discarded timber from an earlier expedition was used for fuel there.

The dating of the sample of wood (IFAO 211) from a timber at the entrance to the Cave 2 suggests that the entrance to the gallery was reinforced in the early 13th Dynasty.

TABLE 1 Mersa/Wadi Gawasis radiocarbon dates.

1) IFAO 205 – WG 16, tr 1–2, SU 77/81
Conventional 14C age: 2934 ± 56 BP. (13 C measured of 24,931% vs PDB).
Calibrated 14C Date: 68.2% probability: 1256 BC: 1236 BC 6.7% – 1215 BC: 1051 BC 61.5% (1σ)
95.49% probability: 1369 BC: 1358BC 0.7% – 1315 BC: 976 BC 94.5% – 952 BC: 949 BC 0.1% (2σ)

2) IFAO 206 – WG 39, SU 11
Conventional 14C age: 3680 ± 53 BP (13 C measured of 25,112% vs PDB).
Calibrated 14C Date: 68.2% probability: 2140 BC: 2010 BC 59.5% – 2000 BC: 1977 BC 8.7% (1σ)
95.49% probability: 2205 BC: 1916 BC 95.4% (2σ)

3) IFAO 207 – WG 39, SU 14, 2 living floor
Conventional 14C age: 3407 ± 47 BP. (13 C measured of 25,372% vs PDB).
Calibrated 14C Date: 68.2% probability: 1755 BC: 1630 BC 68.2% (1σ)
95.49% probability: 1880 BC: 1608 BC 94.3% – 1570 BC: 1561 BC 0.7% – 1546 BC: 1541 BC 0.4% (2σ)

4) IFAO 208 – geological test-pit wig T7, 155 cm
Conventional 14C age: 3455 ± 47 BP. (13 C measured of 1,953% vs PDB).
Calibrated 14C Date: 68.2% probability: 1876 BC: 1842 BC 18.2% – 1822 BC: 1796 BC 12.1% – 1782 BC: 1733 BC 26.9% – 1716 BC: 1693 BC 11.1% (1σ)
95.49% probability: 1892 BC: 1662 BC 94.1% – 1652 BC: 1640 BC 1.3% (2σ)

5) IFAO 209 – geological test-pit wg T6, 125 cm
Conventional 14C age: 3411 ± 46 BP. (13 C measured of 0,044% vs PDB).
Calibrated 14C Date: 68.2% probability: 1766 BC: 1764 BC 0.9% – 1758 BC: 1635 BC 67.3% (1σ)
95.49% probability: 1880BC: 1610BC 95.4% (2σ)

6) IFAO 210 – geological test-pit wg T7 AI, 175 cm
Conventional 14C age: 3884 ± 48 BP. (13 C measured of 1,011% vs PDB).
Calibrated 14C Date: 68.2% probability: 2460 BC: 2334 BC 57.6% – 2324 BC: 2300 BC 10.6% (1σ)
95.49% probability: 2474 BC: 2205 BC 95.4% (2σ)

TABLE 1 Mersa/Wadi Gawasis radiocarbon dates. (cont.)

7) IFAO 211 – WG24, timber 21
Conventional 14C age: 3404 ± 48 BP. (13 C measured of 23,899‰ vs PDB).
Calibrated 14C Date: 68.2% probability: 1754 BC: 1628 BC 68.2% (1σ)
95.49% probability: 1879 BC: 1838 BC 7.4% – 1830 BC: 1606 BC 85.4% – 1574 BC: 1558BC 1.5% – 1551 BC: 1538 BC 1.1% (2σ)

8) IFAO 212 – Geological test-pit wg T6, 175 cm
Conventional 14C age: 3528 ± 48 BP. (13 C measured of 1,589‰ vs PDB).
Calibrated 14C Date: 68.2% probability: 1926 BC: 1862 BC 29.7% – 1850 BC: 1772 BC 38.5% (1σ)
95.49% probability: 2014 BC: 1998 BC 1.6% – 1978 BC: 1740 BC 93.8% (2σ)

9) IFAO 213 – WG 33, hearth 2
Conventional 14C age: 3519 ± 48 BP. (13 C measured of 26,674‰ vs PDB).
Calibrated 14C Date: 68.2% probability: 1907BC: 1771BC 68.2% (1σ)
95.49% probability: 2008 BC: 2004 BC 0.3% – 1974 BC: 1737 BC 93.7% – 1710 BC: 1696 BC 1.4% (2σ)

10) IFAO 214 – WG 56, A3, SU 9
Conventional 14C age: 3517 ± 47 BP. (13 C measured of 25,047‰ vs PDB).
Calibrated 14C Date: 68.2% probability: 1900 BC: 1770BC 68.2% (1σ)
95.49% probability: 1972 BC: 1736 BC 93.9% – 1711 BC: 1695 BC 1.5% (2σ)

A charcoal sample (IFAO 213) was collected in a hearth associated with Canaanite ceramics at the top of the deposit covering the entrance of the gallery Cave 3 and is consistent with the associated ceramics, which have been ascribed to the late 12th to early 13th Dynasties (Wallace–Jones 2008: 49). Possibly this sample could be placed during the reign of Wegaf, at the beginning of the 13th Dynasty (see Bronk Ramsey *et al.* 2010: 1556; Dee 2013: 286).

A sample from a hearth associated with a small shrine to the south of Cave 7 (IFAO 214) suggests use of the shrine in the 12th–13th Dynasties, and thus is consistent with the associated ceramics, which have been ascribed to the late 12th Dynasty (Sally Wallace-Jones personal communication: April 2017).

Only a sample from a transect in front of the entrance to Cave 2 (IFAO 205) provided a much later date and thus might be intrusive, as the ceramics in the gallery date to the Middle Kingdom (Perlingieri 2007a: 117). This sample, however, might point to the re-use of the harbor in the New Kingdom, and may be consistent with the revised radiometric dating of Ramesses III (Bronk Ramsey *et al.* 2010: 1556), who sent the last recorded seafaring expedition to Punt (Diego Espinel 2011: 544–560).

Thus, the radiometric dates provide intriguing evidence of seafaring expeditions of the later 11th Dynasty or early 12th Dynasty and in the 20th Dynasty (reign of Rameses III), which are not represented in the epigraphic evidence at the site, and possibly also suggest that the last expedition visible in the archaeological record at the site was organized in the early 13th Dynasty.

10 Summary: Archaeological and Geological Investigations at Mersa/Wadi Gawasis

On the whole, the archaeological and geological investigations demonstrate that the mouth of the Wadi Gawasis was a lagoon within a large bay delimited by fossil coral terraces, over 10 m high, which provided a sheltered harbor for seafaring expeditions in the late 3rd to mid-2nd millennia BC. The northern side of the bay, beneath the northern fossil coral terrace, was used mainly because it provided better protection from the northerly winds, which members of the archaeological expedition frequently experienced during the fieldwork.

No evidence of permanent occupation has been found at Mersa/Wadi Gawasis, supporting the interpretation that the harbor was used only as a temporary base for different expeditions through time. The southwestern corner of the coral terrace at Wadi Gawasis, where a shrine was located, was more frequently used by expedition members. Evidence there also includes camps on the top and at the southern base of the terrace, chambers and galleries that were cut into the western wall of the terrace slope, and activity areas along the western slope and at the base of the terrace. Small ceremonial structures/shrines also were erected along the edge of the terrace from the coast (Mersa Gawasis) to the wadi (Wadi Gawasis) (Bard and Fattovich 2010c; see Chapter 3).

CHAPTER 3

Spatial Use of the Mersa/Wadi Gawasis Harbor in the 12th Dynasty

1 Overview

Although there is a small amount of evidence dating to the late Old Kingdom and early New Kingdom at Mersa/Wadi Gawasis (Perlingieri 2007a: 116–117), most of the excavated finds date to the 12th Dynasty. Ten field seasons of excavations, 2001–2002 to 2010–2011, have revealed evidence of the use of the harbor mainly in the 12th Dynasty (Figure 6). In the eastern sector of the site overlooking the Red Sea, small shrines were constructed using local materials (fossil coral and conglomerate), but the major focus of site use was in a now inland area, along the slopes of the western fossil coral terrace, originally located above the waters of an ancient lagoon. Ramps/slipways and an industrial area have also been excavated at the base of the western terrace slope.

2 The Eastern Terrace

Overlooking the Red Sea along the edge of the eastern terrace at the site are the remains of six ceremonial structures/shrines (Features 1, 4, 6, 7, 8, 10), most of which had been earlier investigated by A.M. Sayed. Also in this area, Sayed found fragments of five small round-topped stelae, two of which contained the cartouches of Senusret I. One of these fragmented stelae, in which the toponym Bia-Punt is mentioned, belonged to a man named Yameru (Sayed 1977: 149–150).

Re-investigation of this area by the UNO/IsIAO and BU team did not reveal any other evidence of camp use/activity by the seafaring expeditions: the area was used primarily for ceremonial activities. Three of these structures (Features 6, 7, 8) consisted only of semi-circular/oval mounds of coral rocks covered by gravel, with two small internal chambers defined by large, dressed

* Parts of this chapter were first published in this article: K.A. Bard and R. Fattovich. 2010. "Spatial Use of the 12th Dynasty Harbor at Mersa/Wadi Gawasis," *Journal of Ancient Egyptian Interconnections* 2(3): 1–13 (online publication). This chapter, however, represents more recent findings, additions, and updates of the data.

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blocks of conglomerate (Bard and Fattovich 2007: 39–43; Fattovich, Manzo and Zazzaro 2009: 1). Feature 4 consisted of an oval enclosure of rocks (fossil coral and conglomerate), inside of which was a small, horseshoe-shaped stone arrangement opening on the east, with no conglomerate slabs used in its construction (Bard and Fattovich 2007: 41–42). In Feature 10, a larger open, horse-shaped space was defined within a gravel mound (Fattovich, Manzo and Zazzaro 2009: 1). The most unusual of these shrine structures is Feature 1, which consisted of an oval platform, ca. 9.0 m × 10.0 m and 1.2 m high, with a ramp on the west side. Originally, the top of the platform was covered with slabs of conglomerate, and over 650 *Lambis lambis* shells were collected there (Bard and Fattovich 2007: 43–44).

All six shrines along the edge of the eastern terrace were oriented to the sea, as prominent markers that could be seen by ships leaving for and returning from Punt/Bia-Punt. The ceramics associated with these structures are all 12th Dynasty (early, late or only loosely defined as 12th Dynasty) (Bard and Fattovich 2007: 39–44). Not only were these shrines landmarks for the ships, but the fragments of small, personal stelae that Sayed found there suggest commemorative activities associated with these structures. The huge number of *Lambis lambis* shells associated with the platform of Feature 1 suggests ceremonial activities, perhaps offerings to a maritime deity by sailors who participated in the Punt/Bia-Punt expeditions (Bard and Fattovich 2007: 244).

3 The Harbor

The ancient harbor at Mersa Gawasis was an open, protected bay with a maximum area of 560,000 m^2 around 7,500 years ago and a depth of approximately 6–8 m (Figure 9). Large ships could pass through the 10 m (maximum) deep (and 150 m wide) channel at the mouth of the bay (Hein *et al.* 2011). After reaching its maximum extent as sea levels rose above their modern levels, the bay rapidly closed due to high sediment loads from the adjacent wadi during a time of significantly wetter climatic conditions. Rapid aridization between 3000 BC and 2000 BC greatly reduced sediment supply to the lagoon. Slower infilling rates combined with slowly falling sea levels to allow for the existence of a stable, shallow lagoon at the site when it was used as a harbor in the 12th Dynasty. Lagoonal waters reached the southern edge of the site near the beach that was used for expedition camps and the rock-cut caves and galleries that had multifunctions, but were mainly used for storage. Ships would have moored near the southern side of the site, where they were protected from the northerly winds by the coral terrace on land.

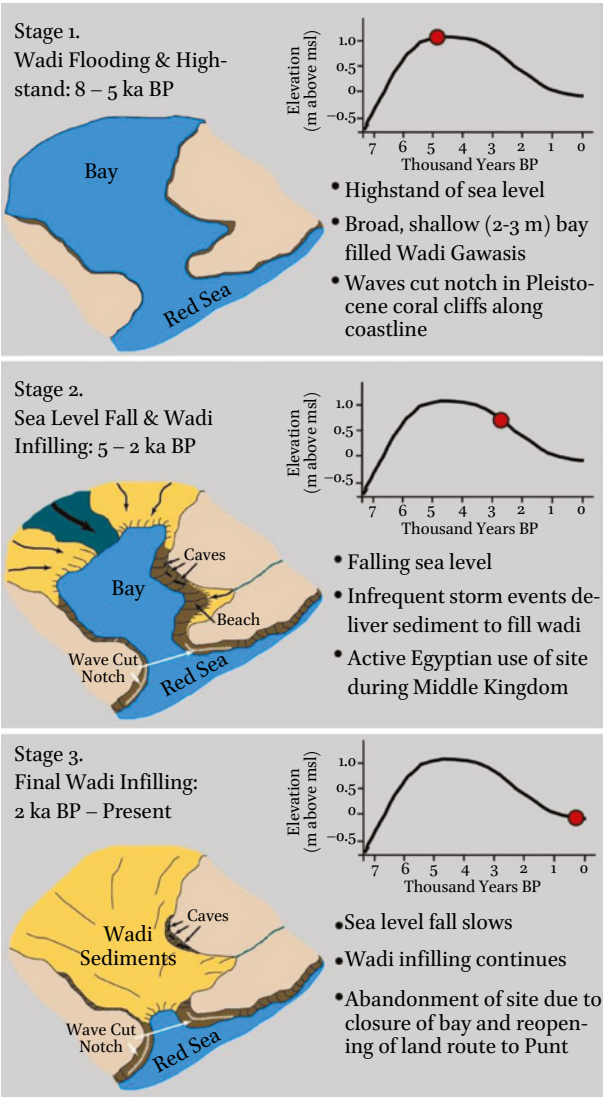

FIGURE 9 Stage 1, Stage 2, Stage 3 of the paleo-bay at Mersa/Wadi Gawasis. COURTESY OF CHRISTOPHER HEIN.

4 Central Terrace and Western Terrace Top

In the area between the shrines overlooking the Red Sea shore and the western terrace, along the channel leading into the harbor, there is only one structure, the monument of Ankhu, which dates to the early 12th Dynasty. Despite the

construction of the modern road and railroad through this part of the site, which also has left significant evidence of bulldozing, there is no evidence of any other ancient features or structures in this large area. Earlier surface surveys and a test excavation in this area in 2010 revealed no cultural remains.

The monument of Ankhu, a high official of Senusret I, was located overlooking Wadi Gawasis, on the southern edge of the western terrace, about 250 m inland. Another monument, of the vizier of Senusret I, Intef-iker (Antefoker), was found 200 m farther inland overlooking the southwestern edge of the coral terrace (Sayed 1977: 169). This monument consisted of an inscribed, round-topped stela associated with a mound later excavated by the UNO/IsIAO and BU team (WG 8, Bard and Fattovich 2007: 48–49).

To the north of the Intef-iker monument (from Excavation Unit WG 8), 24 small circular features were recorded and selectively excavated (in WG 1, WG 4/5, WG 7, WG 9) (Bard and Fattovich 2007: 44–50). Some of these features were associated with hearths and post-holes; the few associated ceramics date to the 12th Dynasty, but one feature, in WG 7, had ceramics of both the early 12th Dynasty and early New Kingdom (Bard and Fattovich 2007: 48). These features were ca. 2–3 m in diameter and ca. 10–50 cm deep. Most likely, these features were originally for tents or temporary shelters/huts, which could have provided shelter for a small number of soldiers (up to 40) (Manzo 2010f). Given the strong northerly winds that frequently whip across the terrace top, it is unlikely that this area was ever used for the main expedition camp or other activities, as has also been demonstrated in other test excavations along the top of the western terrace.

5 Western Terrace Slope

The major focus of site use at Wadi Gawasis during the 12th Dynasty was along the slope of the western terrace, where chambers and galleries were excavated in layers of conglomerate, which was easier to remove than the layers of fossil coral (Figure 10). Evidence of these ancient excavations consists of dark pebbles/cobbles, originally part of the conglomerate layer, left on the slope outside the cave entrances. These caves were used for storage, but there is also evidence of other activities inside the rock-cut rooms. On the slope outside the caves, there is also evidence of activities, including salvaging ship timbers, packing and unpacking supplies and goods, and the administration of goods and materials, and information, on ostraca and papyri. This is the area where expeditions from the Nile Valley would first arrive, via the Wadi Gasus and

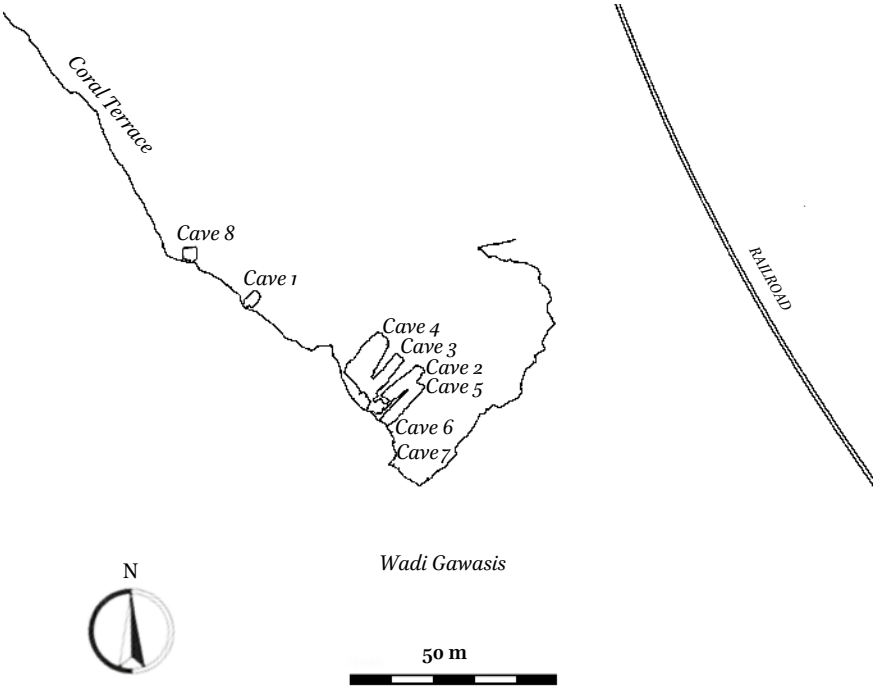

FIGURE 10 Map/plan of Caves 1–8 on western terrace. PLAN BY STEFANO TILIA.

Wadi Gawasis. The man-made caves also were located a short distance from the ancient lagoon, which facilitated loading and unloading the ships.

The rock-cut caves fall into two spatial groups: the smaller Caves 1 and 8 to the northwest, and the much larger galleries of Caves 2–7 to the southeast.

6 Western Terrace Slope, North

Cave 1 was the first man-made cave located at the site, in 2004. Cave 1 is approximately 7.0 m × 4.5 m in area, and 2.0 m high in the center, forming a roughly hemispherical space inside. Sherds of storage jars (late Old Kingdom and early 12th Dynasty), cedar planks of boxes, and five grinding stones were found inside along with other small finds (Bard and Fattovich 2007: 70–72). The original entrance sealing was no longer in place and had been breached in antiquity. A later 12th Dynasty ostracon (O. WG 101), with the cartouche of Amenemhat III,

also was found in this cave (Mahfouz 2007b: 225–227). Thus, the cave was probably excavated in the late Old Kingdom, and then reused in the early and later 12th Dynasty.

In 2010–2011 a trench (WG 40) was excavated on the terrace slope just to the south of the entrance to Cave 1. Two different periods of use there were evident in the stratigraphy, and the pottery and other artifacts found there were associated with domestic activities: cooking and eating (Bard, Fattovich and Ward 2011: 3–4). At the southern end of this 7 × 3 m trench, which was extended farther south, a pile of five mats, made of halfa grass or dom palm leaves, was excavated in SU4, along with cut reeds, the raw material for mat-making, and fragments of large and small ropes and a rope bag (Borojevic and Mountain 2011a: 87–89). The mats, which were of materials found in nearby wadis (halfa grass) and possibly along the Red Sea shore in antiquity (dom palm), were used there to create a living/sitting surface at the camp site (Borojevic and Mountain 2011a: 90).

To the north of Cave 1, the terrace slope was investigated in 2009–2010, and another cave (Cave 8) was located. The interior of this cave (ca. 5.0 m × 6 m in area and 1.7 m high) was similar in dimensions to Cave 1 and had been carefully cleared out at some point, probably in the later 12th Dynasty, and only a few sherds of early 12th Dynasty pots were found in corner areas or along the base of the rear wall. Along with the few Egyptian potsherds were sherds of an unknown black ware, with a few traces of burnishing. It had been made on a fast wheel, with a wheel-made ring base and jar handle (Wallace-Jones 2018: 21). According to Duncan FitzGerald, large-grained sand had been intentionally brought into this cave to make a smooth floor on the excavated cobble (Bard and Fattovich 2010a: 15).

A wall of sandstone blocks, possibly including anchors or parts of anchors, was constructed on the southwestern side of the Cave 8 entrance – to delimit the entrance to the cave in order to protect the materials inside, provide privacy, and guarantee more controlled access to the inner space. A kind of step also may have been created immediately outside the original rock shelter. A rectangular sandstone block was found lying vertically on this step, perpendicular to the edge of the terrace wall and west of the entrance to the cave. This block may have been intended to protect the entrance from the prevailing winds and transported sand. Two holes ca. 0.2 m in diameter were carved symmetrically to the east and west of the entrance in the vertical terrace wall, possibly for a canopy (of perishable materials), which would have shaded and protected the area immediately outside the cave. The post-holes and the mud-brick walls discovered in the area outside the cave also may have been intended to sustain the horizontal beams of this canopy.

On the terrace slope outside Cave 8 were many ceramics, of early to mid-12th Dynasty. The ceramics were all of Nile and marl wares, imported from the Nile Valley, including small cups and dishes, cooking pots, medium and large storage jars, and jars for the transport of solids and liquids. The ceramics were what one would expect from a town site, such as that associated with the pyramid of Senusret II at Lahun, and not at a temporary camp (Wallace-Jones 2011: 18).

Also found outside Cave 8 was a fragmented limestone "lamp," with a burnt depression in the center (first identified as a potter's wheel fragment).[1] This fragment is the same type of limestone lamp as was found in Corridor J of Tomb 10 (one of four shaft tombs for members of the royal family), next to the pyramid of Senusret II at Lahun (Brunton 1920: 74). Possibly in the early 12th Dynasty there was the intent to set up a more permanently occupied settlement at Wadi Gawasis, as the ceramics and lamp fragment outside Cave 8 suggest. But this did not happen.

Probably in the later 12th Dynasty, Cave 8 was swept clean and the exterior was used for administrative activities, which is demonstrated by the evidence found there, including clay papyrus sealings (later 12th Dynasty types), a scarab/seal, and a papyrus fragment with three lines of a hieratic text. Other clay sealings found in this area were used to seal wooden boxes (with ropes tied around pegs), bags and baskets, to control access to the goods and/or materials in different types of containers. The large number of papyrus fragments with traces of sealings from this area also points to the sealing of letters there, and suggests that letters and dispatches were regularly sent to and from Mersa/Wadi Gawasis when Egyptian expeditions were staying at the site – with a kind of regular delivery service between the Nile Valley and the Red Sea (Manzo 2010e: 27).

Also found outside Cave 8, lying face down in colluvium that had fallen from above the cave entrance, was an inscribed sandstone stela (Stela 29), dating to Year 2 of Senusret II (Bard and Fattovich 2010: 11). The text is about an expedition to Bia-Punt, directed by the herald Henenu (Mahfouz 2010: 28–29).

In 2010–2011 a trench (WG 61/65) was excavated to the south of the opening of Cave 8 where two contiguous mud-brick features built on a mud-brick platform (Fire-pits 14 and 15), approximately 2 m long and 1 m wide, were found. The two fire-pits contained ash, charcoal and thousands of burnt barley seeds.

1 We are grateful to Kei Yamamoto for identifying this artifact in 2016 from a photograph and pointing out other examples of 12th Dynasty limestone lamps: MMA 32.1.114 in the Metropolitan Museum of Art (from Lisht South, Pyramid Temple of Senusret I, Outer Court, MMA excavations, 1930–31; and UC17250 and UC16794 (on a stand), both from Lahun and dating to the 12th Dynasty, in the Petrie Museum of Egyptian Archaeology.

Constructed next to the terrace wall, these features were protected from the prevailing winds, which would have been advantageous for controlled burning.

Micro-stratigraphic analyzes of Fire-pits 14 and 15 were conducted by Francesco Berna, working with Ksenija Borojevic and Rebecca Mountain (Bard, Fattovich and Ward 2011: 4–6). The features seem to have been used to process barley: to remove the chaff by parching (Ksenija Borojevic personal communication: June 2016). Many burnt grains of hulled barley have also been identified in fire-pits in the production area (WG 19/25/26/27/44), as well as mineralized barley chaff in ash (Borojevic and Gerisch 2007: 41–42). Perhaps the mud-brick structures of Fire-pits 14 and 15, as well as some of the fire-pits of the production area, were used to prepare barley to take on the long voyages to Punt. The barley could then be easily made into a kind of porridge, as may have been found in the production area (see Borojevic and Gerisch 2007: Fig. 29), or the parched seeds could be eaten as whole grains (as Bard and Fattovich have observed of farmers in highland Ethiopia).

7 Western Terrace Slope, South

The large gallery-caves (Caves 2, 3, 4, 5, 6, 7; Figure 11) are located in this area as well as niches carved outside the cave entrances for inscribed stelae. Initial excavation outside the gallery-caves indicated at least seven phases of use, with at least five living floors. The ceramics associated with these seven phases indicate the earliest one (Phase 1) was during the early 12th Dynasty, and the latest phase (7) dates to the late Second Intermediate Period/early New Kingdom. All other phases of use along the slope outside the gallery-caves date to the late 12th/13th Dynasties (Bard and Fattovich 2007: 54–58; Perlingieri 2007a: 116–122).

The gallery-caves were mainly used as carpentry workshops and for storage, but there is some evidence of living areas. Any activities in these long gallery-caves would have required the use of lamps.

Caves 2 and 3 have been partly excavated, but Cave 4 remains unexcavated because of the dangerous faults that have been found in the rock above (Badr 2008: 2–3). Cave 5 is where the coils of ship rope were found in 2005; because of the fragile nature of these coils they have not been removed and no excavations have been conducted there. The original entrance to Cave 5 remains closed and the opening from the interior of Cave 2 that resulted from collapse of the carved wall between these two galleries has now been sealed off with bricks, in order to preserve the original environment of the "rope cave" as much as possible. Caves 6 and 7 remain uninvestigated because of their location, at the southwestern corner of the western terrace slope, where it was feared that the

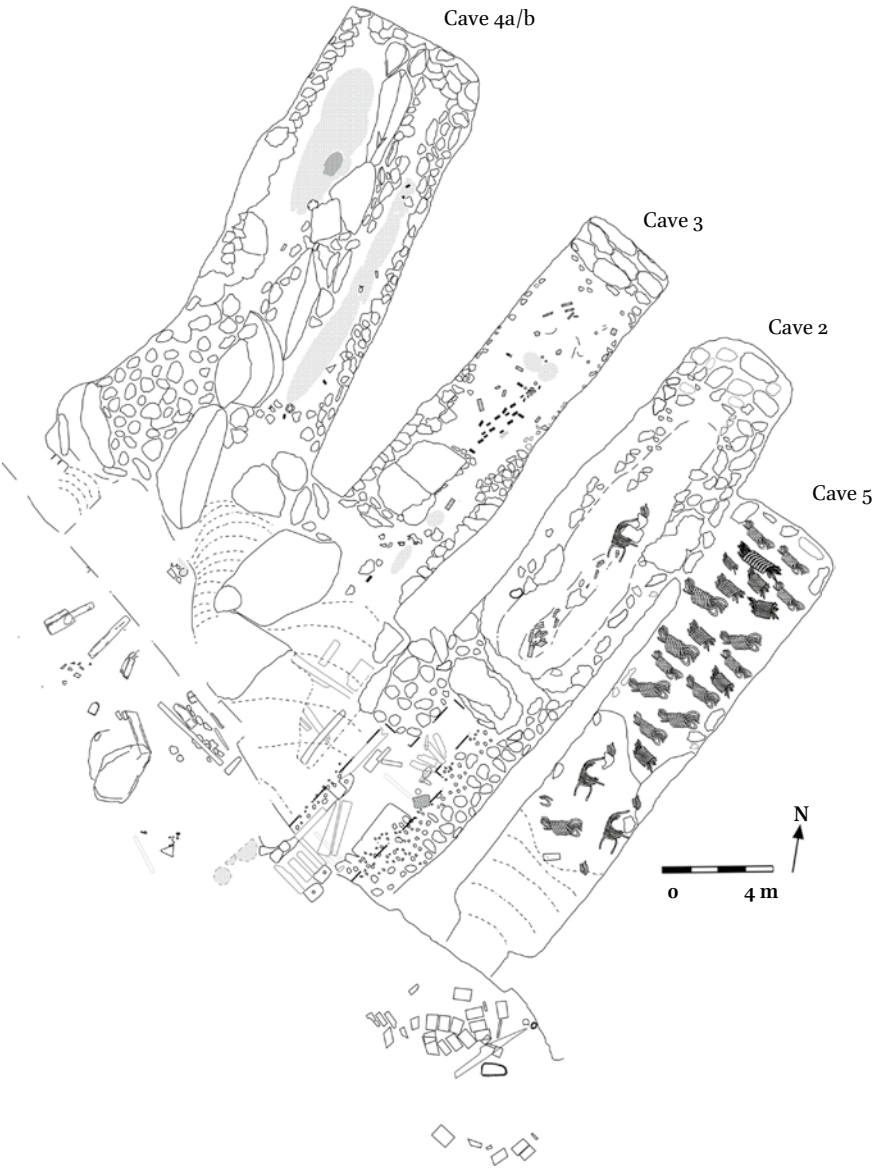

FIGURE 11 Plan of Caves 2, 3, 4, 5.
PLAN BY STEFANO TILIA, ANDREA MANZO AND CHIARA ZAZZARO.

whole coral terrace corner could collapse if the deposits of windblown sand in these caves were removed.

A test trench excavated in this area has clarified the sequence of events (WG 16 transect; Perlingieri 2007a: 116). The earliest use was in the early 12th Dynasty, before the large gallery-caves were excavated. The gallery-caves were then

excavated, also in the early 12th Dynasty, with the conglomerate debris from their excavation covering the earlier occupation. Early 12th Dynasty pottery also was found in the first phase of use *after* the caves were excavated, when there is also evidence there of sealings used to close containers (Manzo and Pirelli 2007: 237).

Excavated outside the entrances to Caves 2 and 5 were ceramics dating to the later 12th Dynasty (WG 24 and WG 32; Perlingieri 2007a: 117), as well as administrative sealings of the later 12th Dynasty (excavated in WG 32), for control of imported goods (Manzo and Pirelli 2006: 94–96). Also excavated at the entrance to Cave 2, along with the later 12th Dynasty pottery, were two ostraca (O. WG 105 and O. WG 106) with partially preserved hieratic inscriptions relating to expedition food/rations (Mahfouz 2007b: 229–231).

Also on the western terrace slope, south, outside the entrances to Caves 5 and 6 (in WG 32), over 40 cargo boxes had been unpacked and left here. The wood of these boxes showed termite damage, but nine boxes had been made in a standardized size: 50–52 cm long, 32–34 cm wide, and 27–29 cm high; while four boxes were slightly smaller: 45–48 cm long, 30–34 cm wide, and 20 cm high (Manzo 2007c: 30). Of the six boxes examined by Rainer Gerisch, four of them were made of planks of sycamore, imported from the Nile Valley (Gerisch 2007: 188). Two of these cargo boxes had inscriptions, one of which preserves the name of the king, Amenemhat IV, and a year date (Year 8), and "… of wonderful things of Punt/ … overseer of recruits, the royal scribe Djedy" (Mahfouz 2007a: 238). Although the sand within and around the boxes was carefully sieved during excavation, nothing remained of the original contents of the boxes, which must have been unloaded there and packed into other containers for (easier) transport by (donkey) caravan to the Nile Valley. Donkey bones have been excavated in the harbor beach area (in WG 38, Fattovich and Bard 2007: 26; in WG 63/66; Bard and Fattovich 2010c: 8), and the coprolite of a large herbivore, probably a donkey, was identified in deposits (WG 55) to the south of the entrance to Cave 6 (Borojevic 2010: 48), suggesting that donkeys were used as pack animals on the cross-desert treks to the harbor.

But before the cargo boxes were deposited in this area, there is evidence of an earlier phase of use near the entrance of Cave 6 – which represents the last phase of use of the entrance to this cave. A pile of ca. 50 shallow (complete or fragmentary) plates was placed over a large (broken) jar to the southwest of the entrance to Cave 6. In this phase two walls of coral and conglomerate blocks had also been built immediately to the north of the entrance to Cave 6 and south of the entrance to Cave 5, delimiting a space between the two entrances. These walls abutted the rock terrace and may have been used already in earlier occupation phases (Fattovich and Bard 2007: 18–19). The plates

have a diameter of ca. 16–19 cm and were engraved with pot marks of single or multiple "commas" before firing. Based on their similarity to plates from different deposits at Lisht, they may have been jar stoppers (Perlingieri 2007b: 28).

Also in the area of the western terrace slope, south, a number of large ship timbers were left outside the cave entrances (Ward 2007: 135–136). In the 2009–2010 excavations, two large rudder blades (T72, T85, 3.25 m and 4.20 m long) were identified that had been reused to form a ramp outside the entrance to Cave 6 (Ward and Zazzaro 2010: 34).

8 Caves 2 and 3

When Cave 2 was first opened in 2004, two large rudder blades (T1, T2) were found lying on a deposit of windblown sand in the cave's entrance corridor. Associated with these two rudder blades were potsherds dating to the early New Kingdom (Zazzaro 2007c: 150). This evidence probably represents the last seafaring expedition at Mersa/Wadi Gawasis.

The main period of use of Cave 2, however, was during the 12th Dynasty. The entire gallery is 24.0 m long and 4.0–5.0 m wide. It has been divided into three sectors: (1) entrance corridor, 2.6 m × 1.4 m, and 1.2–1.5 m high; (2) Room 1, about 4–5 m wide, and damaged by some collapse of the rock-cut ceiling (excavated in 2004–2005 and 2005–2006); and (3) Room 2, ca. 17.5 × 4.0–5.0 m, 2 m high in the center and 1.0 m high near the walls (excavated in 2009–2010 and 2010–2011) (Bard and Fattovich 2007: 62–66, Figs. 27, 64; Ward and Zazzaro 2010: 31–33, 2011b: 14). Evidence suggests that Cave 2 originally was used as a rock shelter with the bedrock beginning between the entrance corridor and Room 1 (Bard and Fattovich 2007: 64). When Cave 2 was created, a ramp structure was made of mud-bricks and three ship timbers (T3, T4, T48), were laid in parallel. The walls of the entrance corridor were reinforced with large blocks of conglomerate and limestone (six of which were anchors: Zazzaro 2007d: 157) and ship timbers, as well as mud-bricks, small rocks (both conglomerate and fossil coral), potsherds, and textile fragments fixed in gypsum and mud plaster (Bard and Fattovich 2007: 63–64).

In Room 1, beyond the corridor entrance to Cave 2, were ceramics from the later 12th Dynasty, from a later phase of use (Bard and Fattovich 2007: 64–65; Perlingieri 2007a: 117). Two ship timbers (T18, T19) had been laid horizontally at the cave entrance, and a walkway of five reused ship timbers (T27, T28, T29, T39) were positioned as a walkway in Room 1 (Bard and Fattovich 2007: 64–65). Artifacts from this phase are associated with food production: a rope (grain?) bag, an ovoid wooden bowl (grain scoop?), two grinding stones and a

few potsherds of small cups (Bard and Fattovich 2007: 65). A large quantity of reworked wood fragments and disassembled ship timbers there also suggest an activity area for wood-working (Bard and Fattovich 2007: 65).

Later excavations in Cave 2, Room 2, in 2009–2010 and 2010–2011, produced more evidence of wood-working, including approximately 47 liters of wood debitage, most likely the result of dismantling, cleaning and modification of ship timbers. Identified species of the wood debitage were cedar (*Cedrus libani*) and sycamore (*Ficus sycomorus*). The wooden handle of an adze (missing its copper alloy blade), probably used in the debitage activity, was also excavated in this sector (Ward and Zazzaro 2010: 32). More cedar chips, shavings and debitage were excavated in this room in 2010–2011, including fragments of dovetail and trapezoidal tenon fragments, as well as fragments of papyrus ropes (Ward and Zazzaro 2011a: 80).

Cave 3, which is 22 m long from the entrance, has an almost rectangular plan in its inner part (13.5 m × 4.0 m), and a height in the vaulted ceiling of 1.65 m in the middle of the gallery. Two phases of activities were recorded in this cave. The later phase of use has evidence of small hearths at the entrance/shelter area of the gallery, and wood debris associated with shells, rope fragments and fish bones were scattered throughout the cave. The burning of ship timbers also took place during this phase. Wood fragments in the inner part of the cave from this phase include fragments of mortises, tenons and dovetails: the fastenings from ships. An earlier phase of use in the cave involved the reworking of seven ship timbers (T55, T61, T64, T65, T66, T67, T69), found lying on a prepared floor of the cave, and food processing (Bard and Fattovich 2007: 66; Calcagno and Zazzaro 2007: 22, 30–33; Fattovich and Bard 2007: 22). The ceramics from the interior of Cave 3 date to the later 12th Dynasty (Perlingieri 2007b: 27).

T64, a massive timber found in Cave 3, was removed from the cave in 2010 and recorded by Ward, who identified it as a segment of a cedar strake fastened to the keel, originally positioned at the waterline, that had probably been reused as a work bench in the cave, as suggested by the numerous cut marks on one surface (Ward and Zazzaro 2010: 37–38; Ward, Zazzaro and El-Maguid 2010: 387).

Cave 3 also was used for food storage. Well preserved emmer wheat (*Triticum dicoccum*) spikelets, with the seeds completely eaten by insects, were excavated in the earlier deposit in the inner part of the cave (Borojevic *et al.* 2010: 1–10). The emmer had been transported from the Nile Valley as spikelets, already coarsely threshed, and then was stored in Cave 3 (Borojevic and Gerisch 2007: 39, 42). Later it would have been milled on saddle querns, which have been excavated at the site (Lucarini 2007a: 200), to make bread.

Andrea Manzo (2010f) has suggested that the long gallery-caves at Wadi Gawasis are similar in design and use to the long, narrow galleries that Mark Lehner has excavated at the Heit el-Ghurab site at Giza (Lehner 2002: 27–74). At the entrances to Caves 2 and 3 at Wadi Gawasis there is evidence of activity areas with hearths and the remains of food, behind which these galleries may have been used for shelter for expedition members – similar to how the Giza galleries were organized. The gallery-caves at Wadi Gawasis also were used as workshops for wood-working activities, which would have required lamps for working in the interior. Although a fragment of a limestone lamp was found outside of Cave 8 (see above), ceramic lamps have not been found at the site. However, a large valve of a *Tridacna* shell, with traces of a type of fire exposure, suggesting that it was used as a lamp, was found in excavations in the beach area (Carannante 2008: 13). Cave 3 also was used for storage, for emmer wheat that would eventually have been removed from the cave to make bread in the production area.

9 Cave 5

Cave 5, the "rope cave," is 19.0 m × 3.75–4.10 m in area, with straight walls and a vaulted ceiling that is 1.6 m high in its grooved center (Bard and Fattovich 2007: 67). The coiled ropes were found toward the rear of the cave, in at least two layers. At least 16 complete, coiled ropes are in the upper layer, and an estimated 10 coils are in the lower layer (Veldmeijer and Zazzaro 2008: 21). Although unexcavated, Cave 5 and its contents most likely date to the later 12th Dynasty, as do most of the deposits found in this area of the site as well as inscribed artifacts. The coils have not been removed from the cave or uncoiled because of conservation issues, including an infestation of silverfish, but an estimate of length for the largest rope (no. 2) is at least 30 m long (Veldmeijer and Zazzaro 2008: 29). The ropes were probably used as a ship's standing rigging and/or hogging trusses (Veldmeijer and Zazzaro 2008: 39).

Although Veldmeijer and Zazzaro (2008: 26, 39) state that the ropes are made of a species of grass (the common reed or the giant reed that grew at the site of the ancient harbor), subsequent analysis by Borojevic and Mountain (2011b) has demonstrated that the ropes are made of papyrus, which grows in the Nile Valley and not on the Red Sea coast. The ropes would have been transported already manufactured in coils from the Nile Valley, along with the rest of the ship parts and equipment.

In 2010–2011 Howard Wellman, the project's conservator, applied cyclodene to sections of rope in Cave 5 as a test and determined that this chemical was

FIGURE 12 Coiled ropes in Cave 5.

effective in consolidating the rope fiber (Wellman 2011: 93), but without a complete conservation plan in place, the ropes were left *in situ*.

To view these coiled ropes *in situ* in the "rope cave" is truly an extraordinary sight: a frozen moment of time from ca. 3,800 years ago, when the sailors left them on the floor of the cave, probably intended for use on a future expedition, which never happened (Figure 12).

10 Cave 7 and the Alcove Shrine

In 2007–2008 a shrine was partially excavated (in WG 56) to the east of the entrance to Cave 7, which remains unexcavated. Both the shrine and the entrance to Cave 7 are located directly below the circular mound on top of the terrace where the Intef-iker stela was found by Sayed. The shrine consisted of an alcove-like opening in the terrace wall, outside of which was a U-shaped structure composed of three large conglomerate blocks, with a fourth block leaning against the southernmost one (Figure 13). A low curved wall ("cobble wall"), cut into the conglomerate layer of the terrace, extended around the shrine. Unlike the excavated deposits in other areas of the terrace slope, which typically have evidence of wood-working, administrative activities, and

FIGURE 13 The "Alcove Shrine."

accumulated materials from expeditions, evidence of such activities was missing there (Bard and Fattovich 2008: 22–25).

The ceramics associated with the shrine were very mixed throughout the strata: both early and later 12th Dynasty ceramics were found together (Sally Wallace-Jones personal communication: March 2017), which is similar to the stratigraphic evidence at a shrine excavated at the Gebel Zeit galena mines farther north. The mining site was only used periodically by expeditions, and the shrine would have been abandoned for periods of time, robbed, and then periodically repaired and cleaned out. These cycles of activities at the Gebel Zeit shrine explain why older artifacts were mixed with more recent ones (Régen and Soukiassian 2008: 2). Such activities can also explain the mixed ceramics at the Wadi Gawasis shrine, which was probably used by different expeditions throughout much of the 12th Dynasty. Also found in a stratum (SU 8) in the alcove shrine was a concentration of sherds from at least five small jars of Palestinian origin (Sally Wallace-Jones personal communication: March 2017) – most likely offerings.

To the west of this shrine is the entrance to Cave 7. Excavations there in 2007–2008 (in WG 55) uncovered two limestone stelae (Stela 23 and Stela 24)

near the entrance to the cave (Bard and Fattovich 2008: 19–22). Stela 23 dates to Year 41 of the reign of Amenemhat III, but most of the text is now missing (Mahfouz and Manzo 2008: 31–32). In the contiguous excavation unit associated with the stone shrine structure, another stela (Stela 28) was found (Bard and Fattovich 2008: 23). The unfinished inscription on this offering stela includes (in translation) "an offering which the king gives to Osiris of *Wadj-wer* [Great Green, i.e., Red Sea in this case] and Horus the Great" (Mahfouz and Manzo 2008: 33; English translation from the French by Bard).

Four rod-like pieces of ebony (now in fragments) also were excavated in WG 55, along with two Minoan potsherds. The rods of ebony suggest the original shape in which they were imported from Punt, where ebony trees grow (Gerisch 2010: 51–52, 56). Although the two Minoan potsherds were found in the same stratigraphic unit (WG 55, C2, SU2), they come from different pots dating to very different periods. One potsherd is characteristic of the Proto-palatial period, possibly as early as ca. 2000 B.C., of the White-banded Style of MMIB Kamares pottery; the other potsherd is from a shallow bowl of Fine Buff Crude ware of the MMIIIA, ca. 1700 BC (Wallace-Jones 2018: 32).

The alcove shrine and exterior area of the entrance to Cave 7 thus provide evidence of the most unusual ritual activity excavated at the ancient harbor site. The shrine was used throughout the 12th Dynasty and offerings were left there, including Minoan pots, pots of Palestinian origin, and (burnt) rods of ebony, as well as an offering stela to a maritime deity, Osiris of *Wadj-wer*, and Horus the Great. The shrine was located at a prominent point at the site, at a corner in the western coral terrace overlooking the inland lagoon/harbor.

11 Harbor Edge

Below the western terrace slope at its base and at the edge of the harbor, there is evidence of different uses: a dump below Cave 8, with a production area to the south. Excavation Unit WG 69 was excavated below Cave 8. In Middle Kingdom times (throughout the 12th Dynasty) this area was at the water's edge and broken pottery was dumped there. The ceramics are a mix of early and late 12th Dynasty wares, and a possible fragment of an Old Kingdom bread mold also was found there. A Canaanite jar also was excavated in the dump (Wallace-Jones 2008: 23).

In sections in this excavation unit the dark, decayed roots of mangrove trees were found in the level below the pottery, and above the last use of the area as a dump there were no more mangrove roots. Interpretation of this section is as follows:

(1) Mangrove trees originally grew in stands along the edge of the lagoon.
(2) As the site was repeatedly used as a harbor, the mangrove trees were cut down and used during expeditions.
(3) After abandonment of the harbor, as the area infilled with wadi silts and aeolian sand, the mangrove trees were permanently gone (see Hein *et al.* 2011: 690).

12 Production Area

The production area (WG 19/25/26/27), located to the south of WG 69, was excavated by S. Terry Childs and Cinzia Perlingieri in four field seasons, beginning in 2003–2004. In this area a great number of fire-pits were excavated along with many deposits of ash and charcoal. The charcoal from this area has provided most of the samples for wood identification by Rainer Gerisch (Gerisch 2007: 170–185). Although most of the ceramics at the 12th Dynasty harbor were imported from the Nile Valley, large, chaff-tempered "platters" using local clay were fired in the production area (Bard and Fattovich 2007: 73–76). The many long, cylindrical bread molds found there, once thought to have been produced at the harbor site, were probably brought from the Nile Valley and were used for bread making (Wallace-Jones, 2018: 21). Most of the imported Egyptian ceramics associated with these fire-pits date to the later 12th Dynasty, but the earliest phase of use of the production area is associated with early 12th Dynasty pottery (Bard and Fattovich 2007a: 76). Stone tools also were made in the production area (Lucarini 2007a: 205–207).

Prolific samples of cereal grains have come from hearths and fires in the production area. These include numerous burnt grains of hulled barley (*Hordeum vulgare*), but also some emmer grains (*Triticum dicoccum*), as well as mineralized barley chaff from ashes, which was used as tinder for starting fires. An excavated residue with burnt barley grains adhering together was perhaps from a porridge or was the residue of beer making (Borojevic and Gerisch 2007: 41–42).

13 Ramps (Slipways?)

In 2010–2011 three features (F1, F3, F7) were excavated in WG 70/72/73/76 (an area of 168 sq. m) at the base and on the lower slope of the western coral terrace slope, to the north of Cave 8. Dated to the 12th Dynasty by the associated ceramics, these three features were ramps (slipways?). Feature 1 was located

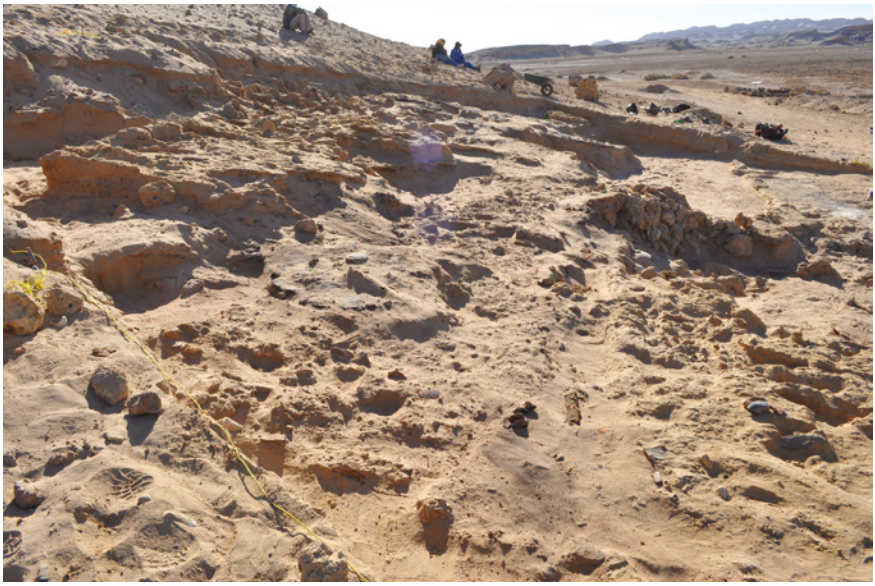

FIGURE 14 Ramps in WG 70/72/73/76.

at the base of the slope near the shore of the paleo-bay, while Feature 3 and Feature 7 were on the terrace slope. A small platform made of coral rocks (F2), about 2 m × 2 m in area and 0.4 m high, also was built at the base of the slope between Feature 1 and Feature 4 (Bard, Fattovich and Ward 2011: 6–9, 18, 2011b: 76–77) (Figure 14).

The ramps were associated with a great quantity of wood debris, suggesting that carpentry activity was practiced in this area. Constructed of mud-brick, the ramps were no more than 30 cm in height at the higher end, which ended in corners. The walls of these structures were oriented NW-SE and were aligned approximately perpendicular to the edge of the paleo-bay. The ramps varied in length from ~6 m (F7) and 6 m (F1), to 8 m (F3). Feature 1 and Feature 3 were built with mud-bricks approximately 15–18 cm wide. Feature 7 was built with larger mud-bricks, approximately 27 cm wide (Bard, Fattovich and Ward 2011: 9).

An alignment of thin mangrove poles was found along the external side of the ramp walls, delimiting areas covered with a stratum of mud (from slipways?), about 5–7 cm thick, sloping down to the shore of the paleo-bay. Fragments of copper alloy strips (used for tenon fastenings) and wood debris from this area suggest that these structures were associated with disassembling ships (Bard, Fattovich and Ward 2011: 9).

Another structure (F4) consisted of a mud-brick wall about 4 m long, ending in a short perpendicularly constructed wall, which suggests that a rectangular mud-brick building had been built close to the shore of the paleo-bay. These mud-bricks were approximately 27 cm wide (Bard, Fattovich and Ward 2011: 9).

Although the chronological sequence of these four features is uncertain, most likely the ramps were constructed for at least two different expeditions. On the basis of the size of the mud-bricks, Feature 1 might be contemporary to Feature 3, and Feature 4 to Feature 7. A great number of hearths as well as fragments of chaff-tempered platters, with many fragments of bread molds on top, were found beneath the stratum of mud, which suggests that the whole area was initially used for bread making (Bard, Fattovich and Ward 2011: 9).

The stratigraphic sequence of these structures demonstrates that Feature 4 was built directly on the sand of the ancient shore of the lagoon and was later in date than Feature 2, as the mud-brick wall of Feature 4 abutted the rocks of the platform of Feature 2. Feature 1 was erected on a higher level of the slope, over some hearths, which most likely were associated with Feature 4. Hearths were located on the top of the sterile sand forming the slope to the east of Feature 1 and Feature 4, and were covered with a thin stratum of mud associated with Feature 3. Feature 3 was erected at a higher level on the slope, on a stratum of mud-bricks overlapping the stratum of sand forming the ancient slope, which also occurred beneath Feature 4 and Feature 1 (Bard, Fattovich and Ward 2011: 9).

Thus, the earliest use of this area in the 12th Dynasty was for baking bread. The ramps were constructed only later in the 12th Dynasty. Possibly ships that were used at the beginning of an expedition(s) were constructed on these ramps (slipways?), but the archaeological evidence is only of their dismantling and the salvaging of timbers at the end of an expedition(s).

14 Western Terrace, Southern Slope

Under a rock shelter along the southern slope of the Wadi Gawasis, and below the stela of Intef-iker, Sayed found evidence of a camp: "traces of ashes and food remains," as well as some inscribed potsherds (in painted hieratic or incised hieroglyphs) and two unfinished anchors (Sayed 1978: 70–71). Also in these deposits were a "small copper (or bronze) chisel, 10 cm in length, and some broken chisel heads," a "group of terra-cotta pipes" [bread molds], and a quartz bowl, 40 × 29 × 12 cm, that "resembles the mortars found in the ancient gold mines in the Eastern Desert" (Sayed 1983: 27). Two groups of inscribed

potsherds (25 and 15 in number) also were found there (Sayed 1983: 24–26). One of these potsherds, with a hieratic text, mentions the toponym "Punt," and another ostracon gives the name of the funerary temple of Senusret II and Year 5 [of Senusret III] (Sayed 1983: 25). The official (*ḥ3ty-ʿ Rʿ-nbw-k3w*) Nebukaure, whose name has also been documented in the Lahun Papyri, which date to the time of Senusret III, is found on another ostracon (Sayed 1983: 26). Thus, it is likely that an expedition in Year 5 of Senusret III was (in part?) supplied by the pious foundation at Kahun, under the direction of the official Nebukaure, and the remains of this expedition were located in this part of the harbor site. This rock shelter was re-investigated by the UNO/IsIAO and BU team in 2010–2011 (WG 74). A constructed mud-brick platform had been built there and there were many potsherds of storage jars, but use of this area was terminated in Middle Kingdom times when huge fragments of the coral terrace overhang broke off and destroyed part of this platform (Fattovich, Bard and Ward 2011: 78).

At the base of the southern slope, the UNO/IsIAO and BU team excavated more evidence of a camp: a mound of (anciently) discarded ceramics of later 12th Dynasty pottery. Beneath and around the mound of broken pottery was evidence of a camp: wooden poles, potsherds, hearths and charcoal. In a test pit in this area, early Middle Kingdom pottery was found at the bottom (WG 10: Bard and Fattovich 2007:50–51). Another excavation unit (WG 18) near this revealed similar evidence, with ceramics from two periods of use: the early and later 12th Dynasty. Thus, the ceramics and hieratic inscriptions on ostraca in this area provide evidence of temporary expedition camps (with no permanent architecture) dating to both the early and later 12th Dynasty.

15 Beach Area above the Harbor

In 2007–2008, Fattovich excavated large areas of a beach next to the harbor, opening to the south of the western terrace, southern slope, where there is evidence of two periods of use as a camp, both of which have later 12th Dynasty ceramics. The largest area excavated there consisted of several contiguous excavation units (WG 45/46/47/48/49/50), covering an area of 600 sq. m (Bard and Fattovich 2008: 25–27), and was stratigraphically earlier than the other area excavated in the beach (WG 51). Many of the ceramics in WG 49 were from large jars (mainly of Marl C ware and its variants, as well as large storage jars of Marl A variant 3 from Upper Egypt (Wallace-Jones 2008: 47–48). A number of these large jars were aligned along the shore line, and were probably related to work/activities along or near the beach edge of the harbor. Evidence of camp subsistence activities in this area, of food preparation and

consumption, consisted of a number of hearths, charcoal and fish bones. But ship assembling(?) and disassembling definitely were not part of the activities there.

Excavation Unit WG 51 was located farther away from the harbor edge in this beach area, at the mouth of a small wadi that drains from the coral terrace into the Wadi Gawasis (Bard and Fattovich 2008: 27). Ceramics there were of a wide variety of wares from the Nile Valley, including three Marl C rim sherds from bag-shaped jars that are also found at Tell el-Daba in the 12th Dynasty (Wallace-Jones 2008: 46). Two body sherds of a large cooking pot of Nile E ware were also excavated in this unit. Fragments of a Canaanite jar also were found closer to the beach shore line, in WG 47, as well as a large cooking pot of Nile E fabric, "typical of those found at Tell el-Daba" (Wallace-Jones 2008: 47–48), suggesting that some wares (as well as Canaanite jars) in this camp were supplied from the eastern Delta.

16 Stelae Associated with the Gallery-Caves

More than 30 niches were carved into the western terrace wall, south, near the entrances to the long gallery-caves (Caves 2, 3, 4, 5 and 6). Round-topped, limestone stelae were found there, some still *in situ* in their niches, but most were found in deposits of sand along the terrace slope. Two types of stelae have been recorded: (1) personal stelae inscribed with the "offering formula" and carved with offering table scenes, and (2) commemorative stelae with "historical" information about expeditions. A small, round-topped and uninscribed ("blank") stela was also excavated in WG 74, the destroyed rock shelter along the slope of the northern edge of Wadi Gawasis. This uninscribed stela probably had been brought to the harbor site by an expedition from the Nile Valley, but it was never inscribed and used there.

Most of the inscribed stelae have missing parts of their texts, but of the evidence that remains, these stelae all date to the later 12th Dynasty, suggesting that the stelae in this part of the site all date to this time. Of the stelae in which the king's names/cartouches have been preserved, only one (Stela 14) is from the reign of Senusret III (Mahfouz and Pirelli 2007: 48). Of the five stelae which preserve the names/cartouches of Amenemhat III (Stelae 5, 6, 8, 16, 23), only two have year dates: Stela 16 (Year 23) and Stela 23 (Year 41) (Mahfouz and Manzo 2008: 30–32). Thus, this part of the site was used by expeditions that took place during the reigns of Senusret III and Amenemhat III, and nearby materials in cargo boxes were unloaded from the last known dated expedition to Punt, during the reign of Amenemhat IV (see above).

Stela 5, from the reign of Amenemhat III, has the best preserved (complete) text, about two expeditions during the reign of this king: one to Bia-Punt, under the direction of an official named Nebsu, and the other to Punt, under the direction of Nebsu's brother, Amenhotep (Pirelli 2007a: 220–221). At the top of the stela is a scene of the god Min of Coptos, who is given an offering by the king, Amenemhat III. Standing behind the king in this scene is the stela's owner, Nebsu, who was overseer of the cabinet of the "Head of the South" [i.e., Thebes].

17 Spatial Organization of the Harbor of *Sawu* Compared to the Harbors at Ayn Soukhna and Wadi el-Jarf

At Mersa/Wadi Gawasis there is evidence of a large, sheltered harbor that was used primarily in the 12th Dynasty to send long-distance, seafaring expeditions to Punt and/or Bia-Punt. All of the harbor facilities consisted of rock-cut caves/galleries (and one rock shelter in WG 74), which were used for storage as well as activities, such as a limited amount of carpentry and food preparation. Aside from the small shrines located along the seashore and terrace top, there is no evidence of constructed, free-standing buildings, nor is there any evidence of any permanent habitation – the lack of fresh water and very limited food resources would preclude such occupation, as would the difficult access to the site via wadis in the Eastern Desert. *Sawu* was only used on a temporary basis to mount probably infrequent seafaring expeditions to Punt and/or Bia-Punt.

Upon return to the harbor by successful, seafaring expeditions, cargo from the southern Red Sea region was transferred at the site for overland transport to the Nile Valley. Evidence in the "rope cave" (Cave 5), the only cave that was not disturbed in antiquity, suggests that some undamaged expedition materials may have been stored at the harbor site for use on future voyages. Made of papyrus, such ropes would have been easily obtained throughout the Egyptian Nile Valley, and there would not have been a great need to transport them back across the desert, especially given their weight and volume.

Some large ship timbers were reused at the site: for the support structure at the entrance to Cave 2; ramps into Caves 3, 4 and 6; and a "bench" for carpentry work in Cave 3. Many of the excavated ship timbers show evidence of (shipworm) damage and were abandoned at the site. The most damaged timbers ended up as fuel in hearths at the site, as identified in the charcoal by Rainer Gerisch. More timbers may have been left at the site and were robbed from the caves in antiquity, before the cave entrances were covered with deposits of windblown sand. But given the large amount of wood debris (gribble)

found throughout the site, especially in the area of the ramps/slipways (WG 70/72/73/76), it is likely that many ship timbers, which were made of valuable cedar, imported from Lebanon, were salvaged as much as possible by carpenters working with adzes and were then transported back to the Nile Valley along with other undamaged timbers.

Although the harbor at Ayn Soukhna, located farther north on the Gulf of Suez, was used for a different type of seafaring expedition, to transport copper/copper ore to Egypt from mines in the Sinai, its location had a number of advantages: (1) it was located just to the east of a fresh-water (hot) spring; (2) the harbor is sheltered from the prevailing northerly winds; and (3) it was the closest Red Sea harbor site to the capital of Memphis (Abd el-Raziq *et al.* 2012: 3). Inscriptions there date from the Old Kingdom to Coptic times, but the main period represented by the inscriptions is the Middle Kingdom (Abd el-Raziq *et al.* 2012: 4; see also Abd el-Raziq *et al.* 2002; Tallet 2016: 10–11). All the excavated evidence, however, indicates that the site also was used extensively during the Old Kingdom (Abd el-Raziq *et al.* 2012: 6).

Ten rock-cut galleries have been located at Ayn Soukhna carved into the sandstone bedrock (Abd el-Raziq *et al.* 2012: 5), forming a larger complex than those at Mersa/Wadi Gawasis. Two of these galleries (G2, G9) contained the charred remains of boats, "probably quite incomplete" (Pomey 2012: 35–45). Also at Ayn Soukhna are numerous copper workshops for smelting copper ore/malachite in furnaces, removing copper prills from the slag, and then melting the metal into small ingots in crucibles. These workshops date to the Middle Kingdom, with the ore probably coming from mines in the Sinai, but the sources of fuel for these furnaces is uncertain (Abd el-Raziq *et al.* 2012: 7–8).

Also on the Gulf of Suez and to the south of Ayn Soukhna is the site of the 4th Dynasty harbor at Wadi el-Jarf (see Tallet 2016: 12–18; Tallet and Marouard 2016). With a total of 30 long, narrow galleries cut into the limestone bedrock and organized in two groups (Tallet, Marouard and Laisney 2012: 403–405), it is a much larger harbor facility than those at Ayn Soukhna and Mersa/Wadi Gawasis. Inscriptions indicate that the Wadi el-Jarf harbor was used during the reign of Khufu (Tallet and Marouard 2014: 4), supplying the great amount of copper for tools needed to construct the Great Pyramid. Probably the most remarkable finds from the galleries are the hundreds of papyrus fragments in hieratic dating to Year 27 of Khufu's reign, including bureaucratic accounts – the oldest known in the world – of deliveries of food to the site, as well as a "personal logbook" of a Memphis official, Merer, recording daily activities of a team of about 200 men (Tallet and Marouard 2014: 8). At the end of Khufu's reign a closure operation occurred, but there is evidence of limited reuse of the harbor during Khafra's reign (Tallet and Marouard 2016: 149–150).

The Wadi el-Jarf galleries are located considerably inland from the coast, where a limestone formation is found in which they were excavated, and near a fresh water spring (Tallet and Marouard 2014: 4). Features include pottery kilns, where some crude, expedition pottery was made, as found in storage deposits in three of the galleries (Tallet, Marouard and Laisney 2012: 407–410; Tallet and Marouard 2014: 5, 7). Other excavated galleries were used for salvaging dissembled ship timbers, as evidenced by the many fragments of wood (cedar) and wood shavings (Tallet and Marouard 2014: 7). Tenons of acacia as well as rope fragments also have been excavated in these galleries, which originally had been sealed by a sophisticated closure system of limestone blocks (Tallet and Marouard 2014: 6–7). But the ships, which were used for transporting copper mined in the Sinai across the Gulf of Suez, had been "fully removed or reused shortly after the last closure of the galleries" (Tallet and Marouard 2014: 7).

To the north of the two groups of galleries at Wadi el-Jarf are areas of expeditions camps (Zones 2, 3, 4), and about midway between the galleries and the sea is a free-standing "Intermediate Building" in Zone 5 (Tallet and Marouard 2014: 5). In the harbor facilities in Zone 6, located near the sea shore, two large storage buildings with long narrow storerooms have been excavated (Tallet, Marouard and Laisney 2012: 421–422; Tallet and Marouard 2014: 10). Between the two buildings were 99 stone anchors, which had been stored there (Tallet and Marouard 2014: 12). To the east, in shallow water off the shoreline, is a constructed, L-shaped pier (Tallet, Marouard and Laisney 2012: 422). This breakwater pier extends ca. 200 m eastward from the ancient shoreline, and then bends to the south-southeast and continues for 120 m more (Tallet and Marouard 2016: 141).

How does the evidence at the two northern Red Sea/Gulf of Suez harbors inform us about the use of the harbor of *Sawu?* Long, narrow storerooms were the standard design for storage facilities in ancient Egypt, most commonly seen in temple plans, but also found at state planned, Middle Kingdom forts in Nubia. The Heit el-Ghurab "Gallery Complex," part of the Giza pyramid town site excavated by Mark Lehner, demonstrates how such long narrow galleries could be built in contiguous units and have multi-purpose uses.

The galleries at the three Red Sea harbor sites were not constructed, free-standing buildings, but were excavated in the local bedrock. Perhaps it was easier to protect and seal off these storage spaces if they were excavated into the bedrock, and such gallery-caves were used during large-scale state expeditions. Given the limited local materials available for construction, it also may have been easier to excavate the storage facilities in the bedrock than to build large free-standing structures. And at Mersa/Wadi Gawasis, these gallery-caves

were located fortuitously close to the edge of the sheltered lagoon and there was no need to construct free-standing storage buildings.

Ramps were important for construction in ancient Egypt: for moving stones up to the horizontal courses of the Giza pyramids (see Lehner 1997: 204–205), as well as for the construction of stone temples. At both Mersa/Wadi Gawasis and Wadi el-Jarf there is evidence of ramps leading into the gallery-caves and terraces outside the caves made of the stone debris from excavating these caves. At Wadi el-Jarf on the created first terrace there was evidence of occupation: fireplaces, ash and organic material (Tallet and Marouard 2014: 7), and there is similar evidence of use on the terraces outside the caves at Mersa/Wadi Gawasis. Re-used ship timbers were additionally placed on ramps into two gallery-caves (Caves 2 and 6) at Mersa/Wadi Gawasis, probably to make a solid surface for workers moving heavy materials in and out of these caves – possibly similar to the use of hauling tracks found at Lisht, on slideways and ramps excavated at Senusret I's pyramid (Arnold 1992: 92–94).

The evidence of ships that were brought to all three harbors indicates that "the Egyptians were masters in the art of assembling and dismantling seafaring ships for intermittent use" (Abd el-Raziq *et al.* 2012: 6). The organization of these activities was well developed and evidence of similar ship building technology is found at all three harbors. The ships were built in the Nile Valley, disassembled, then carried across the desert in "ship kits" and reassembled on the sea coast for expeditions; when they returned to the harbor they would be disassembled and stored there for the next expedition (Abd el-Raziq *et al.* 2012: 6). Disassembling included salvaging timbers damaged by shipworms, as seen in the large amounts of wood chippings at both Wadi el-Jarf and Mersa/Wadi Gawasis. But the seafaring expeditions to Punt and Bia-Punt from Mersa/Wadi Gawasis were infrequent over the course of the 200+ years of the 12th Dynasty, as the archaeological and textual evidence there suggests, and thus it is unlikely that ships would have been stored there – especially given the value of cedar timbers imported from Lebanon.

Unlike at Ayn Soukhna, where there is evidence of large-scale copper production and pottery manufacture, at Mersa/Wadi Gawasis the only large-scale production was of bread in ceramic bread molds – which may very well have been used for expedition food that was ready to eat, could be stored easily on ships, and would last a long time on voyages. *Saww* was only used as a node where raw materials from Punt would have been transferred from ships to caravans returning to the Nile Valley, and not as a production site to transform or process any raw materials.

Both Ayn Soukhna and Mersa/Wadi Gawasis were located at sites protected from the prevailing northerly winds, with the large lagoon at *Saww* an even

better sheltered harbor that that at Ayn Soukhna. But at Wadi el-Jarf there was no such naturally protected harbor for ships, hence the construction of the L-shaped breakwater pier.

Unlike the harbors at Ayn Soukhna and Wadi el-Jarf, where fresh water springs were located, at Mersa/Wadi Gawasis fresh water was only available at a well at Bir Umm Al-Huwaytat, about 7 km to the west of the harbor along the Wadi Gasus – probably the most important reason that this harbor was only used on a temporary basis. *Saww* also was located much more distantly (ca. 150 km) from the Nile Valley than the two harbors to the north on the Gulf of Suez, and the destination of its expeditions was much more distant – the southern Red Sea region. These were probably the major reasons that the seafaring expeditions from *Saww* were much more limited in number and in the scale of its facilities compared to those at the Gulf of Suez harbors.

CHAPTER 4

Organization of Mersa/Wadi Gawasis Seafaring Expeditions in the 12th Dynasty: The Textual Evidence

1 Textual Evidence at Mersa/Wadi Gawasis

Different types of textual evidence, on stelae, cargo boxes, sealings and ostraca, have been excavated at Mersa/Wadi Gawasis that provide some information about how seafaring expeditions from *Saww* were organized in the 12th Dynasty. Some inscriptions have been better preserved than others, of course, but combined with the archaeological evidence – ceramics from the Nile Valley and elsewhere; ship parts and equipment; expedition supplies; food and fuel; shelter for the workmen; and storage areas and the recycling of expedition materials, which will be discussed in the next chapter – a fuller view of how these seafaring expeditions functioned can now be constructed.

2 Stelae

Until the excavations at Mersa/Wadi Gawasis by Abdel Monem Sayed in the 1970s, the location of a port used for Egyptian expeditions in the Red Sea was unknown – and the subject of much discussion (see Nibbi 1976). The earliest known textual evidence that relates to the Mersa/Gawasis harbor was found in the early 19th century in a small building (among a group of four small structures at a watering station) of the Roman period in the Wadi Gasus, about 7 km from the present sea shore (Nibbi 1976: 46; Sayed 1977: 140–145). This evidence consists of two inscribed (basalt) stelae: one was found by the English traveler and antiquarian John Gardner Wilkinson, and a second was found on a different occasion by another Englishman, James Burton. Both stelae became part of the collection of Egyptian artifacts of the Dukes of Northumberland at Alnwich Castle, but are now in the Gulbenkian Museum of Oriental Art at the University of Durham (Porter and Moss VII: 338–339).

North. Stela 1934, which dates to Year 28 of the reign of Amenemhat II, is about the successful return from Punt by an expedition led by the high official Khentekhty-wer (*rpʿ, ḥ3ty-ʿ, imy-r, rwyt, sḏ3wty, bity*), whose fleet of ships landed at a place called *Saww*. North. 1935, which dates to Year 1 of the reign

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of Senusret II, was dedicated by another high official, Khnumhotep (*ḫtm-nṯr, rḫ-nsw, imy-r, ḥnwy*), who "established his [the king's] monuments in God's Land" (Nibbi 1976: 50). The term "God's Land" is also mentioned in reference to an expedition (also to Bia-Punt) on the monument of Ankhu, found at Mersa/Wadi Gawasis by Sayed (see below). Although much later in date, the same term is associated with Punt in the scenes of Queen/King Hatshepsut's expedition to Punt (Kitchen 1993: 592), in her mortuary temple at Deir el-Bahri. Contra Bradbury (1988: 143), "God's Land" also should be associated with Punt in the case of North. Stela 1935.

Almost 150 years after the discovery of these two commemorative stela at the Roman station in the Wadi Gasus, Sayed searched at this site for more evidence of pharaonic inscriptions, but he only found later Greco-Roman evidence there. Thinking that the two Northumberland stelae could have been moved to the inland site from the seashore, he turned first to the Red Sea harbor of Mersa Gasus, and then to another harbor site about 2 km to the south at Mersa Gawasis (Sayed 1977: 145–146). We now know, however, that the two stelae discovered at the Roman station by Wilkinson and Burton were most likely in their original location (but not in their original monumental shrines/structures, which had been destroyed), as a large amount of Middle Kingdom ceramics also have been identified at this site, and this was probably where the 12th Dynasty expeditions obtained their fresh water when they camped at the harbor site.

Along the shore line at Mersa Gawasis Sayed found several small round-topped stelae, which were not very well preserved, and a fragment of an inscription on limestone with two cartouches of Senusret I, which helped him date the evidence to the 12th Dynasty. In addition, one of the texts on the stela fragments contained the word "Bia-Punt" ("Mine of Punt"). Sayed concluded that Mersa Gawasis was the port for voyages "to Bia-Punt or other Red Sea regions," and that the small round-topped stelae were memorials of soldiers or sailors to thank the gods for their safe return (Sayed 1977: 150).

Further excavations by Sayed to the west of the seashore yielded more inscribed material, including a shrine of the official Ankhu (Sayed 1977: 150). Ankhu's titles and epithets are found on the eastern block (Sayed: "jamb"). These titles include "*smr*" ("friend, courtier"), "overseer of all places of the palace" and "overseer of the audience chamber" (translation by Eugene Cruz-Uribe). Also on the western jamb are Senusret I's cartouches followed by "beloved of Hathor, mistress of Punt" (Sayed 1977: 159). The inscription on the middle block is only partially preserved, but seems to record the number of troops and officials on the expedition, as well as the date of its departure in the first month of winter (*prt*) in [Year?] 24 of this king's reign (Sayed 1977:

160–161). On the western jamb is an inscription about sailing to Bia-Punt and the tribute of "God's Land" (Sayed 1977: 162–163).

Sayed found an even better preserved inscription on a stela about 200 m west of the Ankhu stela: this stela was associated with a mound on the edge of the terrace overlooking the Wadi Gawasis. Although the (rounded?) top of this stela was missing, ten lines of hieroglyphic text were preserved. This text is about the expedition led by the vizier of Senusret I, Intef-iker (Antefoker). Intef-iker was ordered by the king to build ships at the dockyards of Qift/Coptos and to travel/or send them to the Mine of Punt (Sayed 1977: 169–170).

Beginning with the 2004–2005 field season at Mersa/Wadi Gawasis, more inscribed stelae were found by the Italian-American team. Originally, most of these stelae were placed in niches carved along the western wall of the fossil coral terrace, outside the gallery complex of Caves 2–6. These stelae include both commemorative "expedition" texts (see Eichler 1994) and ones for individuals which contain the hieroglyphic "offering formula."

The best preserved of the commemorative expedition stelae is Stela 5 (limestone) (Figure 15), found in 2004. In the upper part of this stela is a scene with King Amenemhat III presenting an offering to the god Min of Coptos. Standing

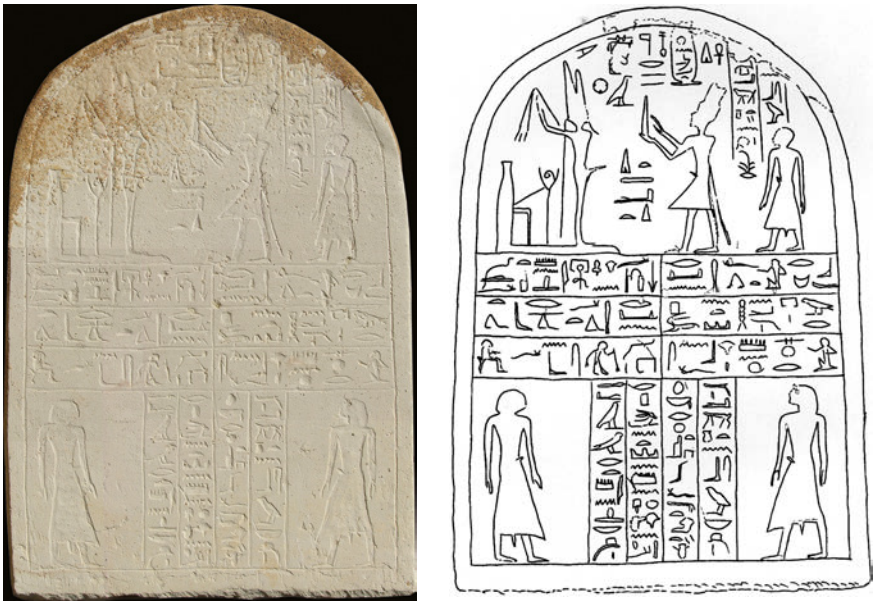

FIGURE 15 Stela 5.
DRAWING BY ROSANNA PIRELLI.

behind the king is the official Nebsu, "Overseer of the Cabinet of the 'Head of the South'" (*imy-r ꜥḥnwty n tp-rsy*) (for this translation see Pirelli 2007b: 90). According to Quirke (1990: 171), at work sites this title (*imy-r ꜥḥnwty*) identifies the "leading operator," who had the authorization of the central state as leader of a workforce. The symmetrically carved inscriptions below this scene record two expeditions: (1) on the left is a text about an expedition to Punt, under the direction of Nebsu's brother, Amenhotep, the scribe in charge of the seal of the treasury (*sš ḥry ḫtm n pr-ḥḏ*); (2) on the right is a text about an expedition to Bia-Punt, under the direction of Nebsu (Pirelli 2007a: 220–221). Mentioned in both expedition texts is the high steward (*imy-r pr wr*) Senbef, the king's deputy, who was the nominal head of the expeditions, but, according to Pirelli (2007b: 98–99), he may only have overseen the organization of the expeditions as far as the point of departure in the Nile Valley at Coptos. Whether the text on this stela represents two different expeditions to Punt and Bia-Punt (Pirelli 2007b: 98), or one expedition that separated at some point, going to the two different locations (as Bard and Fattovich have suggested), cannot be determined. Pirelli (2007b: 95) states that Punt, Bia-Punt and Bia-n-Punt (in other inscriptions) "corresponded to a vast territory, the latter two indicating a specific or limited area within the wide region of Punt." We would like to suggest, however, that "Punt" in this text may have referred to the coastal region of the southern Red Sea, probably in the area of eastern Sudan/northern Eritrea, while "Bia-Punt" in this text was a (gold?-)mining region somewhere inland (see Chapter 7).

Although Stela 5 does not have a year date on it, more stelae from the reign of Amenemhat III have subsequently been excavated at Mersa/Wadi Gawasis: a small votive/offering stela (Stela 16, in limestone) of an official of the palace, Ameny, from Year 23; and a damaged stela (Stela 23, in limestone) in which only the top three registers can be read, including a year date (41) and the cartouche of Amenemhat III (Manzo and Mahfouz 2008: 31–32). Thus, it can be determined that at least two expeditions, and possibly more, were sent from *Saww* during the reign of Amenemhat III.

One stela dating to the reign of this king was found still *in situ* in its niche: Stela 6, in limestone (Figure 16). Carved in the middle part of this stela is a scene with the god Min and his epithets standing in front of the five names of Amenemhat III. Much of the lower part of this stela is now missing, but the heads and shoulders of two persons can be seen on either side of a vertical inscription. The inscriptions are decrees of the king: (1) "His majesty ordered the head officer(?) to go …" (2) "His majesty ordered that one(?) be appointed … chief overseer of scribes(s) in Hut-weret …" What remains of the

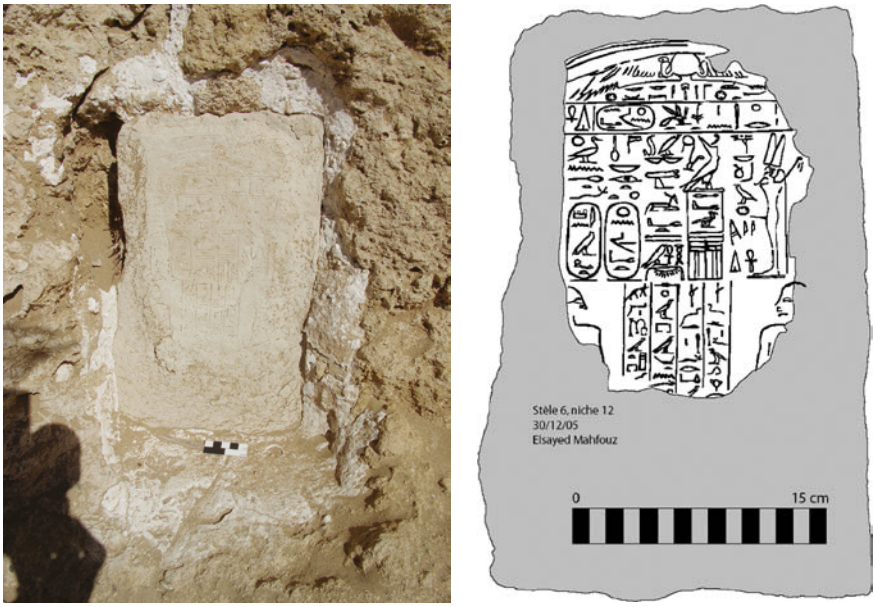

FIGURE 16 Stela 6 in niche.
DRAWING BY ELSAYED MAHFOUZ.

vertical inscription suggests an expedition text, the specifics of which are now lost (Mahfouz 2007c: 221–224).

While the offering stela of Ameny, from Year 23 of Amenemhat III's reign, contains only the "offering formula" text, a larger stela (Stela 2) with this text and an offering scene was found still *in situ* in its niche. Although much of the text is destroyed, an offering scene is found carved on the lower part of this stela. It consists of two seated men on either side of a huge pile of food offerings, placed on a flat platform (and not on an offering table). The titles of these two men are only partially preserved and Pirelli suggests the following: "for the *ka* of the [scribe of the board of the Department of the Head of the South] [...]," and "for the *ka* of the [scribe of the called-up laborers of the ... ?]" (Pirelli 2007a: 217–219).

From the reign of the preceding king, Senusret III, there is only one stela (Stela 14, in limestone), with most of the text about the expedition missing. But this stela does contain three of the royal names of this king, facing a depiction of the god Min (Fattovich and Bard 2007: Figs. 92, 93).

The stelae found along the western slope of the fossil coral terrace, below niches carved in which they were originally placed and outside the entrances

to the larger gallery-caves (Caves 2–6), do not provide specific details of expeditions, as do the longer inscriptions associated with tumulus/monuments on top of the terrace (of Ankhu and Intef-iker). But they do provide information about expeditions from the reigns of kings from the later 12th Dynasty (Senusret III and Amenemhat III), and suggest that this area of the site was the major focus of activities then.

Although it is not known if the limestone used for these stelae was local or was brought from the Nile Valley, a small blank stela (Stela 15) found in deposits outside Cave 5 (Mahfouz and Pirelli 2007: 48), as well as another blank stela found on the southern terrace slope in WG 74 (Bard, Fattovich and Ward 2011: 1), suggest that they were brought there from elsewhere, to be painted or carved with an inscription at some point.

One earlier stela (Stela 29, of sandstone, Figure 17), dating to Year 2 of Senusret II, was found in 2009, in the area to the northwest of the entrances to Caves 2–6, outside the entrance to Cave 8. Since there are no stelae niches in this area of the site and the stela was found lying face-down in a mass of colluvium, it is likely that the original location of Stela 29 was in the mound above Cave 8, on top of the western edge of the coral terrace (Bard and Fattovich 2010a: 11). Carved on the upper part of this stela is the king's Horus name in a serekh, with epithets (and a cartouche with his prenomen) to either side, all of which are surmounted by a winged sun disc. In the "expedition" text below in line 2, is the title of the director who led the expedition (*imy-r sbt*) to Biaw-Punt, and navigated (*ḫsfy*). His name is given at the bottom in line 6: Henenu, who was also the herald and "prospecteur" of the desert (*gmi ḫ3st*). Line 1 also lists his titles as: hereditary noble (*iry-pʿt*), mayor (*ḥ3ty-ʿ*) and king's confidant (*rḫ nsw*) (Mahfouz 2010: 29–30). From these titles, it seems as if Henenu directed the entire expedition, both across the desert from the Nile Valley and navigating in the Red Sea to the mines (plural: Biaw) of Punt.

Line 3 of the Henenu inscription mentions that "il a approché du sanctuaire de Min" (*sprn.f ḥwt Mnw*), and Mahfouz has suggested that this temple was actually located at *Saww* (Mahfouz 2010: 30). Although a number of shrines were constructed at the harbor site, none has been identified with an inscription referring to this deity, and there is also the possibility that this text refers to a temple of Min in the Nile Valley.

How the meaning of such texts are to be understood falls within what Jan Assmann has called "monumental discourse" (Assmann 1996). According to Parkinson (2002: 62), commemorative and funerary inscriptions on stelae, architecture and natural rock surfaces comprise a form of "monumental discourse," addressed to posterity as well as an audience of viewers and

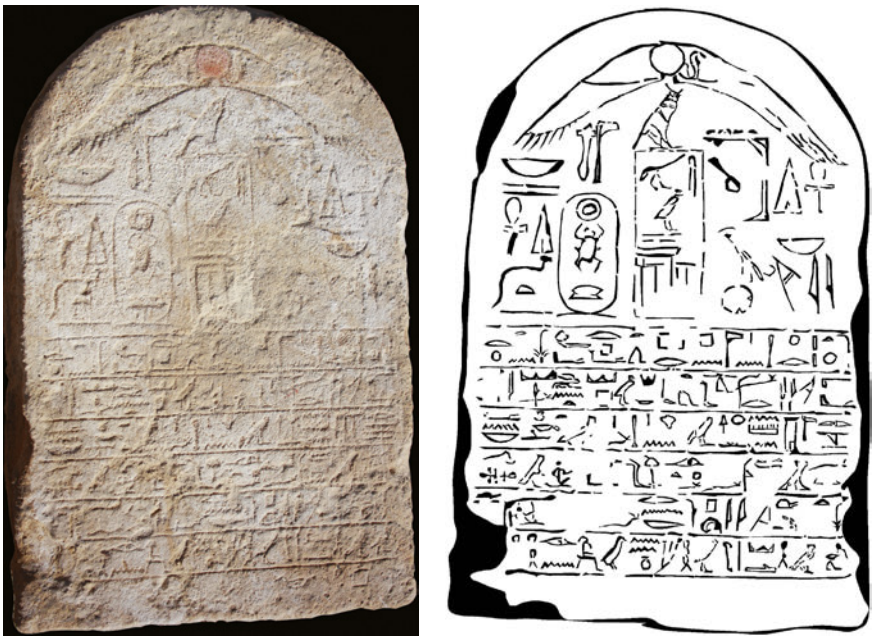

FIGURE 17 Stela 29.
DRAWING BY ELSAYED MAHFOUZ.

listeners, formulating central cultural values. There are both royal and non-royal commemorative inscriptions, the latter of which include non-funerary ones that record expeditions (Parkinson 2002: 62), such as are found at the ancient harbor of *Saww*. Both Parkinson (2002: 86) and Bloxam (2006: 286), however, point out the discontinuity between the textual view of reality and the archaeological evidence, e.g., the lack of archaeological evidence at Mersa/Wadi Gawasis for an expedition of 3,756 men, as stated on the Intef-iker stela found there. Since the audience viewing/reading the stelae at Mersa/Wadi Gawasis was only temporary, when expeditions were at the site before or after the voyages to Punt and/or Bia-Punt, the form of discourse that these stelae represent must be mainly addressed to posterity. The ideological intent of the commemorative stelae at Mersa/Wadi Gawasis is also evident. As Assmann (1996: 70) has written about the different types of monuments with which the Egyptians attempted to create a sacred dimension of permanence, they "assured their entry into this dimension of permanence by means of the monumental form they gave their tombs and commemorations; and, above all, they wrote themselves into permanence through the medium of their inscriptions."

Thus, the stelae found at Mersa/Wadi Gawasis have an ideological function (as will be discussed more fully later in Chapter 6), but they also provide specific information about expeditions. As the stelae information listed in Table 2 and Table 3 demonstrates, there were expeditions to Bia-Punt and/or Punt

TABLE 2 Officials' names and titles, and toponyms in Mersa Gasus and Mersa/Wadi Gawasis texts.

Stela/box	Title	Title translation	Toponyms
Senusret I, [Year?] 24			(Hathor, Lady of) Punt
Ankhu stela	*rḫ nsw*	king's confidant	God's Land
	imy-r ꜥḥnwt n pr-wr	chief interior-overseer to the palace	Bia-Punt
			?*Bakt*
	imy-r st nb nt pr nsw	store overseer of the palace	?*Saww*
Senusret I			Coptos
Intef-iker stela	*ṯ3ty*	vizier	Bia-Punt
	rpꜥ	hereditary noble	
	ḥ3ty-ꜥ	nomarch	
	imy-r niwt	overseer of the town	
	imy-r ḫwt-wryt 6	overseer of the six Great Mansions (law courts?)	
Ameni	*wḥmw*	reporter/herald	
Senusret I Round-topped stelae fragments along shore			Bia-Punt
Amenemhat II, Year 28			(Min of) Coptos Punt
Khentekhty-wr North. 1934 stela	*rpꜥ*	hereditary noble	*Saww*
	ḥ3ty-ꜥ	nomarch	
	imy-r rwyt	overseer of the law court	
	sḏ3wty bity	seal-bearer of the king of Lower Egypt	

TABLE 2 Officials' names and titles, and toponyms in Mersa Gasus and Mersa/Wadi Gawasis texts. (cont.)

Stela/box	Title	Title translation	Toponyms
Senusret II, Year 1 Khnumhotep North. 1935 stela	*ḫtm-nṯr* *rḫ nsw* *imy-r ḥnwty*	seal-bearer of the god of the expedition king's confidant chief interior-overseer	(Sopdu, Lord of the) Land of Malachite? God's Land
Senusret II, Year 2 WG Stela 29, Henenu	*rpʿ* *ḥ3ty-ʿ* *wb3w m stp-s3* *imy-r sbt* *wḥmw*	 hereditary noble nomarch butler in the palace overseer of the expedition reporter/herald	(Min of) Coptos Bia-Punt
Senusret III (3 names) WG Stela 14			
Amenemhat III WG Stela 5, Nebsu Amenhotep Senbet	*imy-r ḥnwty n* *tp-rsy* *sš ḥry ḫtm m pr-ḥd* *imy-r pr-wr*	 chief interior- overseer of the Head of the South scribe in charge of the seal of the Treasury high steward	(Min the) Coptite Bia-Punt Punt
Amenemhat III (5 names) WG Stela 6: *ḥtp di nsw*	*s3b imy-r sš(w) m* *ḥwt-wrt*	 chief overseer of scribes in the *Ḥwt-wrt*	(He of) Edfu (Min of) Coptos
Amenemhat III, Year 23 WG Stela 16, Ameny *ḥtp di nsw*			

Stela/box	Title	Title translation	Toponyms
Amenemhat III, Year 41 WG Stela 23			
Amenemhat IV, Year 8 Boxes 2 and 21, Djedy	*ḫrp nfrw* *sš nsw*	controller of troops royal scribe	Punt
? king WG Stela 2: *ḥtp di nsw* (right half)	*?sš n ḏ3ḏ3t n wrt tp-rsy*	?scribe of the functionaries (of a special commission) of the Weret of the Head of the South	
[Anty]emhat (left half)	*sš n sm*[*dt n …?*]	?scribe of the called-up laborers of the … ? (subordinates?)	

TABLE 3 Wadi Gasus and Mersa/Wadi Gawasis texts with kings' names and year dates.

King	Year	Text
Senusret I	Year 24, month 1 of *prt*	Ankhu monument
Senusret I	?	Intef-iker stela
Senusret I	?	Round-topped stelae
Amenemhat II	Year 28	North. 1934
Senusret II	Year 1	North. 1935
Senusret II	Year 2	WG Stela 29
Senusret III	?	WG Stela 14
Senusret III	Year 5	Doc. 1/O. WG 20 + O. WG 22
Amenemhat III	?	WG Stela 5
Amenemhat III	?	WG Stela 6
Amenemhat III	Year 23	WG Stela 16
Amenemhat III	Year 41	WG Stela 23
Amenemhat III	?	O. WG 101 (in Cave 1)
Amenemhat IV	Year 8	2 cargo boxes, O. WG 111 (in WG 47)

TABLE 4 Wadi Gawasis texts with year dates but no king's name.

King	Year	Text
?	Year 4, month 3 of *šmw*	Doc. 5/O. WG 18
?	Year 5, month 3 of *prt*, day 20	Doc. 2/O. WG 06
?	Year 5, month 2 of *prt*, day 22	Doc. 4/O. WG 39
?	Year 5, month 2 of *prt*, day 16	Doc. 7/O. WG 15
?	Year 6, month 1 of *šmw*	O. WG 114 (in WG 61)
?	Year 12, month 3 of *šmw*, day 20	O. WG 106 (at entrance to Cave 2)
?	Year 16	Doc. 23/O. WG 12

during the reigns of most of the kings of the 12th Dynasty, and sometimes more than one expedition (reigns of Senusret II and Amenemhat III). A number of stelae, however, do not give/have year dates of kings' reigns (or that information has been destroyed in the text), and these stelae could be from some of the dated expeditions or from other ones.

According to Sayed (1977: 173), the monuments of Intef-iker and Ankhu relate to the same expedition. The Intef-iker inscription is about the building of ships at Coptos and (re)constructing them on the Red Sea, while the Ankhu inscription is about the actual expedition on the Red Sea to Bia-Punt and Punt – the result of the ship-building commission.

The inscriptions of Intef-iker and Ankhu also provide more specific information about the organization of the expeditions than all other stelae texts found at Mersa/Wadi Gawasis. According to the stela of the vizier, Intef-iker, he was ordered by King Senusret I to build the ships (plural, but the number is not given) at the dockyards of Coptos on the Nile, to "travel" or "send them to Bia-Punt" (Sayed 1977: 170). The ships must have been disassembled and then taken across the desert to the "shore of the Great Green" [Red Sea], where the herald Ameni, son of Mentuhotep, built/reconstructed them, together with the Assembly (*ḏ3ḏ3t*: "group of functionaries" of a single commission; see Quirke 1990: 54) from Thinis of southern Upper Egypt (Sayed 1977: 170). Along with Ameni on the shore of the Red Sea were soldiers (*mšʿ*) together with the reporter/herald (*wḥmw*) and a total of 3,756 others:

> 50 retainers of the Lord [= King]
> 1 Steward of the Assembly (*ḏ3ḏ3t*)
> 500 Personnel of the crew of the Lord

5 scribes of the great Assembly (*d3d3t wrt*)
3,200 men [Citizen-militia]

SAYED 1977: 170; English translation of Kitchen 1993: 590

Since the Intef-iker text is about the expedition from the Coptos dockyards in Upper Egypt to the harbor site on the Red Sea, possibly the great number of men in this text (3,200) were used to carry the disassembled ships across the desert along with other expedition supplies (and reassemble the ship parts at the harbor site?). This number of men is close to the 3,000 men used for the trek across the Eastern Desert (along with the need to dig fifteen wells) mentioned in lines 13–14 of the Henu inscription in the Wadi Hammamat, for the Punt expedition in Year 8 of Mentuhotep III (see Bradbury 1988: 127). Another inscription at Ayn Soukhna, dated to the reign of Mentuhotep IV, mentions an army (*mš'*) of the king of 3,000 men for bringing back turquoise and copper from the Sinai (Abd el-Raziq *et al.* 2002: 40–41). The actual crew of the ships on the Bia-Punt expedition recorded on Intef-iker's stela must have been a much smaller number of sailors – perhaps the "500 Personnel of the crew of the Lord."

As vizier, Intef-iker's function was to organize everything necessary for the expedition, especially the ship-building, on the Nile in Upper Egypt. Such a function is also suggested in the stela of Nebsu (Stela 5), where the high steward Senbef is mentioned in the two expedition texts (to Punt and Bia-Punt), but he may actually have overseen the organization of the expeditions only in the Nile Valley (Pirelli 2007b: 98–99).

For the actual seafaring expeditions, it is necessary to look at the partially preserved text of the Ankhu monument, which Sayed published, but did not transliterate and translate in full (Sayed 1977: 159–162). (See the complete translation by Eugene Cruz-Uribe at the end of this chapter.) Ankhu's work began when (in line 5 of the eastern jamb): "I reached *Suu* of the Coptite nome in order to complete/finish." According to Sayed (1977 160), this toponym may be read as "*Sww*," the name of the harbor.

The text of the central block of the Ankhu monument begins with the date of the expedition, in [Year] 24 [of Senusret I]:

1) ... 24, first month of winter ... [overseer of]
2) boats, controller of the crew, overseer of ... [I sailed to Pu-]
3) –nt, having sailed south to the end ...
4) together with the youthful crew ... (Cruz-Uribe translation)

A senior official as well as scribes and overseers are then listed, followed in line 8 by: 400 recruits (*nfrw*), 400 total (*dmd*). Thus, "400" may be the total number

of crew of the seafaring expedition, according to this inscription, which is similar to the "500 Personnel of the crew of the Lord" in the Intef-iker stela.

Kitchen (1993: 591) suggests that 10 ships were used for the Senusret I/Intef-iker Bia-Punt expedition, with 50 men on each ship. But these numbers seem high for a fleet as well as its crew. It is unknown how many ships were sent on this or the other 12th Dynasty seafaring expeditions from Mersa/Wadi Gawasis, but we can probably expect that at least some of these Middle Kingdom expeditions would have been the size of Hatshepsut's expedition to Punt in the early 18th Dynasty, which consisted of five ships.

Whatever the actual size of these seafaring expeditions, they were of such a scale that only the state could have undertaken them, as is also demonstrated in inscriptions from mines and quarries (Kemp 2006a: 317). In the 12th Dynasty the Punt/Bia-Punt expeditions began with a decree of the king, ordering a high official of the state to organize the expedition: Intef-iker, the vizier (also: hereditary noble, mayor, overseer of the city; for the title of overseer of the city, see Quirke 2004: 111), as stated on his stela (Sayed 1977: 80); Senbef, the high steward mentioned on the Nebsu stela (Stela 5); possibly the official Ameny on Stela 16, an offering stela (line 5: "*au ka du responsible de collier du grand palais Amény*") (Mahfouz and Manzo 2008: 29–30); and on Stela 16: "His majesty ordered the head officer(?) to go …" (Mahfouz 2007c: 223).

Other officials were then in charge of the actual seafaring expeditions: Ankhu (to Bia-Punt), as stated on his stela; Khentekhty-wer (to Punt), on North. 1934; Khnumhotep (to "God's Land"), on North. 1935; Henenu (to Bia-Punt), on Stela 29; and Nebsu (to Bia-Punt) and Amenhotep (to Punt), on Stela 5. Other (lower status) officials and scribes of the state, as well as a controller of the crew, overseer of boats, and various other overseers directed different aspects of a seafaring expedition, as listed on the Ankhu stela (Cruz-Uribe translation), as well as those listed on the Intef-iker stela.

But the expedition stelae, even the earliest ones from the reign of Senusret I, also show that the officials who left them at the site were functioning within different institutions of the state. As such, the stelae were the physical expression of agents, which, through their texts and scenes, linked the individual of each stela to the king, different institutions in the government, and the gods – and the memory of the individual and the expedition to the historical future.

3 Cargo Box Inscriptions

In 2006 a poorly preserved inscription was found on the second cargo box that was excavated in the area outside Caves 5 and 6. It was photographed and

recorded *in situ* by Elsayed Mahfouz, but the painted inscription disintegrated when the box was removed from the deposit. What was clear in this inscription was a four-line text, which included (in translation): "… of wonderful things of Punt/ … the royal scribe Djedy" (Mahfouz 2007a: 238), clearly goods from a royal expedition. The following field season the same inscription was found on another box (Box 21), with the cartouche of Amenemhat IV fully visible in the second line, which was not the case on Box 2, and the date of the expedition in the first line: Year 8 (Mahfouz and Pirelli 2007: 47) (Figure 18). These two inscriptions were therefore a kind of package label recorded by the royal scribe Djedy, and the boxes contained whatever were the "wonderful things of Punt" – goods that were important enough to be labeled by the royal scribe.

Possibly the king's scribe, Djedy, accompanied the expedition to Punt, where he recorded the valuable goods. Marcel Marée (personal communication: March 2017) has suggested that since these two inscriptions are in hieroglyphs, and not hieratic, and were made by the royal scribe Djedy, the two boxes may have been intended for royal (or temple) presentation. These are the only inscriptions at the site that date to the reign of Amenemhat IV, the last king of the 12th Dynasty, and these boxes are the remains of the last known expedition from Mersa/Wadi Gawasis to Punt in the Middle Kingdom.

Originally the cargo boxes were coated with a layer of white plaster and the use of such boxes for ship cargo is unique. In our opinion, the most likely material that was brought to Egypt in these boxes was incense, one of the most desired materials from Punt, which was used in all temple ceremonies.

4 Sealings and Papyri

Three administrative areas have been excavated where clay sealings with seal impressions were broken off containers: (1) outside the entrances to Caves 2, 5 and 6 (in WG 16 and WG 32), where there is evidence of two phases of sealing activities; (2) in front of Cave 7 (in WG 55); and (3) in front of Cave 8 (in WG 61/65). These sealings, which date to the later 12th Dynasty, not only provide information about how these areas of the site were used, but also about the institutions in the Nile Valley that participated in the organization of the seafaring expeditions to Punt. Sealings also have been found in deposits at the shrine (in WG 56) next to the entrance to Cave 7, but this does not seem to have been an administrative area. What is interesting to note is that the breaking of clay sealings, and the opening of containers that they sealed, took place only in the areas immediately outside the man-made caves, and not within the caves. Although most of the excavated clay sealings are fragmented and many of them lack hieroglyphic signs, a pattern of activities seems to emerge.

FIGURE 18 Inscription on cargo box 21.
DRAWING BY ELSAYED MAHFOUZ.

To the north of the entrance to Cave 2, in WG 16, an earlier phase of (later 12th Dynasty) sealings is associated with sealings used on containers: medium/large vessels with conical clay stoppers, and sealings on baskets or rope bags (Manzo and Pirelli 2006: 94). Presumably these containers were for food and/or supplies brought from the Nile Valley that went into Caves 2 and 3 for storage and redistribution/rationing. These sealings did not have stamped impressions on them, and were probably used to seal containers of food (such as the emmer wheat that has been excavated in Cave 3, and supplies that did not require strict control by expedition scribes.

Outside the entrances to Caves 5 and 6, sealings of a later phase than those in WG 16 have been found in association with the cargo boxes, and were for control of imported goods. Sealings there with the verso impressions of pegs and ropes were used on containers – presumably the cargo boxes – that were closed by a system of pegs and ropes. There also were sealings with the verso impression of cloth and ropes, which probably were used on cloth bags tied by rope. Also in WG 32 were the materials used to seal bag containers: ropes of different dimensions and pieces of pure clay not yet used to the make sealings (Manzo and Pirelli 2006: 94–95).

Of the few seal impressions with hieroglyphic signs excavated at Mersa/Wadi Gawasis, a definite pattern seems to emerge in their find-places. The only institutional (shield-shaped) seal impressions of a government department at the site have been found with the deposits of cargo boxes, in WG 32, and can be associated with the institutional control of the "wonderful things of Punt." According to S.T. Smith (1990: 199), seal impressions fall into three broad categories: (1) the seals of government departments, (2) individual officials, and (3) private individuals or families. The large shield-shaped sealings were for economic controls, while smaller oval seals of government departments were for correspondence (S.T. Smith 1990: 199).

Although some of the signs are missing, seal 1/39 from WG 32 is shield-shaped, and bears the hieroglyphic signs for the Treasury (*pr ḥḏ*), as well as the sign for "foreign land" (Manzo and Pirelli 2006: 47–48), which probably relates to Treasury department control of foreign products(?), most likely the "wonderful things of Punt." These signs are also found on another oval seal impression in WG 32, 7/64, which, according to S.T. Smith, would be for Treasury department correspondence (relating to foreign products?).

Another shield-shaped seal impression was found in this area in 2010, in front of the entrance to Cave 6. The signs on this institutional sealing are for the "southern Town" (*niwt rsy*) [Thebes], and a spiral design appeared around the border of the seal impression. A fragmented oval-shaped seal impression was

found in the same context with the title and name: Overseer of the Treasury, Senusret (*imy-r pr ḥḏ* [*sn*]*wsrt*). Both of these sealings had been used on a wooden box (Manzo 2010e: 27).

Two other oval-shaped seal impressions from WG 32 with hieroglyphic signs are also significant: 5/41, which contains the name "Djedy" followed by the epithet "repeating life" (*wḥm ʿnḫ*). This is probably the same Djedy, the royal scribe, whose name is found on the inscriptions on the two cargo boxes.

Thus, associated with the cargo boxes containing the "wonderful things of Punt" are (1) sealings for the government department of the Treasury, having some association with "foreign land," which possibly represents control of this institution over the products in the boxes of the foreign land (most likely Punt/Bia-Punt); (2) the Overseer of the Treasury; and (3) a department of the "southern town" [Thebes], possibly the office of the vizier of Thebes; and (4) the royal scribe Djedy. All of these sealings represent major institutions of the state, and their control of important imported materials in the cargo boxes.

The only anomaly in the same context (WG 32, the deposit of cargo boxes) is a fragmented oval-shaped seal impression with the sign for Nome X of Upper Egypt, beneath which is the *mr* sign of a hoe, possibly representing a name (Manzo and Pirelli 2006: 51–52). Given the other evidence of seal impressions of major government institutions in WG 32, it is unlikely that a provincial (nome) administrative institution would be associated with the prized imported goods contained in the cargo boxes. In the 12th Dynasty, however, Nome X was the location of the largest known private tombs of this period, at Qau el-Kebir (ancient *Tjebu*), and possibly *Tjebu* and one of its mayors played a role in this expedition. The stelae of three officials who included the title of mayor (*ḥ3ty-ʿ*) in their list of titles (Intef-iker, Khentekhty-wer and Henenu), as well as this title listed on Ostracon WG 114 (see below), also may suggest a role of cities beyond the centralized capital/palace in the organization of these seafaring expeditions, as does the mention of the name of the mayor (*ḥ3ty-ʿ*) of the funerary temple (town) of Senusret II at Kahun, Nebu-kau-Ra (see below: Doc. 1/ O. WG 20 + O. WG 22) (Mahfouz 2008: 283–285).

The evidence for administrative activity in WG 61/65, just outside the entrance to Cave 8, is very different from that associated with the cargo boxes. There are a number of sealing fragments with impressions of pegs, wood and ropes, bags, and baskets from different types of containers, which relate to the distribution of commodities that were probably brought from the Nile Valley and were redistributed/rationed at the harbor site (Manzo 2010e: 27).

Some sealings found in WG 61/65 also came from papyri, and a 3-line hieratic text on papyrus was excavated in this context (see below). The large number of papyrus fragments with traces of sealings in this area also points to the receipt of letters there, and suggests that letters and dispatches were regularly

sent to Mersa/Wadi Gawasis when Egyptian expeditions were staying at the site and replies were sent back to the Nile Valley – with a kind of regular delivery service between the Nile Valley and Red Sea during the time of seafaring expeditions (Manzo 2010e: 27).

The one scarab that has been found at the site was excavated in the area outside Cave 8. The seal on this scarab contains two *nfr* signs and designs of spiraling lines, but no signs for a name. This sealing device may have been owned by a low-level functionary at the harbor site, who possibly was not literate (see S.T. Smith 2001). Literacy would not have been necessity for all of the officials on the seafaring expeditions, but the recognition of specific seal designs may have been adequate for lower level officials involved in the transport of expedition supplies, and not the importation of the valuable "wonderful things of Punt." But there is also evidence there of at least one higher level official involved in the administrative activity: a fragmented seal impression with the name of the "scribe Amenemhat" (*sš Ỉmnmḥ3t*) (Manzo 2010e: 27).

Deposits in WG 55, outside the entrance to Cave 7, which remains unexcavated, are of a workshop area. Wood debris there is indicative of re-working ship timbers. But the many clay sealings and wooden box pieces there also indicate that this area, which is near where the cargo boxes were unloaded, was used for unpacking goods (Bard and Fattovich 2008: 22). One fragmented seal impression excavated in this area has the sign of a boat, below which are the plural signs (S08/06) (Mahfouz and Manzo 2008: 35), and this sealing may be an official one from a seafaring expedition. But also excavated there was an oval seal impression of an official who had nothing to do with a seafaring expedition: S08/04, a sealing of the "overseer of the books/archives of the temple of the city" (*imy-r mḏ3t* (*n*) *ḥwt* (*n*) *niwt*) (Mahfouz and Manzo 2008: 34). In the contiguous excavation unit, WG 56, where the shrine was located, another related(?) seal impression was found: S08/08 of the "temple of the city" (*ḥwt-*[*nṯr*] (*n*) *niwt*) (Mahfouz and Manzo 2008: 34–35). Sealings S08/04 and S08/08 are the only sealings from the entire site that relate to temples – of unknown location(s), which may have provided some supplies to an expedition.

Within the economic context of the state, temples served as state institutions (Ezzamel 2004: 504), and may have helped provision one or more seafaring expeditions, as suggested by other evidence at Mersa/Wadi Gawasis. A fragment of a papyrus, found outside Cave 8 in WG 61/65 at the end of the 2009–2010 field season, consists of a three-line hieratic text (Figure 19). The following translation of this text is by Mahfouz (2010: 30):

> L'héraut Djerserha
> A paquet de trèfle Bundle … dans son desert
> … Contrôle … le temple d'Amon

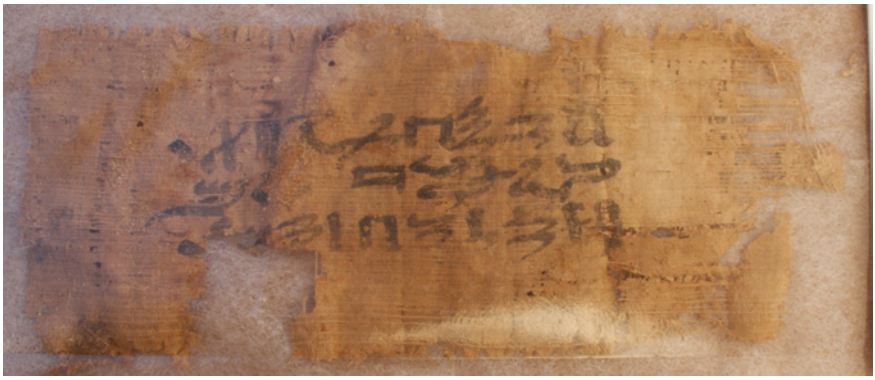

FIGURE 19 Papyrus fragment naming the herald Djerserha.

Though incomplete, the text on this papyrus suggests that the Temple of Amen at Karnak participated in the provisioning of one of the seafaring expeditions (of fodder? for donkeys on a cross-desert caravan?).

A papyrus fragment also was excavated in WG 56, but this text does not refer to any aspect of an expedition. The hieratic inscription in two vertical lines on this papyrus contains the name of a woman: lady of the house (*nbt-pr*), *S3t-in-irt*, and Mahfouz interprets it as part of a letter between two persons (Mahfouz and Manzo 2008: 34–35). Given the other evidence in this excavation unit, it is uncertain why this fragmented letter was found there.

The corpus of seal impressions that have been excavated at Mersa/Wadi Gawasis resembles much more the ones that Stuart Tyson Smith (1990, 2001, 2004) has analyzed from the Middle Kingdom forts in Nubia, than those from the later 12th Dynasty town of *Waḥ-sut* at Abydos that Wegner has excavated and studied. The town of *Waḥ-sut* was associated with Senusret III's mortuary complex at Abydos, a functioning, permanent town with different levels of officials. These included royal administrative officials; local cult personnel; officials responsible for the production and management of goods, and the administration of agricultural resources; and military personnel (Wegner 2010: 138). There are also seal impressions of scarabs belonging to women (Wegner 2004). Presumably at the harbor of *Saww* there were no women on the seafaring expeditions, which left only the evidence of temporary camps and activity areas, and periodically used shrines. The few sealings at Mersa/Wadi Gawasis with hieroglyphic signs suggest a much simpler organization of activities than at *Waḥ-sut*, and probably a much lower level of constituents that were literate.

At the harbor site as well as at the Nubian forts, many sealings relate to the storing and consuming of food and supplies brought from the Nile Valley.

Exotic imported trade goods and materials also came through Mersa Gawasis and the Nubian forts, and these goods would have been controlled by institutions of the state – although there are certainly more state institutions represented in seal impressions at the Nubian forts (see S.T. Smith 1990: 205) than at the harbor. And unlike the institutional sealings for the "Granary" found at some of the Nubian forts (S.T. Smith 1990: 202), there was no institutionalized granary at the harbor of *Saww*, which is probably due to the very temporary nature of use of the harbor.

Stuart Tyson Smith (2004: 208) also has suggested that the patterning of sealing deposits in the Nubian forts represents an "archival" system, which provided a physical receipt of a transaction. But such a depositional pattern does not seem to be the case at the harbor site, where the deposits of sealings seem to represent one-expedition/one-time activities, and not a sealing archive, as may be represented at the Nubian forts. Thus, the seal impressions found at Mersa/Wadi Gawasis represent the government institutions, persons, and goods and materials of highly specific activities of seafaring expeditions at the harbor site.

5 Ostraca

Ostraca with painted hieratic inscriptions have been found at Mersa/Wadi Gawasis by A.M. Sayed and more recently by the UNO/IsIAO and BU team. Sayed (1983: 24) mentions a group of 25 ostraca with hieratic texts painted in black, found along the northern edge of the Wadi Gawasis (now called the southern slope of the western terrace by the uno/IsIAO and BU team). Only a few of these inscriptions were published by Sayed (1983: 25–27), but Mahfouz (2008) has published all of these texts that he could identify. Since the original ostraca could not be found, Mahfouz had to work from photographs (Mahfouz 2008: 268).

Essentially, these ostracon texts are accounts, most of which are about food (especially preserved fish) that was supplied to the harbor site and rationed there. Some of these ostraca also provide information about where the food came from in the Nile Valley and the associated officials. A few ostraca also have year dates.

Large quantities of preserved fish from the Nile Valley were used to feed expedition members, as the following ostraca indicate:

107 *rât*-fish (Doc. 1/O. WG 20 + O. WG 22)
MAHFOUZ 2008: 269–270

287 [...]-fish, 90 preserved (*m wgsw*) fish (Doc. 3/O. WG 11 + O. WG 01)
MAHFOUZ 2008: 271–272

cleaned/gutted (*wgst*) *rât*-fish (Doc. 5/O. WG 18)
MAHFOUZ 2008: 272

100 + x *rât*-fish/109 *rât*-fish were carried/*P* [...]/165 *rât*-fish (Doc. 9/O. WG 44)
MAHFOUZ 2008: 274

A few ostraca excavated by the UNO/BU team also mention fish:
300 fish (O. WG 111, excavated in the beach area above the harbor [WG 47])
MAHFOUZ AND MANZO 2008: 34

30 cleaned (*wgs*) fish of the city (*niwt*) (O. WG 113)
MAHFOUZ 2010: 31

cleaned *bwt*-fish (O. WG 114)
MAHFOUZ 2010: 31

That some fresh water fish were brought from the Nile Valley as food for expeditions is indicated in several of the ostraca, especially when the noun is used with the adjective "*wgs*" (cleaned/gutted). In Doc. 1/ O. WG 20 + O. WG 22, in the line above "107 *rât*-fish," is the name of the mayor (*ḥ3ty-ʿ*) of the funerary temple (town) of Senusret II at Kahun, Nebu-kau-Ra, an official during the reign of Senusret III (Mahfouz 2008: 283–285), and this town must have been one of the suppliers of this particular expedition. In Doc. 9/O. WG 44, the text indicates that "109 *rât*-fish were carried" ("109 poissons-*rât* ont été apporté") (Mahfouz 2008: 274), which probably refers to food supplies brought (by caravan) from the Nile Valley. In Ostracon WG 113, the "30 cleaned fish of the city" (Mahfouz 2010: 31) must refer to fish sent from some city/town in the Nile Valley: there were certainly no Egyptian towns on the Red Sea then that were engaged in fishing. The name of a town in Upper Egypt (Gebelein), *Iw-mitrw*, is found on another ostracon (Doc. 7/O. WG 15), which is also associated with a date: [Year] 5, second month of summer (*šmw*), day 16 (Mahfouz 2008: 273). Gebelein may also have been another supplier of expedition goods.

Probably the most clear association of food supplies with spatial use of the harbor is found on Ostracon WG 111, which was excavated in WG 47, on the beach above the harbor where there is ample evidence of expedition

camps: "[Year] 8, second month of summer/ … [Maakhe]ru[ra]/ 200 *rem*-fish" (Mahfouz and Manzo 2008: 34). This is the same year date and king found inscribed on the two cargo boxes (see above), from the expedition of Amenemhat IV, in Year 8. Since the ostracon is dated to Year 8, second month of summer (*ꜣbd 2 šmw*), which would be around mid-May in our calendar, this date probably represents the camp at the time of year that the seafaring expedition was preparing for the voyage to Punt, and not, given the currents of the Red Sea, the return date from Punt when the cargo boxes were unloaded (see Chapter 8). Possibly these dried *rem*-fish were food supplies for the Punt voyage, as no bones of fresh-water river fish have been identified at this camp (Carannante 2008: 12).

Meat protein also was brought from the Nile Valley, but probably not in the great quantities that are indicated for fish. Doc. 12/O. WG 03 lists "62 … 8 ribs of beef" ("côtes de boeuf: 8" [*sprw kꜣ*]), which are also mentioned in Doc. 13/O. WG 17 (Mahfouz 2008: 275). Provisions also included dates (105 *bnrt*) and figs ("[f]igs of good quality" and "100 sycomore figs"; Doc. 17/O. WG 10, and Doc. 18/O. WG 07) (Mahfouz 2008: 276–277).

Archaeological evidence, however, does not always confirm the textual evidence, and vice versa – since both types of evidence are always missing the complete record of information. Although the remains of figs have been identified in archaeological contexts at the site (Borojevic 2010: 48, 51), there is no evidence of dates or date pits. Nor have any cattle bones been excavated. Emmer wheat and barley have been excavated at the site – along with bread molds (Borojevic 2007: 39, 42), but there is no textual evidence on the known ostraca of their import from the Nile Valley. Although beer was probably made at the harbor in the production area (Borojevic 2007: 42), one ostracon lists a quantity of it, presumably brought by caravan to the site: "good beer [?]: 250" (Doc. 8/O. WG 40) (Mahfouz 2008: 274) – for use on some part of an expedition.

Two ostraca excavated at the entrance to Cave 2 relate to food rations given out to expedition members at the site: O. WG 105, about rations of "8 […] of ox" and "10[+x] pieces of meat"; and O. WG 106: "the arrival of 100 meals for a/guard???/ in the hand of … for the workers" (Mahfouz 2007b: 229–231).

From the textual evidence on ostraca, possible goods to be traded in Punt (or used by expedition members) included: 1 *ḥekat*-measure of galena (Doc. 19/O. WG 21) and 190 *ḥekat*-measures of carob (Doc. 21/O. WG 19) (Mahfouz 2008: 277).

There is also information on some of the ostraca about officials involved in expedition supplies. Aside from the mayor of the town at Kahun (Doc. 1/O. WG 20–O. WG 22), other officials are also named in the ostraca:

interior-overseer of Djed-baw-[Senusret] (*imy-r ḥnwty ?*[*n*] *ḏd-bꜣw* [*š-n-wsrt*]), the town of Kahun (Doc. 10/O. WG 41; Doc. 11/O. WG 23)

MAHFOUZ 2008: 275

scribe of the Assembly (*ḏꜣḏꜣt*), Hor (Doc. 1/ O. WG 20–O. WG 22; Doc. 4/O. WG 39)

MAHFOUZ 2008: 269–272

interior-overseer (*imy-r ḥnwty*), Neb … (Doc. 6/O. WG 18)

MAHFOUZ 2008: 373

reporter of the palace-approach (*wḥmw n* [ʿ*rr*]*yt*), Khenty (Doc. 8/ O. WG 40)

MAHFOUZ 2008: 273–274; for the title see Quirke 2004: 32

reporter (*wḥmw*), Wah (Doc. 12/O. WG 03)

MAHFOUZ 2008: 275

cupbearer (*wpdw*), Hornakht (Doc. 14/O. WG 08)

MAHFOUZ 2008: 275

Also mentioned on the ostracon of the "reporter of the palace-approach, Khenty" (Doc. 8/O. WG 40) is the toponym "domain of Punt" (*pwnt rmnyt*), which suggests a connection between an official of the palace and an expedition to Punt. This toponym is also found on another ostracon, WG 102, which was excavated at the entrance to Cave 2: "260 … *pwnt rmnyt*" (Mahfouz 2007: 228–229) – probably associated with an account relating to a Punt expedition and the administrative use of the area outside of Cave 2.

Although a clear pattern of officials and institutions involved in the different aspects of the Punt/Bia-Punt expeditions does not emerge from the Mersa/Wadi Gawasis ostraca, the ostracon texts that have been preserved at the site demonstrate the importance of expedition accounts by officials – as certainly would be expected for official, state-organized expeditions. Aside from (only some of) the food that was consumed by expedition members, there is not much information about expedition supplies. For a broader understanding of supplies that were actually used on the expeditions, it is necessary to look at the actual materials that have been excavated at the harbor site, the topic of the following chapter.

6 Two Wooden Tags

Two wooden tags were excavated in 2004–2005 in WG 24, outside the entrance to Cave 2 (Pirelli 2007c: 232). The first one is 7.0 cm long and 3.4 cm wide. The hieratic text on this tag is only partially preserved, and includes a sign for "*w*" and Gardiner's N25 sign for: "foreign land," "hill-country" or "desert" (Gardiner 1969: 488). This sign may refer to the (generic) destination of the container to which it was attached and its contents.

The second tag is 9.3 cm long and 2.0 cm wide. Pirelli (2007c: 232, after Vernus 1986) translates its partially preserved hieratic text as: "*Djed-Baw*, literally 'Firm of Power,' referring to foreign lands under the power of the king." Two other poorly preserved signs on this tag include what appear to be a vase and a fish; Pirelli (2007c: 232) suggests that a possible interpretation of these signs is a "container of *khamet*, a type of beer."

No other wooden tags have been found at Mersa/Wadi Gawasis, and these two tags probably identified special contents put in vessels after they were sealed, as opposed to expedition supplies/commodities that were put in a large number of jars, designated by pre-firing potmarks, or less frequently post-firing pot marks (see Chapter 5), which were certainly easier to make than inscribed hieratic signs on specially crafted wooden tags.

7 Dates of Known Expeditions Based on Textual Evidence

In terms of the number of actual expeditions, information in both the stelae and ostraca suggest that at a minimum there were at least 12 (successful) expeditions sent to the southern Red Sea from the harbor of *Saww* in the 12th Dynasty (see Table 3). If the Ankhu monument and stela of Intef-iker are from the same expedition (Year 24 of Senusret I on the Ankhu monument), as Sayed (1977: 173) has suggested, then the undated stela of Intef-iker is not from a separate expedition. It is also possible that the year dates 4, 5 and 6 for unknown kings on several of the ostraca represent two and not three expeditions, given that the expeditions may have spanned two dated years, to include the return date.

In terms of times of year when the seafaring expeditions traveled to and from Punt using the harbor at Mersa Gawasis, the ostraca excavated at the site that have year and month dates give months of the summer (*šmw*) and winter (*prt*), but not of the third season of the year, the season of inundation (*ꜣḫt*). Some of these dates associated with food provisions may refer to when they were packed in places in the Nile Valley (see Bradbury 1988: 144), and not

the actual dates of expeditions at the harbor site. Only the Ankhu monument, which is dated to (Year?) 24, month 1 of winter (*prt*), and is about the successful return of a seafaring expedition, suggests a time of year when the expedition may actually have returned to the harbor, although Sayed (1977: 161) thought that this date refers to the departure of the expedition.

Thirteen seafaring expeditions to Punt/Bia-Punt are not very many over the course of the 12th Dynasty (ca. 212 years). Textual evidence of successful expeditions that actually returned to *Saww* (and did not end up as shipwrecks in the Red Sea), however, is a much smaller number: four. The only stelae with texts about returned expeditions are from the Ankhu monument (Senusret I, Year 24), North. 1934 (Amenemhat II, Year 28) and North. 1935 (Senusret II, Year 1). The two unloaded cargo boxes inscribed with the "wonderful things of Punt" (Amenemhat IV, Year 8) also provide evidence of a successful expedition.

Although most of the archaeological evidence at Mersa/Wadi Gawasis is from the end/aftermath of seafaring expeditions to Punt/Bia-Punt and cannot be dated to precise years, it does suggest that there were certainly more successful expeditions than four. Analysis of the materials and artifacts excavated at the site – the topic of the next chapter – can also provide more information about the complex organization involved in the seafaring expeditions, which is probably a major reason that they did not sail much more frequently from this remote harbor to the southern Red Sea region.

8 Translation by Eugene Cruz-Uribe† of the Hieroglyphic Text of the Ankhu Stela (Eastern Jamb, Central Block, and Western Jamb) Found at Mersa/Wadi Gawasis by A.M. Sayed

The text is published in these two articles:
Sayed, A.M. 1977. "Discovery of the Site of the 12th Dynasty Port at Wadi Gawasis on the Red Sea Shore (Preliminary Report on the Excavations of the Faculty of Arts, University of Alexandria, in the Eastern Desert of Egypt – March 1976)," *Revue d'Égyptologie* 29: 159–160.
Sayed, A.M. 1978. "The Recently Discovered Port on the Red Sea Shore," *Journal of Egyptian Archaeology* 6: 69–71, Pl. XI.

Text of the eastern jamb of the Ankhu stela (Sayed 1977, 159–160):

1) Beloved of Hor-wer-Re, King of Egypt Kheperkare, beloved of Khentykhety, son of Re, Senusret, beloved of Hathor lady of Punt …[1]

1 I find the pairing of these two deities to be of interest. Horwerre is a rare deity and based upon context it would seem he would be the patron deity of this site. Two of the three examples of his are from Wadi Gawasis (here and S. Northumberland 1934 – A. Nibbi, "The Two Stelae

2) … in peace for the lord of the two lands, Senusret, who lives like Re. Now (this is) a decree which his majesty spoke to his courtier, the overseer of all places of the palace, the overseer of the audience chamber[2]
3) to [return?] in peace. Now he is excellent of heart ["a trusted official"] of his majesty more than any other courtier who serves in the Red Sea.[3]
4) possessor of virtue, every six (???) … a true sailor, … competent one of the helpers(?), a man of the future for the wise ones(?)[4]
5) … ships … I reached *Suu* of the Coptite nome in order to complete/ finish …[5]
6) … … … this ship like … doing … to place [on land?][6]
7) …

Text of the central block of the Ankhu stela (Sayed 1977, 160–162):

1) … 24, first month of winter … [overseer of][7]
2) boats, controller of the crew, overseer of … [I sailed to Pu-][8]

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from the Wadi Gasus," *JEA* 62 (1976), 50), and the third from Sinuhe B210 suggest a deity from the edges of Egypt and not from the Nile Valley. See C. Leitz, *LGG* 5, 251. For Khentykhety and his association with forms of Re see P. Vernus, *Athribis*, 367ff., esp. 386ff. Horwerre is a rare Middle Kingdom name, Ranke, *PN* I, 246.20 and M. Thirion, "Notes d'onomastique: contribution à une révision de Ranke *PN*," *RdÉ* 31 (1979), 85, but note the well-known stela of Herwerre from Serabit el-Khadim, A. Blackman, "A New Translation of the Inscription of Herwerre at Serabit el-Khadim," *BIFAO* 30 (1930), 97–101, and E. Iversen, "The Inscription of Herwerre at Serabit-al-Kadem," *Fs Westendorf* (1984), 507–519. Note that the name of the man in Stela Northumberland 1934 is named Khentykhetywer.

2 The title *smr* "friend, courtier" is normally a lower ranking title in the Middle Kingdom, but enhanced with additional titles as done here. See S. Quirke, The *Administration of Egypt in the Late Middle Kingdom,* 69. I wonder if Ankhu's name was to be found in the break following this, otherwise it is an interesting manner to embellish his status in a narrative form.

3 For *šn-wr* meaning "Red Sea" see P. Wilson, *Ptolemaic Lexikon*, 1016.

4 Much of this is a guess because the context is broken. I think we have a series of epithets praising the author, he being a good, trusted person. *s n-m-ḫt* "man of the future" literally "man of that which will becoming about." *ḫr rḫ ḫt* is a guess, but the only thing that would take into consideration all of the items. On the "6" I wonder if it is related to the title *imy-r sis wi3* "overseer of the six of the boat," Jones, *Glossary of Ancient Egyptian Nautical Terms*, 60.

5 The hand copy in Sayed, *JEA* 64 (1978), Pl. XI, shows some traces before the *ww*, which I take as an *s* which would make sense. The following *Gbtyw* shows that the coastal city was considered part of the administrative district of Coptos, following the idea of where the road starts controls/administers where the road leads to. Thus Asyut leads to Kharga, Edfu leads to points in the Eastern Desert and therefore they control those areas. Alternatively, if there is no missing sign, a reading *ww Gbtjw* "district of Coptos" is possible.

6 The end of line may be *r di r* [*t3*] "in order to put to shore," Jones, *Nautical Terms*, 213.

7 Ca. 1932 BC if the king is Senusret I.

8 For *ḫrp ʿpr.w*, not in Jones, *Glossary of Ancient Egyptian Nautical Terms,* but see related titles on pp. 92–93. The title is seen in the Old Kingdom, e.g., "Director of the crew Djefanisut," Giza G1171 (see Digital Giza, http://giza.fas.harvard.edu/ancientpeople/2887/intro/). "Overseer of boats" is restored based on western jamb, line 1.

3) -nt, having sailed south to the end ...[9]
4) together with the crew of recruits ...[10]
5) senior governor of the ocean, overseer ...[11]
6) Senior one of the scribes of the granary, scribes of ...
7) overseer of the records(?), overseer of necklaces ...[12]
8) recruits 400, total 400 ...
9) - 14) only fragments of things that cannot be translated accurately.

Text of the western jamb of the Ankhu stela (Sayed 1977, 162–163):

1) ... ... overseer of the boats, controller of the crew, overseer of the recruits,
2) ... ... [Now I] sailed the boat properly to Bia-Punt[13]
3) ... ... forthwith I brought (them?) in truth.[14]
4) ... ... under the ... Majesty of the lord of the two lands, Kheperkare, lord of life and dominion forever.
5) ... boats ... [*šn*]-ꜥ*ȝ-sk*[15]
6) ... lands, foreign lands. They have enclosed the tribute of God's Land in ... .[16]

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9 I take last three signs as the end of the word "Punt." *R pḥ* probably means "I traveled south to the end of where we were headed on this trip, to the furthest extent."

10 For the *ḏȝmw nw nfrw*, see D. Stefanovic, "*ḏȝmw* in the Middle Kingdom," *Lingua Aegyptia* 15 (2007), 222–223.

11 Sayed suggests "administrator of the Ocean(?)" suggesting that *Nwn* refers to the Red Sea. ꜥ*ḏ-mr nwn* is adopted by Jones, *Glossary of Ancient Egyptian Nautical Terms*, 125.

12 Both of the titles here are problematic. Both have a seated man determinative and thus do not match any writings of these titles elsewhere. For *imy-r nbw* see Meeks, *Annee Lex.* 3 (1979), 146, 79.1510.

13 *mȝꜥ* "to sail, guide boat on right path," Jones, *Nautical Terms*, 214. See also Wilson, *Ptolemaic Lexikon*, 395 under "wind, breeze."

14 *iy.n* is here to be seen as the auxiliary verb formation, Gardiner, *Grammar*, §483.1.

15 This line is interesting. The fragment gives a clue related to a boat. Then it gives the obscure reference to something called the "Shenaasek" which is only known from the Pyramid Texts as perhaps relating to some water place. J. Allen, *Ancient Egyptian Pyramid Texts*, 81, translates the term Shenaasek as "He who surrounds the big waters that perish." Faulkner, *PT*, 120–121, no. 4, does not translate, but gives note to Gauthier, suggesting this is a place name. It is in a PT that lists a series of water places, "wall of the bitter lakes," "Sea," "Ocean," water which surrounds the "Hawnebu" and then this. Perhaps this is a reference to the Red Sea. I wonder if the author is using this as a metaphor for describing how dangerous the journey was, but they made it back anyway. See the discussion of C. Favard-Meeks, "Le delta égyptien et la mer jusqu'a la foundation d'Alexandrie," *SAK* 16 (1989), 51–56.

16 The damaged text does not allow a very clear translation. I do not like Sayed's suggestion here either. *šnw* should refer to "encircling, enclosing" or the like. A foreign land determinative followed by *n.sn* makes no sense. "Tribute of God's Land" is easy. The line ends with *m gs tȝ.w* which is found only in Egyptian meaning something like "partially manufactured," Wb. 5, 197.3.It is clear that a variety of goods were brought back from Punt.

7) ... ... which Horus, lord of Tatenen as every thing of this land which is heard(?)
8) ... ... their counting in a list of the sand upon the riverbank, that which is and that which is not[17]
9) ... ... which is said ... ...
10) ... this tribute which they have presented as taxes ... in ...
11) ... ... 5(?) ... my lord, there by ... ... of the great house Ankhu.

17 The idea here is that the amount of goods brought back is so numerous that it is like listing all of the sand on a river bank and all other things in total.

CHAPTER 5

Organization of Seafaring Expeditions from Mersa/Wadi Gawasis in the 12th Dynasty: Archaeological Evidence at the Harbor

1 Archaeological Evidence of Seafaring Expeditions at Mersa/Wadi Gawasis

Although one successful seafaring expedition to Punt is known from the Old Kingdom, during the reign of the 5th Dynasty king Sahura, the seafaring expeditions to Punt/Bia-Punt in the 12th Dynasty represent repeated long-distance voyages on a scale and frequency not attempted earlier. While texts provide some fragmentary information about the organization of the seafaring expeditions from Mersa/Wadi Gawasis in the 12th Dynasty, evidence from excavations at the ancient harbor site is crucial for understanding the large-scale undertakings necessary to mount such expeditions, as well as their logistical complexities – and Egyptian solutions to these problems.

2 Shipbuilding

For the Punt expeditions from Mersa/Wadi Gawasis, the major activities that were conducted at the harbor before the voyage were shipbuilding (of dismantled ships that originally had been built in a dockyard on the Nile) and preparing the vessels for the sea voyage, which included loading them with ballast as well as all the food, equipment and trade goods needed. While archaeological evidence from Mersa/Wadi Gawasis has provided significant information about the construction and equipment of the ships for these seafaring expeditions (Ward, 2010; 2012a; Ward and Zazzaro 2009; Ward, Zazzaro and El-Maguid 2010; Zazzaro and El-Maguid 2007), the evidence there is mainly from the activities of returning expeditions at the harbor.

The Punt ships were first constructed in the Nile Valley, as indicated in the inscription of Intef-iker (Antefoker) from Wadi Gawasis (Sayed 1977: 169–170; see also Diego Espinel 2011: 261–262). This inscription suggests that the ships were made in the dockyard at Qift, located in the Qena bend of the Nile, and carried as separate timbers to the coast of the Red Sea, where the ships were reassembled. This textual evidence is supported by inscribed hieroglyphic signs and incised marks found on the inside surface of several planks excavated at

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Wadi Gawasis, which may be related to organization of the work for assembling the ships there (Bard and Fattovich 2007: 143; Ward 2010: 44–45, Fig. 4; Ward and Zazzaro 2009: 12–13) (Figure 20).

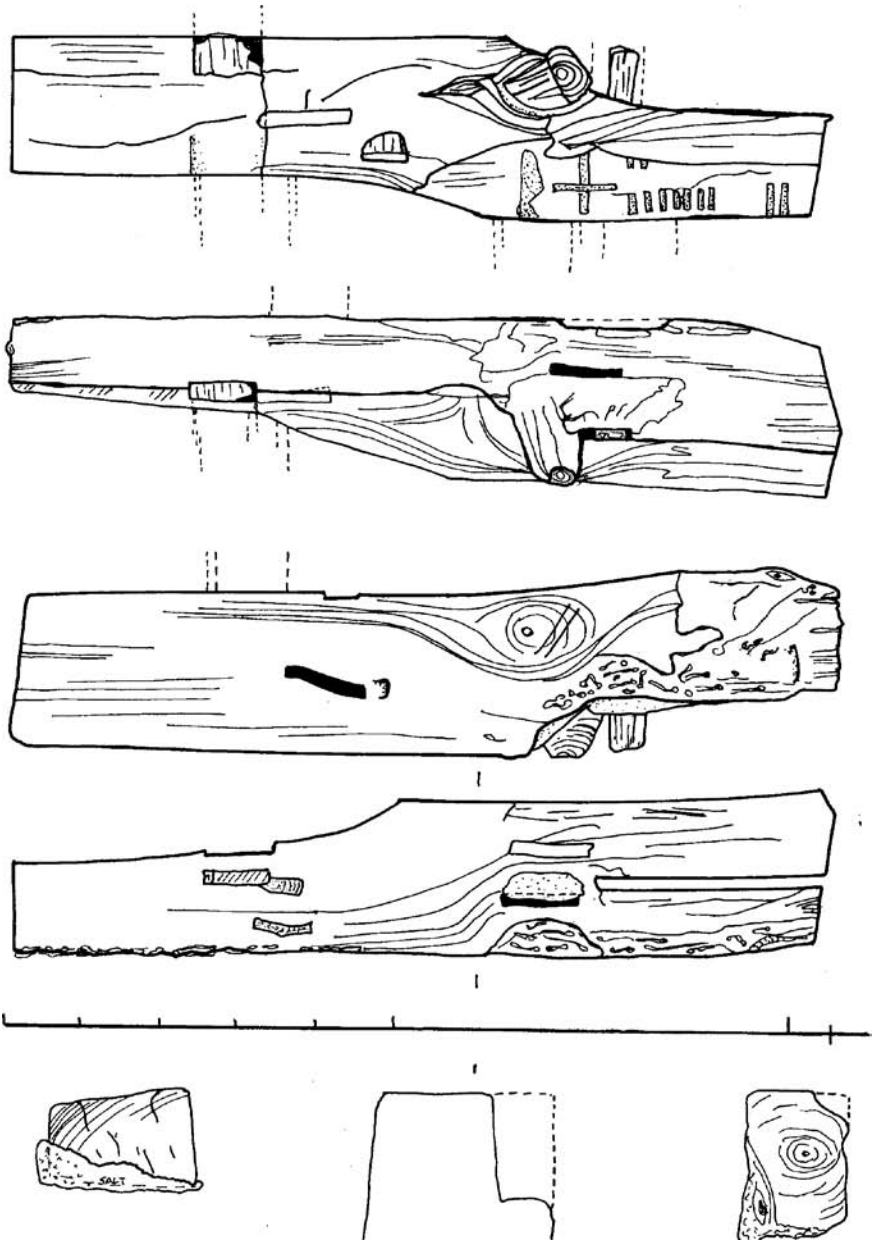

FIGURE 20 Painted marks on ship timber for reassembling ships at the harbor. DRAWING BY CHERYL WARD.

Although the site has been extensively surveyed and excavated, no definite evidence of the area where the ships were assembled has been found. In 2010–2011 three ramps (slipways?) (F1, F3, F7), dated to the 12th Dynasty by the associated ceramics, were found at the base and on the slope of the western coral terrace at Wadi Gawasis, between the shore of the paleo-bay and the terrace (Bard, Fattovich and Ward 2011: 9). The ramps were associated with a great quantity of wood debris, suggesting that carpentry activity was practiced in this area – but most likely this was the result of dismantling ship timbers there and salvaging them by removing the areas damaged by shipworms.

3 Ship Technology

The recorded evidence at Mersa/Wadi Gawasis demonstrates that different techniques were used for shipbuilding (Ward and Zazzaro 2007, 2009). Ship timbers were connected to each other by means of mortise-and-tenon joints, which could be reinforced with copper alloy strips, pegs, dowels and dovetail tenons (Ward and Zazzaro 2007: 140–142) (Figure 21). Ligatures also were used to reinforce the mortise-and-tenon joints (Ward and Zazzaro 2009: 10–11). A crutch made of Nile acacia, with a bifurcated end, from a gallery-cave (Cave 4) (Ward and Zazzaro 2007: 149, Fig. 61) might have been used to support the large rope (hogging truss) that stretched from a ship's bow to stern, as is represented in the early New Kingdom reliefs at Deir el-Bahri of Hatshepsut's expedition to Punt (see e.g., Kitchen 1993: Fig. 35.2).

From the different sizes of two pairs of roughly trapezoidal rudder blades, 2.0/1.8 m long (T1, T2, Figure 22) and 3.250/4.2 m long (T72, T85) (Zazzaro 2007c: 150–153; Ward and Zazzaro 2010: 34), found in front of the rock-cut galleries at

FIGURE 21 Ship tenon fastening.

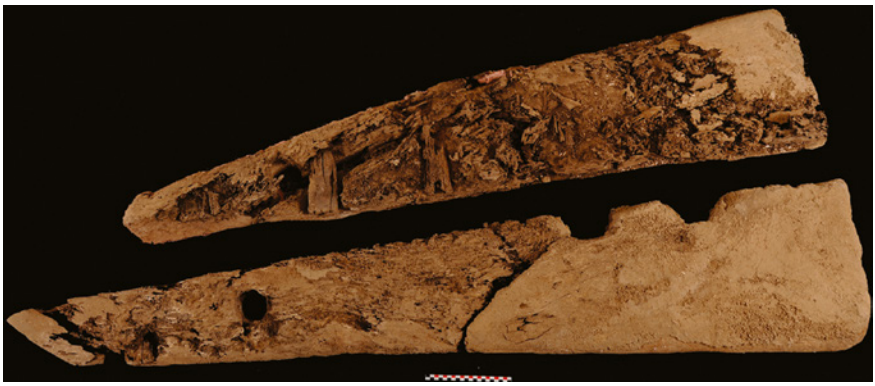

FIGURE 22 T1 and T2 (ship rudder blades).

Wadi Gawasis, the maritime archaeologists calculated that ships used in the expeditions could be 20 m and 30 m long, respectively (Ward, Zazzaro and El-Maguid 2010: 389). The two, larger rudder blades were associated with artifacts dating to the late 12th Dynasty, suggesting that much larger ships were built at this time.

Large, rectangular sails similar to those represented in the reliefs at Deir el-Bahri of Hatshepsut's expedition were used during the seafaring voyage. Most likely, the sails were made of linen; a fragment of a possible sail was collected at the entry of Cave 2 (Zazzaro 2007e: 190). For another possible interpretation of this linen fragment, see below.

Cordage is a well documented component of ship riggings at Mersa/Wadi Gawasis. Several hundred fragments of ropes, up to 5 m long, have been recorded, made of halfa grass or papyrus; there were also thin, fine strands made of flax (Zazzaro 2007a: 190–195; 2008: 41–43). The estimated 26 complete rope bundles in Cave 5 were about 1 m long and 0.6 m wide (Veldmeijer and Zazzaro 2008: 17). The ropes were certainly valuable components and were stored in a gallery-cave that had been carefully sealed off by a large conglomerate block (Zazzaro 2007a: 194–195).

Anchors used on the Punt ships were usually triangular in shape, with a rounded top and a pierced hole with a groove on the top, and range between 40–45 and 105 cm in length, suggesting that some of them were probably made for small boats (Zazzaro 2007d: 156) (Figure 23). Most anchors were made of limestone and were probably carved at the site, as evidenced by several unfinished anchors found along the southern slope of the western terrace at Wadi Gawasis (Bard, Fattovich and Ward 2011: 11; Ward 2012a: 222). Limestone was probably obtained locally, and in 2007 Trina Arpin and Rodolfo Fattovich

FIGURE 23 Stone anchors.

found a limestone deposit about 2 km to the west of the site, although there was no evidence of quarrying there.

Based on the evidence of ship timbers, tenons, ropes and anchors at Mersa/Wadi Gawasis, along with representational evidence of ancient Egyptian ships, maritime archaeologist Cheryl Ward designed and directed an experimental project to build a full-scale replica of an ancient Egyptian ship for seafaring expeditions on the Red Sea. The ship, named "Min of the Desert," was tested for a week in the Red Sea, demonstrating the efficiency of this kind of boat, which did not require great effort by the crew to manoeuvre during navigation (Ward 2010: 46–48, 2012a: 223–225).

The actual number of ships used for the *Saww* expeditions is unknown. Hatshepsut's reliefs at Deir el-Bahri show five ships, but this number probably varied for different expeditions. The inscription of Intef-iker (Antefoker) records 500 sailors (Sayed 1977: 170), suggesting that at least ten ships were used on this expedition, but this may be an exaggerated number.

When they returned to the Mersa/Wadi Gawasis harbor from their destination in Punt and/or Bia-Punt, the ships were disassembled there. Ship timbers that were too damaged by shipworms on the voyage were discarded and recycled at the site or used for fuel, which has been well recorded in some of the caves and along the western slope of the coral terrace at Wadi Gawasis, where wood debris from damaged timbers as well as lithic tools for carpentry (in WG 55) were found (see Lucarini 2008: 56; Ward and Zazzaro 2007: 143–146;

Ward and Zazzaro 2010: 3). No evidence of masts has been excavated at the site, suggesting that these (and other well preserved timbers) were carried back to the Nile Valley.

Thus, the excavated evidence at Mersa/Wadi Gawasis – of discarded and reused ship timbers, wood debris, and charcoal – also provides important information about sources of wood that were used on different expeditions.

4 Ship Wood

Building ships that were sea-worthy required the acquisition of several different species of wood, from abroad as well as in the Nile Valley. Because of its great size, cedar (*Cedrus libani*) was the most frequent type of wood used for ship timbers excavated at Mersa/Wadi Gawasis, and for planks (hull and deck, as well as plank fragments or poorly preserved ones) (Gerisch 2007: 185–188; see also Ward and Zazzaro 2010: 33–46). Two beams of cedar (a heavily reworked one, T66, Ward and Zazzaro 2010: 38; and a deck beam, T32, Gerisch 2007: 185, 187) have also been identified. In the Middle Kingdom, Byblos was the most important shipping center for cedar, with trees there reaching 20–30 m in height – providing the large-scale timbers needed to build seafaring ships (Gerisch 2007: 181).

Gerisch also identified large pieces of charred deciduous oak, some of which suggested plank shapes (in WG 39, in Cave 3; Calcagno and Zazzaro 2007: 33; Gerisch 2010: 57–58). Oak trees do not grow in Egypt, and Gerisch had not seen oak pieces of this size at other ancient sites in Egypt (Borojevic and Gerisch 2007: 44–45). This evidence suggests that oak imported from the eastern Mediterranean region also had been used for ship planks, but only to a very limited extent – the only find context for oak at the harbor site was as debris in Cave 3, where it was being salvaged.

But an even stronger wood, *Faidherbia albida* ("white acacia," formerly included in the genus *Acacia*), was used for the very large rudder blades (T72, T85), with fasteners of another hardwood, *Acacia nilotica* (Nile acacia), which had been recycled as a ramp outside of Cave 6 (Ward and Zazzaro 2010: 38, 41). *Faidherbia albida* was also used for the upper portion of (rudder) Blade 1, found just within Cave 2. The lower portion of Blade 1 was made of Nile acacia, as was Blade 2. All of the tenons, both tongue and dovetail, recorded in 2007 were also made of Nile acacia (Gerisch 2007: 185–188).

A few ship planks also were made of Nile acacia. Gerisch also identified two planks of *Ficus sycomorus* (T8, T15), a tree (sycamore fig) found in the Nile Valley, and another (T29) of *Avicennia marina* (grey mangrove) (Gerisch

2007: 186–187). The mangrove plank must have been made locally at the harbor where these trees grew along the shoreline, possibly as a substitute or spare part.

Three tool handles excavated at Mersa/Wadi Gawasis also were made of grey mangrove, demonstrating the opportune use of locally available materials, as does an adze handle made of mangrove wood and a damaged, reworked piece of cedar (Ward and Zazzaro 2010: 45–46). The adze handle (minus its blade) was found in Cave 2 in association with much wood debris, providing good evidence of its use – to salvage ship timbers.

The predominant use of cedar for ship timbers found at Mersa/Wadi Gawasis, however, points to the use of this wood for the large timbers of seafaring ships, while the chosen wood for all tenons was Nile acacia. Nile acacia also grows in some desert wadis, but it is unlikely that it was obtained locally near the harbor, since construction of the boats must have been completed at the dockyard in the Nile Valley before the ships were disassembled and transported across the desert.

Some ship parts, however, were too damaged for recycling after the sea voyage and ended up as fuel in hearths and fire-pits – especially since there was a scarcity of any type of fuel on the Red Sea coast. Gerisch has identified a variety of wood species from charcoal samples taken at Mersa/Wadi Gawasi, the main constituents of which are Nile acacia, cedar and grey mangrove. Eastern Mediterranean wood used in the Punt ships, however, include not only cedar, but also three other species identified in charcoal samples: pine (*Pinus* sp.) and deciduous and evergreen oak (*Quercus* sp.). Most surprising, ebony from the southern Red Sea region, which was prized as an imported material from Punt, also was identified in charcoal samples. Not surprisingly, however, local materials found along the Red Sea coast also provided material for fuel: grey mangrove, *Leptadenia pyrotechnica* (a desert herb), and sea blite (*Suaeda* sp.) (Gerisch 2007: 173).

5 Cargo Boxes

Not all of the forty-three wooden cargo boxes that had been emptied and left at the harbor site outside the entrances to Caves 5 and 6 (Figure 24) were well preserved. The woods of six of the boxes were identified by Gerisch (2007: 188). Four of these boxes (Cargo boxes 3, 11, 18) are made of planks of sycamore, while the others have planks of *Ziziphus spina-christi* (Cargo box 1) and white acacia (Cargo box 8), woods also found in the Nile Valley. When preserved, furring strips and dowels of these boxes are made of Nile acacia (Cargo box 1), *Tamarix*

FIGURE 24 Cargo boxes *in situ*.

sp. (Cargo box 3), or sycamore (Cargo boxes 8, 13), while Cargo box 11 had furring strips of sycamore and dowels of *Tamarix* sp.

The planks of the cargo boxes, as well as some furring strips, were probably prepared in carpenters' workshops in the Nile Valley, in standardized sizes: 50–52 cm long and 32–34 cm wide (Zazzaro and Manzo 2007: 166). A very similar, plastered wooden box was excavated by Flinders Petrie at Kahun. This box dates to the late Middle Kingdom and is now in the Petrie Museum of Egyptian Archaeology, London (UC 7513). Although smaller in size than the Mersa/Wadi Gawasis cargo boxes (15.6 × 8.8 × 10.5 inches), the Kahun box is made in the same way as the cargo boxes: with two furring strips along the bottom and tiny dowels holding the sides together.

The Mersa/Wadi Gawais cargo box planks were mainly of sycamore, but also of other woods that would have been available in the Nile Valley (Nile acacia, *Ziziphus spina-christi*) (see Lucas 1989: 443–448). At some point plaster was applied to the boxes (as a sealing agent?) – many of the box planks have traces of plaster on their surfaces and a few better preserved boxes were still covered with plaster. The use of a local (Red Sea coast) shrub (*Tamarix* sp.) for dowels and furring strips on some of the cargo boxes suggests that they were fabricated in the harbor area – or possibly even in Punt/Bia-Punt – with locally

available wood for these components when needed and planks of sycamore (or other woods) that were probably transported from the Nile Valley in tied-up bundles.

Although they possibly were intended for royal (or temple?) presentation, the two inscribed, cargo boxes were unloaded at the harbor along with the other uninscribed ones and were abandoned there. Unlike most larger cedar timbers, the timber of these cargo boxes must not have been particularly valuable to salvage or reuse. The fact that these boxes did not get recycled later as fuel also may suggest that this may have been the last seafaring expedition from *Saww*, during the reign of Amenemhat IV, after which the boxes were gradually covered by layers of windblown sand at the abandoned harbor site.

Fragments of plastered cargo boxes also were excavated in WG 61/65, outside the entrance to Cave 8, along with impressed and broken clay sealings (Bard and Fattovich 2010: 12). Other plastered fragments thought to be from cargo boxes also were found in sand deposits on the terrace slope (Zazzaro 2008a: 68). Unlike the intact deposit of 43 cargo boxes outside of Caves 5 and 6, these cargo box fragments must have been from different expeditions.

6 Rope/Ship Rigging

Deposited in two layers at the rear of Cave 5 were at least 26 complete, coiled ropes, which probably were used as standard rigging and/or hogging trusses for several ships (Veldmeijer and Zazzaro 2008: 21) (see Chapter 3). Contra Veldmeijer and Zazzaro (2008: 25–27), analysis by Borojevic and Mountain (2011b) demonstrates that these large ropes were made of papyrus, and thus were fabricated in the Nile Valley where this plant grows. Diameters of these ropes range from 30 to 35 mm (Zazzaro 2007a: 194). An estimate of the length of one of these rope coils is at least 30 m (Veldmeijer and Zazzaro 2008: 29), but none of the coils were weighed, or uncoiled and measured in length due to their fragile condition. It is not known how many of these large coils would have been necessary for riggings for one ship, let alone a small fleet. But smaller sized ropes were also necessary for riggings, and cordage of smaller diameters, made of linen, halfa grass or papyrus (all materials obtained in the Nile Valley), also have been excavated at the site (Zazzaro 2007a: 190–195). The different sized ropes and cordage must have been part of the assembled ships at the ship yard in the Nile Valley, and thus would have been sent by caravan along with the disassembled ship timbers.

The range in size and location of all the ship components strongly suggests that specialized shipwrights were needed to reassemble the ships at the *Saww*

harbor, but such specialists would not have been necessary at the end of the return voyage, when the ships were disassembled there.

7 Linen: Ship Sails, Caulking(?), and Clothing

There is no evidence at Mersa/Wadi Gawasis of spinning and weaving tools, and it is presumed that cloth for ship sails was brought to the harbor from the Nile Valley, where flax was grown and where there is extensive evidence of linen textile production. Fragments of woven linen have been found at the harbor site, including small, irregularly shaped pieces that had been crumpled – and were probably used for caulking the cracks between ship timbers, to make the ships water-tight. One linen fragment from Cave 2, 7+ cm long, had been impregnated with a "black substance" and was interpreted as having been used on a jar sealing (Zazzaro 2007e: 190), but it could equally have been used for ship caulking. Other finds of linen fragments were mostly from along the top of the slope along the western fossil coral terrace (Zazzaro 2008a: 66–67). The only long linen fragment (65 cm) was found inserted in the entrance corridor wall of Cave 2: it had a simple sewn hem (Zazzaro 2007e: 190, Fig. 73c). This is the only possible find of linen textile that could have come from a sail, but equally it could have been a fragment of a garment. Linen was a valuable craft item and is easily transported, and it is unlikely that linen sails would have remained in storage in the caves at Mersa/Wadi Gawasis, as it could be recycled for use as clothing – or reused to make bags at the site for transporting unloaded Punt goods to the Nile Valley by donkey caravan.

One linen fragment from WG 55 has evidence of a seam, possibly a repair (Zazzaro 2008a: 66) – and is possibly from a garment.

Beeswax was identified on a potsherd excavated on the western terrace slope (WG 65, A2-3, SU19), as well as in a soft solid mass excavated in WG 61, SU19 (James Martin, Orion Analytical, personal communication: March 2010). The beeswax must have been brought to the harbor site from the Nile Valley, where it was collected and processed, to use to caulk the ship timbers.

8 Copper Alloy Strips for Ship Timber Fastenings

Copper was mined at small-scale mines in the Eastern Desert, but the major source of Egyptian copper in the Middle Kingdom was the mines in the Sinai (see Chapter 1; see also Lucas 1989: 199–217, Ogden 2000: 149–155). Finds of copper alloy tools were rare at the harbor site (see Zazzaro 2008a: 64), and most of

the copper alloy there was in the form of fragments of flat strips, ca. 1.5–2.0 cm wide – and up to 10–12 cm in length (Childs 2007: 196, Fig. 60), which must have been manufactured in the Nile Valley. These copper alloy strips were used to secure the ship tenon fastenings, and the strip fragments found during excavations were the remains of copper alloy fastenings that had been removed and discarded as the ships were being disassembled at the harbor site after voyages (Zazzaro 2008a: 64).

9 Other Expedition Supplies: Clothing, Footwear, Camp Furnishings

Linen was certainly used for clothing by expedition members, but it is uncertain how the fragments of linen cloth found at the site were originally used (see above). Two fragments of a woven papyrus sandal, made in the Nile Valley, were excavated along the slope of the western terrace (in WG 31, Bard and Fattovich 2007, Fig. 78; Zazzaro 2007b: 196).

Fragments of wooden artifacts thought to be parts of furniture (broken feet of small tables, beds, or chairs), brought to the harbor site from the Nile Valley, also were excavated along the slope of the western terrace, in WG 24 (Zazzaro and Manzo 2007: 168). The leg of a wooden stool was excavated just outside the entrance to Cave 8. Since there was much evidence of administrative activity in this area, including papyri fragments, ostraca and clay sealings, it was suggested that this stool was used by an administrative official (Bard and Fattovich 2010c: 12).

Just to the south of the entrance to Cave 1 (in WG 40 and WG 40 S extension) a pile of five well-preserved mats was excavated, as well as a fragmented wooden furniture leg with evidence of red paint. The pottery in this excavation unit was mainly associated with domestic activities: cooking and eating (Bard, Fattovich and Ward 2011: 3–4; Fig. 24). Four of these mats (A, C, D, E) were made of halfa grass, by weaving or twining. Only one mat (B) was made of dom palm leaves, which had been plaited (Borojevic and Mountain 2011c: 29). Most likely these mats were made locally at the harbor site and very likely in this area, as cut reed – the raw material – also was excavated there. Halfa grass could be found growing in nearby wadis and dom palm trees probably grew along the Red Sea coast in antiquity (Borojevic and Mountain 2011a: 90).

10 Egyptian Ceramics at the Harbor Site

Although some Egyptian ceramics excavated at Mersa/Wadi Gawasis suggest use there in the late Old Kingdom and early New Kingdom (Perlingieri

2007a: 110–114), the majority of pottery dates to the 12th Dynasty (and early 13th Dynasty) (Wallace-Jones 2018: 7). A wide variety of pottery was brought to Mersa/Wadi Gawasis from all over Egypt via the desert caravan route along with other expedition supplies (Wallace-Jones 2018: 2). Problematic for pottery production at the harbor site would have been sources of clay, fuel for the kilns, and especially a lack of fresh water. The only type of ceramics clearly made there were the poorly fired platters for bread making (Wallace-Jones 2018: 6).

According to Wallace-Jones (2018: 2–3), the pottery at Mersa/Wadi Gawasis has parallels at significant sites in the Nile Valley and the Delta, especially Tell el-Dab'a, Kom Rabia, Kahun and Dahshur. Ceramic wares at Mersa/Wadi Gawasis are either of marl clays, found between the Cairo region and Esna in Upper Egypt, or Nile alluvial clays (Nordström and Bourriau 1993: 160). While specific pottery production sites cannot be identified for the Egyptian ceramics found at Mersa/Wadi Gawasis, it probably can be presumed that they were amassed, along with the materials they contained, at major government centers, especially the capital of *Iṯ-tawy*, as well as Thebes. There are many similarities between the Mersa/Wadi Gawasis ceramics and those from Lisht, and some of the pottery at the harbor site must have come from Lisht or nearby. Marl A3, which is also prevalent at the harbor site, had to come from the Ballas/Theban area (Wallace-Jones 2008: 49; Wallace-Jones personal communication: September 2016).

Wallace-Jones (2018) has discussed the parallels between supplying the Mersa/Wadi Gawasis harbor, 12th Dynasty forts in Nubia, and mining encampments, and possibly there was some centralized state facility at the capital for organizing food supplies for such far-flung operations, in order to facilitate frequent and/or repeated operations. Shaw (2009: 75, 79) has proposed a core to periphery model for the distribution of Marl C Middle Kingdom storage vessels, which were suitable for containing and transporting grain, from the kingdom's core (Lisht, Kahun, Memphis) to periphery sites, including the Red Sea harbors at Mersa/Wadi Gawasi and Ayn Soukhna, as well as the gneiss quarry at Gebel el-Asr, to the west of the fort at Aniba in Lower Nubia. In Room 3 of a dry stone structure on the Quartz Ridge at Gebel el-Asr were 22 large storage jars of Marl C1 fabric placed in two long rows. Shaw (2009: 73–75) assigns these jars to the late 12th or early 13th Dynasty. Twelve of these jars have pot marks, both pre- and post-fired; eight of these pot marks appear to be numerical (Shaw 2009: 76–77).

Pre-fired marks of "commas" have also been recorded on potsherds of Marl C jars from Mersa/Wadi Gawasis (Perlingieri 2007a: 105–106), as well as on shallow "plates," mostly of Marl C, which were probably jar stoppers, found piled at the entrance to Cave 6 (Perlingieri 2007b: 28). According to Wallace-Jones (2010: 21), the range of the Mersa/Wadi Gawasis pre-fired pot marks shows

many similarities to those from Kahun. The largest number of potsherds with these pre-fired pot marks was excavated in the harbor beach area, mostly on Marl C fabrics, which are related to quantity or counting (Wallace-Jones 2008: 48). That these pre-fired pot marks were mostly found on closed forms of Marl C fabric suggests that a "system of codifying information about the jars was in place" (Wallace-Jones 2010: 22).

Regarding the function of these pre-fired pot marks, which also are known from other sites, Shaw (2009: 79) quotes Gallorini (1998: 260–261):

> Someone extraneous to the workshop could have asked the potters to apply the marks for reasons related not to the pottery manufacture, but to the logistic/administrative aspects of the vessels' final distribution … especially of the pottery produced by the ateliers directly controlled by the central administration, and working mainly, if not exclusively, to supply vessels for royal buildings and royal domains … many of the sites in which pre-firing marks are well attested are either newly founded settlements in relation to royal domains (Ezbet Rushdi, Lisht, Qasr el-Sagha, Kahun), the Nubian forts or royal funerary complexes (Lahun, Dahshur, Lisht south).

"Graffiti" (post-fired) pot marks also have been recorded on potsherds at Mersa/Wadi Gawasis, such as stylized boats and hieroglyphic signs (*nfr*, *nṯr*, *mn*) (Perlingieri 2007a: 105). According to Perlingieri (2007a: 106), the pre-fired pot marks were made during the manufacturing process and contained "primary" information, which was requested when the vessels were made – "possibly by an official in charge of organizing storage and redistribution, or expeditions," whereas the graffiti represent "secondary" information. Shaw (2009: 79) suggests that the post-fired graffiti of boats on potsherds at Mersa/Wadi Gawasis may specifically correspond to these jars being used for seafaring expeditions.

Other types of Egyptian pottery brought to the harbor of *Saww* were for everyday domestic use: for cooking and bread-baking, possibly beer production and storage, food preparation and consumption, and water storage, as opposed to funerary use, for which there is no evidence (Wallace-Jones 2018: 25). Many different types of Egyptian vessels were excavated there: large open forms and smaller jars, plates, platters, cups, bowls, lid-sieves and cookers – as well as prized personal possessions (Wallace-Jones 2018: 25). Given the considerable amount of Egyptian ceramics and potsherds at the site, pottery was not recycled and returned to the Nile Valley at the end of expeditions, as probably was the case for many of the much more valuable ship timbers.

Evidence of jar stoppers also has been excavated at the harbor site (Wallace-Jones 2008: 48). Five wooden discs with a groove around the circumference were excavated in 2007–2008. Three of these wooden discs, ranging from 10 to 12 cm in diameter, still had string filling the groove and were found in a disturbed context near the entrance to Cave 5 (Zazzaro 2008a: 68). Two ceramic discs also were found near the production area and were interpreted as jar stoppers (Zazzaro 2008a: 68). Also excavated in the production area were several sandstone rubbers, which probably had been used to shape the pottery discs, as the width of grooves on the rubbers is the same dimension as the thickness of the potsherds (Lucarini 2007a: 211). According to Wallace-Jones (2008: 48), the ceramic discs with smaller diameters fit very well into the rims of some jars and bottles, while the larger sized wooden discs, with string acting as a kind of seal, were for larger sized jars. Many of the jars and bottle rims have a cupped internal ridge, fairly standardized in size, in which the sealing discs would have fit (Wallace-Jones 2008: 48).

Although it was first thought that the many ceramic bread molds found in the production area at the harbor were made there, they probably were made in the Nile Valley (Wallace-Jones 2018: 26). With the exception of the large ceramic platters, pottery at Mersa/Wadi Gawasis was all imported from the Nile Valley – even small cups and dishes used as eating ware by some individuals. This is unlike the Middle Kingdom pottery found at the copper mining site of Serabit el-Khadim (Zone Sud) in the Sinai, where much of it was made locally (Bourriau 1996: 30–31). No doubt the importation of pottery to the harbor site was due to the much shorter occupation time there than at the mining camps, where Bourriau (1996: 31) has argued a group of professional potters were working.

According to Wallace-Jones (2018), the range of Egyptian ceramics found at Mersa/Wadi Gawasis is representative of what was occurring in the rest of the country in the 12th Dynasty. The pottery represents a well-organized and proficient system of production, and the quality and quantity of pottery at the harbor site "seems to confirm Royal involvement in every aspect of the expedition" (Wallace-Jones 2018: 61).

11 Non-Egyptian Ceramics at the Harbor Site

The ceramic evidence from Mersa/Wadi Gawasis suggests that the expeditions were organized in Egypt by the Egyptian state, but sherds of non-Egyptian wares from different contexts also suggest more wide-ranging contacts of these expeditions.

Twenty-four fragments of rims and bases from at least five Canaanite medium-sized bottles, with lightly everted grooved rim and flat base, were associated with a layer of mud-brick, most likely a (thin) platform construction, outside the entrance to Cave 3 (in WG 33), and dated to the late 12th – 13th Dynasties (Bard and Fattovich 2008: 17, 51; Wallace-Jones 2010: 23). Several other fragments are ascribable to at least three amphora-type vessels along with a number of smaller jars from different contexts (Wallace-Jones 2010: 23).

In the camp of the beach area (in WG 47), fragments of a Canaanite jar were found, as well as a large cooking pot of Nile E fabric, "typical of those found at Tell el-Dab'a" in the eastern Nile Delta (Wallace-Jones 2008: 47–48). Also excavated in the camp, but farther away from the harbor edge (in WG 51), were ceramics of a wide variety of wares from the Nile Valley, including three Marl C rim sherds from bag-shaped jars that also are found at Tell el-Dab'a in the 12th Dynasty, as well as three sherds of Nile E fabric (Wallace-Jones 2008: 46), suggesting that some supplies came from the eastern Delta. Canaanite wares also could be found in the eastern Delta, and this region may have provided provisions for an expedition. The rare Nile E ceramics at Mersa/Wadi Gawasis, however, could also have come from the Memphis region, and Wallace-Jones (2018: 64) has suggested that given their rarity at the harbor site, they may have been brought there "as a personal possession to be used for cooking."

Twenty-five sherds from small jars of Palestinian origin also were excavated in the alcove shrine (in WG 56, SU 8; Sally Wallace-Jones personal communication: March 2017), where a U-shaped structure composed of three large conglomerate blocks had been placed perpendicularly to each other. There was no evidence of domestic or expedition activities in the excavation units of this shrine, and these small jars must have been left there as offerings.

In the same area and to the west of the alcove shrine, two Minoan potsherds were excavated near the entrance to Cave 7 (in WG 55). One Minoan potsherd dates to the Proto-palatial period, possibly as early as ca. 2000 B.C., of the White-banded Style of MMIB Kamares pottery; the other potsherd is from a shallow bowl of Fine Buff Crude ware of MMIIIA, ca. 1700 BC (Wallace-Jones 2008: 49; 2010: 23–24; 2018: 32). One explanation for the presence of these very exotic wares at Mersa/Wadi Gawasis is that the Minoan pots were brought there by Egyptians and were left as offerings at the shrine. There is limited evidence of Minoan pottery in Egypt in the 12th Dynasty, mainly from the rubbish of settlements in a 50 km stretch of the Nile Valley between Lisht and Lahun (Kemp and Merrillees 1980: 284), and the Minoan pottery at Mersa/Wadi Gawasis was probably brought there from the capital region. It also has been suggested that some Minoan sailors, who were probably known for their

seafaring expertise, were hired in the Delta (where some expedition supplies are known to have originated) for Egyptian expeditions to Punt, in both the early and late 12th Dynasty, and left these offerings at the shrine at *Saww* (Bard and Fattovich 2010c: 8–9).

Ten potsherds excavated at Mersa/Wadi Gawasis were of wares from coastal regions on both sides of the southern Red Sea (Bard and Fattovich 2013: 7; see also Chapter 7). These ceramics include fragments of Ancient Ona ware and early Adulis ware from Eritrea, Gash Group ware from the Sudanese-Eritrean lowlands, Ma'layba ware from the Aden region of southern Yemen, and Sabir ware from the Yemeni Tihama. The fragments of Ma'layba ware, Gash Group ware, Ancient Ona ware, early Adulis ware and Nubian wares were found in assemblages at Mersa/Wadi Gawasis dating to the late 12th Dynasty. A few fragments of Sabir ware also were found in assemblages dating to the early New Kingdom (Manzo 2007a: 29–30; 2007b: 130–131, 134; 2008: 51; 2010d: 26). These wares could have been acquired when Egyptian expeditions were in the southern Red Sea region, but it is also possible that this evidence represents individuals from these regions, hired to replace sailors and/or soldiers who had died during the voyages to Punt/Bia-Punt (see Fattovich 2012a: 12). Fattovich has also suggested that some individuals may have been hired as pilots to help with navigation through the southern Red Sea waters.

The occurrence of a bowl fragment that definitely was made in Egypt, but with decoration imitating Nubian black-topped ware and similar to specimens from the Nile Valley dating to the late 12th – early 13th Dynasties, suggests the presence of *Medjaw* soldiers at the harbor site at this time (Manzo 2007a: 131–132). Eighty-nine potsherds ascribable to domestic vessels of Middle Nubian ware from different contexts dating to the 12th Dynasty suggest the presence of *Medjaw* at the harbor (Manzo 2007a: 126–130; 2008: 50–52, 2010d: 25–26). The majority of the sherds are similar in style to C-Group and Pan-Grave ceramics from Upper Egypt, Lower Nubia and the Wadi Allaqi in the Eastern Desert, as well as the ceramics of Kerma and those of the Fourth Cataract region in Upper Nubia, and assemblages of the Jebel Mokram Group in the Sudanese-Eritrean lowlands. These "Nubian" ceramics at the harbor site have been interpreted as further evidence of the *Medjaw* there because they occur in Pan-Grave cemeteries in Egypt (Manzo 2007a: 132–134), and *Medjaw* soldiers could have been hired by the Egyptians for the overland part of the seafaring expeditions. However, the occurrence of Middle Nubian ware in the region of Wadi Allaqi and the Fourth Cataract (Sadr, Castiglioni and Castiglioni 1993: 32, Fig. 4.2; Kołosowska, el-Tayeb and Paner 2003; Wolf 2004), and the recent discovery of a cattle burial ground with C-Group ceramics at Wadi Khashab,

in the hinterland of Berenike (Sidebotham and Zych 2010: 23–24), suggest that at least some Middle Nubian ceramics from Wadi Gawasis pertain to Eastern Desert nomads who interacted with the Egyptians when they were organizing the seafaring expeditions at the harbor site (see also Manzo 2012c: 229).

12 Shelter for Expedition Members

According to the inscription of Henu in the Wadi Hammamat and the one of Intef-iker (Antefoker) at Mersa/Wadi Gawasis, several thousand people were used for the seafaring expeditions from *Saww* to Punt, at least in the early Middle Kingdom (see Chapter 4). The inscription of Henu records an army of 3,000 men for the expedition across the desert (see Diego Espinel 2011: 250–252). The inscription of Intef-iker lists 50 "followers of the king" (royal guards), 1 "overseer of the house of the magistrates," 5 scribes, 500 sailors and 3,200 soldiers (Sayed 1977: 170).

Excavations at Mersa/Wadi Gawasis have identified the remains of the camps of several (but not all) expeditions, suggesting that their members were lodged in open-air camps, sometimes under simple shelters, and also in the rock-cut caves in the western sector of the site. This evidence does not support the presence of thousands of workers at the site, and suggests that only a few hundred individuals were actually camped on the coast. Thus, we can assume that the majority of the workers did not stay for a long time at the site, but returned to the Nile Valley or were employed for other activities (mining/quarrying) in the Eastern Desert (Sayed 2003: 436).

On the top of the western terrace 24 shallow pits, about 2.3–2.8 m in diameter and 10–50 cm deep, sometimes with evidence of post-holes and hearths, most likely were the foundations of small huts or tents (Bard and Fattovich 2007: 44–50). These features might have sheltered 40–50 men, corresponding to a "company" of 50 soldiers (Schulman 1999: 146). The associated ceramics point to an early 12th Dynasty date for these structures, suggesting that they might have been used by the 50 "royal guards" who accompanied the expedition of Senusret I (1911–1877 B.C.), according to the inscription of Intef-iker.

Surficial concentrations of Middle Kingdom ceramics in the central and western sectors of the harbor site suggest that this area was used for the camps by expedition members. The excavation of a concentration of ceramics to the west of the railway track demonstrated that light shelters, dating to the early 12th Dynasty, were erected on the top of the terrace. These shelters probably were made with mats supported by wooden poles, about 5–6 cm to less than

1 cm in diameter, and were set up in camps of about 100 sq. m (Bard and Fattovich 2007: 31, 45).

Along the southern slope at the base of the western coral terrace was the beach where members of the seafaring expeditions were camping, as well as the harbor area where ships were landing, as can be inferred from the find of a pitted anchor that certainly had been used in the sea along the shore of the lagoon (Zazzaro 2007d: 154, 158, Fig. 22). This area was mainly used in the early and later 12th Dynasty (and early 13th Dynasty?) (Bard and Fattovich 2007: 50–54). The earlier evidence consisted of a sequence of hearths associated with at least two occupation surfaces beneath a stratum of gravel and pebbles, suggesting a phase of greater wadi activity in the area (Bard and Fattovich 2007: 52–53).

Camps of the later 12th Dynasty (and early 13th Dynasty?) in the harbor beach area have been identified with several hearths containing the remains of fish. The hearths were associated with a concentration of several hundred fragments of storage jars, dating to the 12th – early 13th Dynasties (Bard and Fattovich 2008: 25–27). Originally the jars were closed with wooden discs and present a limited range of types, suggesting they had a specific storage function in the harbor area (Wallace-Jones 2008: 47), perhaps for storing fresh water.

Other concentrations of potsherds were recorded in the beach area close to the shore of the lagoon (Bard and Fattovich 2010: 8–10). These fragments included a mixed range of vessels, from *zirs* (water jars) with a base over 30 cm in diameter, to cups dating to the 12th and probably early 13th Dynasties. The ceramics appeared to be domestic debris and probably were discarded after their use, suggesting that the shore of the lagoon also was used as dump area for the camps (Wallace-Jones 2010: 21–22).

A natural rock shelter with evidence of a constructed mud-brick platform and many fragments of storage jars was located on the southern slope of the fossil coral terrace facing the harbor area, in WG 74 (Bard, Fattovich and Ward 2011: 11–12; Fattovich, Bard and Ward 2011: 78). The maximum height of the rock shelter is ca. 132 cm from on top of the mud-brick platform to the ceiling of the shelter. Thus, the mud-brick platform was for storage and sitting: the area was too low for workers to stand up. Use of this area was terminated in Middle Kingdom times when huge fragments of the coral terrace overhang broke off and destroyed part of the mud-brick platform. Ceramics on top of the mud-brick construction or just outside of it included many potsherds of domestic vessels ranging from large storage jars to small cups, including a beer(?) jar and a small whole drinking cup with a hole in it, which suggests a domestic use of the shelter (Bard, Fattovich and Ward 2011: 12), for drinking and probably

eating. The relatively small size of the platform, about 3.4 m (east-west), and 1.4 m from the interior of the rock shelter to the area of rock collapse, suggests that the shelter was used by a limited number of individuals, perhaps the leaders of an expedition. The ceramic assemblage there dates to the late 12th to early 13th Dynasty on the basis of the range of Marl C jar rims present (Wallace-Jones and Imbrenda 2011: 85).

The small rock-cut chambers (Caves 1 and 8) along the western wall of the fossil coral terrace at Wadi Gawasis, probably were used a storerooms, but we cannot exclude the possibility that these facilities also were used as shelters for expedition leaders. Both caves have a similar, rectangular plan and size with small entrances to better protect the inside (Bard and Fattovich 2007: 70–72, 2010a: 1, 14–15).

The much larger, rock-cut gallery-caves (Caves 2, 3, 4a, 4b, 5, 6, 7) were over 20 m long from the entrance to the rear and were mainly used as workshops for carpentry and storage for food and equipment for the seafaring expeditions. But some evidence of living areas also was found.

In Cave 2 in the second phase of use (and in sub-phase 1) of the entrance corridor and Room 1, a floor of a ramp/walkway was built with recycled timbers: the ceramics associated with this sub-phase were late 12th – early 13th Dynasties in date. A rope bag, an ovoid wooden vessel ("grain scoop"), two grinding stones, a potsherd with red ocher inside, a few potsherds of small cups, as well as three ship timbers associated with a concentration of seeds, leaves, and insect remains in Room 1, suggest a living area where food processing took place (Bard and Fattovich 2007: 64–65).

Evidence of a living area in Cave 3 (in the later phase of its use) consisted of shallow hearths near the entrance and scattered pieces of charcoal (Bard and Fattovich 2007: 66). In the earlier phase of use was an assemblage of ship timbers and remains of emmer (*Triticum dicoccum*) spikelets without grains, evidence of food storage along with timber processing there (Fattovich and Bard 2007: 20).

Outside the entrances to Caves 5 and 6 and beneath the wooden cargo boxes were some small hearths, from an occupation phase dating to the late 12th Dynasty. This floor sealed the entrances to Cave 5 and Cave 6 along the coral terrace, suggesting that access to the two caves was already covered with sand (Fattovich and Bard 2007: 18).

A great number of hearths also were excavated in the area outside the entrance to Cave 8 (in WG 61/65) along with mat fragments (Bard and Fattovich 2010a: 12). A large concentration of mats was piled in WG 40, to the south of the entrance to Cave 1 (see above). These areas were certainly used for expedition domestic activities, especially cooking and eating.

Outside the entrance to Cave 7, five mother-of-pearl spoons of different sizes as well as more (spoon) fragments, made from the nacreous valves of shells of *Unionacea* (the largest freshwater mussel), were found (Carannante 2008: 13). These spoons had to have been brought from the Nile Valley for use at the harbor camp – someone(s) had actually brought his own special set of eating utensils! But another broken shell spoon from the same excavation unit, made from the last whorl of a large *Charonia tritonis* (a large sea snail found in the Red Sea), was probably made locally (Carannante 2008: 13).

Thus, there is archaeological evidence at Mersa/Gawasis of outdoor camping areas with hearths – but no permanent buildings for any domestic activities. Open-air camps were located in the harbor beach area as well as on top of the western fossil coral terrace. Interior areas near the entrances of the gallery-caves and on the terrace slope outside of these entrances also were used for cooking (and eating) activities (where large mats and fragments of wooden furniture have been found; see above). Other camp activities, including administrative ones, also took place in these areas outside the cave entrances. Given that the terrace slope areas were sheltered from the prevailing northerly winds, these areas also may have been where a small number of expedition members slept – and the hearths there, and in the harbor beach area, also would have been protected from the strong winds.

13 Food Supplies and Storage, Food Processing and Baking/Cooking

The Red Sea coast is an arid region, lacking in fresh water, and cultivation of the major cereals of pharaonic Egypt, emmer wheat (*Triticum dicoccum*) and barley (*Hordeum vulgare*), was impossible there. Therefore, the emmer wheat and barley excavated at the harbor site had to have been brought there by caravan from the Nile Valley.

It is likely that large quantities of emmer wheat and barley were transported to the site in the large storage jars, but the rope bag excavated in Cave 2 may also have been used for grain transport (Figure 25). This type of bag is frequently depicted in tomb scenes for transporting harvested wheat and barley (Wendrich 2000: 262).

Spikelets of emmer wheat were excavated in Cave 3, where they had been stored by an expedition (Figure 26). No grains of emmer were preserved in the spikelets, which had been infested with insect pests (weevils, *Drupothroidae*) (Borojevic and Gerisch 2007: 39–40). Thus, the emmer wheat grains had been brought to the harbor site still in their spikelets, which would have required further processing there.

FIGURE 25 Rope bag.

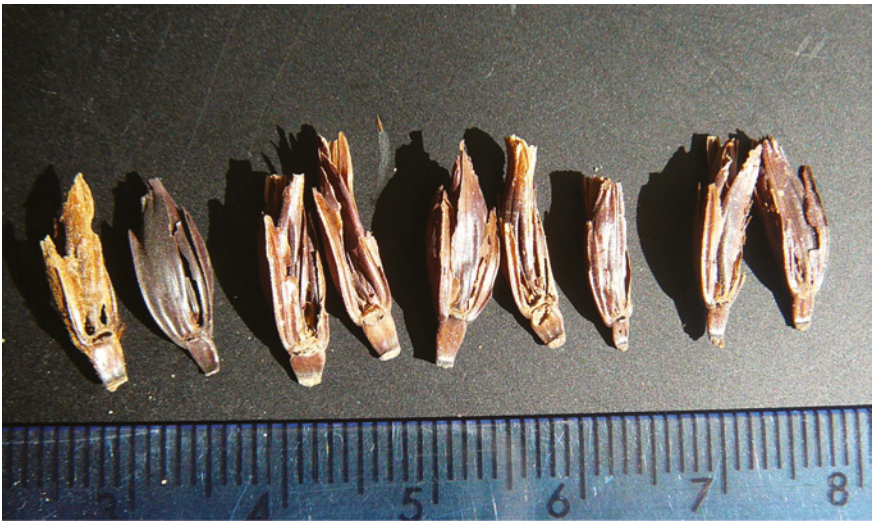

FIGURE 26 Emmer wheat spikelets from Cave 3.

The emmer wheat at Mersa/Wadi Gawasis was used to make bread, a basic staple of ancient Egyptian life. Bread-baking took place in different locations. Excavated along the slope of the fossil coral terrace and in front of the rock-cut galleries (in WG 17) were a small undisturbed, rectangular oven with a plastered clay floor, and the remains of one or perhaps two other, badly damaged ovens. Ceramics associated with these ovens date to the late 12th–13th Dynasties (Bard and Fattovich 2007: 69). The one well preserved oven was 54 cm long, 45 cm wide, and 27 cm high, and was made with three large fragments of the reddish-brown circular ceramic platters with a central groove on the sides (Figure 27). These ceramic pieces had been placed vertically and the oven was open to the west. Clay was used to plaster the oven bottom and to fill the corners and joints between the ceramic fragments. This oven had been well cleaned out and then filled and covered with mangrove branches to preserve it so that it could be used again. The mangrove branches were tied tightly together with rope. Several large branches and smaller pieces, perhaps intended to be used as fuel, also were scattered between and around the ovens (Bard and Fattovich 2007: 69). This oven probably was used to bake bread in the elongated ceramic bread molds, as it similar in design to a bread oven represented in the tomb of Antefoker (Intef-iker) in Thebes (Davies 1920: Pl. X).

FIGURE 27 Oven in WG 17, on western terrace slope.

At the base of western fossil coral terrace slope was the large production area (20 m x 20 m, WG 19/25/26/27), with evidence of five different phases of use. Excavated there were layers of numerous fire-pits, which, between expeditions, had been covered with aeolian sand. A great quantity of bread molds and potsherds was excavated there along with charcoal and ash, gypsum, flakes of chert, tiny pieces of copper ore and a few pieces of copper, as well as fragments of the large chaff-tempered platters. Dumps of discarded materials, with many large fragments of bread molds and vegetal materials (such as straw or dung), also were found there. Small, shallow fire-pits were often associated with food remains (animal bones and shells). One large, shallow fire-pit (in SU72) had a constructed barrier at its edge made of mud-bricks and ceramic platter pieces. A large fragment of an unfired platter was found in a medium-sized fire-pit (in SU49). Many fragments of furnace/oven walls (made from platters and encrusted in salt) and charcoal flakes were found in WG 26, E5. Many bread molds, especially tip ends, as well as fragments of furnaces/ovens were excavated in WG 25, E3. Several (living?) floors, sometimes with post-holes, also were excavated in several strata (Bard and Fattovich 2007: 73–76). On the whole, the ceramics from the production area consist of the conical bread molds, platters/ovens, as well as large plates and large- and medium-sized jars (Perlingieri 2007b: 29).

The evidence from the many fire-pits and dumps in the production area suggests that it was used mainly for baking bread in the long, cylindrical molds. Bread was baked in these molds in the fire-pits, and frequently the bread was extracted by breaking off the mold ends. Perhaps so much bread was baked there to use as ready-made food to take on the expedition ships. Gypsum plaster also was produced in this area, as well as the large, coarsely tempered ceramic platters, which were used to make bread (sun-baked bread?, such as *aish shamash*) and for the walls of ovens/furnaces. A limited amount of cooking also was associated with the small fire-pits.

The ceramics suggest that Phases 1, 2, 3, and 4 of the production area date to the to the late 12th–13th Dynasties, and the earliest phase (5) dates to the early 12th Dynasty, as can be inferred from the occurrence in this assemblage of large, restricted-necked jars ("bag-shaped" *zirs*) (Perlingieri 2007b: 28).

Also excavated in the production area were numerous burnt grains of hulled barley as well as some burnt emmer wheat grains, and a large quantity of mineralized barley chaff, which were found within ash deposits there (Borojevic and Gerisch 2007: 41). The burnt grains had spilled into the fires as quantities of grain were parched by heating, to dehusk them, a necessary step when the grains were to be boiled, such as in a porridge (Ksenija Borojevic personal communication: June 2016). Dehusked grain could also have been mixed with

sprouted grains for beer brewing (Borojevic and Mountain 2011c: 27). Parching large quantities of barley seeds, mainly 2-row barley (*Hordeum vulgare* ssp. *Distichon*), also took place in Fire-pits 14 and 15, to the south of the entrance to Cave 8 (Borojevic and Mountain 2011c: 26–27).

The rope bag that was excavated in Cave 2 (see above), was found in a stratum of organic materials, including seeds, near a grinding stone, a round pestle and what has been identified as a wooden grain scoop (Bard and Fattovich 2007: 65; Zazzaro 2007b: 195). The Mersa/Wadi Gawasis grain scoop is similar to a New Kingdom one in the Petrie Museum of Egyptian Archaeology in London (UC58979). Grain was processed at the harbor site using grinding stones and/or pestles (to make flour for bread dough), and the grain scoop was brought from the Nile Valley for use in these activities. Twelve grinding stones (fragmentary saddle querns, a large complete saddle quern, estimated to weigh 50 kg, and upper grinders) have been found in upper strata of excavation units along the western fossil coral terrace (Lucarini 2007a: 200). Probably these grinding stones also were transported to the harbor site from the Nile Valley and would have been stored in the caves between expeditions. Two upper grinders of sandstone, found in the harbor beach area (WG 51), also could have been used for cereal processing (Lucarini 2008: 55).

What is missing in the archaeological evidence at Wadi Gawasis, however, are large *in situ* vats for either dough making (for bread) or brewing beer. Thousands of potsherds of beer jars (mainly Nile B2 ware) have been found throughout the site (Sally Wallace-Jones personal communication: September 2016). Thus, during the course of the different expeditions large quantities of beer, made in the Nile Valley, were brought to the harbor site in these jars – or some of the beer was consumed on the overland trek and the jars continued to be transported there.

A small amount of cooking took place at the harbor site at some of the hearths in the camping areas, and also in small fire-pits in the production area, mentioned above. The most evidence of camp cooking came from the harbor beach area, where fish remains, mainly sea bream and parrotfish, were identified (Carannante 2008: 13). Although preserved (fresh water) fish, sent as supplies from the Nile Valley, are mentioned in several ostraca (see Chapter 4; Mahfouz 2008: 269–274), no evidence of them was found in the excavated camp sites. (Not all excavated fish remains were identified, however: a planned study season for this and other final analyses was not able to be conducted due to permit problems in Egypt following the 2011 changes in government.)

Most of the 650+ shells of *Lambis lambis* found on top of the shrine at WG 29, where they probably had been left as offerings, were already dead when collected, and therefore they had not been utilized as food (Carannante and

Pepe 2007b: 215). Only 17 of these (MNI) *Lambis lambis* shells may have been collected live for food (Carannante 2008: 13).

Twenty large fragments of the flat bones of a sea turtle were excavated near the entrance to Cave 7, but the evidence of burning on these bones suggests the use of heat to remove the corneous tortoiseshell for ornaments (Carannante 2008: 13), not for cooking the turtle for its meat.

Lastly, in terms of food consumed at Mersa/Wadi Gawasis, dung of ovocaprine herbivores was identified in WG 55, south of the entrance to Cave 6. A long spiral ram horn, of a type of ram known in the Old and Middle Kingdoms, but not found in New Kingdom times when rams had curved horns, was excavated along the western slope in WG 31 in the mixed deposit of SU1, which included an intrusive, cut piece of a (modern) sugar cane (Bard and Fattovich 2007: 72). Thus, sheep were brought live from the Nile Valley for their meat to be consumed at the harbor site.

Also excavated in WG 55 were edible fruits that had been brought from the Nile Valley from sycamore fig and Nile acacia trees. Fruits of the dom palm (*Hyphaene thebaica*) were identified in WG 56, next to WG 55 and in the area of the alcove shrine, along with more fruits of the sycamore fig and Nile acacia, and may have been left there as offerings. The desiccated bases of garlic, as well as garlic rootlets, were recovered in WG 55 and WG 61, in front of Cave 8: the garlic also had been brought from the Nile Valley, for cooking. Fruit specimens of the *Balanites aegyptiaca* tree, which is found in the Nile Valley but also grows in more arid regions and produces a bitter fruit, also were excavated in WG 55 and WG 61 (Borojevic 2010: 47–51).

14 Local Production of Stone Tools

Chert pebbles of various dimensions were available in Wadi Gawasis, and this was the most frequent raw material for stone tools made at the harbor site (Lucarini 2007a: 207). A number of the chert artifacts, especially chips and chunks, show traces of burning, which would have facilitated detachment of longer flakes and blades by pressure flaking (Lucarini 2008: 53).

According to Lucarini (2007a: 211), the lithic tradition found on the western slope of the coral terrace and in the production area is characterized by large, opportunistic stone tools (various rough scrapers, along with better manufactured tools (perforators on flakes, truncations, and pieces with continuous retouch – often on large blades). This lithic assemblage is comparable to those from other sites in the Nile Valley.

The lithic evidence excavated in WG 55 (outside the entrance to Cave 7), with a very high percentage of debitage and 10 cores, as well as primary flakes and blades, indicates a manufacturing site for stone tools (Lucarini 2008: 55).

The majority of retouched tools there were used for scraping (Lucarini 2008: 55). Given that a large quantity of wood debris also was excavated in WG 55, Lucarini (2008: 56), suggests that "these more primitive implements" could have been quickly and roughly knapped in this area and then used right away to scrape and clean ship timbers.

A few of the stone artifacts at Mersa/Wadi Gawasis were in obsidian, which was obtained in the southern Red Sea region. These included two multiple platform cores (in WG 19, in the production area), a flake from a multiple platform core (in WG 18, below the southern terrace slope) and a core side/debitage from a multiple platform core (surface collection) (Lucarini 2007a: 201, 203, 208). The obsidian cores had been used for making flakes (Lucarini 2007a: 208). A not retouched obsidian flake also was excavated in 2008 (Lucarini 2008: 53). Given that imported obsidian was a highly desired material in Egypt, it is not surprising that very few pieces from tool manufacturing were found at the harbor site.

15 Non-Egyptian Stone Tools at the Harbor Site

Archaeological evidence at Mersa/Wadi Gawsis also suggests that other people frequented the site. A lithic industry and a huge quantity of shells with some traces of working were associated with hearths and early 12th Dynasty ceramics on the southern terrace slope, in WG 18 (Bard and Fattovich 2007: 52–53). This lithic industry was different from the one widely scattered at the site, suggesting the presence of "indigenous" coastal people there (Lucarini 2007a: 211–212). Microlithic perforators found in the lower strata of WG 18 could have been used for making shell beads (Lucarini 2007a: 211), and a non-Egyptian style shell bead was found in Cave 1 (Bard and Fattovich 2007: 72). Fragmentary grinding stones associated with a large concentration of shells, crab remains and fish bones suggest processing of sea food at the site (Lucarini 2007a: 211). Agatarchides of Cnidus (Diodorus, III, 7) described the practice of Red Sea coastal peoples (*Ichtyophagoi*) in Hellenistic times who ground dried fish and seeds to make food (Burstein 1989: 68–89). A fragment of rim from a cup decorated with incised patterns on the outside and wiped on the inside also was associated with this industry (Perlingieri 2007a: 131, Fig. 54g).

16 Summary

Because of a lack of basic resources on the Red Sea coast, the ancient Egyptians needed to bring all of their expedition materials and supplies from the Nile Valley to the harbor at Mersa/Wadi Gawasis, from the ships that were built (in

Qift) and dismantled for transport across the Eastern Desert, to the pottery they used at the harbor, to most of the food they consumed there. Ceramics were made at different locations in the Nile Valley and there may have been a central state facility at the capital of *Iṯ-tawy* for manufacturing, organizing and storing vessels for holding grain – for all state expeditions, not only the seafaring ones to Punt/Bia-Punt.

Because of the complexity of organizing all necessary materials, supplies, and manpower for the Punt/Bia-Punt expeditions, a central authority would have been needed for coordination. Possibly this was the role of the high steward Senbef, mentioned on Stela 5 (see Chapter 4), who, following the decree of the king, worked with a special expedition commission (*ḏ3ḏ3t*), but sent others to direct the actual expeditions: Nebsu and Amenhotep who went to Bia-Punt and Punt, respectively, mentioned on Stela 5.

Evidence of shelter at the harbor site was minimal: expedition members would have spent as little time as possible there to mount the seafaring voyages to Punt/Bia-Punt, and then at the end of a voyage to unload the goods and materials and dismantle the ships.

CHAPTER 5 APPENDIX

Bread Baking Experiments

By Ksenija Borojevic and S. Terry Childs

A large number of conical bread molds were found at the site of Mersa/Wadi Gawasis during the investigations from 2003 to 2007. The finds prompted us to investigate further their use and to experiment with bread making using pieces of the preserved ancient bread molds. The primary goal of the experiments was to attempt to reproduce the bread baking process using the narrow, conical bread molds of the Middle Kingdom.

1 Ancient Egyptian Bread Making

The ancient Egyptians made bread in many forms (cf. Samuel 2000, 2001; Lacovara 2017). They baked round flat breads and other forms without the molds but they also used various types of bread molds which changed through time (Chazan and Lehner 1990). Conical molds used for baking bread with a flat or pointed bottom (base) appear in the First Intermediate Period and the Middle Kingdom, becoming thin and long cylinders in the New Kingdom (Jacquet-Gordon 1981).

The depictions of bread making scenes from ancient Egypt tombs, although highly stylized, provide some insights into the bread making. Registers from the tomb of nobles Antefoker and Senet (TT60) dating the Middle Kingdom (12th Dynasty) show scenes of three women preparing bread. Two of them knead the dough in large jars. One of the women takes some of this dough mixture, shapes it into a cone, and places it in one of the ten vertically standing conical molds between the two women. Behind the women, a man is tending fire in the oven where the molds are stacked horizontally above it (Benderitter 2010–2017). Another relief from Amarna dating to the New Kingdom from the Brooklyn Museum (Cooney 1965: 73) depicts two bakery scenes that show the baking of round bread (*passen*-bread?) next to the baking of the mold bread (*bit*-bread?). It is clear that round bread was baked in a circular oven similar to a traditional tannour oven. However, it is unclear how the bread was baked in those conical/cylindrical molds and what type of fire installations (ovens?) were used. The bread from conical molds must have been long and rather thin, and resembled some sort of stick bread or a "conically shaped baguette."

The ancient Egyptians used two types of cereal for making bread – emmer wheat (*Triticum dicoccum*) and barley (*Hordeum vulgare*). Both have hulled grains, such that the grains are tightly enclosed in chaff and need extensive threshing. The bread made from emmer and/or barley grains must have been thick, stiff, and rather heavy, since these cereals contain very little gluten. The bread that the ancient Egyptians baked in the conical molds must have been hard, but it also must have had a rather long "shelf-life" and could have been suitable for carrying on the sea voyages.

Experiments on ancient Egyptian bread making using molds were done by the archaeological team at Giza in 1993. They used replicas of the Old Kingdom bell-shaped bread molds (*bedja*) found in one of the excavated bakeries at Giza. They used emmer and barley flour and wild, naturally captured yeast for baking the bread and placed the dough in preheated molds. The team successfully baked bread, but determined that their recipe needed some additional work (Ancient Egypt Research Associates 2016).

2 Evidence of Bread Making at Mersa/Wadi Gawasis

There is evidence of two types of bread made at the site. The first suggests the making of "sun bread" on platter platforms, similar to how such bread is baked today in Egyptian villages (Weeks 2004). Large pieces of roughly made, circular platters about 30–40 cm in diameter and with a very thick, deeply grooved rim were found in the production area (WG 19/25/26/27/44). These are similar to platters found at sites throughout all pharaonic periods and have been interpreted as used for bread making.

The second type of bread was made in conical bread molds of the Middle Kingdom. Thousands of fragments of the conical molds were discovered at the site (cf. Chapter 3), primarily in an area designated as the "production area," well down the slope from the man-made caves and near the edge of the paleobay. Many molds were found lying on the surface together with other ceramic fragments, while many others were excavated in and around fire-pits and discard dumps.

Hundreds of the molds were of a substantial size to evaluate their basic characteristics. The predominant size was 27 to 30 cm long, although no complete object was found. The wide end of the tapered pipe had an external diameter of 7.0 to 7.5 cm and an internal diameter of 5.0 to 5.5 cm. Its narrower end had an average external diameter of 4.5 to 5.0 cm and an internal diameter of 0.8 to 1.2 cm that made a very small air hole. Smaller sized molds, a few in number, had an external diameter of 3.5 to 3.8 cm and an internal diameter or air hole of 0.2–0.6 cm at the narrow end. Its length and diameter at the wide

end is not known. The narrow end of one of these molds was found intact and had never been fired. A relatively few larger sized molds were also found with an external diameter of 6.0 to 6.5 cm at the narrow end and an average internal diameter at the air hole of 1.2 to 1.8 cm. The wide end had an average external diameter of 8.0 to 8.5 cm and an internal diameter of 6.0 to 6.5 cm. The length of this mold was at least 27 to 30 cm.

The molds were well made of clay tempered with vegetal material, probably wheat chaff, to make the clay body porous and reduce cracking when heated. The majority of the molds were lined with a carefully made internal slip of fine grained clay, generally a millimeter thick, which may have facilitated the extraction of the bread after it was baked (Figure 28). The lining was always a different color than the body of the mold. Not only does this indicate that two different types of clay were used to make the molds, but the addition of the slip required another stage in the manufacturing process. A few of the larger molds had several layers of slip, which suggests that the molds were re-slipped and reused for bread making. Another interesting characteristic of the bread molds was a slight bulge around the exterior of the air hole, which suggests that the air hole was made by pushing out the clay from the interior shaft after the slip was applied and before the clay hardened. Finally, the majority of the larger mold fragments that were analyzed showed signs of being reduced during firing, perhaps revealing that the "oven" in which the bread molds were used had a controlled atmosphere that minimized the entry of oxygen. It is possible that the "oven" was sealed at the end of the baking and as the bread molds cooled down.

FIGURE 28 Cross-section of a bread mold.

The excavations at Mersa/Wadi Gawasis also yielded good evidence of the ovens used to bake bread in conical molds, which are similar in design to a bread oven represented in the Antefoker tomb in Thebes (Davies 1920: Pl. X). An undisturbed, rectangular oven with a plastered clay floor, along with the remains of at least one other oven, were excavated on the slope of the coral terrace in front of the galleries. The well preserved oven was 54 cm long, 45 cm wide, and 27 cm high. It was made with three large fragments of the circular bread-making ceramic platters that were set vertically and plastered in place. One side was open for inserting fuel and/or the dough-filled molds. The builders of the oven may have intentionally faced the open side to the west in order to take advantage of the wind for efficient firing (Bard and Fattovich 2007a: 69).

Additionally, the intact oven contained branches of mangrove (*Avicennia marina*) that were tied tightly together with rope. It is possible that they were saved and intended to be used as fuel for the next bread baking. Many fire-pits, especially in the production area, contained the remains of wood charcoal and ash, attesting to a variety of activities associated with fire. Fuel used for cooking and baking must have been rather scarce considering the location of the site, which may have necessitated careful control over its use. The recovered wood charcoal primarily consisted of locally found grey mangrove, along with acacia (*Acacia nilotica*) from the Nile Valley. The remains of chipped wood from Lebanon cedar (*Cedrus libani*) discarded after repairing the seafaring ships were also found in and around the fire-pits (see above, this chapter).

Finally, numerous remains of barley grains and emmer chaff were discovered at Mersa/Wadi Gawasis (Borojevic 2010). Small saddle stones and pestles were also found at the site, which could have been used for grinding cereal grains into flour for making bread and gruels (cf. Chapters 3, 5).

3 Experimenting with Middle Kingdom Bread Making

We began the bread making experiment by visiting the local bakery in the nearby town of Safaga on December 31, 2006, guided by the value of careful ethnographic observation of people using traditional methods to offer insights into ancient technologies. We observed the process of making traditional pita bread "*baladi*," which is made from whole wheat flour (*Triticum aestivum*), yeast, water, and salt. Notably, free-threshing wheat (*T. aestivum*) grains have more gluten, the protein responsible for the light and airy texture of modern breads. We also observed that very large quantities of *baladi* bread were produced daily with just three workers in one shift. A fourth person ("scribe") kept

very careful record of the quantities of bread produced since the production of *baladi* bread, the staple of the Egyptian diet, was subsidized by the state.

We decided to substitute emmer and/or barley flour that was used in ancient Egyptian times with the modern bread wheat flour and dough obtained from the *baladi* bakery in Safaga. We were aware of the differences between the baking properties of the bread made from wheat (*T. aestivum*) grains, particularly the increased stickiness of the dough from the greater amount of gluten. However, we were not attempting to recreate the ancient bread recipe using emmer or barley, but were exploring the processes of baking "stick bread" using conical molds. Therefore, our experiments involved making bread using modern ingredients and fragments of the ancient conical molds found at Wadi Gawasis.

The experiments were conducted on January 1, 2007. The following provides the specifics about the ingredients, equipment, and location of the experiments:

Ingredients:

- *baladi* wheat dough from the bakery in Safaga that was kept refrigerated overnight; dry wheat flour used for making *baladi* bread that could be added to the dough, as needed.

Equipment:

- wider base pieces of Middle Kingdom ceramic conical molds from Wadi Gawasis, mostly surface collected in the production area
- 1 liter volume of charcoal fuel purchased in Safaga
- approximately 1 *gufa* (basket) of wood and brush (about half of each) collected in the area of the experiment
- matches

Location:

- Courtyard of the Coral Garden Hotel, ca 2 km north of Mersa/Wadi Gawasis on the shore of the Red Sea. There was a very strong northern wind, which made it difficult to find a well protected area. We used local rocks to develop a wind shield and to create sides of an "oven." The north side of the "oven" was a rock wall built by the hotel.

The following five test trials were conducted. The set-up for each test is described, along with the results:

Test #1 involved using 3 bases of ancient conical bread molds (narrow bottom with a hole) described below. They were positioned in a triangle with two molds lying horizontally on the bottom and one on the top. The fire blazed most of the 20 minutes of baking time. A few rocks were used to cover the molds for wind protection.

- One conical mold with an interior slip was filled with rather stiff dough. It was placed on the bottom of the triangle of molds. It received the greatest amount of heat and fire. As a result, the baked dough was almost completely burnt. The bread came out of the mold easily because it shrunk from burning.
- One conical mold with an interior slip was filled with runny dough. It was also on the bottom of the triangle of molds. The result was that the dough began to run out of the mold quickly and most of it fell into the fire. The remainder of the dough baked but could not be removed from the mold since it was "glued" in place.
- One conical base mold with some interior slip was filled with rather stiff dough. It was placed on the top of the triangle of molds. The result was that the dough baked, but the bread could not be removed from the mold and the bottom side was burnt.

Test #2 involved two short bases of the conical bread molds (narrow bottom end of the shaft), which often built up over time on the artifacts recovered at Wadi Gawasis. Both molds were filled with rather stiff dough. The fire was substantial from the addition of hot coals. The molds were laid horizontally in the fire with some rock cover and baked for approximately 15 minutes. The result was that the bread was less burnt, but it could not be removed from the molds. Furthermore, the surrounding rocks were burned and several were cracked after the first two test trials, indicating that the fire was too intense.

Test #3 focused on trying to bake bread in a modern ceramic flower pot (15 cm diameter; 16 cm depth), which was reminiscent of an Old Kingdom bread mold, using runny dough. The pot was placed in hot coals, 2–3 cm deep, instead of a blazing fire, and the top of the pot was covered. The baking time was approximately 30 minutes during which time we added wood and brush, then some charcoal to maintain heat. A small amount of blaze occurred on the back side of the "oven." The result was completely unsuccessful because the dough was very runny and filled too much of the pot (12 cm deep). The dough was still runny in the center after we stopped baking, although there was some crusting and burning on the sides of the bread. Also, the dough was completely stuck or glued to the pot walls and could not be removed.

Test #4 involved using one broken modern ceramic flower pot base and rather stiff dough. We *preheated* the flower pot base in coals for approximately 10 minutes. We did not remove the pot from the coals, but directly added stiff dough that was about 6 cm in diameter and 1 cm thick. We covered the pot, turned it over once, and baked the dough for 12 minutes. The result was that the dough rose some and baked well. The small, flat bread was easily removed from the pot and was edible.

FIGURE 29 Bread test 5.

Test #5 involved using one ancient conical bread mold (Figure 29). It had a wider circumference than the average molds found on the site, was broken at both ends, and still retained its internal slip lining. We preheated the mold on both sides for a total of 10 minutes in a stoked fire, but without flames. We positioned the mold a little above the coals, so the heat could circulate around it. The mold was not removed from the fire after preheating but a "baton" of stiff dough covered with a thin coating of dry flour was pushed into the mold. The bread baked for approximately 12 minutes with the wider end of the mold visible. We then let the mold and bread cool down for 30 minutes before trying to extract it. The result was that the bread could be pulled out at the wider end in one intact piece. It was slightly burnt on one side and a little at the narrower end. It had a hard crust on the side closest to the fire and was softer on the upper side. An edible, hard stick bread was produced.

4 Conclusions

Although we used modern bread wheat flour dough as a substitute for ancient dough made of emmer or barley flour, our bread baking experiment provided invaluable insights about bread baking activities of the ancient Egyptians. We

were successful in baking one hard but edible stick of bread using an ancient conical mold from Wadi Gawasis. Despite some unsuccessful trials and a few obstacles encountered during the baking process, the following observations are noteworthy for future work on Middle Kingdom bread making:

1) The greatest success in bread making occurred when the bread mold was *preheated* before inserting the dough.
2) The internal slip is important to removing the bread since, as hypothesized, it provides a thin dense layer in the ceramic vessel to prevent the bread from sticking to the porous sides of the mold.
3) The successful mold was not a whole object, since the narrow end had been broken off long ago. We do not know if the bread would have been as successfully removed if the mold was full length and had the narrow base. However, all of the hundreds of relatively complete bread molds found at Wadi Gawasis were broken at one end, usually the narrow end with the small hole. This leads to the hypothesis, supported by our experiments, that the molds were usually broken at the end of a baking to help remove the bread.
4) Evidence from the molds burned during our tests suggests that the fire for preheating and baking needed to produce a uniform heat from well distributed charcoal and should not be blazing. Good air circulation is needed around the molds for optimal baking.
5) The part of the baking process that remains unclear is how the dough was inserted in the molds if they were preheated, especially if the molds were laid horizontally in the "oven," as in our experiment and as depicted in the bread making scene in the tomb of Antefoker and Senet. It would have been easier to pour runny (more liquid) dough into vertically positioned molds, as depicted in the bakery scene from Amarna. On the other hand, the majority of the molds had a small hole in the narrow end, which might have caused the dough to run out the hole as happened in our Test #1.
6) It is possible that the bread molds were not fired before bread making, but were fired during the preheating and bread making processes. This is supported by the fact that several fragile bread mold fragments were found during the excavations that were not fired. Unfired ceramics are very vulnerable to degradation and loss, especially after 3,500 years, so should not be expected to be recovered archaeologically. Furthermore, it is possible that the small hole at the narrow end of the bread molds, in combination with the vegetal temper added to the clay, provided some mitigation against cracking and breaking of the mold during the bread baking process.
7) Molds retained heat for 20–30 minutes before they could be picked up and the bread removed.

Bread was a staple food in ancient Egypt just as it is in our modern times. This fundamental part of daily life deserves to be fully researched and understood. We feel our experiments have contributed to this knowledge, but more work needs to be done to resolve some of our observations. Furthermore, what was the function of the bread from the conical molds? Why was considerable effort expended to manufacture the molds and then to bake the bread? We hope our work will stimulate others to pursue a more complete understanding of bread making in the Middle Kingdom.

CHAPTER 6

Interpreting Ideology at *Saww*: Ritual Practices, Memorial Shrines, and Commemorative Stelae

1 Ceremonial Shrines and Commemorative Stelae at Mersa/Wadi Gawasis

Aside from the evidence of camping and seafaring expedition activities at Mersa/Wadi Gawasis, there is also evidence of ceremonial shrines that were specially constructed, as well as inscribed, commemorative stelae that were intentionally left there. Since the harbor site was never permanently occupied, no cult center was ever built there, but two shrine structures, where special offerings(?) have been found (the Feature 1 platform built overlooking the Red Sea, and the alcove shrine constructed on the western terrace slope in WG 56), were probably used throughout much of the 12th Dynasty. Mound shrines built overlooking the Red Sea shore and along the terrace top may have commemorated successful expeditions, while stelae commemorated specific individuals involved in the expeditions, as well as the monarchs under whom they served who commissioned these expeditions. Only two of these shrine structures, of Ankhu and Antefoker/Intef-iker, can be characterized as monuments of specific expeditions, while the other shrine structures remain anonymous (with the possible exception of a monument that may have been built for the stela of Henenu) (Figure 30).

2 Shrines Constructed along the Red Sea Coast

Ceremonial and/or commemorative structures were built along the eastern edge of the fossil coral terrace facing the sea at Mersa Gawasis, as well as on top of the western terrace at Wadi Gawasis. An unusual shrine was also located near the entrance to Cave 7 on the upper slope of the western terrace. Several structures were associated with inscribed stelae dating to the Middle Kingdom, sometimes with arrangements of limestone anchors, supporting the interpretation that they were ceremonial monuments of 12th Dynasty maritime expeditions (Sayed 1977: 149–173, 1978). These structures were investigated by Sayed in the mid-1970s (Sayed 1977, 1978) and have been reinvestigated by the UNO/ISIAO and BU expedition in order to better understand their construction and function (Bard and Fattovich 2007: 38–44; Fattovich, Manzo and Zazzaro

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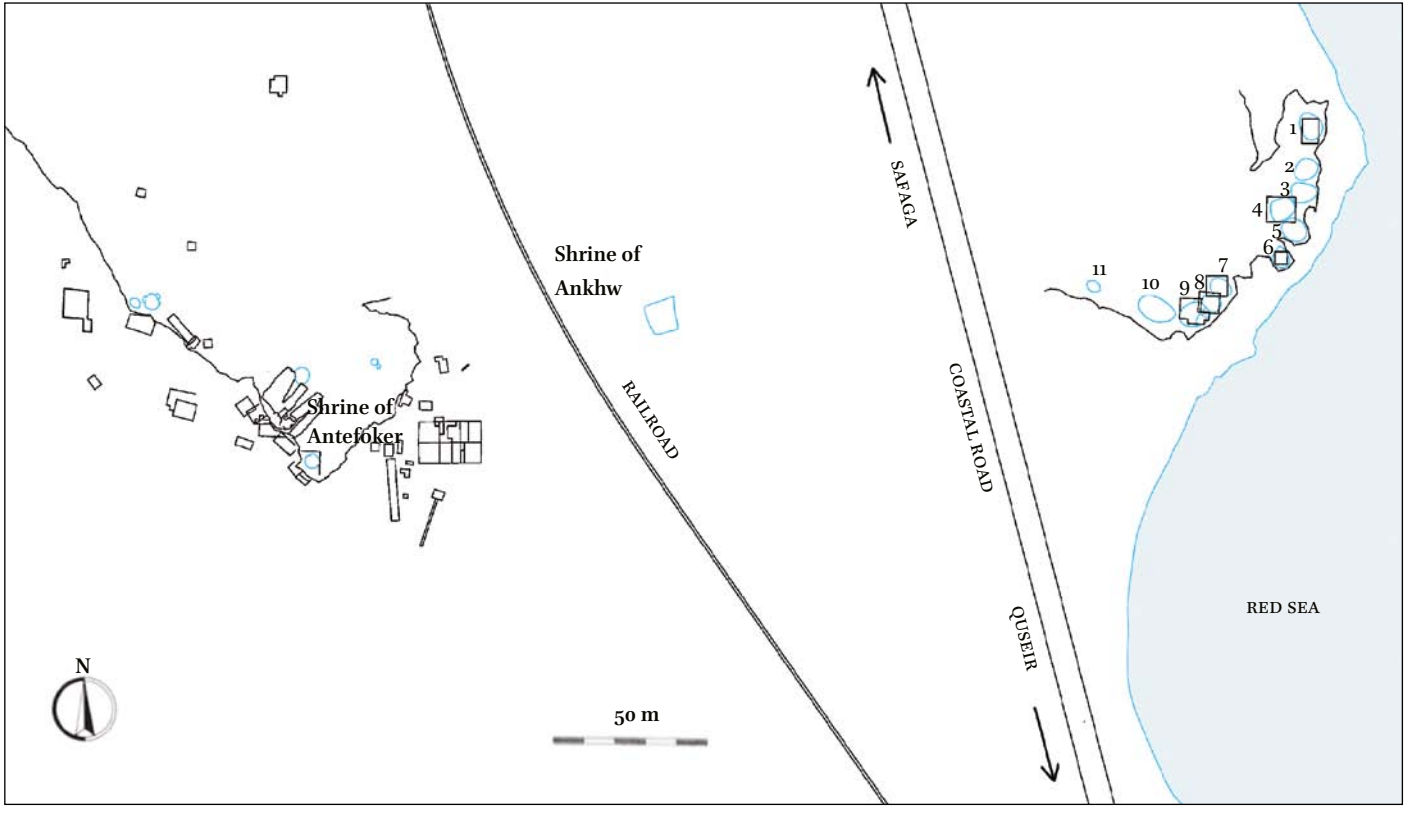

FIGURE 30 Map of shrine structures: along Red Sea coast and on top of terrace.
PLAN BY STEFANO TILIA.

2009). Unless there were inscriptions associated with these shrine structures, however, ascribing them to specific expeditions is not possible.

Ten structures (Features 1, 2, 3, 4, 5, 6, 7, 8, 10, 11) were erected along the edge of the coral terrace at Mersa Gawasis. In the mid-1970s Sayed collected small Middle Kingdom stelae of limestone associated with Features 4 and 11, providing evidence that they were related to seafaring expeditions (Sayed 1977: Map 3, Pl. 12, 13 a-c, 1978). Features 1 (WG 29), 4 (WG 20), 6 (WG 23), 7 (WG 60), 8 (WG 12), 9 (WG 58) and 10 (WG 59) were reinvestigated by the UNO/ ISIAO and BU expedition (Bard and Fattovich 2007: 38–44; Fattovich, Manzo and Zazzaro 2009).

These structures include, from north to south: a platform built with coral rocks (Feature 1), six gravel mounds with internal chambers, made with coral rocks and slabs of conglomerate (Features 2, 3, 5, 6, 7, 8), a circular enclosure of coral rocks with a small, interior circular chamber (Feature 4), an oval mound open to the east, encompassing a central chamber delimited with vertical conglomerate slabs (Feature 10), and a structure built with coral rocks (Feature 11). Limestone fragments from anchors were associated with these structures (Bard and Fattovich 2007: 38–44).

Feature 1 was an oval platform, ca. 9 m × 10 m in area and ca. 1.2 m high, with an east-west orientation and a ramp to the west (Bard and Fattovich 2007: 43–44; Figure 31). The platform was constructed with slabs of conglomerate covered with rocks of fossil coral and limestone. Originally, the top of the structure was covered with slabs of conglomerate, with a framework of mangrove wood in the center. Evidence of a hearth was found at the junction between the ramp and the platform to the south of the ramp. A hearth was also recorded at the base of the southeastern side of the platform. A few fragments of limestone, perhaps from an anchor, were found at the northwestern side of the structure. Fragments of wood were scattered through the excavated area, and the lower part of a possible pole was still *in situ*. A few, atypical Middle Kingdom potsherds were collected at the base of the platform.

On the top of the platform over 650 specimens (MNI) of conch shells and several *Tridacna* shells were collected. No other shell species were found. Most likely the conch shells (*Lambis lambis*) were ritual offerings, as no evidence of any practical use of them was identified (Carannante 2008: 13–14). The presence of so many shells on top of the platform probably represents offerings (72% of the *Lambis* shells were collected after the death of the mollusc; Carannante 2008: 13). It is likely that this shrine was used throughout the 12th Dynasty by sailors on a number of different expeditions, who, after returning safely to the harbor, collected conch shells on the beach and left them as offerings on top of the shrine platform.

Possibly the evidence at Feature 1 represents a distinctive sailors' cult of a marine deity at Mersa Gawasis, which possibly can be identified with the god

Min. Images of conch shells are carved on two colossal statues of the god from Coptos dating to Dynasty 0/1st Dynasty (see Kemp 2006a: 128–131, Fig. 45), and this god is represented on several stela found at the harbor site.

Feature 4 was an oval enclosure built with rocks of fossil coral and conglomerate, ca. 0.5–1.0 m thick and 0.2–0.4 m high, which delimited an area of ca. 12 m × 10 m, with an opening to the east-northeast (Bard and Fattovich 2007: 41–42; Figure 32). A horseshoe-shaped stone arrangement, ca. 1.0 m × 1.2 m in area, with an opening to the east in the southwestern sector, abutting the enclosure wall, was built inside the feature after the oval enclosure was erected. Several post-holes were found inside the enclosure. Only a few potsherds dating to the Middle Kingdom were associated with this structure.

Along with the platform (Feature 1), Feature 4 is different in plan and construction technique from the other structures in the same sector of the site. No slabs of conglomerate were used in this structure. Fragments of limestone from an anchor found inside a hole near the opening of the enclosure suggest that this structure was related to maritime activity. In some respects, the oval structure is similar to a Middle Kingdom shrine of Hathor in the galena mining village at Gebel Zeit. This shrine, too, consisted of an oval-shaped enclosure

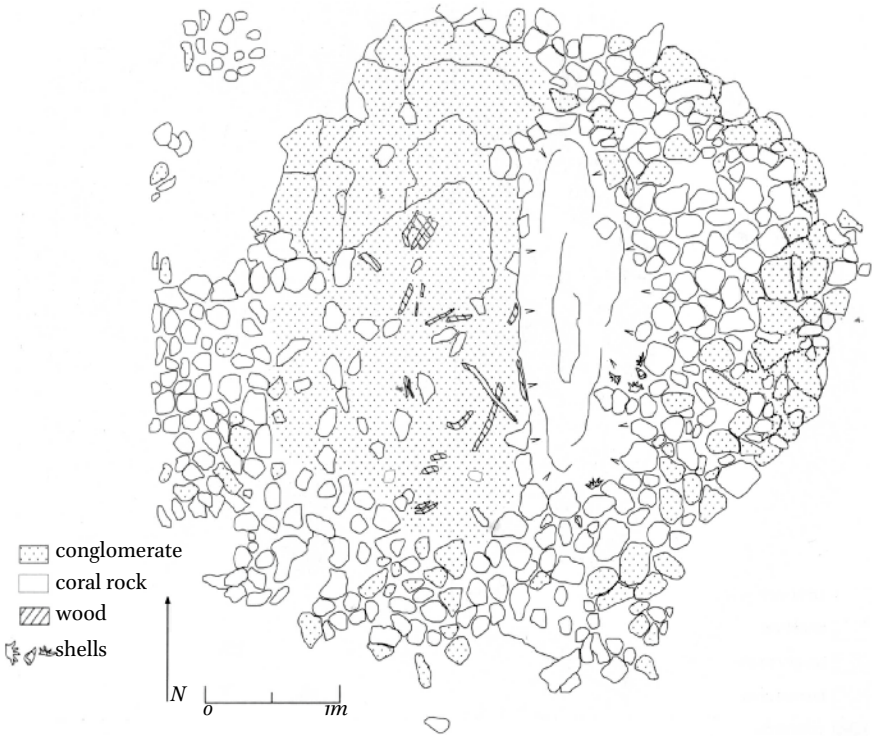

FIGURE 31 Plan of Feature 1 platform.
PLAN BY CINZIA PERLINGIERI.

FIGURE 32 Plan of Feature 4.
PLAN BY ANDREA MANZO.

with a small inner chamber in the western part (see Castel and Soukiassian 1985; Régen and Soukiassian 2008).

Feature 6 was an oval structure of coral rocks, ca. 6–7 m × 4.5 m in area, with a possible opening and two small chambers built with vertical slabs of conglomerate surrounded by a mound of coral rocks and conglomerate (Figure 33). The floor of both chambers was the surface of the fossil coral terrace on which the structure was built. Fragments of limestone, *Lambis lambis* shells, potsherds, and small branches of wood were found in the mound. In front of the entrance of the eastern chamber a small, shallow hearth and a concentration of potsherds were excavated. The ceramics associated with the structure date to the late 12th–13th Dynasties (Bard and Fattovich 2007: 42–43).

The eastern chamber of this structure, 1.8 m × 1.0 m in area, was open to the east. The western chamber of the structure had been greatly damaged. This chamber was closed off with no entry, and a small round hole, which was empty, had been cut in the floor (Bard and Fattovich 2007: 42–43).

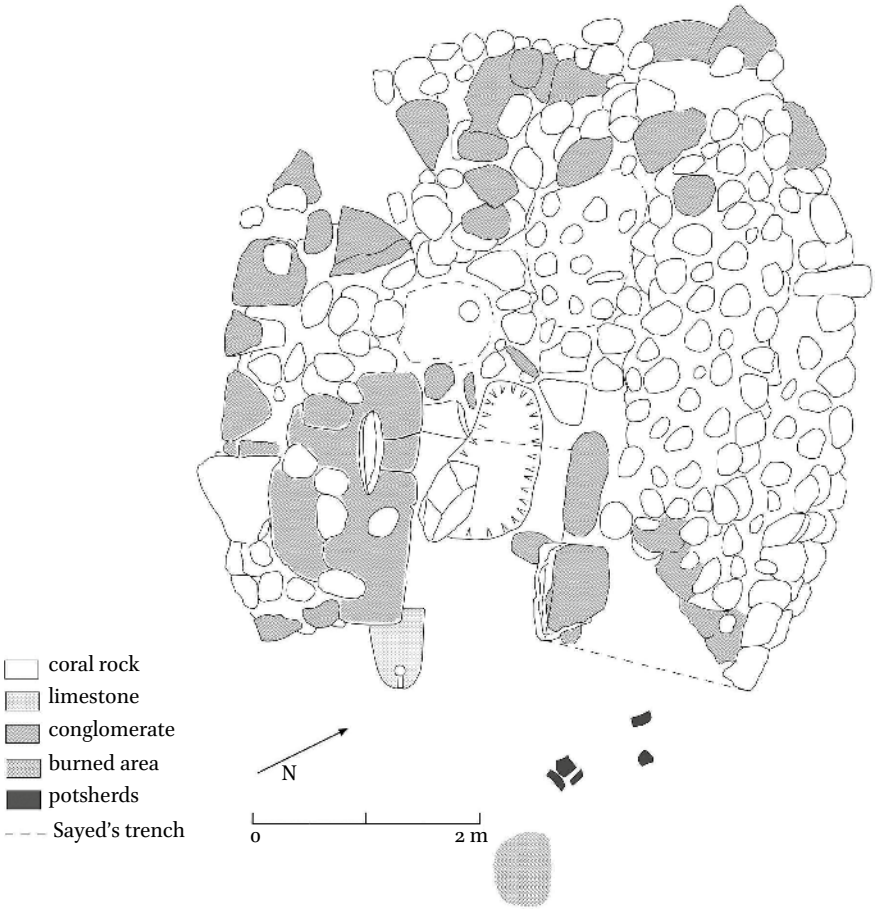

FIGURE 33 Plan of Feature 6.
PLAN BY ANDREA MANZO.

A limestone anchor was beneath (and was partially covered by) the south wall of conglomerate, near the entrance of the eastern chamber of Feature 6. Another almost complete anchor was found by Sayed in 1976 and was left near the excavation. Most likely, this anchor was originally symmetrical to the one still *in situ* near the entrance of the eastern chamber of Feature 6 (Bard and Fattovich 2007: 42–43).

Originally Feature 7 was a mound of coral rocks, 7.5 m × 8 m in area, arranged in a horse-shoe shape, with a southeast-northwest axis. Similar to Feature 6, Feature 7 contained an internal room, delimited by two conglomerate slabs, which opened to the sea (Fattovich, Manzo and Zazzaro 2009: 2).

Although Feature 7 had been heavily disturbed by an earlier dismantling, which destroyed most of the northern and central parts of the structure,

re-investigation in 2009 suggested two phases of construction. The earlier phase consisted of a straight north-south alignment of blocks, which might have been part of an earlier structure later incorporated into the western side of a horseshoe-shaped mound. The later phase, better preserved in the northern and eastern part of the structure, consisted of a horse-shoe shaped mound of coral rocks with a chamber delimited by conglomerate slabs facing the sea, similar to Feature 6 (Fattovich, Manzo and Zazzaro 2009: 2).

The occurrence of two floors abutting the stone slabs delimiting the eastern chamber of Feature 7 suggested that the horseshoe-shaped structure had at least two phases of use, which is not uncommon in the other structures investigated in this sector of the site. Two fire-pits were associated with the last phase of use of Feature 7, suggesting that offering activities were performed near the entrance of the chamber. Large fragments of limestone anchors also were found on the two living floors near the entrance of the chamber. The few potsherds collected in association with the limestone fragments on top of the earlier floor date to the 12th Dynasty (Fattovich, Manzo and Zazzaro 2009: 2).

Feature 8 was an oval mound of gravel, ca. 6–7 m × 5.5–6 m in area, which encompassed two small contiguous chambers, built with vertical and horizontal slabs of conglomerate along an east-west axis (Bard and Fattovich 2007: 39–41). The two chambers were 1.2 m × 1 m and 1 m × 1 m in area; the stone slabs were ca. 0.85–0.9 m high (Figure 34).

The eastern chamber of Feature 8 opened to the east. The vertical slab, which closed the chamber to the west, was cut to fit the two side slabs. The western chamber was intentionally filled with gravel. Fragments of the rounded top of a limestone anchor, a fragment of a possible grinding stone, and a limestone slab (55 cm × 55 cm × 10 cm) were found in a pit in the floor of this chamber. The stone slab walls were reinforced with coral blocks, which formed a circular arrangement and was covered with the gravel of the mound. Coral blocks also were used to support the base of the mound. Concentrations of potsherds and fragments of limestone were found on the terrace near the corners the chambers, suggesting that they were intentionally placed there before the mound was erected. The associated ceramics date to the late 12th–13th Dynasties (Bard and Fattovich 2007: 40–41).

Feature 9 was a shallow pit within a low mound of small- and medium-size rocks on the top of the terrace. Excavations demonstrated that this feature was just a pit whose function cannot be determined because of its bad preservation (Fattovich, Manzo and Zazzaro 2009: 2–3).

Feature 10 consisted of a gravel mound, supported by irregular walls of coral rock and surrounded by a large horse-shoe shaped enclosure, ca. 5.5 m × 6.0 m in area, with an opening to the east (Figure 35). The chamber/space inside the mound was delimited by an alignment of vertical conglomerate slabs. Ceramics associated with this structure date to the 12th Dynasty (Fattovich, Manzo

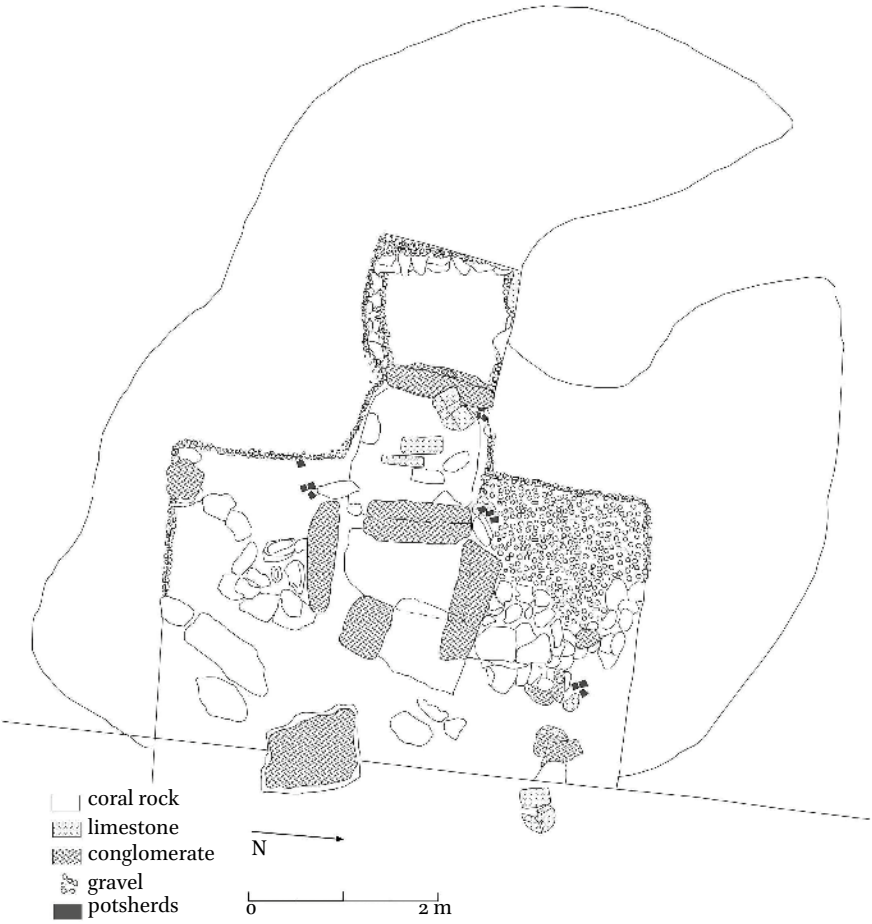

FIGURE 34 Plan of Feature 8.
PLAN BY ANDREA MANZO.

and Zazzaro 2009: 1). In a pit at the center of the chamber of Feature 10 was an intrusive human burial, radiocarbon dated to 1610 +/- 30 BP (GX-33110-AMS). Due to post-depositional disturbance, the skeleton was very badly preserved, with the bones no longer articulated.

Two large conglomerate slabs with an east-west axis originally were erected on each side of the eastern entrance to Feature 10, suggesting that this structure may have been designed as a kind of pylon, modified in the context of a simply built cultic structure at a sporadically used harbor on the Red Sea. A badly preserved graffito was engraved on the smooth surface of the upper part of the southern slab. It consisted of a rectangular area, ca. 0.5 m × 0.4 m, defined by an engraved groove, ca. 20–2.5 cm wide and 2.0 cm deep. Inside the rectangle was a cartouche; other signs, including a long horizontal zig-zag, were engraved on both sides of the slab (Fattovich, Manzo and Zazzaro 2009: 1).

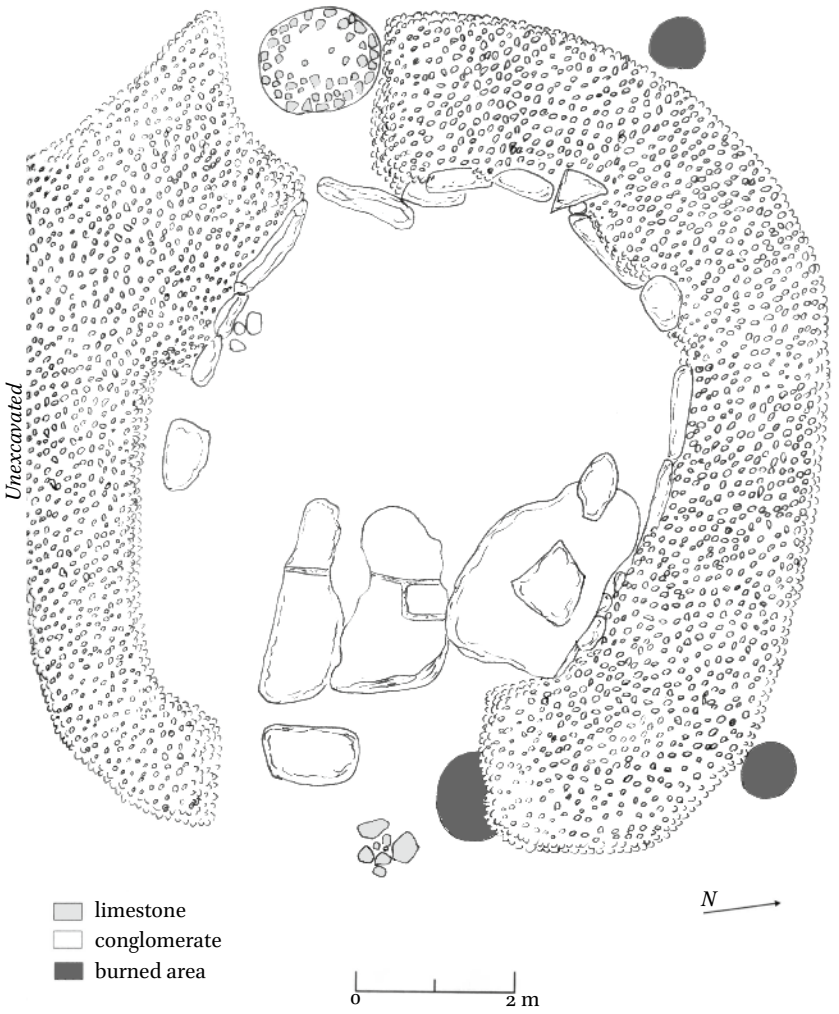

FIGURE 35 Plan of Feature 10.
PLAN BY ANDREA MANZO.

Features 2, 3 and 11 had been excavated in the 1970s by Sayed, and were not reinvestigated by the UNO/IsIAO and BU expedition. Features 2 and 3 are similar to Features 6 and 8 and consisted of internal chambers opening to the east, associated with fragments of limestone anchors, within a gravel mound. Feature 11 was constructed with coral blocks, but was too disturbed to be reinvestigated. According to Sayed 1977: 150, Map 3), stelae were recorded near this structure, but there is no more any evidence of them.

On the whole, Features 6, 8 and 10 (and possibly Features 2 and 3) are similar in general design, but differ in size and construction technique. Features 6

and 8 consisted of two small chambers built with vertical conglomerate slabs supported by coral blocks inside a gravel mound; they were associated with fragments of limestone, shells, potsherds, and other materials. There was a pit in Feature 8, but no pit was found in Feature 6. The ceramics of both Features 6 and 8 date to the late 12th–13th Dynasties, but they were probably built by different expeditions.

Feature 10 was similar in construction technique to Feature 8. The general plan of the structure, of a chamber open to the sea and delimited by conglomerate slabs, is comparable to those of Features 6 and 8. Only one large chamber was built in Feature 10, however, while there were two chambers in Features 6 and 8. Also, the two large vertical slabs at the entrance to Feature 10 are unique.

The mound structures with 1–2 internal chambers built with conglomerate slabs (Features 2, 3, 6, 7, 8 and 10), located overlooking the seashore at Mersa Gawasis, may have been designed as small shrines in which cult statues, robbed in antiquity, had been placed in the internal space – somewhat similar to a naos in later temples. The internal "chambers" that the conglomerate slabs define are too small for human activities, and the few potsherds found associated with them may have been the remains of offerings, but certainly not domestic activities. These structures also may have been simple shrines that were built at the end of different – and unidentified – seafaring expeditions to the southern Red Sea, to commemorate their members' successful return to Egypt. It also has been suggested that the location of these shrines, overlooking the Red Sea, was oriented to the sailing expeditions, and the shrines also may have served as landmarks for ships returning from Punt/Bia-Punt.

3 Shrines/Monuments on the Terrace Top Overlooking Wadi Gawasis

Probably the most impressive shrine at the harbor site was located on the top of the fossil coral terrace overlooking Wadi Gawasis, in the central sector of the site. Constructed of inscribed anchors, this shrine records the expedition of Ankhu in the early 12th Dynasty. It was excavated by Sayed in 1976 (Sayed 1977: 150–169).

The Ankhu shrine, which consisted of two anchors laid horizontally to form a base above which were three standing, pierced slabs of limestone, most likely originally anchors, formed a small room opening to the south (Sayed 1977, Fig. 2). The standing limestone slabs consisted of what Sayed called a Western jamb (55 cm high), Middle block, and an Eastern jamb (61 cm), inscribed with texts recording the expedition of Ankhu to Bia-Punt during the reign of Senusret I (Sayed 1977: pp. 150–169, Fig. 2, Fig. 3, Pl. 13d. Pl. 14; see also Chapter 4, translation by Eugene Cruz-Uribe). The inscription begins on the

eastern jamb with "the usual invocation in the name of the king to the gods," including Hathor "goddess of Punt" (Sayed 1977: 159). Although no detailed description of the whole structure was published by Sayed, the surviving evidence where the shrine was located suggests that it was part of an approximately quadrangular structure, 4 m × 4 m in area (Sayed 1977: Fig. 4).

Another possible monumental structure probably was located at the edge of the terrace to the east of the Ankhu shrine, as a badly preserved, round-topped stela was found in the rubble along the modern north-south railroad track in 2001–2002. A careful survey of the area, however, did not find any evidence of a mound, which was probably destroyed during construction of the railroad (Bard and Fattovich 2007: 31).

Four structures, probably commemorative monuments made with coral blocks, were located in the western sector of the site at Wadi Gawasis. Two of these structures (in WG 3/6 and WG 8) were reinvestigated by the UNO/IsIAO and BU team (Bard and Fattovich 2007a: 45–49). The other two mound structures were almost completely destroyed and could not be investigated. The structure in WG 8 had been partially investigated by Sayed and was associated with the inscription of Intef-iker (Antefoker) (Sayed 1977: 169–173).

A quadrangular structure, about 4–5 m × 4–5 m in area, also was located along the southern edge of the terrace to the east of WG 3/6, but it was completely destroyed and only some traces of the foundation were still visible on the top of the coral bedrock (unpublished field record). A stela, Stela 25 (see below), was found near it.

The WG 3/6 structure was located in the central sector of the western terrace (Bard and Fattovich 2007: 45–47). The structure visible on the surface consisted of: (1) a roughly circular arrangement of coral rocks, which formed a mound (Feature a), ca. 8.0–9.0 m in diameter, and had been partially excavated by Sayed; (2) an elongated pit (Feature b), ca. 3.0 m × 1.5 m in area, in the south-central sector of the excavated area, which probably was a test excavation by Sayed; and (3) four small, very shallow circular pits, ca. 0.4–1.0 m in diameter, in the center of the excavated area.

Despite the poor preservation of the circular structure (Feature a), a stratified deposit was identified, mainly in the western sector of the trench, as the eastern sector was heavily eroded, and two phases of use of the structure, which were separated by a stratum of sterile sand, have been identified. The earlier phase of use (Phase 2) consisted of a stratum of sand mixed with small pieces of fossil coral and cordage, and a well preserved, elongated pile of leaves and branches over the bedrock in the eastern sector of the excavation unit. The pile of leaves and branches, ca. 2.80 m long and 70–90 cm wide, had an irregular S-shape, and was associated with many potsherds and pieces of cordage. This feature was near an alignment of limestone and coral blocks, which partially covered it (Bard and Fattovich 2007: 46–47).

The circular structure (Feature a) in WG 3/6 was built in Phase 1 (the later phase). It consisted of the remains of a mound, a floor of compact sand associated with potsherds, cordage, and coral blocks, and possibly four shallow pits of unknown purpose. The ceramics associated with this structure date to the early 12th Dynasty (Bard and Fattovich 2007: 47). Since much of this structure had been excavated by Sayed, its use remains uncertain.

The structure in WG 8 was a circular mound of coral blocks mixed with soft sand, wood and branches, 4.5 m in diameter and 0.7–0.8 m high, at the southwestern edge of the terrace, where Sayed discovered the stela of Intef-iker (see Sayed 1977: 149, Map 3). The UNO/IsIAO and BU excavations demonstrated that originally the structure was a circular arrangement of large blocks of coral and limestone laid horizontally, with a great quantity of potsherds and a few lithics in the upper strata (Bard and Fattovich 2007: 48–49).

Two phases of use and/or reconstruction of the mound were identified in the WG 8 structure. The earlier phase of use (Phase 1) consisted of a bedrock base (SU9) on which the lower part of the structure was built, with a deposit of sand mixed with leaves and small branches, and a thick layer of burned soil and charcoal with many potsherds dating to the early 12th Dynasty. The later phase of use (Phase 2) consisted of a possible floor on which the upper part of the structure was built. The later structure, which consisted of layers of coral blocks, most likely was a reconstruction of the earlier mound. The ceramics are also early 12th Dynasty (Bard and Fattovich 2007: 49; see also Perlingieri 2007a: 118).

About 100 m to the north of WG 8 at the edge of the top of the coral terrace, a very disturbed structure was noted directly above the entrance to the rock-cut chamber Cave 8 on the terrace slope below, but this structure was not investigated because it already had been almost completely excavated or disturbed. The surviving evidence suggested that originally this structure was a mound made with coral blocks covered with a mound of gravel, about 100 cm high. Stela 29 of Henenu, an expedition stela dating to the reign of Senusret II, which was found in colluvium on the terrace slope below (see Mahfouz 2010: 28–30), most likely originally had been associated with this mound monument.

4 The Alcove Shrine along the Western Terrace Slope

Lastly, a small shrine was discovered in contiguous excavation units (mainly in WG 56) on the terrace slope and to the south of the entrance to Cave 7, at a prominent point overlooking both the southern and western slopes of the fossil coral terrace. This structure consisted of three vertical conglomerate slabs, arranged in a U-shape with the opening to the east, erected in front of

a large, hemispherical-shaped alcove cut into the terrace wall. This structures was enclosed by a low, curved wall ("cobble wall"), ca. 80 cm high and 50 cm thick, which had been cut directly in the natural conglomerate strata of the terrace and was partially consolidated with mud plaster (Figure 13). The vertical slabs were erected above a horizontal conglomerate slab. Another slab was leaning against the back of the structure (Bard and Fattovich 2008: 22–25).

The three vertical slabs were almost rectangular in shape and had rectangular, recessed cuts on their faces or in the corners. Slab 1 (74 cm × 69 cm × 29 cm) had two rectangular, recessed cuts at the two corners (12 cm × 6 cm and 4 cm in depth; and 16 cm × 10 cm and 7 cm in depth). Slab 2, the central one (74 cm × 54 cm × 42 cm), had two rectangular, recessed cuts: one in the center (14 cm × 9 cm and 6 cm in depth), and one in the lower corner (10 cm × 9 cm and 3 cm in depth). Slab 3 (61 cm × 59 cm × 21 cm) also had two rectangular, recessed cuts: one in the center (9 cm × 7 cm and 6 cm in depth) and one on the same face but in the lower part (9 cm × 9 cm and 6 cm in depth). The leaning stone had an irregular pentagonal shape, measuring 67 cm × 63 cm × 22 cm (Bard and Fattovich 2008: 23–24).

A stratum (SU11) of compacted sand associated with three hearths and with a great concentration of organic materials (wood fragments, ropes, bones) and potsherds (including dishes, bowls and small bottles) was found outside and at the base level of the "cobble wall" of the WG 56 shrine. A well preserved ceramic jar (Marl A, variant 3), missing only its neck, was found on top of this stratum, associated with the stone structure (Bard and Fattovich 2008: 24). Just above this stratum (SU11), in SU8, were body sherds from large jars, as well as a concentration of 25 sherds from at least five small jars of Palestinian origin (Sally Wallace-Jones personal communication: March 2017).

The archaeological deposits associated with the stone structure in WG 56 seem to be distinct from other deposits excavated on the terrace slope, which usually contained evidence of woodworking activities and/or remains of accumulated materials connected to the expeditions, of camping and cooking, and administrative activities. The concentration of small vessels and the possibly votive, large jar associated with this structure suggest that offerings may have been left in this area.

A partly inscribed, but unfinished, round-topped stela (Stela 28) also was found in a deposit near the stone structure (in the southern limit of WG 55; Bard and Fattovich 2008: 23). This small stela records a rare epithet of the god Osiris (*Wsir wḏ-wr*, "Osiris of the sea") (Mahfouz and Manzo 2008: 32–33) (Figure 36). The epithet of Osiris "of Wadj-wer" is the earliest known example, and this epithet is rarely found later (Elsayed Mahfouz personal communication: January 2010).

To the west of the alcove shrine in WG 56, at the entrance to Cave 7 in the contiguous excavation unit WG 55, four rod-like pieces of ebony (in fragments)

FIGURE 36 Stela 28 (to Osiris-Wadj-wer).

were also excavated (Gerisch 2010: 51–52, 56), along with two Minoan potsherds, dating to MMIB and MMIIIA (Wallace-Jones 2018: 32). It is likely that the ebony rods were (burnt) offerings associated with the nearby WG 56 stone shrine, along with two Minoan pots, which were left there as offerings at very different times.

Middle Minoan pottery is known from a number of Middle Kingdom sites in Egypt (Kemp and Merrillees 1980), especially from burial contexts, but the presence at Mersa/Wadi Gawasis of two sherds of Minoan pottery in the context of a shrine is unusual.

Also excavated at the entrance to Cave 7, was a corrugated rim sherd of a tiny jar of Marl A fabric. This sherd was from a model jar that had been wheelmade and was very carefully finished (Wallace-Jones 2018: 31). The find context of this model jar suggests that it also may have been an offering – or possibly was from a foundation deposit (Sally Wallace-Jones personal communication: April 2017).

Two stelae, which originally may have been associated with the WG 56 shrine, also were excavated in WG 55. Stela 23 was found in a vertical position above Stela 24, lying horizontally at the entrance to Cave 7 (Bard and Fattovich

2008: 20–21). Both of these stelae were made of limestone and had round tops. Only the top part of inscription remained on Stela 23, dating to Year 41 of Amenemhat III. The only signs visible on Stela 24 were: *nfr nṯr* (Manzo and Mahfouz 2008: 32).

The alcove shrine in WG 56 is completely different from all other shrine structures at Mersa/Wadi Gawasis. Possibly the constructed U-shaped slabs defined an internal "chamber" where a cult statue had been placed, but it was impossible to excavate further in this area next to the carved alcove because of two large horizontal faults in the terrace wall there. Very special offerings had been left near this shrine, such as the ebony rods that had to have been brought from Punt, small Canaanite jars, and Minoan pots – possibly offerings left there by Minoan sailors employed on different expeditions, or Egyptian sailors who brought these pots there.

Also, the alcove shrine was the only one located in the same area where expedition members were temporarily living and working, but it was separated in space by the small cobble wall carved into the conglomerate layer. It was located directly below the mound shrine where the Intif-iker stela was found by Sayed. The unfinished, round-topped stela (Stela 28), excavated near the WG 56 shrine, was inscribed with the offering formula and the name of "Osiris of the sea" (*Wsjr Wḏ-wr*), which suggests a special cult of a maritime form of this god associated with this shrine.

5 Stelae

The inscribed stelae and one inscribed stone monument (Ankhu), all non-royal ones, originally were placed in three different contexts at Mersa/Wadi Gawasis:

(1) Monumental structures (Ankhu, Intef-iker, and probably Henenu)
(2) Some kind of association with a mound structure(s) along the Red Sea, where Sayed found small inscribed stela fragments
(3) Stela niches carved in the western terrace wall.

6 Stelae in Monumental Structures

It is likely that the two, round-topped stelae found in the nearby Wadi Gasus in the early 19th century, which commemorate two state expeditions, were also originally in a monumental context, such as a mound structure (Northumberland 1934 and 1935, in the Gulbenkian Museum of Oriental Art, University of Durham). In a July 1836 Sotheby's catalogue, James Burton discusses these

two stelae as "having been found in the immediate vicinity of a station" [i.e., a watering station] (Nibbi 1976: 46). This is the well at Bir Umm Al-Huwaytat, about 7 km to the west of Mersa/Wadi Gawasis along the Wadi Gasus, the Greco-Roman station where Sayed also excavated in the 1970s. Sayed recorded the remains of four standing buildings at this site (Sayed 1977: 142), which date to a much later time than when the stelae were erected there, and thus it is likely that in Greco-Roman times (or earlier) the original monuments for these stelae were destroyed.

The two Northumberland stelae are beautifully carved in sunken relief on basalt slabs, a medium available in the Nile Valley, but as far as it is known, not on the Red Sea coast, and perhaps they were produced in a royal workshop in the Nile Valley. If so, it is not clear at what point they would have been brought from the Nile Valley, as they commemorate the end of expeditions to the southern Red Sea region: to Punt and the "God's Land." Northumberland 1934 dates to Year 28 of Amenemhat II, and describes the official "(3) Khentekhtay-wer, after his return in (4) safety from Punt, his expedition (5) being with him, sound and healthy, and his fleet resting (6) at Sawu" (translated by S.W. Gruen, Balliol College, Oxford; Nibbi 1976: 50; see also O'Connor 2015: 175–176). Northumberland 1935, of an official named Khnumhotep, dates to the reign of Senusret II: "(1) Year 1: establishing his monuments in God's Land" (Nibbi 1976: 50).

At Mersa/Wadi Gawasis the texts on two inscribed stelae associated with shrine structures, of Ankhu and Intef-iker, both date to the reign of Senusret I (see Chapter 4). According to Sayed (1977: 173), these two inscriptions were from the same expedition: the vizier Intef-iker organized the building of ships, which Ankhu then sent or led to Bia-Punt (the destination of the expedition given on each monument). This was a state expedition, as decreed by the king, and the two inscribed monuments at Wadi Gawasis are symbolic of the state expedition, which is specified in the texts. The inscribed texts were placed in specially designed structures that became prominent and visible monuments to this state expedition at the harbor site. The titles of the two officials, Ankhu and Intef-iker, that are inscribed on these monuments not only emphasize their identity and their closeness to the king, but also demonstrate their important roles in this expedition.

In 2007–2008 a large (67.5 cm × 46 cm × 23 cm) round-topped stela (Stela 25) made of conglomerate was found lying face-down on the surface of the terrace top, near the quadrangular structure on the southern edge of the terrace to the east of WG 3/6. Carved on the lower right of this stela is an image of a standing deity with the body of a human and the head of a falcon, holding the *ankh* sign in his right hand and a scepter in the other hand. The *ḥtp* sign is inscribed before the deity's left foot (Manzo and Mahfouz 2008: 32).

Unfortunately, nothing more of this inscription was preserved. The medium of this stela, conglomerate, was found locally and thus this stela had to have been made and engraved at the harbor site (and not in the Nile Valley).

The Ankhu shrine consisted of three inscribed blocks placed on two horizontally laid stone anchors (Sayed 1977: 163–164, P. 14), which are symbolic of the seafaring nature of this expedition. In the photographs these anchors do not appear to have pitted surfaces, which would have occurred if they had been used in salt water on an actual expedition, and these anchors were either quarried near the harbor site (most likely) or were brought there from the Nile Valley. Skilled stone masons would have been needed to quarry and fashion these blocks and large anchors (as well as other large anchors found at the harbor), and the texts carved on this monument would have required a skilled engraver(s) – either at a workshop in the Nile Valley, if the stelae were made there, or one that came on the expedition. The Henu inscription in the Wadi Hammamat demonstrates that skilled engraver(s) would have accompanied this large-scale expedition (see Sweeney 2014: 283). This also may have been the case for the expedition described on the Ankhu monument, and it is likely that these inscriptions were engraved at the harbor site.

Another stela (Stela 29, Figure 17) also may have been associated with a mound shrine built on the top of the terrace, but had fallen down the terrace slope as a consequence of erosion of the coral bedrock (Bard and Fattovich 2010a: 11). This large round-topped stela (72 cm long and 46.5 cm wide) was made of sandstone. The text on this stela is about a state expedition in Year 2 of Senusret II, and the named official, Henenu, seems to have directed the entire expedition, both across the desert from the Nile Valley and navigating in the Red Sea to the mines (i.e., plural of Bia: Biaw) of Punt (see Mahfouz 2010: 28–30). The inscription on this stela also suggests that a temple(?) dedicated to the god Min was located at the harbor of *Saww* (Mahfouz 2010: 29). There is no evidence, however, of a large cult building at the site, and the inscription on Stela 29 may refer to one of the shrine structures overlooking the seashore in the eastern sector of the site – possibly the oval platform structure (Feature 1) on top of which hundreds of conch shells were found, or the alcove shrine located along the western terrace slope.

7 Stelae at Mersa Gawasis

Five small round-topped stelae were found by Sayed in the area of Feature 4, overlooking the Red Sea. The name of Senusret I could be read on one limestone fragment found in the same location, which suggests that Feature 4 dates

to the early 12th Dynasty. Another stela found there, belonging to a man named *Ỉ-mrw*, recorded the toponym Bia-Punt. According to Sayed, these small stelae, which were not well preserved, were memorials of sailors or soldiers who returned safely from Bia-Punt or other Red Sea regions (Sayed 1977: 150).

It has been remarked (above) how Feature 4 resembles the design of the Hathor temple at the galena mining settlement at Gebel Zeit, where four stelae dating to the 12th Dynasty (1 in limestone, 1 in faïence) and 13th Dynasty (1 in faïence, 1 in basalt) also were found, in deposits that predate the late 18th Dynasty temple structure (Régen and Soukiassian 2008: 2). These stelae were ex-votos from an earlier period of use of the temple. A similar context could be suggested for the five stelae that Sayed found near Feature 4: that they were votive offerings to this shrine structure (Feature 4) by individuals who are mentioned in the stela texts.

8 Stelae Placed in Niches Carved in the Western Terrace Wall

In 2005–2006 two very large stela niches were noted, carved into the western terrace wall over the entrance to Cave 4, but only one large, round-topped stela, in pink granite with a very eroded surface, was found on the slope below (Fattovich and Bard 2007: 19). Given the size and (unknown) weight of this stela, it would have been difficult to transport to the harbor site – and thus was also symbolic of a major state undertaking. But other smaller stelae, some of which could be dated to the later 12th Dynasty, also were excavated along the western terrace slope.

All of these stela were excavated in an area on the western terrace slope between the entrances to Cave 4 to the northwest and Cave 7 to the southeast (from excavation unit WG 33, to the Cave 2 entrance, to WG 32, to WG 55). With the exception of Stela 14, which dates to the reign of Senusret III, all of the stelae found in this area with royal names still visible date to the reign of Amenemhat III. Thus, there seems to have been a shift to where stelae were placed in the later 12th Dynasty – away from shrines located along the Red Sea coast or along the top of the terrace overlooking the wadi, to an area associated with the large gallery-caves used by later expeditions – and a new focus of display at the harbor site. These stelae were not associated with constructed shrine monuments in prominent locations at the site, as earlier in the dynasty, but perhaps the greater investment of labor was now going into creating larger facilities at the harbor site – the large gallery-caves (Caves 2, 3, 4, 5, 6, 7) in this area.

Beginning with the stela finds in WG 33, two small stela niches, both empty, were discovered in 2006–2007 ca. 2 m to the south of the two large niches.

A limestone stela (50 cm × 30 cm × 10 cm) and an unfinished limestone anchor were excavated in the sand deposits below the two smaller niches, in WG 33, but no inscription was discernable on the stela (Fattovich and Bard 2007: 19). In 2007–2008 a fragment of a limestone stela (Stela 26) was found in one of these niches, but only a small part of the text was preserved in the lower right corner. These signs include a cartouche followed by the signs for "given life forever"; and probably the hare sign (Gardiner E34) along with the determinative sign for "foreign country" (Gardiner N25), possibly part of the spelling for "Punt" (Manzo and Mahfouz 2008: 32).

Several other limestone stelae were also excavated in 2007–2008 in deposits in this area (WG 33), but they were small in size. They include: Stela 16 (round-topped, 16.4 × 14 cm × 5 cm, Figure 37), Stela 18 (rectangular, 26 cm × 16 cm × 7 cm), Stela 19 (round-topped, 10.5 × 8.6 × 5 cm), and Stela 22, only a fragment. Stela 16 contains a complete inscription, including in line 1: Year 23. In line 2 the king's

FIGURE 37 Stela 16.

title and name are given: *Nsw-bit* Nymaatra [Amenemhat III]. Line 3 states the offerings that the king gives to Min of Coptos, followed in line 4 by the offering formula, and in line 5: for the *ka* of a palace official, Ameny (Manzo and Mahfouz 2008: 30–31).

To the southeast of WG 33, the entrance to Cave 2 was an early focus of excavations of the UNO/IsIAO and BU expedition after the gallery-cave was discovered in late 2004, and the first stela finds were in this area. Originally a number of the limestone stelae had been placed in niches carved in the terrace wall to the south of the entrance to Cave 2 and above it. Ten niches were located in this area, in two groups (Bard and Fattovich 2007a: 58–60, Figure 38). Three of the stelae found in this area are inscribed with the name of Amenemhat III, and possibly the stelae niches carved at the entrance to Cave 2 were from one expedition.

Stela 5 (Figure 15), the best preserved stela excavated at the entire site by the UNO/IsIAO and BU expedition was found just below its original niche (niche 10). The round-topped limestone stela, which measures 38 cm × 26 cm × 10.5–11 cm, is divided into three parts: (1) the upper part, with a scene of the god Min being given an offering by the king (Amenemhat III), behind whom is the official Nebsu; (2) the central part with two symmetrical texts in three

FIGURE 38 Stelae niches at the entrance to Cave 2.

horizontal lines; and (3) the lower part in four vertical columns, which continues the two horizontal texts, flanked by the figures of two standing men in each lower corner. The horizontal inscriptions, which continue into the lower vertical ones, describe an expedition to Bia-Punt led by Nebsu on the right, and an expedition to Punt led by his brother Amenhotep on the left (Pirelli 2007a: 220–221; see also Chapter 4).

A second limestone stela with an "expedition text," Stela 6 (rectangular, 36.5 cm × 22.5 cm × 5 cm, Figure 16), was found *in situ* in niche 12, affixed there with gypsum plaster and small stones, with a wooden wedge at the base. In the upper part is a carved sun disc and two horizontal lines of inscriptions: (1) "He of Edfu, august god, of variegated plumage, master of the sky, Lord of Mesen," and (2) a damaged year date followed by "under the majesty of the king of Upper and Lower Egypt, Nymaatra, given life." The central part of the stela consists of a scene of the ithyphallic form of the god Min and his epithets in front of the five names of Amenemhat III. The lower part of the stela consists of a hieroglyphic text in four vertical columns, to each side of which are carved two standing men (Mahfouz 2007c: 222–223). The composition of the lower part of this stela (vertical inscriptions and two standing men) is similar to that on Stela 5, but its vertically carved inscriptions are not well preserved. What remains of this text is about an expedition: "His majesty ordered the head officer(?) to go" … [to a toponym?], referring to the man on the right, while the other three columns of text refer to the man on the left: (1) "His majesty ordered that one(?) be appointed … (2) … (3) chief overseer of scribe(s) in the Hut-weret … " (Mahfouz 2007c: 223).

Two more limestone stelae were found *in situ* in niches in the terrace wall at the entrance to Cave 2: Stela 1 in niche 1 and Stela 2 in niche 2. With a missing upper half, Stela 1 is 27 cm × 27 cm × 5–7 cm in size. The only image visible on the lower half is of a seated man on a chair with bull legs, holding a long staff in his left hand, and a folded cloth in his right hand. Stela 2 (round-topped, 40.1 cm × 23.5 cm × 9.5 cm) is the better preserved one, although much of its text is missing (Figure 39). Carved at the bottom of Stela 2 are two seated men to either side of an offering platform (not table) piled high with food. Ten of the twelve horizontal lines of text above this scene contain an "appeal to the living" followed by the offering formula. Below this are two lines of inscriptions divided on the right and left: 11) "for the *ka* [of the scribe of the board of the Department of the Head of the South] […] 12) born of [Rehu-]ankh, the revered" on the right half, and 11) "for the *ka* of the [scribe of the called-up laborers of the … ?], 12) [Anty]emhat born of [… ?] true of voice and revered" (Pirelli 2007a: 217–219). Unlike most other stelae found at the harbor site, Stela 2 contains the offering formula (as does Stela 16, of Ameny), not a commemorative

FIGURE 39 Photo: Stela 2 *in situ* in niche.

expedition text. Another possible exception is Stela 1, with much of its surface missing except for the seated man in the lower left, which may have had a similar content.

Two small limestone stelae (Stela 7, Stela 8) were excavated just to the southeast of the entrance to Cave 2, on the terrace slope in WG 32, in an upper

stratum of windblown sand (Fattovich and Bard 2006: 5). Stela 7 consists of a rectangular slab, 23 cm × 23 cm. Originally, it had a hieratic inscription in black ink, but the only signs visible are for a title: *imy-r*, "overseer." Stela 8 is 21 cm × 14 cm × 7 cm. The upper part of this stela has a painted image of the ithyphallic form of the god Min in front of the cartouche of Nymaatra. In the lower, more damaged part of this stela is a standing man with his arms raised in adoration (Mahfouz 2007c: 224–225).

In 2006–2007 more limestone stelae were excavated in WG 32. The largest of these stela (36 cm × 23 cm × 10 cm) was very damaged and without any inscription (incorrectly numbered Stela 16 in 2007, Mahfouz and Pirelli 2007: 49). Stela 15, another limestone stela also found in WG 32, is 25 cm × 16 cm × 4.5 cm. This stela is without any inscription, suggesting that it may have been carried to the site blank (Mahfouz and Pirelli 2007: 48). Another blank limestone stela (round-topped, 19 cm × 14 cm × 7 cm) also was found on the southern terrace slope in WG 74 (Bard, Fattovich and Ward 2011: 1). Thus, at least two blank stelae were probably carried to the harbor site from the Nile Valley, with the intention to paint inscriptions on them at the site, which never happened.

Stela 14 (rectangular, 31.5 cm × 23 cm × 7.5 cm) is the best preserved of the stela excavated in WG 32 (Figure 40). In the upper part of this stela is an official scene, of the god Min facing the royal names of Senusret III. The lower part has at least seven columns of a badly preserved text, and two officials carved facing each other. According to Mahfouz, this stela corroborates the evidence of an expedition to Punt in Year 5 of Senusret III, recorded in hieratic on an ostracon found by Sayed at the site in 1977 (Mahfouz and Pirelli 2007: 48).

Finally, in WG 55, where the entrance to Cave 7 was located and to the southeast of WG 32, more limestone stelae were excavated. The largest of these stelae, Stela 24, is 54.3 × 34 cm × 12.5 cm, with a round top. Carved at the top of this stela is a winged sun disc, below which on the right is (the top part of) the ithyphallic image of the god Min; only two signs are visible on this stela, *nfr ntr* (Manzo and Mahfouz 2008: 32). Also found in WG 55 was Stela 23 (round-topped, 35 cm × 26.5 cm × 9 cm), dating to Year 41 of Amenemhat III. The only inscription visible on this stela is: (1) Year 41 [under] (2) His majesty the King of Upper and Lower Egypt Nymaatre … (3) [Horus] Aa[baw] Horus of Gold Wahankh itiwa[tawy] (Manzo and Mahfouz 2008: 32).

Stela 28, a small unfinished stela (18 cm × 10.5 cm × 4.5 cm), also was found in WG 55, at its southern limit and near the alcove shrine in WG 56 (Figure 36). It records a rare epithet of the god Osiris (*Wsir wḏ-wr*, "Osiris of the sea"), along with another deity, Horus the Great (Mahfouz and Manzo 2008: 32–33). These two gods are listed in an unfinished text of the offering formula: a *ḥtp-di-nsw* which the king gives to Osiris Wadj-wer and Horus-wer for the *ka* of … (Manzo and Mahfouz 2008: 33).

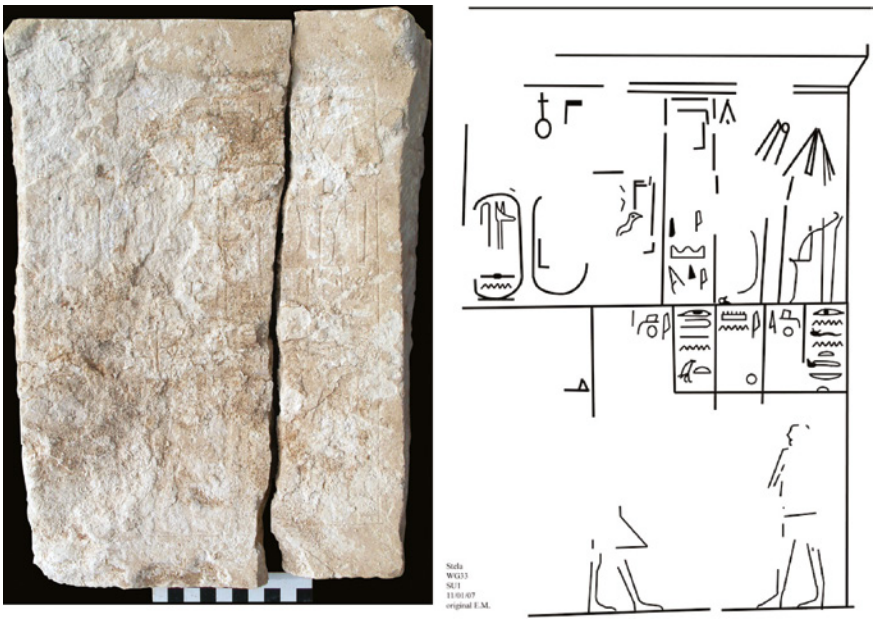

FIGURE 40 Stela 14.
DRAWING BY ELSAYED MAHFOUZ.

Although the stelae that originally were placed in niches carved in the western terrace wall vary considerably in size and content, they demonstrate the range of stelae that would commemorate expeditions and individuals on those expeditions from *Saww*, as well as the rank and range of officials on those expeditions, in the later 12th Dynasty. The question arises as to whether these stelae were made and inscribed at the harbor site, or were brought there finished from the Nile Valley. The finds of two small blank stelae at the harbor site suggest that some of the smaller stelae, such as Stela 16 with the offering formula and the name and title of a palace official, Ameny, could have been made and inscribed there. The inscription on this stela is short and not very carefully made, and it probably could have been done at the harbor site. But it would also have been possible for its owner, Ameny, to obtain this stela, with its standardized offering formula minus any offering scene, at a workshop in the Nile Valley, where his name could have been added easily to the end of the inscription, and then carry it with him on the desert trek to the Red Sea.

The detailed and carefully inscribed texts and scene on Stela 5, however, suggest that this stela was commissioned by Nebsu at a workshop in the Nile Valley, where he would have given the specific details of the expedition(s) to Punt and Bia-Punt to an artisan/scribe to be included on this stela. This also

may have been the case with Stela 6, with a scene in the upper part of the god Min, along with his epithets, in front of all five names of Amenemhat III. According to Mahfouz (2007c: 222), the inscription and decoration on this stela (6) were "very carefully made and are of high quality, mainly if we consider that the stela was found in a deserted area far from the Nile Valley."

9 Use of Stelae at *Saww*

Although found in several different contexts and locations at the ancient harbor site, the stelae excavated there are all non-royal, and were left there within the context of state organized, seafaring expeditions to Punt and/or Bia-Punt. They served as commemorative monuments (Hölzl 2001: 320), and may have been on display for future visitors to the harbor site, to inform them of their predecessors' achievements (Sweeney 2014: 289). Unlike many of the non-royal stelae from the Middle Kingdom, which had a funerary context, or were associated with the processional routes at Abydos, the cult center of the god Osiris, the *Saww* stelae only very infrequently had a living audience. Rather, the inscriptions on these stelae are a form of discourse addressed to posterity (Parkinson 2002: 62).

According to Yamamoto (2015: 34), the fundamental purpose of these stelae, as well as others, was "to eternalize the identities and existence of their commissioners." The messages, then, on these non-royal stelae were to demonstrate the owner's rapport with royal authority and divine powers (Yamamoto 2015: 34).

The question arises, however, regarding the purpose of the Mersa/Wadi Gawasis stelae inscribed with the offering formula. Stela 2, with its partially preserved text, includes an "appeal to the living" and the offering formula, as well as a scene carved at the bottom: of a platform piled high with food offerings, to either side of which are images of seated men (Pirelli 2007a: 217–219). No evidence of tombs or burials has been found at Wadi Gawasis, and this isolated and infrequently used site would have been a very undesirable place for burial and a funerary cult. So the presence of this stela next to the entrance of Cave 2, still in its original niche, can only be explained as an intentional act of commemoration by its owner, who was a member of one of the expeditions. Perhaps the owner was not able to commission a special expedition text stela at a workshop in the Nile Valley, and obtained this one instead – to commemorate his presence on an expedition. Unfortunately, not enough of the text has been preserved on this stela to provide more information.

Another stela at the site with an offering text, Stela 16, of Ameny, at least provides information about his office, the one "responsible for the storeroom of

the great palace," along with Year 23 of Amenemhat III (Manzo and Mahfouz 2008: 31). This title must have related to his service on a seafaring expedition, in which he was probably responsible for goods obtained in Punt/Bia-Punt that would be brought to the royal palace. But in the context of a commemorative stela, Ameny's title and name, associated with a specific royal/state expedition, would have served to eternalize his permanent existence.

Another small stela, Stela 28, which also contains the offering formula, probably was associated with the alcove shrine in WG 56. It records a rare epithet of the god Osiris (*Wsir wḏ-wr*, "Osiris of the sea"), along with another deity, Horus the Great (Mahfouz and Manzo 2008: 32–33), but the meaning of this inscription, which is definitely unfinished, is uncertain.

While the specific information in the texts on these commemorative stelae is useful to us for their historical content, this was not the intent of their owners. The texts added individuality, and the one ultimate goal of these stelae was the permanent survival of their owners (Yamamoto 2015: 36).

10 Mersa/Wadi Gawasis Stelae and the Gods

The only information about gods associated with the Punt and Bia-Punt expeditions are found on stela from the harbor site, as well as the two stela found at Wadi Gasus (Northumberland 1934, 1935), and mainly in the context of royal epithets and scenes of the king making offerings. According to the preserved evidence, Min was the most important deity associated with these expedition stelae (North. 1934, WG Stela 5, 6, 14, 16, 29).

One of the two inscribed Middle Kingdom stelae found at Wadi Gasus, Northumberland 1934, has a carved scene of the king, Amenemhat II, giving offerings to the god Min, with an epithet carved above: "beloved of Min of Coptos" (Nibbi 1976: 50). In the lower part of this stela is a scene of the official, Khentekhtay-wer, with his arms raised, and the text: "Praising and giving laudation to Hareoeris-Re and to Min of Coptos" (Nibbi 1976: 50). While Re-Horus refers to the king (as in the Ankhu inscription, see below), Min of Coptos was the patron deity of the royal/state expedition itself, and as such the direct recipient of Khentekhtay-wer's praises upon having returned safely from Punt.

Three stelae excavated at Wadi Gawasis also contain scenes of the god Min:

(1) Stela 14 with the figure of Min facing the royal names of Senusret III (Mahfouz and Pirelli 2007: 48).
(2) Stela 5 with a scene of the king, Amenemhat III, offering a conical cake to Min, and the epithet "beloved of Min of Coptos" (Pirelli 2007a: 220).
(3) Stela 6, with a scene of Min in front of the five names of Amenemhat III, and the epithet "beloved of Min, Lord of Coptos" (Mahfouz 2007c: 222).

Also, at the top of Stela 6 is a line of hieroglyphic signs beneath the sun disc: *Bḥdty nṯr ʿ3 s3b šwt nb pt nb Msn*: "He of Edfu, august god, of variegated plumage, master of the sky, Lord of Mesen" (Mahfouz 2007c: 222). ("*Bḥdty*" is also found inscribed beneath the winged sun disc on the North. 1935 stela.) According to Mahfouz (2007c: 222), *Msn* is a toponym, indicating either Edfu or Qantara, but in the context of this inscription, Mahfouz thinks that the text refers to Horus, Lord of expeditions to the East. More generally, however, at the top of round-topped stelae the winged sun disc was associated with Horus of Behdet, and denoted the realm of kings and deities (Yamamoto 2015: 36), and Hölzl (2001: 320) has suggested that the rounded top in general symbolized the "firmament."

Two other stela from *Saww* also refer to the god Min. Stela 16, of the palace official Ameny, dating to Year 23 of Amenemhat III, begins with the offering formula (*ḥtp-di-nsw*) to Min of Coptos (Manzo and Mahfouz 2008: 31). Additionally, on Stela 29, dating to Year 2 of Senusret II, the epithet "beloved of Min of Coptos" appears in the upper right of this stela (Mahfouz 2010: 28). In the text carved in seven registers below, about the official Henenu, the text in line 3 begins: "he approached the sanctuary of Min" (Mahfouz 2010: 29; English translation by Bard). Where the sanctuary of Min mentioned in this text was located, however, remains unknown.

Two other deities associated with expeditions are mentioned only once: Hathor, mistress of Punt in the Ankhu text, and Sopdu, Lord of the East, on the North. 1935 stela found at Wadi Gasus, nor do these two expedition texts mention the god Min. Without any carved scene, the Ankhu monument text begins on the eastern jamb with the pronomen and nomen, title and epithets of King Senusret I: "Beloved of Horoeris-Re, King of Upper and Lower Egypt, Kheperkare, beloved of Khentekhtay, son of Re, Senwsre, beloved of Hathor, mistress of Punt" (Sayed 1977: 159). This is the only text from the site that mentions "Hathor" or "mistress of Punt." Punt was the destination of this expedition, and perhaps this goddess was not directly relevant to the expedition itself until it reached Punt, her domain.

The Northumberland 1935 stela has a scene carved in the upper part of the king, Senusret II, receiving blessings from Sopdu, god of the Eastern Desert. According to O'Connor (2015: 175), Sopdu was the deity "responsible for the safe return of armies sent on dangerous mining and trade missions." But this is the only known stela associated with seafaring expeditions from *Saww* where this god, and not Min, is mentioned.

Thus, on the stela of expedition officials at *Saww*, when the evidence has been preserved, Min is the deity depicted most frequently in scenes with the king (or his names), and/or accompanied by the epithet in hieroglyphs "beloved of Min of Coptos," or in the offering formula text (Ameny Stela 16).

Min of Coptos was the patron of the Eastern Desert and the protector of Egyptian sailors on seafaring expeditions to Punt (Mahfouz 2010: 28), or possibly this god was the most recognized patron deity on stela of expedition officials.

Another explanation is also possible: on the eastern jamb of Ankhu stela (which has with many missing parts), Sayed recorded in line 4: *dpwt … dmi n Sww sp3t Gbtiw*, which he translates: "… the vessels … the quay of *Sww* of the Koptite nome" (Sayed 1977: 160, 175). In this context *Saww* by extension was part of the nome of Coptos, where the cult of Min was located. Coptos was at the western end of the Eastern Desert wadis that led to mining regions (as well as the Red Sea harbor of *Saww*), and hence Min's role was as a "tutelary deity of that area" (Wilkinson 2003: 116).

While Min may have been the "official" expedition patron deity, as depicted and inscribed on stelae of expedition officials, the alcove shrine excavated on the terrace slope in WG 56 was probably the focus of offering rituals of a number of different expedition members throughout the 12th Dynasty – and near it was found a crude, unfinished stela that names "Osiris of the sea" (*Wsir wḏ-wr*) and Horus the Great in the offering formula. The deity "Osiris of the sea" may have been a more personal deity for the many nameless sailors/soldiers on these expeditions than Min of Coptos, and a maritime form of the god Osiris that was associated specifically with the seafaring expeditions to Punt and/or Bia-Punt, may have been worshipped at the harbor. But no other mention of this deity is found at the harbor site.

11 Archaeology of Ritual and Religion at Mersa/Wadi Gawasis

Religion is a system of beliefs, and the rituals practiced at *Saww* and the monuments and commemorative stelae left there should be understood within the context of traditions of ancient Egyptian religion: the cult deities of the Egyptian state, the belief in the god-king and service to him, as well as individuals' personal beliefs within the context of their own lives, work, homes, families and family burials. But the material evidence of beliefs at *Saww* is in a very different location – outside the Nile Valley at an isolated harbor that was never a permanently occupied settlement, and within the context of state expeditions, which probably only consisted of male personnel. Personal beliefs concerning these expeditions probably also were associated with the potential dangers involved with these expeditions: of going to distant unknown places on seafaring voyages, also an unknown activity to most expedition members.

Thus, religious beliefs and practices at *Saww* were outside the normal living context of town, cult center, home and mortuary cults for personnel on these expeditions. In an important article, "Rethinking Ritual," however, Joyce

Marcus (2007: 43) states that the study of ritual needs to be a scientific endeavor, rather than focusing on each rite or ritual as unique, which allows us to discover interconnections among religion, economics, society and politics. These four different spheres of analysis and interconnections between them can help to illuminate the meaning of rituals practiced at *Saww* and provide explanations for the monuments and commemorative works left there. The archaeological and textual evidence at Mersa/Wadi Gawasis is, however, unique – in its context and degree of preservation. But this unique material evidence also can be used to illuminate beliefs and rituals practiced at the ancient harbor within the larger context of the ancient Egyptian state.

Traditional Egyptian religion, the cults of the gods and the god-king, and the mortuary cult, is the background to the belief system of expedition members, but at a place where there were no cult temples, no chapels, no priests, no tombs and no households. Egyptian gods, mainly Min, are depicted and carved on stelae left at the harbor site – but in the context of this god's tutelary area, which probably extended to this isolated harbor, and his patronage for these expeditions.

Rituals based on known rituals in the Nile Valley were practiced at *Saww*, but outside of the normal contexts and with very limited material resources to use for these rituals. At *Saww* evidence of rituals included offerings left at shrines, and the simple act of individuals finding a *Lambis lambis* shell on the beach and leaving it at the Feature 4 platform.

The deposition of broken anchors in the foundations of several shrine structures at Mersa and Wadi Gawsis suggests rituals associated with maritime activities, perhaps symbolising consecration of the ships after a safe return, which might also be inferred from use of anchors to build the Ankhu monument. A similar interpretation may also be suggested for the concentrations of limestone fragments under the mound of Feature 10 at Mersa Gawasis, which might represent ritual destruction of limestone anchors.

Instead of temples at *Saww* there were different shrine structures: the small mound structures built overlooking the seashore and the WG 56 alcove shrine located along the western terrace slope. The monuments of Ankhu, Intef-iker, and probably Henenu, were prominently visible on the terrace top, and can be understood within the economic context of these state expeditions and as monuments to these expeditions and their leaders. The small shrines along the seashore and the terrace top above Wadi Gawasis also may have commemorated specific (successful?) expeditions. These state expeditions were intermittent ones, decreed by the king – to obtain exotic raw materials only available in regions of great distance from Egypt, and since these expeditions were by sea, this greatly increased the difficulty of their organization and undertaking – at an extraordinary cost of labor and resources.

The political background to these expeditions is the highly organized bureaucracy of the king's state – especially evident in the text on the Intef-iker monument, which lists the different classes of expedition personnel: a total of 3,756 men. The social background to this and other seafaring expeditions, however, is highly specific. The expedition personnel consisted of a small, select male segment of the society; the soldiers and sailors for each expedition would have been obtained by conscription, while the expedition officials would have been chosen from the hierarchical structure of the government and palace bureaucracy.

The intentional display of inscribed stelae is also a significant part of the belief system evidenced at *Saww*. According to Yamamoto (2015: 33), non-royal stelae can be understood as "abbreviated forms of commemorative architecture," with the round-topped stela symbolizing the "curved roof of a vaulted chapel." The stelae texts at *Saww* were commemorative ones about state expeditions and individuals' roles in these expeditions, as well as personal memorials, including the three stelae with the offering formula. The audience for these stelae was "posterity" (Parkinson 2002: 62), and the ultimate goal of these stelae was the permanent survival of their owners (Yamamoto 2015: 36).

CHAPTER 7

The Land of Punt: A View from Mersa/Wadi Gawasis

1 Punt and Mersa/Wadi Gawasis

Unquestionably, the archaeological and textual evidence from Mersa/Wadi Gawasis demonstrates the organization of seafaring expeditions to Punt and/or Bia-Punt. The exact destination of these expeditions, however, is more problematic. But new data from the harbor site, including exotic raw materials and artifacts, which were imported from these regions in the southern Red Sea, are now providing important evidence for reconstructing Egyptian trade with Punt and/or Bia-Punt in the Middle Kingdom, and the Mersa/Wadi Gawasis evidence is contributing in a significant – and unique – way to the debate on the location of these toponyms.

2 The Land of Punt: Egyptian Evidence

Beginning in the Old Kingdom, Egyptian texts record the land of Punt as a geographical region from where frankincense and other exotic commodities were imported (see Breyer 2016; Diego Espinel 2011; Herzog 1968; Kitchen 1993, 2001), and an exotic and mythical country from where marvelous things came to Egypt (see Beaux 1990: 295–306; Harvey 2003; Pirelli 1993). The trade with Punt also was embedded in royal ideology (see Martinssen 2003). The complexities of this royal ideology can be seen in the Punt reliefs and texts in Hatshepsut's Deir el-Bahri temple, where Hatshepsut's expedition not only obtained the Punt goods, but she also obtained "advantages of an ideological nature, since the presence of the Egyptian army in Punt is effective in including this land in the officially 'known' world and also in the officially controlled world" (Liverani 1990: 241). The trade goods that were dispatched from the Egyptian palace were for "Hathor Lady of Punt" (an Egyptian goddess), while the goods obtained in Punt were "tribute" (*inw*), then *bi3t* when Hatshepsut received them in Thebes and presented them to Amen (Liverani 1990: 243–245). "*Bi3t*" is the same term that was inscribed on the two cargo boxes excavated at Mersa/Wadi Gawasis, referring to the contents of these boxes: "the wonderful things [*bi3wt*: plural] of Punt."

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The location of Punt has been debated for over a century, based on Egyptian textual and iconographic evidence. Many hypotheses have been suggested to identify Punt with a specific geographical region, including Syria, the Sinai, the Eastern Desert in Egypt and/or Sudan, the Upper Nile, the Sudanese-Eritrean lowlands, Eritrea, northern Somalia, the western Arabian peninsula, southern Arabia, East Africa, and India, which also demonstrates the fascination of this land with modern scholars – as well as the imagination of Egyptologists in locating it (see Breyer 2010, 2016: 56–310; Diego Espinel 2011: 59–120; Herzog 1968; Kitchen 1971, 1982, 1993, 2001, 2004).

According to Egyptian textual and iconographic sources, Punt was the southernmost region included in the commercial network of the pharaonic state, and was regarded as a distinct country from the other southern regions within the Egyptian sphere of political and economic influence (see e.g., O'Connor 1993: 42; Schiaparelli 1916; Zibelius 1972). In the New Kingdom Punt encompassed several districts, suggesting that this land included different regions broadly stretching along the Red Sea coast and the African hinterland (see Breyer 2016: 541–543; Edel 1983; O'Connor 2006; Zyhlarz 1958).

The land of Punt was a mountainous region with access to the sea. Dom palms grew there (as well as in Egypt), and baboons, which were not indigenous to Egypt, were found in Punt. In Egyptian representational art Puntite men were depicted with short hair and headbands, wearing short skirts, while Puntite women had long hair, headbands and long skirts. Their standardized dress in representational art possibly suggests that the Egyptians perceived them as the same population. Only in the 18th Dynasty was another Puntite group, with long hair, associated with Punt, possibly suggesting that another Puntite group participated in trade with Egypt at this time (see Cooper 2015: 70–75; Diego Espinel 2011: 449–453).

In the "Tale of the Shipwrecked Sailor," which dates to the Middle Kingdom, the sailor is found by a huge, bearded snake, covered with gold and lapis lazuli, who describes himself as the "ruler" (*hekaw*) of Punt (see Lefebvre 1949: 29–40). In later New Kingdom texts, however, the *werew* (chiefs) of Punt were distinguished from the *hekaw* (rulers) of Nubia, which possibly suggests that there were small-scale polities in the Punt region at this time (Manzo 1999: 29–30, 35; see also Lorton 1974: 26–38, 60–68; Sachko 1998).

The reliefs and texts recording a seafaring expedition to Punt in the Deir el-Bahri funerary temple of Queen/King Hatshepsut (ca. 1473–1458 BC) describe this land as a country inhabited by pastoral and/or agro-pastoral people with short-horned cattle, while herders with long-horned cattle occupied its hinterland (Breasted 1906–7 IV: 102–122; Millet 1962; Naville 1898: Pl. 56–86; Sethe 1905, 1906 (2): 315–355; W.S. Smith 1962).

Egyptian trade with Punt began in the late Old Kingdom and continued in the Middle Kingdom and New Kingdom, up to the 20th Dynasty. Some attempts to resume contacts with this region may have been made in the 26th and 27th Dynasties, but there is no evidence that these contacts were successful. In Greco-Roman times only mythological references to Punt are known (see Kitchen 1982, 1993; Säve-Söderbergh 1946: 8–30).

The main products imported to Egypt from Punt were frankincense, myrrh, electrum, gold, ebony, and baboons, which suggest that this region produced resins and gold, and was a gateway where products from other regions were collected and channeled to Egypt or Nubia (Manzo 1999: 37; for a definition of gateway see Hirth 1978). Frankincense and/or myrrh were imported as resin or as trees to be transplanted in Egypt (see Dixon 1969; Lucas 1937, 1989: 91–94; Serpico and White 2000: 438–442).

The list of products imported from Punt changed through time. Frankincense and/or myrrh, electrum, gold (?), throw sticks, and pygmies (at least once) were imported in the Old Kingdom. Frankincense and/or myrrh, electrum(?), and gold(?) are recorded in the Middle Kingdom. Frankincense and/or myrrh, electrum, gold, ebony, baboons, hounds, ivory, animal skins, ostrich eggshells and feathers, semi-precious stones, kohl, and throw sticks were imported in the New Kingdom. Bovines also were imported at the time of Thutmose III (Manzo 1999: 15–39).

3 Location of Punt: Natural Resources

At present, two regions are considered as the most probable locations of Punt, based on the occurrence of natural resources and archaeological evidence: (1) the Eastern Desert in Sudan and (2) the northern Horn of Africa, comprising the Sudanese-Eritrean lowlands and the coastal plains in eastern Sudan and Eritrea, and the highlands in Eritrea and Tigray/northern Ethiopia (Figure 41) (Bard and Fattovich 2013; Fattovich 1996a; Kitchen 1993, 2004). Southern Arabia also is considered a likely location of Punt because this region was the main supplier of frankincense and other aromatic resins to Mediterranean countries in the 1st millennium BC (see Boivin and Fuller 2009: 140; Meeks 2003; Uphill 1988), but the evidence for its identification with Punt is scarce and questionable (see Kitchen 2004; Sayed 1989).

The Eastern Desert in Sudan has been suggested as a possible location of Punt because of the occurrence of aromatic resins along the coast near Port Sudan and rich deposits of gold to the east and northeast of the Fourth Cataract (Kitchen 1993, 2004). Unfortunately, archaeological investigations in this

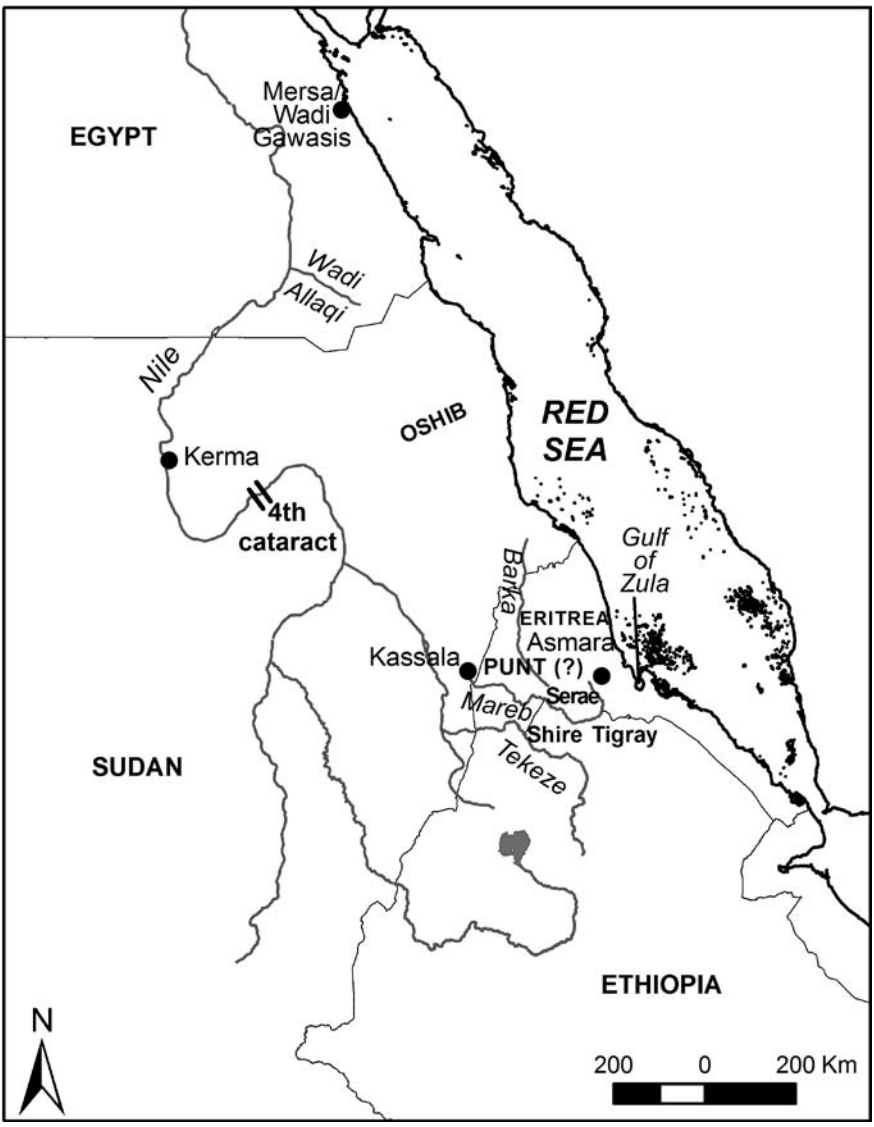

FIGURE 41 Map of northern Sudan and the northern Horn of Africa.
MAP BY LUISA SERNICOLA.

region are still preliminary and focused mainly in the northern sector between the Fourth Cataract and the Wadi Allaqi to the east of the Second Cataract (Manzo 2012a). These investigations have demonstrated that nomads with ceramics ascribable to the Pan-Grave culture of Lower Nubia and Upper Egypt occupied the Eastern Desert region of Sudan in the 2nd millennium BC. They

most likely interacted with the kingdom of Kerma in Upper Nubia, as Kerma ceramics have been recorded at sites to the east of the Fourth Cataract, suggesting a penetration from the Nile Valley to the Eastern Desert for the exploitation of the gold mines in the present districts of Onib and Oshib, between the Nile and the Red Sea (Castiglioni, Castiglioni and Bonnet 2010; Emberling and Williams 2010). At present, however, no evidence of Egyptian activities in this region has been found.

A location of Punt in the northern Horn of Africa seems more probable because of the occurrence of specific natural resources there and a cultural landscape that is consistent with the information about Punt in Egyptian sources (Bard and Fattovich 2013; Fattovich 1991c, 1996b, 2012; Kitchen 2002, 2004; Phillips 1997). In the 19th century AD dom palms were found across the landscape of the Sudanese-Eritrean lowlands, which also was the habitat of baboons and large savanna mammals – a landscape that conforms to that of the Punt reliefs in Hatshepsut's Deir el-Bahri temple (see e.g., James 1883; Krockow von Wickerode 1867, I: plates on pp. 98, 250).

Natural resources in the northern Horn of Africa include gold, aromatic resins (myrrh and frankincense), and ebony, as well as elephants and baboons. Most of these resources were found in the northern highlands in Eritrea, along the western and eastern slopes of the highlands, and in the western lowlands along the present Sudanese-Eritrean borderland (Fattovich 1991c: Fig. 1; Manzo 1999: 6–9).

Deposits of gold occur in the Eritrean highlands near Asmara, where ancient mines have been recorded (Schmidt, Habtmichael and Curtis 2008); in the upper and lower Anseba valley; along the western slopes of the highlands between the Barka and Tekeze valleys; in the Mareb/Gash valley; the hinterland of the Gulf of Zula; the eastern edge of the highlands and the highlands of Serae in Eritrea; and along the lower Tekeze valley and the highlands of Shirè in northern Ethiopia (Manzo 1999: 9).

Aromatic resins – especially myrrh (*Commiphora* spp., *Opobalsamum* spp.) and frankincense (*Boswellia* spp.) – occur along the western and eastern slopes of the Eritrean highlands, with a major production area between the Barka and Setit valleys in the western lowlands, as well as in the highlands in Tigray (Manzo 1999: 8). Ebony trees (*Dyospiros mespiliformis*; *Dalbergia melonoxynon*) are found in northern Eritrea, and in the lowlands along the border between Sudan and western Ethiopia (Manzo 1999: 8).

Elephant ivory, ostrich feathers and leopard skins could be obtained from the western lowlands and northern highlands in Eritrea (Manzo 1999: 6–7). Live baboons could be caught in the lowlands and highlands of Eritrea and northern Ethiopia (Manzo 1999: Pl. 8).

A location of Punt in southern Arabia seems less probable, despite the physical landscape of the coastal plains there with dom palms. Although the same species of baboon (*Papio hamadryas*) is found in both the northern Horn of Africa and southern Arabia, stable isotope analysis of two *P. hamadryas* mummies from 20th Dynasty tombs in Egypt indicates a "high likelihood match with eastern Somalia and the Eritrea-Ethiopia corridor" (Dominy *et al.* 2016) and supports an African location of the region where these animals were caught.

The distribution of natural resources in southern Arabia and the cultural landscape are less consistent with the known information about Punt in Egyptian sources than those in the northern Horn of Africa. Gold deposits occur in the highlands in northern Yemen and southern Saudi Arabia, but there is no evidence that they were exploited in pre-Islamic times (Manzo 1999: 9, Pl. 12). Aromatic resins – mainly frankincense and myrrh – are the only typical Puntite resources in southern Arabia. Frankincense occurs in the coastal region of Aden, the valley of Hadramawt in Yemen, and Dhofar in Oman, while myrrh occurs in the coastal plains along the Red Sea and Gulf of Aden in Yemen (Manzo 1999: 8) (Figure 42).

4 The Land of Punt: Cultural Evidence

The cultural landscape of the northern Horn of Africa in the 3rd–2nd millennia BC consisted of communities with distinct cultural traditions that had differential access to the natural resources of the region (Figure 43) (Fattovich 2010, 2012b). Beginning in the mid-3rd millennium BC, the lowlands from the Gash Delta to the Red Sea coast in Sudan and Eritrea were occupied by pastoral groups that are identified in the archaeological record with the Gash Group (ca. 2700–1800 BC) and Jebel Mokram Group (ca. 1800 – 800 BC) (Fattovich 1990, 1991b; Fattovich, Marks and Ali 1984; Manzo 2017; Sadr 1991).

Imported materials at the main site of the Gash Group, Mahal Teglinos near Kassala, suggest that these people were included in an exchange network stretching from the Nile Valley to the Horn of Africa and southern Arabia (Manzo 1997). The occurrence of administrative devices (stamp seals and tokens) at Mahal Teglinos suggests that a few members of the community controlled these exchanges (Fattovich 1991c, 1995; Sachko-Autissier 2002). Funerary stelae of different shapes (flat slabs, pointed monoliths, and small pillars) at Mahal Teglinos were the most distinctive feature of this culture (Fattovich 1989a).

The Jebel Mokram Group can be ascribed to an agro-pastoral population that replaced the Gash Group ca. 1800 BC in the lowlands along the

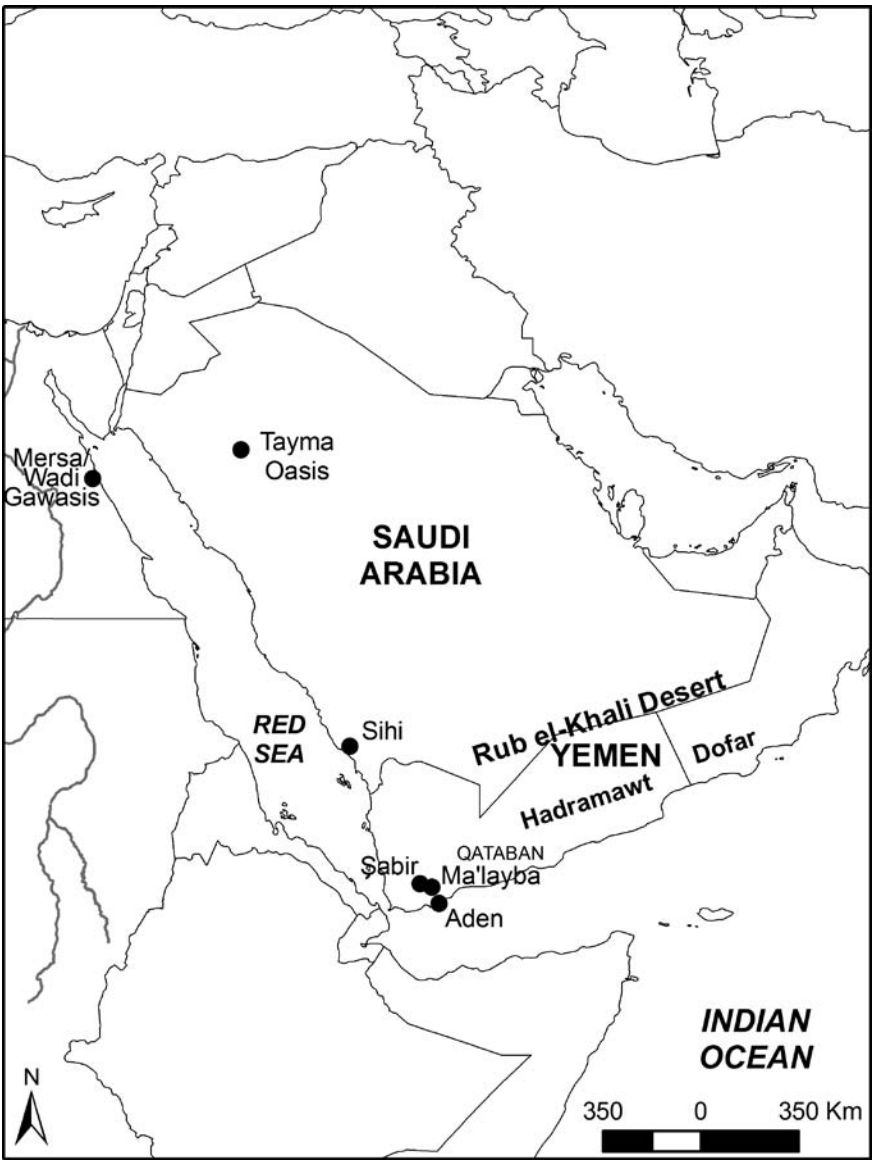

FIGURE 42 Map of Arabian peninsula.
MAP BY LUISA SERNICOLA.

Sudanese-Eritrean borderland. The ceramics include both Gash Group and Nubian types, suggesting that nomads from Nubia and/or the Eastern Desert mixed with the local Gash Group people (Fattovich, Sadr and Vitagliano 1988–89; Sadr 1991). This cultural unit was initially dated to ca. 1500/1400–900/800

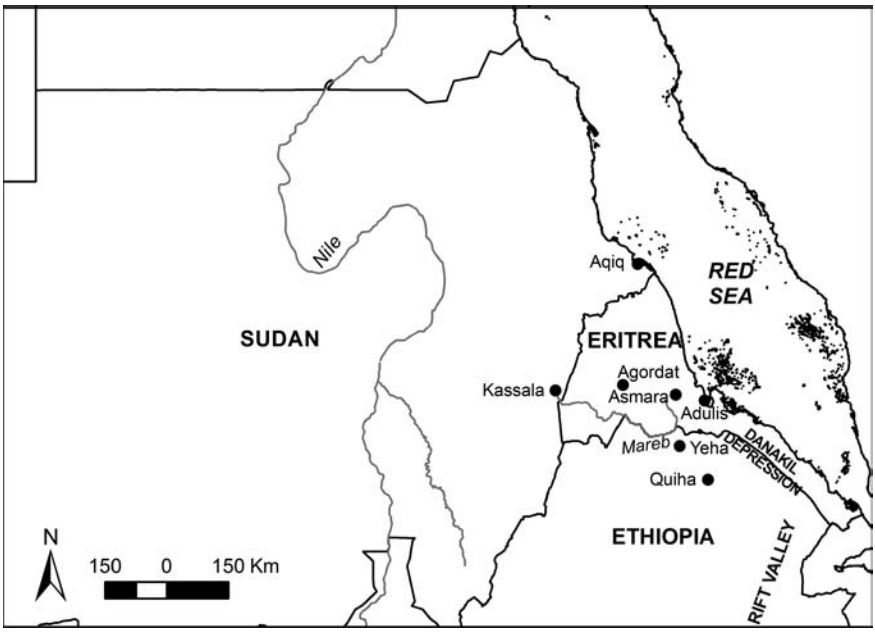

FIGURE 43 Map of eastern Sudan and Eritrea.
MAP BY LUISA SERNICOLA.

BC based on the cross-dating of Jebel Mokram Group ceramics with ceramics from the Nile Valley and Ethiopian highlands, and one radiocarbon date (see Sadr 1991: 45–48). A new series of radiocarbon dates from recently excavated Jebel Mokram Group assemblages at Mahal Teglinos have demonstrated, however, that the penetration of Nubian elements in the Gash Delta began in the early 2nd millennium BC and the Jebel Mokram Group replaced the Gash Group around ca. 1800 BC (see Manzo 2017: 43, N.D.a).

Rock-art in the Eritrean highlands, tentatively dated to the 2nd – early 1st millennia BC, suggests that herders of short-horned cattle were moving in the upper Mareb/Gash valley to the east of Kassala, and herders of long-horned cattle occupied the highlands in northern and central Eritrea (see Calegari 1999; Graziosi 1964a, 1964b; Teka 2008).

Sedentary farmers, identified in the archaeological record with the Ancient Ona culture (ca. 900–400 BC), were settled in the highlands in Eritrea around Asmara (Schmidt, Curtis and Teka 2008). This culture is usually dated to the 1st millennium BC, but the discovery of two fragments of jars similar to those of the Ancient Ona culture together with late Middle Kingdom ceramics (ca. 1800–1650 BC) at Wadi Gawasis suggests that this culture emerged in the 2nd millennium BC (Manzo 2007a). Most likely, another sedentary group with knowledge of

copper metallurgy occupied the site of Adulis near the Gulf of Zula in Eritrea, in the 2nd and early 1st millennia BC (Manzo 2010a; Paribeni 1908).

The occurrence of megalithic monuments, along the Red Sea coast from Aqiq in eastern Sudan to the northern Danakil Depression suggests that nomadic or seminomadic groups frequented the coastal plains in Eritrea, probably in the 2nd and 1st millennia BC (Bondioli and Vidale 2004: 59; Fattovich 2007). Pastoral groups with different ceramic traditions also occupied the highlands in northern Ethiopia in the 3rd–2nd millennia BC (Barnett 1999: 127–146; Finneran 2007: 59–64).

These populations in the northern Horn of Africa most likely interacted with each other within local exchange networks, facilitating the circulation of products from one area to another and from the hinterland to the sea – in regions which might correspond to Punt in the Egyptian sources (Fattovich 2012b). The existence of these networks is supported by the occurrence of: (1) obsidian tools from the Eritrean and/or Ethiopian highlands in lithic assemblages of the Gash Group and Jebel Mokram Group near Kassala in the Gash Delta, and at Agordat in the Barka valley (Arkell 1954: 2; Fattovich 1989b); (2) fragments of large storage jars with everted rims, comparable to those of the Late Gash Group and Jebel Mokram Group, in a site of the Ancient Ona culture at Sembel-Cushet near Asmara (see Tringali 1978: Fig. 24); and (3) typical jars of the Ancient Ona culture in a Late Gash and/or Jebel Mokram Group context at Agordat, in the middle Barka valley (Brandt, Manzo and Perlingieri 2008) and at Adulis (Manzo 2007b).

The occurrence of cowrie shells (*Cyprea moneta*) from the Red Sea and Indian Ocean in graves of the Gash Group, dated to the early 2nd millennium BC at Mahal Teglinos, and the same type of stelae at Kassala and Aqiq on the Red Sea coast, suggests that pastoral groups living in the western lowlands had access to the sea and possibly frequented the bay of Aqiq (Fattovich 2007; Fattovich, Manzo and Usai 1994).

Finally, the inclusion of pastoral groups in the lowlands along the Sudanese-Eritrean borderland into the Egyptian commercial network in the 3rd–2nd millennia BC is demonstrated by the occurrence of Egyptian artifacts in assemblages of the Gash Group and Jebel Mokram Group at Mahal Teglinos in the Gash Delta, Agordat in the Barka valley, and Adulis on the Eritrean coast. Several dozen Egyptian potsherds have been found in contexts dated to ca. 2500–1800 BC at Mahal Teglinos (Manzo 1997, 2014a). A round-topped, Middle Kingdom stela, the text of which has not been preserved, also has been recorded at this site, suggesting that Egyptians actually visited there (Manzo 2014b: 378–379). Two bracelets made with shells of *Lambis* spp., manufactured in the Sinai for trade in Egypt and the Levant, have been found in a burial dated to the

first half of the 2nd millennium BC at the same site (Carannante 2012: 96–97). A few Egyptian potsherds from assemblages ascribable to the Gash Group and Jebel Mokram Group also have been recorded at two other sites to the west of Mahal Teglinos (Manzo 2016). Later Egyptian evidence also has been recorded in the lowlands along the Sudanese-Eritrean borderland. Several stone axes reproducing Egyptian copper axes of the 17th–18th Dynasties and/or Kerma axe types, were found in assemblages of the Late Gash/Jebel Mokram Group at sites near Agordat in the Barka valley, suggesting that pastoral groups living in this region were part of an (indirect?) exchange network with Egypt and/or Nubia in the mid-2nd millennium BC (see Arkell 1954; Caneva 1990: 138, Fig. 119). A fragment of a glass vessel, similar to Egyptian ones of the New Kingdom, was found in the deepest levels at Adulis, suggesting contacts with Egypt at this time (Paribeni 1908: 450).

Napatan and Meroitic amulets and vessels in an Egyptian style also have been recorded at several sites in the highlands in Tigray and Eritrea (Fattovich 1982; Philips 1995), and two scarab seals similar to Egyptian prototypes have recently been recorded at Yeha in central Tigray (Raue 2012: 174; see also Breyer 2016: 793–794). But these artifacts have been found in contexts dating to 1st millennium BC – early 1st millennium AD and thus point to (possibly indirect) contacts with the Nubian kingdom of Kush, but do not provide any significant information about the location of Punt in earlier times.

On the eastern side of the Red Sea in Yemen, in the 3rd–2nd millennia BC, there were nomads and farmers in the highlands and eastern lowlands, and sedentary communities in the coastal plains along the Gulf of Aden and the Red Sea, as far as the border with Saudi Arabia (de Maigret 1996). The presence of nomads at the edge of the Rub el-Khali Desert in southern Arabia is supported by the evidence of cemeteries with tombs covered with different types of stone superstructures, most likely dating from the 4th to the 1st millennia BC, which are scattered far from the coast along the eastern highlands and eastern lowlands of Yemen (Buffa 2007: 234–245). Megalithic monuments dating to the 3rd–2nd millennia BC also have been recorded at a few sites in the coastal plain along the Red Sea (Keall 1998; Khalidi 2005).

Sedentary farmers occupied the highlands and eastern lowlands in Yemen in the 3rd millennium BC (de Maigret 1990; Wilkinson, Edens and Gibson 1997). They are identified in the archaeological record with the Khawlan culture. This culture is usually dated to ca. 2700–2000 BC, but a longer chronology from ca. 2900 to 1800 BC is also possible (de Maigret 1996: 151–153).

Sedentary communities occupied the coastal plains of southwestern Arabia in the 2nd millennium BC. They are identified in the archaeological record with the Sabir culture (ca. 2000–900/800 BC), which has been divided into two

phases: Ma'layba Phase (ca. 2000–1300 BC) and Sabir Phase (ca. 1300–900/800 BC). Major sites of this culture are Ma'layba and Sabir near Aden, and Sihi in the southern coastal plains of Saudi Arabia. The second phase is characterized by the development of a large residential settlement with mud-brick buildings at Sabir (Buffa 2000, 2007; Buffa and Vogt 2001; Vogt and Sedov 1998; Zarins and Al-Badr 1986; Zarins, Al-Jawarad Murad and Al-Yish 1981; Zarins and Zaharani 1985).

At present, there is only indirect (and questionable) evidence of possible contacts between Egypt and southern Arabia, which dates to the New Kingdom. This evidence includes a record of the *Gebentiw* in Thutmose III's list of foreign peoples at Karnak. The *Gebentiw* have been identified with the ancient inhabitants of Qataban in the Yemeni highlands that had a significant role in South Arabian trade in the late 1st millennium BC and early 1st millennium AD. Possibly earlier inhabitants of Qataban were included in the Egyptian commercial network in the mid-2nd millennium BC (Saleh 1972), but this interpretation is highly questionable and it cannot be excluded that they were living along the African side of the southern Red Sea (Cooper 2015: 72–74).

Also from the (late) New Kingdom is an inscription of Ramesses III near the oasis of Tayma in northern Saudi Arabia (Somaglino and Tallet 2011). This inscription only indicates that the traditional trade route from southern Arabia to the Mediterranean along the western Arabian peninsula was already used in the 12th century BC (Somaglino and Tallet 2011: 366–367).

5 Punt and Bia-Punt, and the Evidence from Mersa/Wadi Gawasis: Inscriptions

Textual evidence from Mersa/Wadi Gawasis has produced relevant information for reconstructing the sea trade to Punt and Bia-Punt in the Middle Kingdom, and assessing the different hypotheses scholars have suggested about the location of Punt. This evidence includes inscriptions on several stelae from Mersa/Wadi Gawasis, as well as two stelae from the Wadi Gasus, indicating that the destinations of these expeditions were Bia-Punt and Punt (Pirelli 2007b).

Texts on the two Wadi Gasus stelae (Porter and Moss 1951: 338–339) record the "God's Land" (most likely corresponding to Punt) and Bia-Punt (Sayed 1977, 1999). Inscribed stelae found by Sayed at Mersa/Wadi Gawasis include those of Ankhu and Intef-iker (Antefoker). On the western jamb of the Ankhu monument is an inscription about sailing to Bia-Punt and the tribute of "God's Land" (Sayed 1977: 162–163). On the stela of Intef-iker, the vizier was ordered by the

king to build ships at the dockyards of Qift/Coptos and to travel/or send them to the "Mine of Punt" (Sayed 1977: 169–170). Sayed (1977: 150) also found a stela fragment that contained the word "Bia-Punt" ("Mine of Punt").

Two more stelae from Wadi Gawasis, found by the UNO/IsIAO and BU expedition, record toponyms. Stela 5 records a seafaring expedition, which probably split up, with one group going to Bia-Punt and another to Punt, suggesting that these were distinct destinations, at least in the late 12th Dynasty (Pirelli 2007a, 2007b). Stela 29 records the director of an expedition, Henenu, leading the expedition to Biaw-Punt (Mahfouz 2010: 28–30).

Sayed also found one ostracon (Doc. 8/O. WG 40) at Mersa/Wadi Gawasis with a partially preserved hieratic text that mentions the name "Punt" (Mahfouz 2008: 273–274, Pl. 41; Sayed 1983: 25–26).

Inscriptions, used as a kind of package label on two cargo boxes abandoned outside the entrances to Caves 5 and 6, of an expedition during the reign of Amenemhat IV, record the "wonderful things of Punt," suggesting that the contents of these boxes were obtained by this expedition in Punt (Mahfouz 2007a; Mahfouz and Pirelli 2007: 47–48).

Bia-Punt (or Bia-n-Punt) is recorded only in the biography of Harkhuf (6th Dynasty), where it is associated with Punt (Sethe 1932–1933: I, 128 [17]-129 [1], 130 [14–15]), and on the stelae from Mersa/Wadi Gawasis, suggesting that in the late Old Kingdom and Middle Kingdom this was either a district of Punt or a region on the way to Punt (Balanda 2005–2006; Diego Espinel 2011: 273–274; Sayed 1977: 176–177). The inscription of Ankhu from Mersa/Wadi Gawasis (Sayed 1977: 150–169) records that in the early 12th Dynasty expeditions to Bia-Punt were leaving the harbor in May, and thus were conducted in a different season from those to Punt, which according to the inscription of Henu in the Wadi Hammamat (Couyat and Montet 1912–1913: no. 114, 81–84 and Pl. 31), were leaving in September (Bradbury 1988: 138–141; see also Manzo 2012a).

The Stele 5 text from Mersa/Wadi Gawasis, however, suggests that at least at the time of Amenemhat III the expedition to Bia-Punt was organized in association with the one to Punt, and thus both expeditions began at the same season. There is no year date on this stela, however, and the text might also be interpreted as two distinct expeditions under the supervision of the same officer (Pirelli 2007b: 98).

6 Punt and the Evidence from Mersa/Wadi Gawasis: Paleoethnobotanical Remains and Lithics

Exotic raw materials and artifacts, which probably were imported from Punt/Bia-Punt, also have been excavated at Mersa/Wadi Gawasis. The

paleoethnobotanical evidence demonstrates that these expeditions were navigating as far south as Eritrea and perhaps Yemen, and suggests that communities settled along the Red Sea coast on both sides, and the immediate hinterland regions, were in some way involved with Egyptian maritime trade in the 2nd millennium BC. The occurrence of charcoal of red mangrove wood (*Rhizophora*/*Bruguiera* genus) in assemblages at the harbor site dating to the late 12th Dynasty may indicate that seafaring expeditions reached the coast of eastern Sudan and/or Eritrea. Today, the red mangrove (*Rhizophora mucronata*) grows along the entire coast of Sudan to the south of the border with Egypt, while the species *Bruguiera gymnorrhiza* occurs along the entire coast of eastern Africa (Borojevic and Gerisch 2008: 70). It is possible, however, that these species also were growing closer to the site when the harbor was used in antiquity.

Several fragments of carbonized ebony wood (*Diospyros* sp.) have been excavated in deposits in front of the gallery-caves at Wadi Gawasis (Borojevic and Gerisch 2008: 71; Gerisch 2007: 183–184, 2010: 56–57). Ebony was certainly part of the cargo of the ships returning to the harbor site as this hard wood had been imported to Egypt since the 1st Dynasty and was recorded among the products from Punt (Lucas 1989: 434–436; Manzo 1999: 8). African ebony (*Diospyros* sp.) could be obtained from the northwestern slopes of the highlands in Eritrea (Fattovich 1991c: Fig. 1; Manzo 1999: Pl. 11), which supports the hypothesis that Egyptian ships from *Saww* reached the coast of the northern Horn of Africa. The discovery of four rod-like pieces of ebony at Mersa/Wadi Gawasis suggests that the wood was cut in this shape in Punt in order to be more easily transported to Egypt (Gerisch 2010: 56).

Several obsidian tools found at Mersa/Wadi Gawasis suggest that this stone, too, was part of the cargo that was transferred to the Nile Valley from the harbor site. These artifacts include one scraper, one blade and four flakes of obsidian (Lucarini 2007a: 208, 2008: 53–61). Obsidian from Eritrea and/or Yemen had been imported to Egypt since Predynastic times (Aston, Harrell and Shaw 2000: 46–47; Giménez 2015; Giménez, Sanchez and Solano 2015; Lucas 1989: 415–416; Zarins 1989).

The exact source of the obsidian brought to Egypt is uncertain, however, because the mineral composition of obsidian in Eritrea and/or the Rift Valley in Ethiopia and in Yemen is similar and cannot be easily distinguished from each other (Giménez 2015). A preliminary analysis of the samples from the harbor site by Lucarini and Barca suggests a Yemeni origin for four samples and an Eritrean/Ethiopian origin for the fifth one (Giulio Lucarini and Donatella Barca personal communication: January 2016).

7 Punt and the Evidence from Mersa/Wadi Gawasis: Exotic Ceramics

Non-Egyptian exotic ceramics excavated at Mersa/Wadi Gawas also demonstrate the wide-ranging contacts of the seafaring expeditions. These include ones from: (1) Nubia and/or the Eastern Desert, (2) the northern Horn of Africa, and (3) coastal regions of Yemen (Manzo 2007a, 2010c, 2010d, 2012a, 2012b), which provide evidence for the location of Punt.

Potsherds in a Nubian style are the majority of the exotic ceramics at Mersa/Wadi Gawasis (Manzo 2012b, 2012c). These sherds are similar in style to the ceramics of the Kerma culture in the upper Nile Valley and the ceramics of the Pan-Grave culture in the lower Nile Valley and Eastern Desert. Two body sherds can be ascribed to Middle and Classic Kerma bottles or flasks, with a grey polished external surface and grey smoothed internal surface. Most of these fragments also occur in Gash Group and Jebel Mokram assemblages in the Sudanese-Eritrean lowlands (Manzo 2012b, 2012c).

Particularly significant are several potsherds from Mersa/Wadi Gawasis that are comparable to a variant of Kerma pottery, which has been recorded in cemeteries and sites to the east of the Fourth Cataract in Sudan. These sherds include: (1) five rim sherds of closed bowls decorated with horizontal, incised lines on the body and sometimes small impressed notches on the top of the rim; (2) three body sherds of bowls decorated with incised lozenges or triangular sectors filled with parallel oblique incisions often crossing other parallel oblique incisions, which also are similar to Pan-Grave vessels; (3) 16 sherds of open or slightly closed bowls with oblique incised or crossing bands of incised lines on the upper part of the body; (4) two sherds of vessels with an incised herringbone pattern on the external surface; (5) a body sherd decorated with a criss-cross motif framed with two wavy bands of triangular impressions; (6) a rim sherd of a bowl or cup decorated with irregular, horizontal, vertical, and oblique bands of parallel incisions delimiting undecorated sectors on the external surface and notches on the top of the lip; and (7) a rim sherd of a bowl or cup with a triangular lip, decorated with four vertical, incised lines crossing two horizontal or slightly oblique parallel lines (Figure 44) (Manzo 2012a, 2012b, 2012c).

Finally, several potsherds from Mersa/Wadi Gawasis are comparable to vessels from opposite sides of the southern Red Sea, and can be ascribed to Gash Group ware in the Sudanese-Eritrean lowlands, Ancient Ona ware in the Eritrean highlands and early Adulis ware in the coastal region of Eritrea, as well as Sabir ware in the coastal regions of the southwestern Arabian peninsula as far as Aden in southern Yemen. Most of these sherds are from open vessels

FIGURE 44 Potsherds of Kerma variant pottery at Mersa/Wadi Gawasis.

for domestic use and might have been the personal property of Puntites(?) who joined the crews of Egyptian ships (Manzo 2007a: 126–134, 2007b: 29–30, 2008: 51, 2010a: 26, 2010b, 2010c, 2010d, 2012b).

Potsherds found at Mersa/Wadi Gawasis from the northern Horn of Africa include: (1) a body sherd decorated on the outside with parallel deep incisions covered with combed impressions, similar to the Gash Group basket ware dating to the early to mid-2nd millennium BC and specimens from Agordat in the Barka valley; (2) three sherds of bag-shaped elongated bottles or jars similar to specimens of the Ancient Ona culture; (3) a body sherd decorated with a band of combed lines comparable to specimens from the lower strata at Adulis and in sites dating to the first half of the 2nd millennium BC in the region of Djibouti (Figure 45) (Manzo 2010d, 2012b).

Fourteen potsherds excavated at Mersa/Wadi Gawasis are comparable to specimens from Yemen. They include: (1) a sherd of a jar decorated with two molded parallel horizontal lines and five vertical parallel lines under them, similar to specimens ascribable to first phase of the Sabir culture (Ma'layba Phase, ca. 2000–1500 BC) from the site of Ma'layba, located to the northwest of Aden; (2) a fragment of a jar decorated with two vertical parallel ledges, similar to jars from the site of Ma'layba, dating to the Ma'layba Phase of the Sabir culture; (3) two rim sherds of small open dishes similar to bowls or dishes ascribable to the Ma'layba Phase of the Sabir culture from the site of Ma'layba, although the paste and surface treatment of the samples from Mersa/Wadi Gawasis seem different to the Yemeni specimens; (4) five sherds of closed bowls similar to specimens from the coast of northern Yemen, where they are

FIGURE 45 Potsherds of the Gash (a), Ancient Ona (b), and Adulis (c) at Mersa/Wadi Gawasis.

dated to the late 3rd and 2nd millennia BC; (5) a rim sherd and a body sherd of a closed bowl with a handle decorated on the top with three lines of small impressed circles, similar to vessels of Sabir ware dated to the 2nd millennium BC from the Aden region; (6) a rim sherd decorated on the outside with horizontal burnished lines under the rim and parallel burnished oblique lines on the body, similar to specimens from Sabir in the Aden region, where they are dated to the second half of the 2nd and early 1st millennia BC; and (7) three sherds decorated with burnished lines, similar to specimens from the Yemeni coast, but unfortunately too small to be ascribed to specific types (Figure 46) (Manzo 2007d, 2010c, 2010d).

Sherds of Gash Group ware, Ancient Ona ware, early Adulis ware and Ma'layba Phase/Sabir ware were found in assemblages at Mersa/Wadi Gawasis dating to the late 12th Dynasty. Five Sabir ware sherds were found in an assemblage dating to the early New Kingdom: these sherds are particularly intriguing as they possibly suggest that the harbor was used at least once for a seafaring expedition to Punt in the early New Kingdom (Bard and Fattovich 2007: 130, Fig. 54b).

Although the sherds in a Pan-Grave style suggest the presence of *Medjaw* and/or local nomads at the harbor, the other exotic ceramics demonstrate that Egyptians in the Middle Kingdom were navigating as far as the coastal regions of the southern Red Sea, and they provide further information about the possible location of Bia-Punt and Punt.

FIGURE 46 Potsherds at Mersa/Wadi Gawasis similar to ones from Yemen.

8 Location of Bia-Punt and Punt: Ceramic Evidence at Mersa/Wadi Gawasis

The occurrence at Mersa/Wadi Gawasis of potsherds ascribable to the ceramics from the region of the Fourth Cataract might suggest a location of Bia-Punt ("mine of Punt") in the gold-bearing region of Oshib, to the east of this cataract (see also Manzo 2012b), where ancient gold mines have been recorded (Castiglioni, Castiglioni and Bonnet 2010; Emberling and Williams 2010). Such a location also might be indirectly supported by the evidence of ancient gold mines along the Khor Nubt ("gold" in ancient Egyptian), about 150 km to the

west of Port Sudan (Oman, Grassi and Trombetta 1998; de Rachewiltz 1968; Sandars and Owen 1952).

Similar vessels to those of the Fourth Cataract, however, occur in assemblages of the Gash Group and Jebel Mokram Group (see Fattovich 1991a), suggesting that they were widely diffused, from Upper Nubia and the Eastern Desert to the slopes of the highlands in Eritrea and Ethiopia. This pottery also may have arrived at Mersa/Wadi Gawasis via the Egyptian seafaring expeditions, and possibly is evidence of contact with peoples with these ceramics in the Sudanese-Eritrean lowlands (Manzo 2012b). A southern location of Bia-Punt might be supported by the discovery of Gash Group ceramics and ancient grindstones probably used for working gold close to ancient gold mines at Bisha along the Barka valley in the western lowlands of Eritrea (Yemane *et al.* 2008).

The overlap of the areas of distribution of ebony and gold sources in the western lowlands and northern highlands of Eritrea (Fattovich 1991c: Fig. 1; Manzo 1999: 8–9, Pl. 11–12), together with the occurrence of potsherds at Mersa/Wadi Gawasis from the same region (Ancient Ona ware; Gash Group ware), also might suggest that Bia-Punt included both gold-bearing regions in present-day northern Eritrea and eastern Sudan.

Potsherds of the Gash Group, Ancient Ona and early Adulis ware excavated at Mersa/Wadi Gawasis are consistent with the archaeological evidence from the northern Horn of Africa, described above, and support a location of Punt in this region, suggesting that Egyptian ships were navigating at least as far south as Adulis.

The occurrence of Sabir ware at Mersa/Wadi Gawasis suggests that the Egyptians were navigating along the coast of Yemen, where sites of the Sabir culture have been recorded (Vogt and Buffa 2005), and thus Punt could have included the southwestern part of the Arabian peninsula. The possibility that myrrh and frankincense were transported from southern Arabia to the African side of the southern Red Sea, where they could be traded for Egyptian goods, cannot be excluded, however. Archaeological evidence, though scarce (see Durrani 2005), suggests that groups living in the northern Horn of Africa and southern Arabia were not completely isolated from each other, and an interaction network between them emerged in the 5th–3rd millennia BC, and consolidated in the 2nd to mid-1st millennia BC (Buffa 2007: 261–271; Fattovich 1996b, 2012b; Khalidi 2007, 2009; Manzo 1999: 48–55; Vogt and Buffa 2005; Zarins 1989, 1990). This interaction network probably was established as a consequence of the obsidian trade from the Horn of Africa and southern Arabia in the 5th millennium BC (Khalidi 2007, 2009; Zarins 1989, 1990, 1996).

Evidence of contacts with southern Arabia in the 3rd–2nd millennia BC has been recorded at Mahal Teglinos in the Gash Delta, about 400 km to the southwest of the Red Sea coast. This evidence includes two potsherds similar to specimens of the Khawlan culture in Yemen (3rd–2nd millennia BC) and several fragments of shallow bowls comparable to specimens of the Ma'layba Phase of the Sabir culture in Yemen (ca. 2000–1300 BC) (Fattovich 2012b).

In southern Arabia evidence of contacts with African regions on the opposite side of the Red Sea include: (1) African obsidian from several coastal sites of Yemen dating to the 3rd–2nd millennia BC; (2) black bowls and pots with a rounded base and geometrical decoration (mainly triangles along the rim and vertical lines on the body) that are similar to specimens from the deepest strata at Adulis in Eritrea, found at the site of Sihi on the southern coast of Saudi Arabia; (3) C-Group and/or Kerma ware in Nubia and/or Eastern Sudan, found at Sihi (Zarins and Zaharani 1985: 85); (4) a clay stamp seal similar to those from Gash Group assemblages in the Gash Delta, found at Sabir (Sachko-Autissier 2002); (5) a clay "bull's head" similar to specimens of the Ancient Ona culture, found at Sabir; (6) several sherds with geometric motifs comparable to specimens of the Jebel Mokram Group, found at Sabir; and (7) a sherd of a jar similar to those of the Ancient Ona culture, found at Ma'layba (Fattovich 2012b; Manzo 2012b; Vogt and Buffa 2015). Moreover, very schematic rock-drawings similar to typical decorative motifs on the earliest ceramics at Adulis (2nd millennium BC) have been recorded at al-Mastūr in the coastal region of Yemen (Keall 2005: 346–347, Fig. 21; Paribeni 1908: Pl. V).

This evidence in the southern Arabian peninsula possibly suggests that in the mid-3rd to early 2nd millennia BC maritime trade of obsidian was conducted from the African coast to the Yemeni one (cf. Khalidi 2007, 2009; Zarins 1989, 1990), which possibly explains the occurrence of a few Khawlan potsherds in Gash Group assemblages at Mahal Teglinos. The original Khawlan pots may have arrived to the Gash Delta through a chain of exchanges from the Red Sea coast to the western Sudanese-Eritrean lowlands, either across the highlands in northern Ethiopia/Tigray or directly from the coast in eastern Sudan. The development of a highland route to the Gash Delta can be suggested by the occurrence of ceramics similar to those of the Gash Group at Quiha, near Mekele in Tigray, which is still a terminal of the route for salt trade from the Danakil coast in Eritrea to the Tigrean highlands (Barnett 1999: 137). A more direct route from coastal Sudan to the Gash Delta can be suggested by the occurrence of funerary stelae similar to those of the Gash Group at Aqiq on the Red Sea coast of Sudan (Fattovich 2007), where obsidian tools also were recorded (Conti Rossini 1928: 75). Possibly both routes were in use in different periods.

The occurrence of Ma'layba Phase/Sabir ware potsherds together with obsidian tools in assemblages of the Gash Group at Mahal Teglinos, as well as possibly Jebel Mokram Group potsherds at Sabir, suggest that in the mid-2nd millennium BC pastoral groups living in the Sudanese-Eritrean lowlands were included in an interaction network with those of the Yemeni coast. These contacts may have occurred on the coast of eastern Sudan because personal ornaments made with cowrie shells have been found in burials of the Gash Group at Mahal Teglinos, suggesting that products from the Red Sea were circulating in the lowlands in the early-2nd millennium BC. Aqiq may have been a gateway to the lowlands because, until recently, this bay was the traditional terminal for transhumance herders moving from the Gash Delta to the coastal plains, as told to Rodolfo Fattovich by local informants in 1985.

The occurrence of a black ware with similar decorative motifs at Adulis and Sihi on the southern coast of Saudi Arabia possibly indicates that in the early to mid-2nd millennium BC Adulis also emerged as a gateway to and from the Eritrean highlands. Finally, in the mid- to late 2nd millennium BC people of the highlands around Asmara may have been intermediaries between the coast and the western lowlands, as potsherds like those of the Ancient Ona culture have been found at Adulis and at sites near Agordat in the Barka valley (Brandt, Manzo and Perlingieri 2008; Manzo 2010d).

On the whole, the evidence from Mersa/Wadi Gawasis is consistent with the picture of Punt, as can be inferred from Egyptian textual and representational evidence, and archaeological evidence and raw materials from the southern Red Sea region, even if this evidence does not completely resolve some of the ambiguities about the location of Punt. This evidence suggests that:

(1) The ancient Egyptians were navigating along the Red Sea as far south as Adulis in Eritrea or maybe Djibouti.
(2) Bia-Punt (or Bia-n-Punt, Biaw-Punt) corresponds to the gold-bearing regions of the Eastern Desert in the hinterland of Port Sudan and/or the Barka and Anseba valleys and northern highlands in Eritrea.
(3) Punt corresponds to the coastal plains (and immediate hinterland) of Eritrea, from Aqiq to Adulis, where Egyptian ships could meet both the nomads from the African hinterland and traders from the opposite side of the Red Sea in Yemen.

CHAPTER 8

Long-Distance Routes Involved in the Punt Expeditions

1 Routes from Egypt to Punt/Bia-Punt

Punt could be reached from Egypt by land and/or sea (Bradbury 1988; Diego Espinel 2003, 2011: 126–131; Kitchen 1971, 1993, 2004; Manzo 1999: 9–13). The products of Punt were usually imported through intermediaries along land routes (Manzo 1999: 36–39; Saleh 1973), which probably correspond to the traditional caravan routes from Egypt to the African interior along the Nile Valley and adjacent deserts (see Amin 1970; Manzo 1999: 9–13). The general direction of these routes can probably be inferred from the sequence of southern districts in Thutmose III's list of toponyms at Karnak (see Breyer 2016: 643–645; Zyhlarz 1958).

A fluvial route to Punt along the Nile also has been suggested (Bradbury 1996; Desroches-Noblecourt 2002: 191–208; Herzog 1968: 55–83; Vandersleyen 1991, 1996), but evidence for this hypothesis is problematic. Although some parts of the river may have been used to transport commodities by boat, navigation along the Nile to the south of the Second Cataract was difficult for large ships up to the early 20th century (Hurst 1957: 73–78).

Textual and representational evidence records seafaring expeditions during the reigns of Sahura (ca. 2487–2475 BC) in the 5th Dynasty; Pepi II (ca. 2278–2184 BC) in the 6th Dynasty; Mentuhotep III (ca. 2004–1992 BC) in the 11th Dynasty; Senusret I (ca. 1956–1911 BC), Amenemhat II (ca. 191–1877 BC), Senusret II (ca. 1877–1870 BC), Senusret III (ca. 1870–1831 BC), Amenemhat III (ca. 1831–1786 BC), and Amenemhat IV (ca. 1786–1777 BC) in the 12th Dynasty; Hatshepsut (ca. 1473–1458 BC) in the early 18th Dynasty; and Ramesses III (ca. 1184–1153 BC) in the 20th Dynasty (Diego Espinel 2011: 188, 198–199, 255–273, 341–358; Bard and Fattovich 2011: 119–120). Most likely, these expeditions were organized to gain direct access to the sources of the products of Punt in order to bypass intermediaries along the land routes. Direct access to these products by sea was also desirable during times of conflict when land routes to the south of Egypt could be impeded (see Bard and Fattovich 2010c: 11, 2013: 10, 2015: 6; Fattovich 2012a: 14; Manzo 1999: 37–39).

Certainly in the Middle Kingdom Egyptian seafaring expeditions were aimed at bypassing the Nubian polity of Kush, with its capital city at Kerma

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(Bonnet 1990; Bonnet and Valbelle 2014). In the late 3rd and early 2nd millennia BC, when Kerma was at the peak of power (D. Edwards 2004: 90–97), Kush progressively dominated the Upper Nile and controlled the land routes to the northern Horn of Africa across the Gash Delta, as can be inferred from the evidence of exotic ceramics in assemblages of the Gash Group at Mahal Teglinos (Kassala) (Fattovich 1991a: 45; Manzo 1997, 2018b). These materials include: (1) sherds of Egyptian Old Kingdom ware, C-Group ware from Lower Nubia, Early Kerma ware from Upper Nubia, and Khawlan ware from Yemen, with a majority of C-Group and Kerma potsherds, in assemblages of the Early Gash Group (ca. 2700–2300 BC); (2) Kerma ware and a few Egyptian potsherds, in assemblages of the Middle Gash Group (ca. 2300–2000 BC); (3) Kerma ware and Egyptian Middle Kingdom potsherds, in assemblages of the Classic Gash Group (ca. 2000–1900 BC); and (4) a majority of Kerma potsherds, as well as sherds of Pan-Grave ware from the Eastern Desert, several sherds from Middle Kingdom Egypt, and sherds of the Sabir culture in Yemen, in assemblages of the Late Gash Group (ca. 1900–1800 BC) (Manzo 1997, 2018b).

The occurrence of Egyptian Middle Kingdom potsherds, including ones from domestic vessels, and possibly an Egyptian stela, in Middle and Late Gash Group assemblages at Mahal Teglinos (Manzo 2014a: 168–173, 2014b: 378–379, 2017: 35–38) does not contradict this interpretation, as this evidence might be ascribed to Egyptians arriving to the Gash Delta from the Red Sea coast.

Although the precise number of seafaring expeditions in the Red Sea during the Middle Kingdom is uncertain, the textual and archaeological evidence from Mersa/Wadi Gawasis suggests that these expeditions ranged in number from 12 to 20, with an average interval of 20–30 years between each one. Textual evidence points to at least 12 expeditions in the 12th Dynasty (see Chapter 4). Five more expeditions might have been organized as well, if we take into account the stelae of Ankhu and Intef-iker recording the name of Senusret I (Sayed 1977: 157–163), and two stelae and one ostracon with the name of Amenemhat III, but without the destination toponym and year date (Mahfouz 2007b: 225–227, 2007c; Pirelli 2007a, 2007b: 88–99). Two monumental stelae originally placed in two large niches above the entrance to Cave 4 may have recorded two more expeditions, but unfortunately the surface of the known one (in granite) was completely eroded and if there was a second one, it was not found (Fattovich and Bard 2007: 14–15).

The number of shrines/monuments at the harbor possibly suggests that 16 expeditions were sent to Punt and/or Bia-Punt from Mersa/Wadi Gawasis, if we assume that each structure was built as a commemorative memorial at the departure or return of an expedition. It is possible, however, that the platform structure (Feature 1) and the roughly circular enclosure (Feature 4) at Mersa

Gawasis were used by several expeditions. Two monuments at Wadi Gawasis (in WG 8, and WG 3/6) and one monument at Mersa Gawasis (Feature 7) show evidence of different phases of construction, suggesting that originally they were built for one expedition and later were restored or reconstructed to commemorate either the return of the expedition or another expedition (Bard and Fattovich 2007a: 45–49; Fattovich, Manzo and Zazzaro 2009). The mound with the inscription of Intef-iker (in WG 3/6) and the Ankhu monument may record either two separate expeditions or one expedition (in which both officials participated) during the reign of Senusret I (Sayed 1977: 173).

The evidence from Mersa/Wadi Gawasis demonstrates that seafaring expeditions in the Red Sea were complex enterprises, embedded in the political economy of the Middle Kingdom state. These expeditions were probably associated with the exploitation of mineral resources in the Eastern Desert. The inscription of Henu in the Wadi Hammamat, dating to the reign of Mentuhotep III in the late 11th Dynasty, and the inscription of Intef-iker at Wadi Gawasis, dating to the reign of Senusret I in the early 12th Dynasty, record 3,000 and 3,200 workers, respectively (Breyer 2016: 599–602, 615–617; Diego Espinel 2011: 251, 261–262). Some of these workers may have been employed in mining activities in the desert, at least in the early Middle Kingdom (Bradbury 1988: 127; Sayed 2003: 436–437), as no evidence of large camps for so many people has been found at the harbor site.

The evidence from Mersa/Wadi Gawasis also demonstrates that the organization of seafaring expeditions in the Red Sea required the acquisition of cedar and other timber for building the ships, construction of the ships in the Nile Valley, transportation of the dismantled ships and all supplies from the valley to the Red Sea coast across the Eastern Desert, preparation of the ships at the harbor, navigation to the southern Red Sea (about 750 nautical miles or more from the coast of Egypt), transactions at the destination in the southern Red Sea region, and then the return voyage to the harbor and the overland trek back to the Nile Valley (see Chapters 5 and 7). Thus, the implementation of these expeditions depended on the development and consolidation of a wide web of long-distance routes, both by land and sea, stretching from the Levant, where cedar, pine and oak used in the construction of the ships could be obtained, to the hinterland of eastern Sudan, the northern Horn of Africa, and possibly southern Arabia, where the sources of imported products were located.

The seafaring expeditions in the Red Sea also required the employment of experienced sailors for manoeuvring the ships and captains and/or officers with detailed information about the location of their destination and dangerous coral reefs along the way, the regime of winds and currents, and the occurrence of potential anchorages and fresh water sources along the coast. In any

case, the north to south orientation of the Red Sea and the similarity of the regime of winds to that of the Nile would have provided the sailors with some background for navigating in this sea (see e.g., Cooper 2014: 125–142).

Most likely, the crew consisted of ordinary sailors, a pilot or bow-man, a helmsman and several "directors of a ship's contingent of rowers" (Jones 1995: 70–71), some of whom could have been recruited from the sailors who were regularly navigating in the eastern Mediterranean. The evidence of potsherds of domestic vessels from the southern Red Sea, along with sherds and lithic tools of an unknown (coastal?) culture, at Mersa/Wadi Gawasis might point to the presence of foreign pilots and/or sailors, who could be recruited on both sides of the southern Red Sea. These individuals could provide the Egyptian crew with information for identifying landmarks along the coast and channels cutting through the reefs to get to anchorages (Bard and Fattovich 2007a: 131, Fig. 54g, 211). Archaeological evidence from the northern Horn of Africa and southern Arabia demonstrates that the coastal communities were capable of navigating across the southern Red Sea in the 3rd–2nd millennia BC (see Chapter 7). In particular, the occurrence of obsidian microlithic tools on Dahlak Kebir Island confirms that Africans were sailing in the Red Sea since late prehistoric times (see Blanc 1955).

The Middle Kingdom sailors certainly must have relied on information about navigation in the Red Sea from earlier seafaring expeditions. This information must have been recorded and kept in archives somewhere, possibly in the form of sketch maps, such as the (much later) one of gold mines in the Eastern Desert, now in the Egyptian Museum, Turin (Harrel and Brown 1992), especially since the seafaring expeditions to Punt were always exceptional enterprises, with intervals of decades, which would have prevented direct transmission of information about sea routes from one crew to another through time.

More and more detailed information about the land and sea routes to Punt probably accumulated since the late 5th millennium BC, when an exchange network between the Nile Valley in Upper Egypt and northern Horn of Africa emerged and Egyptians began frequenting the Red Sea coast. The earliest evidence of these activities consists of ebony and personal ornaments made with shells from the Red Sea and tortoise shells found in Badarian graves in Middle Egypt (ca. 4400–4000 BC) (Krzyzaniak 1977: 76–77), as well as a burial located along the Wadi Allat to the north of Wadi Hammamat and another at Wadi Samadi near Marsa Alam on the coast (Friedman and Hobbs 1995; Resch 1963; Murray and Derry 1923).

Beginning in the early 4th millennium BC, obsidian from regions in the southern Red Sea were imported into Egypt, as can be inferred from the

occurrence of this stone in Naqada I (ca. 4000–3500 BC) and Naqada II graves (ca. 3500–3200 BC) (Zarins 1989, 1990, 1996).

According to Zarins (1989), the representation of Naqada II and/or "Mesopotamian" oared boats along the Wadi Hammamat (see Winkler 1938, I: 24–28, Pl. XXXIII–XLI) might be associated with Egyptian Red Sea maritime trade in the mid-4th millennium BC, but this hypothesis is speculative as evidence of Egyptian seafaring ventures at this time is scarce, consisting of the discovery of Naqada II ceramics off the coasts of Israel and the southern Levant (E. Marcus 2002a: 407, 2007: 137, n. 1). Evidence of frequenting the Red Sea coast at this time is scarce, consisting of a few Naqada II potsherds from a site close to Quseir (Prickett 1979: 290–291).

The representation of conch shells carved on the legs of two colossal statues of Min from Coptos, dated to the late 4th–early 3rd millennia BC (see Kemp 2006a: 129, Fig. 45), suggests some marine connection for this god and possibly some maritime activity along the Red Sea in Early Dynastic times. The occurrence of sea shells from the Red Sea and obsidian and ebony from the northern Horn of Africa in royal tombs of the 1st and 2nd Dynasties, possibly suggests that maritime activity was as far south in the Red Sea as Punt (Lucas and Harris 1989: 434–436; Wilkinson 1999: 170; Zarins 1989).

Finally, in the Old Kingdom (ca. 2686–2125 BC) the Egyptians surely had enough sailing experience to routinely cross the Gulf of Suez, bringing copper and turquoise from the Sinai to the Egyptian coast (Tallet 2016), and to send the first (officially recorded) seafaring expedition to Punt (Diego Espinel 2011: 188–189), which provided the background to maritime trade in the Red Sea in the Middle Kingdom.

2 The Levant and Maritime Trade with Punt

The use of cedar for building the Red Sea ships entangled these seafaring expeditions with Egyptian commercial and military expansion in southwestern Asia (see Redford 1992), even if part of the timber was recycled from other boats (Ward 2000: 139–141), as can be inferred from the evidence of carefully dismantling the timbers and removing damaged parts at Mersa/Wadi Gawasis (Ward 2007: 145; Ward and Zazzaro 2016: 24–25). Cedar trees were felled in Lebanon at 1,000–1,600 m ASL (Gale, Gasson and Herper 2000: 349–350) and transported overland to Byblos, where trade was conducted with the Egyptians through the agency of the local ruler/prince. From there the cedar was transported in Egyptian ships to the Nile Delta (see E. Marcus 2002b, 2007).

The great quantity of cedar in royal tombs of the Early Dynastic period, and the record of "ship-building" in the annals of the Palermo Stone for the reign of Khasekhemwy at the end of the 2nd Dynasty (ca. 2700 BC) (Redford 1992: 37), suggest that beginning in early 3rd millennium BC cedar was imported to Egypt by means of large seafaring ships called *kbnt* (sometimes translated as "Byblos" ships). Although evidence of Egyptian seafaring expeditions to the Levant during the Middle Kingdom is scarce, an inscription of Amenemhat II (ca. 1911–1877 BC) at Mit Rahina (Memphis), and archaeological evidence from Egypt and Lebanon, demonstrate that the Egyptians conducted maritime activities in the eastern Mediterranean in the first half of the 2nd millennium BC – and cedar was the main imported product (E. Marcus 2007: 137–138).

The inscription of Amenemhat II at Mit Rahina provides evidence that the quantity of imported cedar from Lebanon by one seafaring expedition could easily satisfy the request of timber for a flotilla of two to five Red Sea ships. This inscription records the import of 231 trunks and planks of cedar, which could provide timber for building several ships of the size of the preserved Khufu ship at Giza, 42.3 m × 5.66 m × 1.88 m in size (E. Marcus 2007: 174, Table 4; Ward 2000: 45–47).

From the Lebanese coast, Egyptian seafaring ships would have transported the cedar to somewhere in the Nile Delta – possibly the harbor at Tell Ibrahim Abu Awad (Manfred Bietak personal communication: October 2016), or the harbor at Tell el-Dab'a, where there was a state-planned Middle Kingdom town (Herbich and Forster Müller 2013: 263–264). From the Delta the timbers would have been taken upriver by smaller, riverine boats to Qift in Upper Egypt, where the shipbuilding docks were located, although no evidence of these facilities has been recorded (see Herbert 1999).

Experienced Levantine sailors from Canaan and possibly others from Crete may have been recruited for Egyptian expeditions in the eastern Mediterranean – and some of them also may have been employed in the seafaring expeditions to the southern Red Sea, as suggested by the finds of Canaanite and Minoan ceramics at Mersa/Wadi Gawasis.

3 Land Routes from the Nile Valley to the Red Sea Coast

The land routes across the Eastern Desert from the Nile Valley to Mersa/Wadi Gawasis are still uncertain in the absence of detailed archaeological exploration of the region between the Wadi Hammamat and Wadi Safaga to the east

of the Qena Bend in the Nile (see also Breyer 2016: 347–357). The record of donkeys in the inscription of Henu and the finds of several donkey mandibles in the harbor area at Mersa/Wadi Gawasis indicate that these animals were used for carrying supplies from the valley to the coast (Bard and Fattovich 2010a: 9; Breyer 2016: 599–602; Diego Espinel 2011: 251).

At present, only the inscriptions of Henu along the Wadi Hammamat and Intef-iker at Wadi Gawasis provide some information about the route to the Red Sea coast in the early Middle Kingdom (Breyer 2016: 599–602; Diego Espinel 2011: 250–255). Both inscriptions state that the expeditions were departing from Qift (Coptos) in the Qena Bend. The inscription of Henu records the opening of a route from Qift to the coast across an unidentified region, and the return from the coast to the Nile Valley along a route crossing a region called "*Wag*," which has not yet been identified, and then the Wadi Hammamat, and thus points to the use of two routes to cross the desert (Bradbury 1988: 131–133). The find of two Middle Kingdom stelae along the Wadi Gasus about 7 km to the west of Mersa/Wadi Gawasis may indicate that this wadi was the final track of the route from the desert to the sea (Sayed 1977: 140–141).

Most likely, the routes to the harbor corresponded at least in part to those used to get to the gold mines and stone quarries in the Eastern Desert (Bard, Fattovich and Manzo 2013: 549). This hypothesis is supported by the evidence of exploitation of gold mines in the region between the Wadi Hammamat and Wadi Safaga during the Middle Kingdom (see Klemm and Klemm 2013: 6–8, 68–146; Klemm, Klemm and Murr 2002: 223, Fig. 2). It is also possible that prospectors searching for mineral deposits in the Eastern Desert discovered the bay in Predynastic times, as deposits of galenite, amethyst, lead and copper, materials used in the Nile Valley in the 4th millennium BC (Aston, James and Shaw 2000: 50–52; Ogden 2000: 149–161, 168–169; Shaw 2002: 244), occur within a 10 km radius of Mersa/Wadi Gawasis, and a gold mine at Semna, which was exploited since Early Dynastic times (Klemm, Klemm and Murr 2002: 216, Fig. 1), is located 40 km to the southwest of the harbor (Bard, Fattovich and Manzo 2013: Fig. 13). A small rectangular palette in green siltstone, similar to Naqada III types, was found on the surface of the southern coral terrace at Mersa Gawasis, and is possible evidence that Egyptians were there in late Predynastic or Early Dynastic times (Bard and Fattovich 2007: 210).

The location of fresh water was certainly the main constraint of expedition leaders in their choice of routes across the Eastern Desert to the Red Sea. The inscription of Henu records that in the absence of springs, wells were excavated along the route to provide a supply of water to men and animals (Breyer 2016: 599–602; Diego Espinel 2011: 251).

As part of the UNO/IsIAO and BU project, identification of the routes from Qift to Mersa/Wadi Gawasis has been suggested by Manzo, based on an analysis of satellite images of the region between Wadi Hammamat and Wadi Safaga combined with GIS geological, topographical, hydrological and archaeological information (Bard, Fattovich and Manzo 2013: 549–552; Manzo 2011: 211–214). The results of this analysis show two main systems of routes, which might have been used in the Middle Kingdom, possibly corresponding to those used by the expedition of Henu in the late 11th Dynasty (Bard, Fattovich and Manzo 2013: 551–552; Bradbury 1988: 132–133): (1) a northern route along the Wadi Hammamh, Wadi Abu Jarida, Wadi Safaga, Wadi Simna and Wadi Saqi to the coast, and (2) a southern route along the Wadi Hammamat and Wadi Qush (Figure 47).

The northern route follows the Wadi Qena,Wadi Hammamh and Wadi Abu Jarida and crosses a plateau to the west of Jebel Maghrabyya as far as Bir Sirbakis. From Bir Sirbakis the route continues to Bir Simna and along the Wadi Abu Muraywat and Wadi Safaga to Jebel Wasif, south of Wadi Safaga, where it joins the Wadi Gasus leading directly to the coast near Mersa/Wadi Gawasis. The southern route, which seems consistent with the returning route in the inscription of Henu, follows the Wadi Hammamat to Wadi Abu Hammad

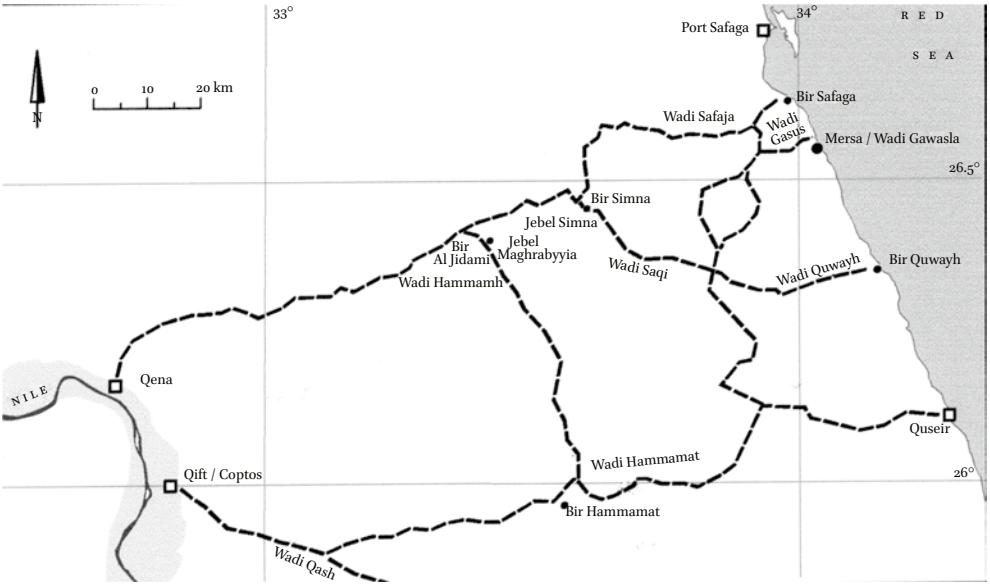

FIGURE 47 Map of Eastern Desert/wadi routes from Qena and Qift to Mersa/Wadi Gawasis. MAP BY ANDREA MANZO.

and turns to the north as far as Jebel Wasif, where it joins the Wadi Gasus and reaches Mersa/Wadi Gawasis.

At present, we do not know which route was actually used in the Middle Kingdom, as both routes cross regions with mines and different expeditions may have reached the harbor through different routes (Bard, Fattovich and Manzo 2013: Fig. 17; see also Bradbury 1988: 131–138). Although the Henu inscription indicates that the route along the Wadi Hammamat was used to return to the Nile Valley from the coast in the late 11th Dynasty, we cannot exclude *a priori* that the northern route was the one that Henu used to reach the coast at the beginning of the expedition.

4 Sea Route to and from the Southern Red Sea

The sea route to and from the southern Red Sea has never been outlined in detail (see Bradbury 1988; Breyer 2016: 394–403; Kitchen 1971). Scholars usually assume that the Egyptians were sailing to the south by exploiting the northerly winds, which blow on the Red Sea during most of the year, and returned to Egypt with the push of southerly winds and currents, which prevail in the southern Red Sea in winter, with rowers providing additional energy for the navigation (Bradbury 1988: 128–130). Using the inscription of Henu, Bradbury (1988: 138–141) calculated that navigation from Mersa/Wadi Gawasis to Bia-Punt was at least 4–6 weeks long. According to Ward (2012a: 225), the ships were navigating southward along the African side of Red Sea, and along the Arabian coast for the return trip north.

A more precise reconstruction of the sea routes requires taking into consideration the direction of the winds and currents, size and maneuverability of the ships, location of potential anchorages along the coast, access to anchorages through the coral reefs, possible sources of fresh water along the coast, and location of natural resources in the hinterland.

Throughout the year the Red Sea is dominated by winds blowing from north to south, with a mean annual speed of less than 10 knots, although these winds can reach a force of 10–17 knots. In winter the winds over the southern part of the Red Sea are reversed because of the effect of the southeastern monsoons, with the wind blowing from south to north approximately as far as 18°-20° N latitude. These wind systems also determine the circulation of the surface currents. During the summer the currents have a southerly direction and an average speed of about 0.25 knot, which increases up to 1.25 knots to the south of 16° latitude. From October to May, this drift is reversed in the southern half of the Red Sea, and the currents drift to the north with an average speed of

0.75–1.0 knot as far as the northern end of the basin (F. Edwards 1987: 48–51, 64–65).

Given this regime of winds and currents, the Egyptian ships probably left Mersa Gawasis in spring or early summer in order to profit from the northerly winds and currents to get to the coasts of the southern Red Sea. They returned north in winter by profiting from the southeastern monsoons and southern currents, first to get to the latitude of Port Sudan (19°37′0″N, 37°31′0″E) and/or Jiddah (21°30′0″N, 39°10′0.12″E), and then from the southern currents to get to the Egyptian coast (see also Bradbury 1988: 127–131).

Depending on the type of boat, the Egyptian sailors – like any ancient or modern sailors – had three main options for navigating in the Red Sea: (1) off-shore navigation, (2) off-shore navigation with visual contact of the coast, or (3) navigating along the coast (see Mendes 2004: 12–14). Thus, the size and maneuverability of the ships were crucial constraints in the navigation the captains chose in the Red Sea, the actual route they followed, and the time they had to spend in the sea (see Facey 2004: 11).

Specific landforms, such as islands, bays or mountains, could have been used as visual markers for the sailors to locate anchorages during the voyage and harbors at the final destination. In the "Tale of the Shipwrecked Sailor" (Lefebvre 1949: 29–40), Punt is associated with an island, which may have been a (fictional) reference to Dahlak Kebir. This island is the largest one along the sea route to Punt on the African side of the Red Sea, and, being located at the entry to the Gulf of Zula, it may have been a useful reference point to ships that were approaching Adulis, their probable destination in Punt, which was located on the western side of this gulf.

Representational and textual evidence dating to the Old and New Kingdoms suggests that ships used in the Punt expeditions had a flat hull, with short half-decks, a squared sail, and two steering oars (Jones 1995: 40–42, 53–56, 70–71). According to the "Tale of the Shipwrecked Sailor," the Middle Kingdom ships could be 60 m long and 20 m wide with a crew of 120 or more men (Vinson 1994: 36), which possibly suggests open sea navigation to Punt. Archaeological evidence from Mersa/Wadi Gawasis, however, has demonstrated that this description of the ships probably was a literary exaggeration, and smaller ships, 20 m and 30 m long, with a crew of 40 or 60 men, respectively, were actually used (Ward and Zazzaro 2016: 23), which supports the hypothesis that these ships could navigate in the open sea, but probably not very far from the coast.

In January, 2009, the "Min of the Desert" ship, a full-scale replica of an ancient Egyptian seafaring ship (20 m × 4.89 m in dimension, and 1.7 m under the beams, displacing 30 tons with a cargo capacity of about 17 tons), navigated

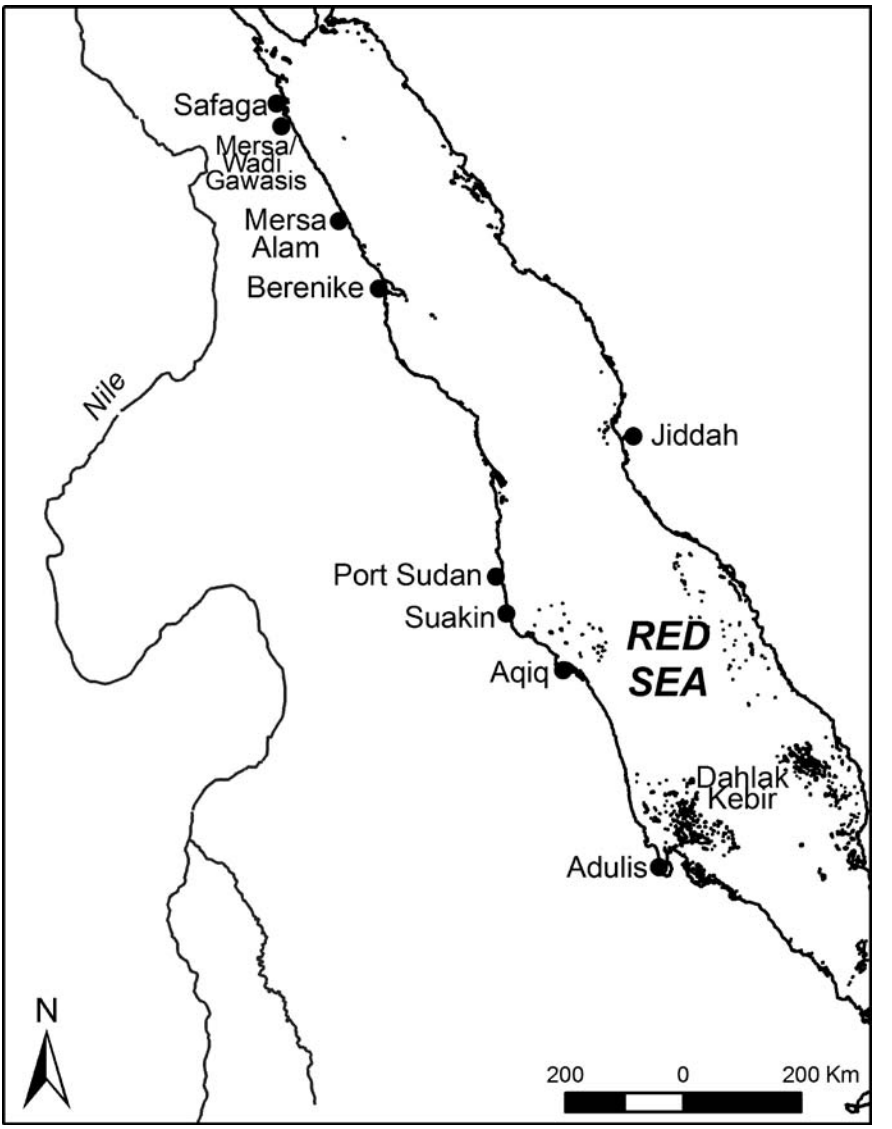

FIGURE 48 Map of coastal sites along the Red Sea.
MAP BY LUISA SERNICOLA.

from Safaga to Mersa Alam. This experiment confirmed that besides having very good maneuverability, the ship could reach an average speed of 6–9 knots before the wind and 2.5 knots against the wind using the sail, and cover a distance of about 73 nautical miles in seven days with a stop each night at protected anchorages (Ward 2012a: 30, 2012b: 223–225).

Assuming that the anchorages of Bia-Punt and Punt were located at Port Sudan, Suakin, Aqiq and Adulis (Figure 48, see Chapter 7), it can be calculated that an Egyptian ship would take 45 days to cover the distance from the coast of Egypt to Port Sudan (ca. 440 nautical miles), 47 days to Suakin (ca. 470 nautical miles), 52 days to Aqiq (ca. 515 nautical miles), and 75 days to Adulis (ca. 750 nautical miles). Thus, approximately 6–7 weeks were required to get to Bia-Punt, which is consistent with information from Egyptian textual sources (see Bradbury 1988: 138–141), and 10–11 weeks to get to Punt. It is possible, however, that the ships only stopped at anchorage when the crew needed fresh water, and also navigated during the night with the orientation of the stars. In such a case, the number of days for the journey could have been reduced.

Different anchorages could have been used or bypassed according to fluctuations in sea-level through time (see e.g., Hein *et al.* 2011). According to Kitchen (1971: 197–202; 2007: 136–141), 132 potential anchorages were located along the African coast of the Red Sea from Suez in Egypt to Ras Hafun in northern Somalia, and 57 anchorages along the Arabian coast from the Gulf of Aqaba to Kane (Qana) in southern Yemen.

At least 16 anchorages along the coast from the Gulf of Suez to the Barka Delta in eastern Sudan exhibit similar geomorphologic features to Mersa/Wadi Gawasis and might have been used in the Middle Kingdom: Mersa Haleib, Mersa Gwilaib, Mersa Abu Imama, Mersa Shin'ab, Dungunab Bay, and Mohamed Qol, along the coast from Ras Banas in Egypt to Ras Abu Shagara in Sudan; and Khor Inkeifal, Mersa Salak, Mersa Arakiyai, Mersa Fijab, Mersa 'Arus, Mersa Darur, Mersa Gwiyai, Port Sudan, Suakin, Mersa Sheik Ibrahim, and Trinkitat Bay, from Ras Abu Shagara to the Barka Delta (see Kitchen 2007: 137, 139). Nine more anchorages between Aqiq in eastern Sudan and Adulis in the Gulf of Zula (Eritrea) might have been used in the Middle Kingdom (Kitchen 2007: 138). A preliminary analysis of satellite images of this area, however, reduces this number to seven: Aqiq, Brassy Bay, Mersa Teclay, Mersa Kuba, Khor Daklyat, Massawa and Adulis.

Some of the 51 anchorages along the Arabian coast from the Bab el-Mandeb to the Gulf of Aqaba could have been used by the ships on their return to Egypt (Kitchen 2007: 140–141). They include 30 anchorages from the Bab el-Mandeb to Jiddah, and 21 anchorages to the north of Jiddah. A preliminary analysis of the satellite images of the Arabian coast, however, suggests that only a few of these anchorages could offer enough protection from the southerly winds, and thus might have been used by the Egyptians: Mocha, Hodeida, and Karaman Bay in Yemen; and Jafiraah Bay, Al-Qahma Bay, Khor Birq Bay, Marsa Raka, al-Lith, Abu Shauq, Jiddah, Sharm Bihar, Sharm Buraiqa (Ar Rays), Yanbu, Sharm Mahar, Umm Lajj, and Sharm Habban in Saudi Arabia.

Coral reefs were a serious danger for navigation along the Arabian coast of the Red Sea. In medieval times Arab sailors used five wide channels, which cut through the coral reefs and facilitate access from the open sea to sectors of the coast between the Bab el-Mandeb and Jiddah. These channels are located: off-shore from Hodeida, between the Farasan islands and al-Fasaliyat shoals, off-shore from al-Lith, off-shore from the villages of 'Umair and Sharja, and at the entrance to the Jiddah harbor (Tibbetts 1961: 330, Fig. 2). These same channels may have been used by the Egyptian ships in the 3rd–2nd millennia BC if they returned to Egypt along the Arabian coast of the Red Sea.

At present, there is not much archaeological evidence of anchorages along the African and/or Arabian coasts of the Red Sea to the south of Mersa/Wadi Gawasis that Egyptian ships might have used in the Middle Kingdom. Most of these regions have not yet been investigated, and very few sites with evidence dating to the 3rd–2nd millennia BC have been recorded.

On the African side of the Red Sea, only Berenike (Ras Banas), Aqiq and Adulis provide evidence dating to the Bronze Age. At Berenike, two fragments of a round-topped stela in quartzite, with the cartouche of Amenemhat IV and a year date (Year 7), have been excavated (Hense, Kaper and Geerts 2015: 589–591). Year 8 of Amenemhat IV's reign was recorded on the two cargo boxes excavated at Mersa/Wadi Gawasis, and, taken together, the stela and cargo box inscriptions suggest that an expedition during this king's reign stopped off at Berenike on the way to Punt and then returned to *Sawn* the next year. There is no inscriptional evidence at Mersa/Wadi Gawasis, however, of Ptahhotep, the overseer of recruits mentioned on one of the Berenike stela fragments (Hense, Kaper and Geerts 2015: 600).

At Aqiq, several megalithic monuments are visible on the top of an ancient dune, about 2 km from the present seashore. The dating of most of these megaliths is uncertain, but the occurrence of monoliths similar to the funerary stelae of the Gash Group at Kassala suggests that some of them may date to the 3rd–2nd millennia BC (Fattovich 2007). At Adulis, two main levels of occupation have been discovered beneath the remains of an Aksumite town (Paribeni 1908: 446–451). The dating of this early occupation to the 2nd millennium BC is supported by the occurrence of potsherds there similar to those in Middle Kingdom assemblages at Mersa/Wadi Gawasis (Manzo 2010c, 2010d).

Several sites with ceramics ascribable to the Ma'layba Phase (ca. 2000–1200 BC) and Sabir Phase (ca. 1300–900/800 BC) of the Sabir culture (ca. 2000–900/800 BC) have been identified in the coastal plains of southwestern Arabia (Buffa 2007: 199–203; Vogt and Buffa 2005: Fig. 1;), but only the site of Sihi on the southern coast of Saudi Arabia has been extensively investigated, providing evidence of black ware similar in style to the ceramics from the lowest

stratum at Adulis (Zarins and Al-Badr 1986; Zarins, Al-Jawarad Murad and Al-Yish 1981; Zarins and Zaharani 1985). Megalithic monuments, tentatively dated to the 3rd–2nd millennia BC, also have been recorded at al-Midamman on the Red Sea coastal plain of Yemen (Keall 1998, 2004; Khalidi 2005).

5 Land Routes in Punt/Bia-Punt

At present, it can be assumed that nomadic and/or semi-nomadic cattle herders had a crucial role in establishing and controlling the circulation of products on a regional scale in the northern Horn of Africa, through their seasonal movements between the highlands and the lowlands or the coastal plains, as aromatic resins, gold, ebony, and ivory were available within the range of their transhumance (see Chapter 7). Most likely, the ancient transhumance routes were the same as those that nomads were still using in the early 20th century, and the major areas of rock art in Eritrea are located along these routes (see Calegari 1999: 23, Fig. 16), which connected the Sudanese-Eritrean lowlands to the Eritrean/Ethiopian highlands, Red Sea coast and southern Atbai mountains (Red Sea Hills), as well as the Red Sea coast to the highlands (Figure 49; Fattovich 1990a: Fig. 1).

The occurrence of stelae similar to those of the Gash Group at Aqiq on the coast, and ceramics with decorative patterns comparable to those of the Gash Group in eastern Tigray (northern Ethiopia) as far as the edge of the Rift Valley, suggest that in the late 3rd–early 2nd millennia BC people living in the Sudanese-Eritrean lowlands participated in a wide network of interactions over most of the lowlands and highlands in northern Ethiopia and Eritrea (Barnett 1999: 127–146; D'Andrea, Manzo, Harrower and Hawkins 2008; Fattovich 1991a: 45, 2007; Negash 1997).

The discovery of a round-topped stela and potsherds of Egyptian domestic ware dating to the Middle Kingdom at the site of Mahal Teglinos (Kassala) (Manzo 2014b: 378–379, 2014b: 168–173, 2018b) suggests that the Egyptians penetrated the hinterland regions from the coast at least once. In such a case, they could have used different routes, covering the distance from the coast to the Gash Delta in approximately two to three weeks, depending on the harbor where they landed and the distance they covered per day. Assuming an average rate of 25 km per day, it would have taken 18 days to travel from Suakin to Kassala, a distance of about 470 km; 17 days from Aqiq to Kassala, about 435 km; and 16 days from Adulis to Kassala, about 400 km.

The easiest route to Kassala from Suakin or Aqiq was to follow the Barka River as far as Agordat in Eritrea, and then turn to the southwest, to the Mareb/Gash River and Gash Delta, crossing forests with ebony and gold deposits in

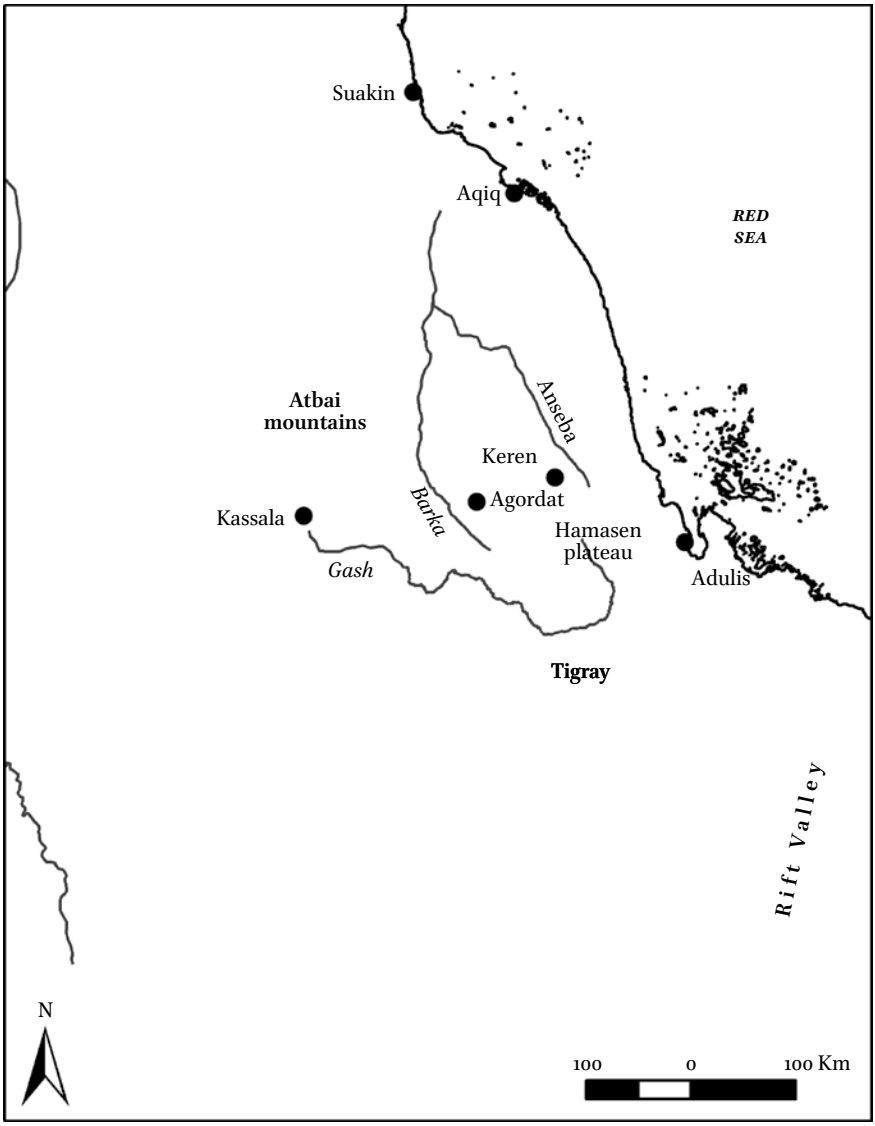

FIGURE 49 Map of sites in eastern Sudan, Eritrea and northern Ethiopia. MAP BY LUISA SERNICOLA.

the Barka and Anbseba valleys. The best route from Adulis to Kassala was across the Hamasen plateau in central Eritrea, where gold mines were located, to present-day Keren, and from here to Agordat and Kassala in the lowlands (see also Manzo 1999: 12–13).

On the opposite side of the Red Sea, coastal people identified in the archaeological record with the Sabir culture participated in trade with Egypt, as can be inferred from the potsherds of this culture found at Mersa/Wadi Gawasis (see Chapter 7). Most likely, they transported frankincense from sources in Hadramaut and Dhofar to Aden in southern Yemen along a coastal land route or a maritime route, and then across the highlands from Aden to the Red Sea coast (Manzo 1999: pl. 15), from where they could have navigated to Adulis.

6 Maritime Expeditions to Punt/Bia-Punt

In conclusion, taking into account the sea and land routes discussed above, it can be assumed that:

(1) The Egyptian seafaring expeditions to the southern Red Sea were connected to those to the Levant, to obtain the timber necessary for building seafaring ships.
(2) Supplies for the expeditions were transported from Qift to the Red Sea coast along two possible routes along the Wadi Safaga or Wadi Hammamat, to Wadi Gasus and the coast.
(3) The ships to Bia-Punt could leave the harbor of *Saww* in the summer (August) in order to reach Suakin or Aqiq in 6–7 weeks, and arrive there in September/October when the coastal plains were still dry, but with fresh water available in the rivers because of the summer rains in the hinterland.
(4) The ships to Punt could leave *Saww* in August and reach Adulis in 10–11 weeks by October, when the rainy season was over in the highlands and lowlands of northern Ethiopia and Eritrea, and fresh water was available in the rivers and streams.
(5) At Adulis the Egyptians could meet traders from the coastal regions of Yemen and obtain Arabian aromatic gums from them.
(6) From the southern Red Sea coast the Egyptians could penetrate into the African hinterland as far as Kassala in 2–3 weeks.
(7) After spending 1–2 months on land, the Egyptians could navigate northward in January/February, and return to the coast of Egypt by March/April.

CHAPTER 9

The 12th Dynasty Punt/Bia-Punt Expeditions from Mersa/Wadi Gawasis

For the ancient Egyptians, Punt was an important source of exotic raw materials – elephant ivory, ebony, gold, obsidian – and especially incense, but also prized animal skins and live animals (baboons) that were not found in Egypt. Punt was located a great distance to the southeast of Egypt, probably in the Sudanese-Eritrean lowlands, where these materials and animals are found, and its products could be obtained either through overland routes, or, less frequently, seafaring routes.

Based on the archaeological and textual evidence at the Middle Kingdom harbor of *Saww*, present-day Mersa/Wadi Gawasis on the Red Sea, ca. 12–20 successful seafaring expeditions were sent to Punt and/or Bia-Punt (the "mine" of Punt), over the course of the main use of the harbor, ca. 180 years, from Senusret I to Amenemhat IV. Although not frequent, these seafaring expeditions were aimed at bypassing control of the Upper Nile by the Kerma kingdom, as well as Kerma control of land routes to the east of the Upper Nile. No doubt the infrequency of these seafaring expeditions had to do with the huge logistical and organizational problems involved in these undertakings, as well as the very risky nature of long-distance voyages on the Red Sea. Because of the infrequency of these seafaring expeditions, the goods/materials of Punt/Bia-Punt still must have been reaching Egypt in the Middle Kingdom via the Nile, from the Kerma kingdom in Upper Nubia, and through Lower Nubia, which was firmly under the control of the Egyptian forts there. But Egyptian relations with Kerma were contentious – hence the desire to send seafaring expeditions directly to the harbors of Punt/Bia-Punt in the 12th Dynasty.

The earliest known, Egyptian seafaring voyage to Punt occurred in the Old Kingdom, during the reign of Sahura (see El Awady 2006, 2008) – long before Kerma became a powerful polity on the Upper Nile. But already by this time there probably were dangers along the overland routes to Punt, and hence this seafaring expedition to Punt was organized in the 5th Dynasty. The later, 6th Dynasty tomb inscription/biography of Pepynakht (called Heqaib) at Qubbet el-Hawa, Aswan, suggests these problems: Pepynakht was sent to bring back the body of the controller of Nekhen, Kaaper's son the overseer of foreigners, Ankhti, who had been building a boat to travel to Punt, when he was killed by the "Aamu" and "Sand-dwellers" (Studwick 2005: 335). Harkhuf's overland

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expeditions from Aswan to (regions near) Punt, also in the 6th Dynasty, were probably successful because they included security forces on the caravans and/or because of their large size.

In the 12th Dynasty the Egyptians built forts and fortified towns in Lower Nubia, and during the reign of Senusret III, more forts were built above the Second Cataract. But unlike these Nubian forts, the harbor of *Saww* was not intended to be permanently occupied. This probably was due to the difficulties of reaching and supplying the harbor from the Nile Valley, a distance of ca. 150 km through the desert wadis, by donkey caravan (donkey bones and dung have been found at the site). The major problem for human occupation at the harbor was a lack of fresh water, as well as foodstuffs and other necessary supplies. The Intef-iker (Antefoker) stela found by Sayed at Wadi Gawasis in the 1970s states that ships for this seafaring expedition sent from *Saww* were built at Qift on the Nile in Upper Egypt, and then disassembled and taken overland to the Red Sea harbor site – so even the expedition ships had to be transported from the Nile Valley to the Red Sea, along with all of the needed food and supplies, which for the most part were unavailable outside the Nile Valley.

The main harbor facilities were located on the northern side of a paleo-bay, no longer in existence, and about 700 m inland from the present-day shore line. There is evidence of small tent structures on top of the western fossil coral terrace, as well as camps in a beach area below this terrace top to the southeast, where fish bones, mainly sea bream and parrot fish, were identified. These fish were caught locally, but there is also evidence (dung and a ram horn) that live sheep were brought to the harbor from the Nile Valley. Sayed also found the remains of another camp on the southern slope of the western coral terrace, just to the west of the beach camps.

There is no evidence of free-standing buildings at the harbor, and the main facilities consisted of eight man-made chambers and galleries, excavated into the western fossil coral terrace. These man-made caves were used for storage, including an estimated 26 coils of ship rigging left in the rear of Cave 5. There is evidence in the largest gallery-cave (Cave 2) of wood-working, including a large amount of wood debitage, most likely the result of salvaging used ship timbers. Cave 3 also was used for food storage, for spikelets of emmer wheat that had been transported from the Nile Valley to make bread at the harbor. In the entrances to Caves 2 and 3 there is also evidence of hearths and food remains, and it has been suggested by Andrea Manzo that the long galleries may have provided shelter for expedition members.

The areas on top of the western terrace slope, just outside the entrances to the man-made caves, were used for a variety of activities. A living area with mats had been created just to the south of the entrance to Cave 1, and outside

the entrance to Cave 8 a number of ceramics, all imported from the Nile Valley, were excavated. These ceramics, of early to mid-12th Dynasty in date, include storage jars, cups, dishes and cooking pots, suggesting an area where food was stored, prepared (in the great number of hearths also found there), and then consumed. Just to the south of the entrance to Cave 8, two contiguous mud-brick features were found: these features were fire-pits where barley was parched to remove the chaff. Later in the 12th Dynasty, the area outside Cave 8 was the locus of administrative activity: a scarab/seal, papyrus fragments, and different types of clay sealings (to seal boxes, bags and baskets) were found there.

On the terrace slope outside the entrances to two of the large gallery-caves (Caves 5 and 6), 43 cargo boxes had been unpacked and left there. Associated clay sealings, of types of the later 12th Dynasty, also were found there – for control of imported goods. Two of the cargo boxes had painted hieroglyphic inscriptions on one side: "of the wonderful things of Punt," signed by the royal scribe, Djedy, and dating to Year 8 of Amenemhat III.

A number of large ship timbers also were left outside the entrances to the gallery-caves, and at the entrance to Cave 6 there was evidence of lithic tool manufacture – especially tools made for scraping, for salvaging ship timbers that had been damaged by shipworms on seafaring voyages.

At the base of the western terrace slope were a number of fire-pits in a production area. Hundreds of long, cylindrical bread molds were found there, for baking bread for expedition teams at the harbor and perhaps to take on the seafaring voyages. Also produced in this area were stone tools and crude chaff-tempered platters, probably also used for bread-making. Although charred barley seeds and mineralized barley chaff were identified in the fire-pits (as well as in the two fire-pits to the south of the entrance to Cave 8), there is no evidence at the harbor site of beer brewing – but beer jars have been identified among the pottery brought from the Nile Valley.

To the southwest of the production area were three constructed ramps, possibly slipways. Most likely, ships were reassembled there, but the archaeological evidence is of disassembling ships and salvaging their timbers at the end of voyages.

Ship-building/reassembling was the main activity at *Saww* in preparation for the voyages to Punt/Bia-Punt. Building ships that were sea-worthy required cedar, imported from Lebanon, for ship timbers and planks. A small amount of deciduous oak was also imported from the eastern Mediterranean for planks, and a few planks were made of woods from the Nile Valley: Nile acacia and sycamore. Nile acacia also was used for tenons found at the harbor site, which were secured in place with strips of copper alloy. All of these woods have been

identified at the harbor site, mostly from the remains of ship disassembling activities, as well as from reused ship timbers and charcoal from hearths/fire-pits.

Although no evidence of sails was excavated, the sails must have been made of large sheets of linen, probably specially woven at workshops in the Nile Valley. Small pieces of crumpled linen were found in many areas of the site, and may have been used for caulking the ships along with beeswax brought from the Nile Valley. The large deposit of ship ropes made of papyrus, found in Cave 5, also represents ship materials brought from the Nile Valley.

The importance of these seafaring voyages to expedition members can be seen in texts of the commemorative stelae that were left in specially carved niches along the wall of the western coral terrace, as well as in monuments on top of the coral terrace. A number of mound shrines were built on top of the eastern terrace overlooking the sea, and may have commemorated successful expeditions. The largest of these structures overlooking the Red Sea is Feature 1, an oval platform on top of which over 650 *Lambis lambis* shells had been left, probably as offerings by sailors from a number of different expeditions.

A different type of shrine, the "alcove" shrine, which was located near the campsites and along the western terrace slope, was used throughout the 12th Dynasty. It consists of a U-shaped arrangement of megaliths erected in front of an alcove rock-shelter on the southern corner of the terrace slope, and directly below the monument structure with the Intef-iker stela on top of the terrace. Some very special offerings had been left just outside the shrine: two Minoan pots dating to different periods, four sticks of ebony, and an unfinished stela with the offering formula and the name "Osiris of the sea" (*Wsjr Wḏ-wr*). The Egyptian ceramics associated with the shrine were of early and late 12th Dynasty dates, demonstrating that offerings had been left at the shrine repeatedly – by members of different expeditions, and several small jars of Palestinian origin also had been left there – possibly by non-Egyptians/Canaanites who were part of an expedition crew.

Unlike the Old and Middle Kingdom harbor at Ayn Soukhna, which was used for the transport of copper mined in the Sinai, a short distance across the Gulf of Suez to Egypt, ships that set out from *Saww* had a much greater distance to travel – to the harbors of Punt and/or Bia-Punt in the southern Red Sea region. Most likely Punt was an inland region in the northern Horn of Africa, especially in the area of the western and eastern slopes of the Eritrean highlands – where frankincense and myrrh trees are found, and the Sudanese-Eritrean lowlands where ebony, elephant ivory and live baboons could have been obtained. Gold also occurs in deposits in inland areas, from the desert to the east of Upper Nubia to the Eritrean highlands near Asmara.

The text on Stela 5 from Mersa/Wadi Gawasis indicates that "Punt" and "Bia-Punt" (the "mine of Punt") were different destinations. Based on the finds of exotic ceramics from the northern Horn of Africa excavated at the harbor site, we suggest that the harbor of Punt to where the ancient Egyptians were sailing was located on the Eritrean coast in the Gulf of Zula at Adulis – the outlet for the products of highland Eritrea, with the earliest levels dating to the second millennium BC. Bia-Punt, mentioned much more frequently in texts found at Mersa/Wadi Gawasis than the toponym Punt, was probably located farther north in eastern Sudan – and closer to the Egyptian harbor than Adulis. From harbors along the coast of eastern Sudan, gold could have been obtained from inland mines, as well as the main products of Punt (incense, ivory and ebony) from the Sudanese-Eritrean lowlands in the area of Kassala.

The locations of Punt and/or Bia-Punt were of a considerably greater distance from Egypt by sea than Byblos was. The Red Sea expeditions were risky, as the "Tale of the Shipwrecked Sailor" definitely indicates, and large ships that could sustain the potentially rough conditions in the Red Sea, as well as hold considerable cargo and crew, had to be specially designed and built. For successful expeditions, knowledge of Red Sea winds and currents, as well as navigation, was necessary.

Knowledge of the location of coral reefs to be avoided, as well as anchorages and local resources (especially fresh water) also was necessary for the ancient expeditions. In *Sailing Directions,* published in 1841 for the *Red Sea and Gulf of Aden Pilot*, the navigational guide of the British Admiralty, there are references to corals, reefs and shoals on almost every page (Wick 2016: 136–137). According to Tibbetts (1961: 330), the Red Sea is noted for being difficult to navigate because of the large numbers of reefs and shallows – along both coasts. For the Punt expeditions, some information about these navigational problems may have been recorded in writing and/or on maps – and possibly was stored in some sort of repository in Egypt (the palace or an administrative center?) and accumulated through time.

Not only did the seafaring expeditions need skilled navigators and leaders, but in Punt/Bia-Punt there also was an important human factor: the Egyptian officials had to successfully negotiate bartering transactions with local peoples. Soldiers were taken on these expeditions, as indicated in the Intef-iker stela and the Punt reliefs from Hatshepsut's Deir el-Bahri temple, suggesting an element of intimidation along with trade.

The Punt/Bia-Punt expeditions began with a decree of the king, which set in motion the enormous task of organizing all of the personnel (which could entail hundreds of men used in different parts of the expedition), as well as supplies (including trade goods/materials), equipment, and food – and building

the ships, made primarily of cedar from Lebanon, but also other woods in the Nile Valley (where timber was scarce), at a shipyard in Upper Egypt. Food, supplies and equipment were amassed at different government centers in Lower and Upper Egypt and then sent to Qift, where the journey began, and then were transported across the Eastern Desert to the harbor of *Saww* – along with the dismantled ships and rigging.

That the Egyptians actually succeeded in a number of these expeditions involving complex logistics – as certainly is evidenced at the ancient harbor at Mersa/Wadi Gawasis – is a testament to the ability of the ancient Egyptian state to organize, undertake and accomplish such missions on a very large scale.

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