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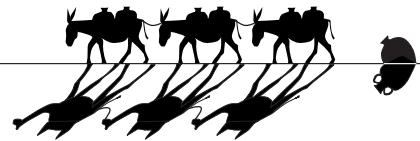
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Edited by Rudolph Kuper

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Desert Road Archaeology in Ancient Egypt and Beyond

Edited by Frank Förster & Heiko Riemer



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“A highway out of Egypt”: The main road from Egypt to Canaan

Abstract

The Ways of Horus, the well-traveled route across north Sinai, has been the subject of ongoing research for nearly a century because of the importance of this desert road to the military and economic interests of ancient Egypt, especially during the Late Bronze Age/New Kingdom. Until recently, our knowledge of this route was limited to Egyptian texts and carved reliefs of Seti I at Karnak. In the past 30 years archaeological and geological studies in the area now can complement the epigraphic and pictorial sources, permitting us to better understand and reconstruct this strategic corridor which connected Egypt to western Asia.

Keywords: Ways of Horus, “military road”, fort, toponym, Nile Delta, Sinai, Levant, Late Bronze Age, New Kingdom

1. Introduction

Because of the vital relationship between Egypt and the Levant throughout Egyptian history from the 4th millennium onwards, the connection between these two regions was supremely important. In ancient times there were in fact two ways of getting between Egypt and western Asia, by sea and by land. Actually there were two land routes, the lesser known, or southern way, ran from Egypt east through the Wadi Tumilat and across Sinai to Beer-sheba in southern Canaan/Israel, from where it proceeds north along the central mountain route, passing by Hebron, near Jerusalem, and points north [Fig. 1]. Not much is really known about this southern route from the Egyptian side, although Kenneth Kitchen has recently suggested that during Rameside times, this route was marked with a series of forts leading from the Delta Residence south to the beginning of the Wadi Tumilat (Kitchen 1998). The Wadi Tumilat itself was also defended by forts, the most significant one being at Tell el-Retabeh (Petrie 1906: 28–34).¹ Once in Sinai, however, we have no textual or archaeological evidence that there were

Egyptian military installations placed on it to monitor movements or support military operations. Given the fact that there was little chance of a hostile attack coming on this road – because a successful invasion of Egypt from the Levant would likely require naval support – it would appear that this more southerly route was not defended in Sinai.

The name of this road is known from the Old Testament as the Way of Shur (Gen. 16:7), Shur (שׁוּר) being described as the area immediately east of or on the border of Egypt (Gen. 25:18; 1 Sam. 15:7; 27:8). The word שׁוּר means “wall” (Koehler & Baumgartner 2001: 1453). Some think שׁוּר may allude to the walled-forts on Egypt’s east frontier that would have guarded the entry to the Wadi Tumilat (Hyatt 1971: 172; Sarna 1989: 120), although this view is problematic and has been questioned (cf. Na’aman 1980: 100f.). Another possibility is that שׁוּר refers to the Cenomanian limestone wall-like escarpments of Gebel Halal and Gebel Maghara by

1 For a recent reconstruction of the gateway of the Tell el-Retabeh fort see Cavillier 2004: fig. 2.3.

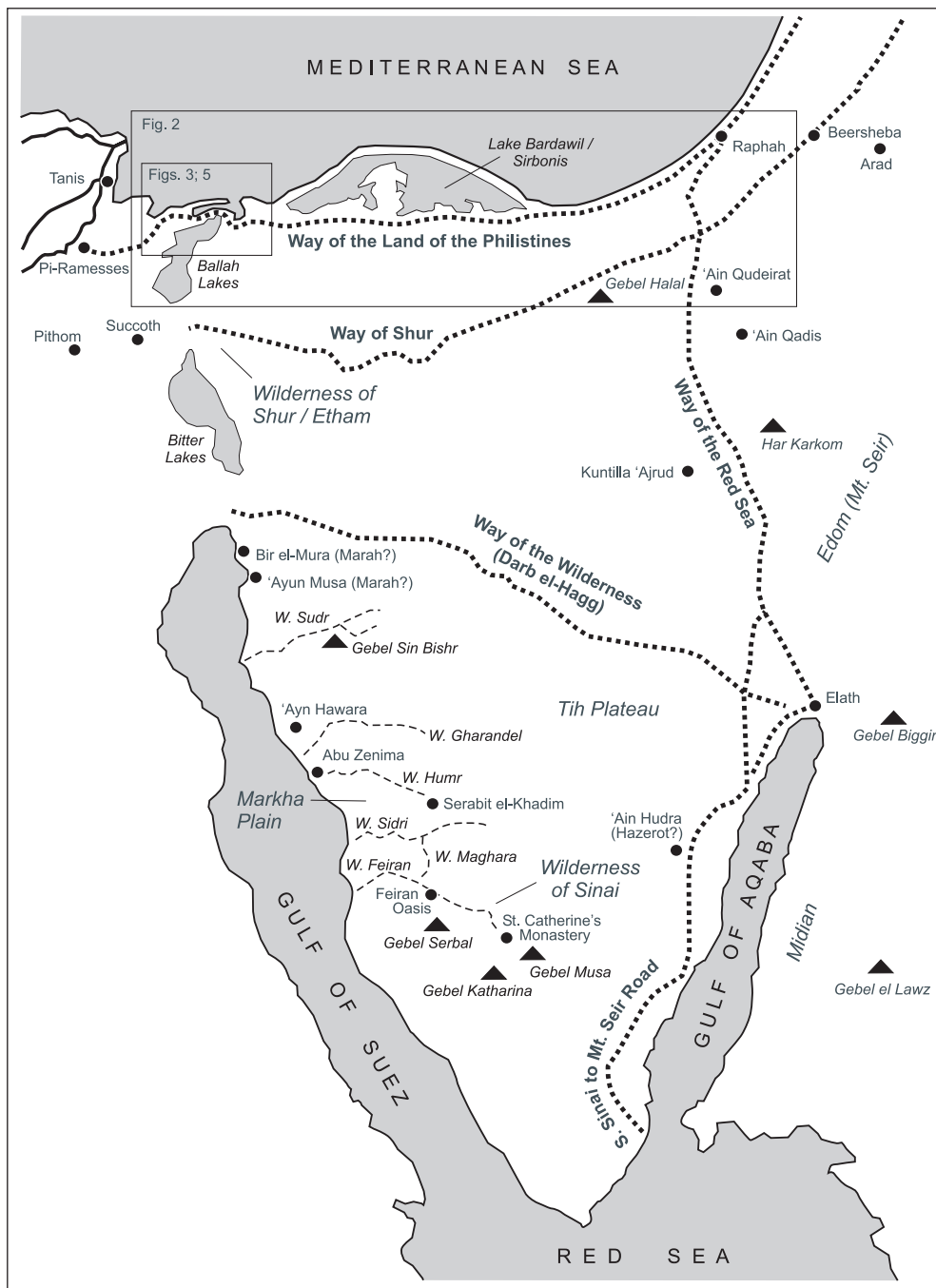


Fig. 1 Map of Sinai (based on a map made by Jessica Lim).

which this route passes. Regardless of the precise meaning of this name, the line of the route and its connections between the east end of the Wadi Tumilat and the Negev is clear.

But the second route, the one that follows the Mediterranean coast in north Sinai, ending at Gaza in southern Canaan, has been the subject of ongoing

scholarly research for nearly a century. In Greco-Roman times a more northerly alternative route was used that lay on the barrier island that enclosed Lake Sirbonis or Bardawil (Figueras 2000: 7–11) [Fig. 1]. This more northern route apparently could not be traversed in earlier times as the western section of the barrier island was not connected to the

mainland (see section 3, below). Why this road that was known to be difficult to travel (so Plutarch)² was used at all remains unclear. Pau Figueras (2000: 9) suggests that the older route to the south of the lagoon “had fallen into disrepair” by late Persian and Hellenistic times. The greatest challenge facing this road, as is the case with the modern asphalt surfaced El Arish Road, is the moving sand dunes and sand storms that easily cover and obscure the road.³ Maintenance was and remains essential for traffic to pass across north Sinai. The north Bardawil road, on the other hand, would not have been effected by dunes and sand storms, although perils likely came from the Mediterranean waters and storms.

In the Old Testament, the coastal road (south of Bardawil) is called “the way of the land of the Philistines” () (Gardiner 1920: 100). Invariably, this route is included in Bible atlases and is shown in proximity to the Mediterranean and running E-W parallel to it (Beitzel 1985: 86f.; May, ed., 1974: 58f.; Pritchard 1987: 56f.; Aharoni et al. 2002: nos. 47; 480). Sometimes identified with the ancient Egyptian “Ways of Horus” (Gardiner 1920: 114–116; Kees 1961: 191; Pritchard 1987: 56f.; Bietak 1996: fig. 1; Morris 2005), this northern route will be the subject of the current study. It will be divided into the following lines of evidence: textual, paleo-environmental and archaeological.

2. Textual evidence

Many scholars think that the “Ways of Horus” (*w3wt Hr*) was the actual name of a route that connected Egypt and Asia (Gardiner 1920; Oren 1987; 2006; Bietak 1996: fig. 1; Hoffmeier 2005; 2006a). It had a dual function, military and trade (Gardiner 1920; Oren 1987; 2006; Bergoffen 1991). Recently Dominique Valbelle has reexamined the texts with occurrences of *w3wt Hr*, and reminds us that the earliest occurrences date to the 5th dynasty (c. 2500–2350 BC) and are used in titles, especially “overseer or supervisor of the Ways of Horus” (Valbelle 1994: 380f.). The use of such titles indicates that as early as the Old Kingdom there was official supervision of the Ways of Horus. They are found again in the 18th dynasty (Sethe 1961: 547,3f.). These references and others from later periods, Valbelle argues, are ambiguous about the nature and location of this to-

ponym, leading her to conclude that the Ways of Horus is a region and not the name of the road across northern Sinai (Valbelle 1994: 386). While she makes a valid point that the toponym was a region originally, that does not preclude the possibility that it also referred to the road that begins at the Ways of Horus. Be it a zone, a road or both, it was found within the 14th Lower Egyptian nome, *hnty i3bty* – “Front of the East” (Gardiner 1947: 200*–204*; Bietak 1975: 157–159; Baines & Málek 1980: 15).

We turn now to some of the crucial texts that enable us to locate *w3wt Hr* and inform us of its function. It is not clear until the First Intermediate Period in the *Wisdom for Merikare* that the Ways of Horus was located in the northeast Delta. Line 88 reads: “Look, the mooring post is pounded [in the region] which I have made in the east, from *Hbnw* to the Way of Horus.”⁴ For reasons that are not clear, the singular *w3t* and not the expected plural writing *w3wt* occurs here. It is evident from this reference that the security zone King Khety had established “in the east” (*hr i3btt*) was to obstruct the migrations of Semitic speaking pastoralists (*3mw*) into the eastern Delta. Nearly a century ago Sir Alan Gardiner thought that Khety had established the Ways of Horus as a “garrison town” (Gardiner 1920: 115). That the Ways of Horus is located in Egypt’s northeasterly frontier is further confirmed in the *Story of Sinuhe* where the fugitive Egyptian official stops at *w3wt Hr* on his return from Syria-Canaan. He is met there by a *ts im nty m-s3 phrt* (Blackman 1932: 35 [B 242]), which has been variously translated, e.g. “commander in charge of the patrol” (Simpson et al. 1972: 70), “commander in charge of the garrison” (Lichtheim 1973: 81), and “commander in charge of the frontier patrol” (Morris 2005: 48). This line suggests that there was a military presence in this frontier zone known as the “Ways of Horus” early in the 12th dynasty. From this point Sinuhe is ferried by boat back to Itj-tawy, the capital. This information

2 See Figueras 2000: 9. The presence of the Mediterranean on the north side of the narrow band surely posed some dangers to travelers.

3 In 2001 we traveled to El Arish and encountered a duststorm (*khamisin*) and parts of the road were drifted shut and we saw front-end loaders in use clearing the way.

4 Translation is that of Hoffmeier 1996: 55.

not only suggests that the Ways of Horus was on the eastern border, but that one could navigate on the Nile, likely on the Pelusiac branch, to the main branch at the base of the Delta.

An important occurrence of *w3wt Hr* is found in Papyrus Anastasi I and dates to the reign of Ramesses II. Here the loquacious scribe, Hori, brags of his geographical knowledge of Sinai and the Levant, and specifically reports on his familiarity with the road to Canaan and the names of some of the forts that guarded the way. After describing the terrain and some of the toponymy and conditions in Canaan, Hori offers instructions for how to get there from Egypt. The starting point appears to be the Delta Residence, Pi-Ramesses. “Come and [I] will describe [ma]ny things [to] you” he begins, “head toward (?) the fortress of the Way[s] of Horus]. I begin for you with the Dwelling of Sese, l.p.h. ...” (Wente 1990: 109). As the above translation shows, there is a critical lacuna where the name is associated with “the Way[s] of [...]”. In a new critical edition of Papyrus Anastasi I, Hans-Werner Fischer-Elfert, like Gardiner before him (Gardiner 1911: 29f.), restores the break with some certainty with a \ominus and plural strokes under the 𓏏 , and to

the left of the *w3t*-sign he restores with 𓏏 (Fischer-Elfert 1983: 150; 1986: 230f.), viz. “the Ways of [Horus]”.

This reference, which connects a fort (*htm*) to the Ways of Horus, is unique. It is widely held that “the fortress of the Ways of Horus” is one and the same as *htm n t3rw*, the fortress of Tjaru (Gardiner 1920: 113; Valbelle 1994: 384; Morris 2005: 409f.; Hoffmeier 2006a: 10).

We concur with Ellen Morris who lately has shown that during the New Kingdom *htm*-forts were situated on or near borders to control movements of people (Morris 2005: 5; 382–384; 404–409). In other words, such border forts were official entry points to Egypt. One was stationed on the northern or coastal entry point, i.e. Tjaru, and the other guarded the southern corridor through the Wadi Tumilat and the Way of Shur, likely at Tell el-Retabeh (Morris 2005: 419–423; Hoffmeier 2005: 58–65).

Valbelle’s study has cast some doubt on applying the name “Ways of Horus” to the military road across north Sinai, forcing us to reassess the traditional understanding. One thing is certain, and that

is that the god Horus in Pharaonic and later times played a significant role in the NE frontier area, just as Atum did in the Wadi Tumilat (notice the Arabic *tum* preserves the name of Atum), which is probably why Tell el-Retabeh’s ancient name was *pr Itm* or Pithom, meaning “House (or Domain) of Atum” (Hoffmeier 2005: 58–65). The epithet “Atum Lord of Tjeku (Succoth)” is found on inscriptions from the New Kingdom and the late periods (Petrie 1906: pls. 29; 30; Naville 1888: pls. 5a; 7a; 8–10).

The influence of Horus in the east-most district of Egypt is realized in the number of toponyms in the northeastern Delta that incorporate his name. The name Horus is associated with one of the lakes on Egypt’s northeastern frontier. *P3 3 Hr* (“The Water or Lake of Horus”), known from Papyrus Anastasi III (2,11f.), is located near another lake or marshy area, *p3 twfy* (Gardiner 1937: 22; 1947: 201*). The latter, according to the Onomasticon of Amenemope, is located near Tjaru, Egypt’s east frontier town (Gardiner 1947: 201*f.).⁵ Consequently all three of these coordinates, Tjaru, *p3 twfy* and *p3 3 Hr*, are found in this northeastern frontier zone. Manfred Bietak, therefore, has proposed that *p3 3 Hr* should be identified with the recently identified lake in northwestern Sinai (more on this below) (Bietak 1987: 165; 1996: fig. 1). The Old Testament locates Shihor (< [*p3*] 3 *Hr*) “east of Egypt” (Josh. 13:3), and Jeremiah (Jer. 2:18) places Shihor on the road from Judah to Egypt ().

Scholars continue to disagree as to whether this feature is a branch of the Nile or a lake or marshy area (cf. Na’aman 1980). Based on his geographical study of the northeastern Delta, Bietak has proposed that Shihor was a lake on Egypt’s east frontier, just east of the present-day Suez Canal, as well as the name of the east-most arm of the Pelusiac branch of the Nile (Bietak 1975: figs. 10; 23). Subsequently, he described Shihor as “the long narrow lake and water branch north of the Isthmus of Qantara accompanying the Road of Horus”, with *p3 twfy*

5 The onomasticon lists toponyms moving from north to south, and the penultimate site is *p3 twfy* and the final one is Tjaru, being Egypt’s northeast-most site (Gardiner 1947: 201*–203*). For a discussion of the location of Tjaru vis à vis *p3 twfy* see Hoffmeier 2005: 87–89.

being a marshy lake to its south in what until recent centuries was the Ballah Lakes (Bietak 1987: 167). If Bietak's proposal is correct, then the Pelusiac branch of the Nile split to the northeast north of Memphis where it was known as "the Waters of Ra", and then this branch bifurcated east of Tell el-Dab'a. The more northern arm continues with the previous name, while the southern distributary he labels *p3 š Hr* and it proceeded east and emptied in "the long narrow lake" (cf. Bietak 1996: fig. 1).

The most recent geomorphological research in the area immediately east of the Suez Canal conducted by Marcolongo (1992) and a decade later by Moshier (Hoffmeier & Moshier 2006; Moshier & el-Kalani 2008) show that this "long narrow lake" widens into a lagoon that was 7–8 km E-W and 7–8 km N-S (for further discussion see below). This lagoon, which emptied into the Mediterranean, extended approximately 15 km east of the Suez Canal. These data mean that *p3 š Hr* or Shihor was a substantial feature on Egypt's east frontier.

The importance of Horus to this region is further recognized by the various forms of the sky-god attested in texts found in northwestern Sinai. In 1887 Griffith spent a short time excavating Tell Abu Sefeh about 2–3 km east of the Suez Canal at Qantara East (Petrie 1888). He discovered several Ramesside blocks there, one of which was a plinth of Ramesses II. Along with his royal titulary, there were a number of epithets of Horus: *Hr tm3-š* "Horus the Strong-Armed" (Kitchen 1979: 402,15), *Hr nb msn* "Horus Lord of Mesen", which occurs twice (op.cit.: 402,15; 403,3), and *Hr nb sš* "Horus Lord of the Marsh" (op.cit.: 403,3). The location of Mesen remains a problem. The discovery of this Ramesside plinth with the epithets of Horus Lord of Mesen led Gardiner to think that Mesen was a town near Tjaru/Sile (Gardiner 1944: 26, n. 1; 1947: 203*).⁶ Kitchen has described it as "the old provincial capital", which must have been located somewhere near Tell Abu Sefeh (Kitchen 1993: 14).

⁶ This inscription also influenced Gardiner's belief that Tell Abu Sefeh was Tjaru/Sile.

⁷ This sarcophagus, which is now on display in the Cairo Museum (JdE 66748 A/B), was depicted recently in Abd el-Maksoud 1998a: 64, fig. 54.

Another monument found together with the foregoing has at least ten epithets of Horus Lord of Mesen (Kitchen 1975: 105,6; 105,10; 105,16; 106,2; 106,3; 106,7; 106,8; 107,5; 107,10; 107,13). In three of the cases, the text reports that Seti I "made it as his monument for his father Horus Lord of Mesen" (op.cit.: 105,10; 107,10; 107,13), while another refers to Horus Lord of Mesen as "the great god, lord of heaven" (op.cit.: 106,2). Then Ramesses II adds an inscription on the rear of the block, indicating that he renewed (*sm3w*) the monument that was in the house of Horus (*m pr Hr*) for his grandfather, Ramesses (I) (op.cit.: 107,5f.).

An indication of the longevity of the influence of Horus of Mesen in this area was realized with the discovery of a Greco-Roman period sarcophagus at Qantara East (Daressy 1914). It is cited by Montet as evidence for the proximity of Mesen to Tjaru/Sile (Montet 1957: 190; 1961: 33). The sarcophagus belonged to a "first priest of Horus, Lord of Mesen, Lord of Sile". This parallel usage of Mesen and Sile was cited recently by Mohamed Abd el-Maksoud to show the close relationship between these toponyms (Abd el-Maksoud 1998b: 65).⁷ This parallel usage suggests four possibilities: (1.) that they were in close proximity to each other; (2.) that they were one and the same; (3.) that Mesen was an earlier name for Tjaru/Sile; or (4.) that it was the name of the original temple or cult center at Tjaru. Beyond a location in the northwestern Sinai, nothing can be said more specifically about its location or the origins of this cult.

Excavations at Tell Abu Sefeh beginning in the 1990s have revealed that it was primarily a Ptolemaic-Roman period site, with the earliest remains being from the Persian period (Abd el-Maksoud 1998b; Abd el-Maksoud et al. 1997). Consequently it appears that the Ramesside blocks discovered by Griffith originated elsewhere, probably from Hebua, the closest significant New Kingdom site (about 10 km NNE).

The excavations of the Supreme Council of Antiquities, under the direction of Abd el-Maksoud over the past 20 years at Hebua have revealed a number of important inscriptions (more below on the nature and name of the site). A Ramesside Period votive statue contains an offering formula with the name of Horus (Abd el-Maksoud & Valbelle 2005: 18–21). Subsequently in 2007 the excavations

at Hebua II unearthed a relief depicting Ramesses II offering Maat to Horus. As of this date, only press reports of the discovery are available.⁸

The forgoing textual evidence clearly demonstrates that the god Horus was a dominant divine figure in the area immediately east of the present day Suez Canal, both in the toponym Shihor (known from Egyptian and biblical texts) and in various uses of the name of Horus with different epithets. So it is understandable why the toponym “the Ways of Horus” should be associated with this same area. While it is certainly possible that *w3wt Hr* was the name limited to the northeast-most part of Egypt, that does not answer why it is called the “way/s” or “road/s” of Horus unless a road was somehow associated with it. In our judgment then, there is no reason to exclude the possibility that *w3wt Hr* also is the name of the road that passed through this region and proceeded eastwards to Canaan.

Bietak posits that the “Ways of Horus” began in the eastern Delta at the site of Avaris in the Middle Kingdom, and that Avaris and subsequently Pi-Ramesses were strategically located where “the land and the sea route met” (Bietak 1996: 3). This starting point of the land and river routes at Avaris may be behind the earlier name of the site, *r3 w3ty*,⁹ literally meaning “the opening of the two roads or ways”. It is attested first in the First Intermediate Period and then in the 12th dynasty (Bietak 1996: 5–7).

Thus we conclude that the expression “Way(s) of Horus” applies both to the northeastern zone of Egypt and the road that runs through it across Sinai to Canaan. Eliezer Oren likewise maintains that it was a “dual usage” toponym, and the Ways of Horus was the older name for Tjaru as well as the route itself (Oren 2006: 279, n. 1).

8 As reported by <<http://news.nationalgeographic.com/news/2008/06/080602-egypt-fort.html>> (May 2011).

9 *W3ty* is the dual for *w3t*, “road”.

10 Baines & Málek’s atlas (1980: 15) reflects the knowledge of paleo-environment in the northeast Delta 30 years ago, although some of their maps are completely based on present-day geographical realities.

3. Physical setting of the north Sinai coast through time

Maps of Sinai that attempt to fix the locations of ancient sites, typically Bible atlases, are based on modern geographical features.¹⁰ Even Rainey & Notley’s recent authoritative atlas uses maps of Sinai that reflect geographical understanding of the region that is decades old and does not include known ancient bodies of water, marshes, and Nile distributaries discovered in the past fifteen years (Rainey & Notley 2006: 118; 120). From the outset of our archaeological work in northwestern Sinai, we believed that a thorough understanding of the ancient landscape was required. Consequently we also engaged in geological investigations of northwestern Sinai, and the results mean that the existing maps showing the Ways of Horus require some significant adjustments. Our work was preceded by important contributions to the geology and geomorphology of the eastern Nile Delta and northern Sinai coasts as they bear on the ancient coastal byway between Egypt and Canaan, including syntheses by Neev et al. (1987) and Stanley (2002).

Before reviewing the recent archaeological work on the Ways of Horus, the corresponding geological research in the region, leading to a reconstruction of paleo-environmental conditions, must be considered.

The Mediterranean coast of the Sinai, the geographic setting of the Ways of Horus, marks the northern edge of an extensive surface deposit of wind-blown sand classified as an *erg* or dune sheet [Fig. 2]. The southern boundary of the *erg* is constrained by the upland Insular Massifs (Gebel Maghara, Gebel Halal, etc.). The *erg* stretches from the vicinity of the Suez Canal eastward to the Negev in Israel. High dunes, some surpassing 50 m in relief, are more prevalent between Romani-Gilbana in the northwest Sinai and Beersheba, Israel. Low areas between dunes may contain freshwater springs and groves of palm or *sidri* trees (Greenwood 1997), providing suitable conditions for Bedouin encampments. Along the coastal margin of the *erg*, sand forms a cover of variable thickness over older sand and mudflats related to Pleistocene to Holocene marine littoral deposition. Shrubs stabilize the northern slopes of coastal dunes because of lower rates of evapotranspiration facing the sea (Greenwood 1997: 51–67). Mean annual precipita-



Fig. 2 Satellite image (top) and corresponding map (bottom) of the eastern Nile Delta and north Sinai.

Top: Landsat image (NASA-US Geological Survey) from Band 3 camera obtained c. 1987. The outline on the image traces the approximate Bronze Age Mediterranean coastline prior to advance of the Pelusiac Nile and formation of the Tineh Plain (after Stanley 2002). The coastal fault trace (identified by Neev et al. 1987) aligns with the northeastern Sinai coast and extends south of the Bir Abd peninsula.

Bottom: Geographic outline of the satellite image including the following (with sources): locations of geomorphic features, modern towns, and archaeological sites referred to in text; modern road between Qantara and Gaza (dashed); proposed traces of Pelusiac Nile branches of the eastern Nile Delta emanating from el-Dab'a (after Bietak 1975; 1996); locations and clusters of sites surveyed by Oren (1973) containing ancient Egyptian pottery (open boxes); and outline of the Ballah Depression with proposed channel (early Pelusiac?) course.

tion in this region is about 100 mm, increasing from 75 mm at Qantara in the west to 120 mm at the border city of Raphah. Most of the rainfall occurs during the winter (between November and March). With arid conditions and mean annual temperature

of about 20 °C, the Mediterranean coastal zone of the north Sinai is considered a marine desert.

The source of sand for the *erg* is undoubtedly the Nile River system. The Insular Massifs are built of limestone bedrock, and drainage from these up-

lands would not provide sufficient sand. Nile sand and silt is carried counterclockwise along the coast by longshore currents and pushed to the shoreline by waves. Dunes of the *erg* at Bir Jamil overlie chalky freshwater deposits dated at 35,000 years BP, leading Neev et al. (1987) to conclude that the *erg* is younger than Late Pleistocene. Thick beach and lagoon sands exposed at Mount Casius, an uplifted terrace north of the Bardawil Lagoon, are dated at 9000 to 6000 years BP. Neev et al. (1987) believed that the *erg* sand is derived from these deposits and that dunes migrated landward up until sea-level stabilized during the transition from Chalcolithic to Bronze Ages (5500 to 4500 years BP). They interpreted subsequent cycles of sand incursion and stabilization based upon the temporal distribution of ancient settlements along the northern Sinai coast (following surveys of Oren; see Oren 1973; 1987) and contemporaneous sand incursion/stabilization patterns in the Levant. Periods of sand stabilization during the Late Bronze Age to Early Roman times (3500–2000 years BP) and Early Islamic to Mamlukian times (1400 to 500 years BP) would have facilitated navigation along the coastal route (Neev et al. 1987).

Sea-level rise, Nile system input (sediment and freshwater), and local tectonic activity contributed to changes in the configuration and environmental settings of the Mediterranean coast of the northern Sinai over the past 10,000 years. The present coastline of the eastern Nile Delta from Port Said eastward toward El Arish represents the configuration since only the past 1000 years. Between 10,000 and 7500 years BP, the shoreline of North Africa moved landward across the Mediterranean continental shelf as sea-level rose after the last Pleistocene glacial advance. Sediment cores reveal the initiation of modern Nile Delta deposition about 7500 years BP (Stanley & Warne 1993) coinciding with sea-level rise slowing from about 10 to 1–2 mm/year (Stanley & Goodfriend 1997), the establishment of easterly (counterclockwise) coastal currents (Stanley 2002), and increased aridity in the region (Adamson et al. 1980). Following the generally accepted rate of sea-level rise for the past 7000 years, during the Bronze Age sea-level was between 3 to 5 m lower than at present. Actual sea-level change at any given location along the Egyptian-Sinai coast must also take into consideration uplift or subsidence resulting from tectonic movements in the crust or sediment

loading. For example, Stanley & Goodfriend (1997) have shown that subsidence outpaced sea-level rise in the vicinity of Port Said at the northern end of the Suez Canal so that the actual sea-level rise there is at least 5 mm/year. Yet, only 35 km southeast of Port Said there is evidence of uplift countering the effect of subsidence in the vicinity of Tell Farama (ancient Pelusium; Stanley et al. 2008; Goodfriend & Stanley 1999).

By about 5000 years BP, the Mediterranean shoreline in the northwest Sinai was located along a prominent linear tectonic feature evident on satellite imagery [Fig. 2]. The Pelusium Line extends SW-NE from the vicinity of Qantara (along the Suez Canal) to Mount Casius (on the north side of Bardawil Lagoon). Neev (1977) described this feature as the surface expression of a transcontinental mega-shear suture, along which there is evidence of vertical tectonic movement over the past 10,000 years (Neev et al. 1987; Stanley et al. 2008). Remnants of an ancient dune ridge (known in the Levant as *kurkar*) and inland paleolagoon along the inland stretch of the Pelusium Line were identified by remote sensing analysis of satellite imagery by Marcolongo (1992) and mapped on the surface by Moshier & el-Kalani (2008). New Kingdom installations at Tell Hebua and Tell el-Borg are contemporaneous with this ancient coastal setting [Fig. 3].

By 3500 years BP the Pelusiac Nile flowed toward the northwest Sinai, possibly directly into the lagoon associated with the Pelusium Line. Paleogeographic reconstructions by Bietak (1975; 1996) and Marcolongo (1992) show the Pelusiac branch flowing from the administrative cities of Avaris and Pi-Ramesses (Tell el-Dab'a and Qantir, respectively) in the heart of the eastern Delta to the vicinity of Tell Hebua, located just shoreward of the Pelusium Line. Surface geology corroborates the existence of a narrow stretch of estuary or lagoon (*p3 š Hr* or Shihor, see above) behind the ancient dune ridge supporting Tell Hebua (Hoffmeier & Moshier 2006; Moshier & el-Kalani 2008). A buried channel discovered at Tell el-Borg may also be related to the Pelusiac system of distributaries. This paleo-channel clearly emptied into the lagoon, but appears to have flowed out of the Ballah system of lakes and wetlands (*p3 twfy*, see above). The paleo-channel was clearly contemporaneous with New Kingdom settlement at Tell el-Borg. Channel course sediments contain New Kingdom pottery, and conven-

Fig. 3 Geo-referenced CORONA satellite images (US Geological Survey) serving as a base map for northwest Sinai, just east of the Suez Canal, include the following: locations of geomorphic features, modern towns, and archaeological sites referred to in text; locations of sites surveyed by Oren (1973) containing ancient Egyptian pottery (open boxes); and outlines of interpreted Late Bronze Age paleo-environments (after Stanley 2002; Moshier & el-Kalani 2008).

tional radiocarbon dates from shells and charcoal fragments in the deposits range from 3210 ± 80 to 3000 ± 70 years BP, but with 2 sigma calibrations to calendar years ranging between 3620 and 2960 years BP (Moshier & el-Kalani 2008).

The Pelusiac Nile in the northwest Sinai provided environments and natural resources to a region that would become a marine desert in its absence [Fig. 3]. Fresh Nile water would have saturated the ground for ready access by shallow wells. Fluvial-estuarine channels and the lagoon contained fish and invertebrates for food (abundant fish bones were excavated near the channel at Tell el-Borg). Marshes were dredged for mud to make bricks. Annual floods fertilized and watered cultivated land.

The Pelusiac branch shifted after the New Kingdom/Late Bronze Age advancing north of the Pelusium Line and creating the Tineh Plain. This action effectively stranded the ancient coastline and converted the paleolagoon into a marsh. By 2800 years BP (800 BC) the Delta plain was stable such as to support the founding of Pelusium (Tell Farama), which thrived as an entry port to Egypt during Greco-Roman times and was abandoned by the middle of the first millennium AD (Carrez-Maratray 1999). Cultural abandonment of Pelusium followed the geological abandonment of the Pelusiac branch to more westerly distributaries, probably caused by regional tilting of the Delta region (Said 1981; el-Gamili & Shaaban 1988). Subsequent to abandonment of the Pelusiac branch, sand carried

by longshore currents from newer, central Nile distributaries built a gently curving (convex) strand plain into the Gulf of Tineh, and the western half of the Tineh Plain began to subside (forming Lake El Malaha). Stanley et al. (2008) proposed that vertical shifts associated with the Pelusium Line between 1000 and 800 BC kept Pelusium and vicinity from submergence due to natural subsidence and sea-level rise.

The Bardawil Lagoon and associated barrier strand was known in ancient times as Lac Sirbonis. The barrier strand served as a convenient route along the coast between Egypt and the Levant known as the *Via Maris* between Persian and Mamlukian times, c. late 6th century BC to 15th or 16th century AD (see discussion above; Figueras 2000: 7–11). Many maps from the Middle Ages, often based upon more ancient written descriptions of the region, depict Lac Sirbonis as a circular body of water located farther inland than it ever actually was. The geological investigations of Neev et al. (1987) concluded that the lagoon was not enclosed by an uninterrupted barrier strand until just before Persian times.

The formation of Bardawil Lagoon involves complex tectonic movement and dynamic sedimentological response over the past ten thousand years. Uplift along the Pelusiac Line created the eastern barrier strand of the lagoon that terminates at Mount Casius. Vertical movement began in the Late Pleistocene and continued well into the Holocene (possibly as recent as the past 4000 years). Ancient marine sediments and coastal soil horizons were uplifted 30 m above sea-level at Mount Casius. Another 30 m of active dune sand covers the uplifted deposits. Persian to Mamelukian pottery (and nothing older) found at the contact between uplifted strata and the modern dunes led Neev et al. (1987) to deduce that Mount Casius was isolated from the mainland until that time. The eastern barrier strand formed between Late Bronze Age and Roman times. Nile sand accumulated in offshore bars west of the Bir Abd peninsula and on spits attached to the northern apex of the western barrier strand. The system of bars and spits migrated seaward and coalesced into the barrier strand that closed off the eastern side of the lagoon.

The coastline of the northeastern Sinai, east of Bardawil Lagoon, is subjected to scouring by swift longshore currents. Sediments dumped into the sea

at the mouth of Wadi El Arish form only temporary deltas before being swept away by the currents (Stanley et al. 2008). In addition to swift currents, this segment of the Sinai coast appears to correspond with the trace of another fault south of the Pelusium Line that aligns with the coast in the vicinity of El Arish and probably extends inland to south of the Bir Abd peninsula (Neev et al. 1987) [Fig. 2]. Elevated terraces along the fault indicate vertical movement on the order of several meters since the Late Pleistocene. Neev et al. (1987) noted that the El Arish to Bir Abd segment of the “overland route (or the ancient military road) between Egypt and Canaan” corresponds with the inland extension of this coastal fault. The actual shoreline along this segment of the Sinai coast during the Bronze Age was probably set seaward (north) of the modern shoreline some several hundred meters, corresponding with the lower sea-level of that time (3–5 m below present sea-level). Freshwater sources along the central and eastern sections of the Ways of Horus in the north Sinai are limited to shallow wells exploiting thin unconfined aquifers over saline groundwater. Surface water would have been intermittently available from streams flowing out of the Wadi El Arish. Despite the limited amount of water sources, they appear to have been adequate to support the Egyptian military’s needs during the New Kingdom.

In summary, the coastline along the Ways of Horus during the Bronze Age must be reconstructed in light of changes in sea-level, sediment input, coastal processes of erosion and deposition, and tectonic activity of the past 10,000 years. Ignoring local subsidence or vertical uplift, global sea-level has risen some 3–5 m since the Bronze Age. The western half of the Sinai coast, from the Suez Canal zone to Mount Casius, was controlled by the Pelusium Line from about 6000 to 3000 years ago. Advance of the Pelusiac Nile created the Tineh Plain north of the Pelusium Line between modern Port Said and ancient Pelusium after the Bronze Age. Subsequent longshore movement of Nile sand around uplifted Mount Casius, and deposition east of the Bir Abd peninsula resulted in a barrier strand that enclosed the Bardawil Lagoon. The northeastern Sinai coast was controlled by swift longshore currents and intermittent vertical movement along a coastal fault.

Fig. 4 Seti I Karnak relief on the north outside wall of the Hypostyle Hall depicting and naming some forts along the Ways of Horus (Gardiner 1920: pl. XI).

4. Recent archaeological investigations in north Sinai

The Karnak war reliefs of Seti I (1294–1279 BC) (Epigraphic Survey 1986: pls. I–VI) remain the most celebrated and studied source of information about the Sinai coastal highway or the Ways of Horus. Their importance lies in the fact that they depict a series of **eleven forts** in stereotypical fashion that marked the route, and the names of the strongholds are typically recorded on each feature, though some have not survived. Additionally, the adjoining wells and watering holes are also shown and their names recorded [**Fig. 4**]. Gardiner made the first serious attempt to trace the cross-Sinai road, which he called “the military road”, by correlating known sites with the Seti I Karnak reliefs and Papyrus Anastasi I (Gardiner 1920). Given the limited archaeological work done in the region, his reconstruction was highly speculative and tentative (cf. Cavillier 2001). No one would disagree with the premise that the forts and water sources depicted at Karnak marked

the route. Unfortunately, when Gardiner published his seminal study in 1920, no forts had been uncovered along the route. What little had been done by earlier investigators, like Jean Clédat (1916–1917; 1919; 1920; 1921) and Griffith (Petrie 1888), was limited to the western end of the road, between Qantara East and Pelusium, and their discoveries were restricted to Persian through Roman period materials. At the eastern end, the locations of Raphah (*r-ph*)¹¹ and Gaza (*kd*)¹² at the entry of Canaan were identified by the survival of the ancient names into Arabic.

Consequently Gardiner’s reconstruction of the military highway based on the sites along north

11 Raphah is mentioned in Papyrus Anastasi I and on the Seti I relief, but in the latter the name has been lost in recent times, see Ahituv 1984: 161, n. 461.

12 In the Seti I Karnak relief, Gaza is not mentioned, but it is widely believed that the last entry *dmi n p3 k3n3n*, “the city of Canaan”, is used for **Gaza** (Ahituv 1984: 83f.; Kitchen 1993: 14f.).

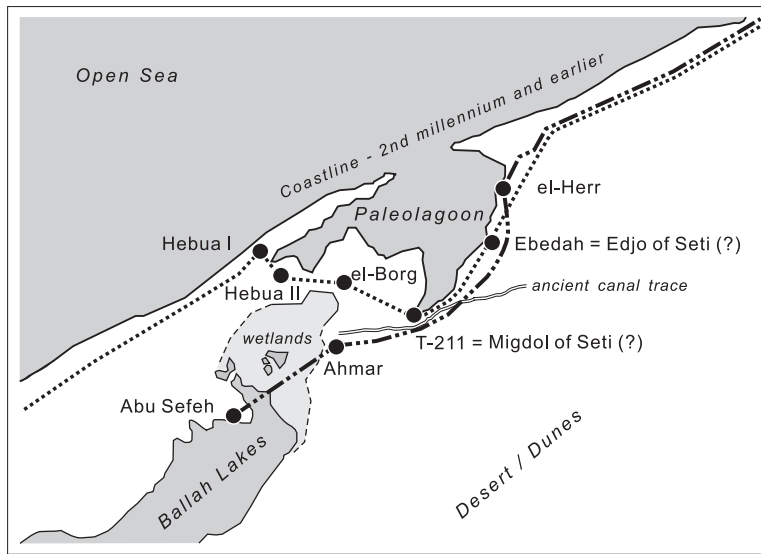


Fig. 5 Map of northwestern Sinai and the proposed course of the Ways of Horus based on the research of the East Frontier Archaeological Project, made by Jessica Lim, based on Stephen Moshier's data.

Sinai was understandably provisional. The sequence he proposed is as follows (Gardiner 1920: 113) [cf. Fig. 5]:

1. The fortress of Tjaru = Qantara (i.e. Tell Abu Sefeh)
2. The Dwelling of the Lion/Sese = Tell Habwe (?)
3. Migdol of Menmaatre = Tell el-Herr
4. Buto of Seti Merneptah = Qatia
- 5.–10. (no correlations made)
11. The town of [Raphia]¹³ = Raphah

Any possible archaeological investigations in north Sinai to test this reconstruction and fill in the blanks were forestalled by repeated military activity over the next fifty years: World War I and II, the found-

ing of the modern state of Israel in 1948, the Suez crisis in 1956, the six-day war of 1967 and the subsequent Israeli presence in Sinai until the Camp David accords that resulted in the return of Sinai to Egyptian sovereignty. However, during the decade of Israel's occupation of Sinai, a flurry of archaeological surveys and brief excavations occurred, and these mark the beginning of the modern era of work in this critical region.

Eliezer Oren of Ben Gurion University conducted systematic archaeological surveys, and some excavations, along the north Sinai corridor between the Suez Canal and Raphah in the east. While the complete survey awaits publication, some preliminary reports have been instrumental in enabling one to trace the route across the sandy dunes of the Mediterranean coast (Oren 1973; 1987; 1993; 2006). From the maps in his preliminary reports, Oren's team identified hundreds of sites clustered along a narrow band across north Sinai, between Qantara and Raphah, that apparently followed the course of the Ways of Horus [Fig. 2]. The discoveries demonstrated that this was the principal travel corridor between Egypt and Canaan from the 4th millennium onwards. For the Early Bronze Age I and II periods (late pre-dynastic through Old Kingdom) he documented "nearly 250 settlement sites" (Oren 1993: 1387), "nearly one hundred" smaller sites for the Middle Bronze Age (Middle Kingdom and Second Intermediate Period), mostly south of Lake Bar-

13 Gardiner (1920: 113) proposed that Raphia is the missing toponym in the lacuna. This interpretation is provisionally accepted by the Epigraphic Survey (1986: 12, n. m), whereas William Murnane (1985: 56), a member of the Epigraphic Survey who made the new collation of the Seti I Karnak reliefs, suggests that "the City [of Canaan]", i.e. Gaza, was written. Murnane, in turn, is following the suggestion of Faulkner (1947: 35f.). The latter reading would harmonize the concluding point of the route as spelled out in Papyrus Anastasi I.

dawil and east to Raphah (op.cit.: 1388), and for the Late Bronze Age/New Kingdom more than 230 sites and settlements were recorded (Oren 2006: 280). The earlier published map only shows the larger New Kingdom/Late Bronze Age sites (Oren 1987: 79). Only from this period are architectural remains attested which might correlate to the fort sequence in Ramesside times. Since the archaeological sites from the earlier periods were discovered first in the Canaan end of the route, we will move in our investigation from east to west.

4.1. Gaza and Raphah

The entry point of Canaan has long been identified with the site of Gaza. In the early 1930s, Petrie excavated Tell el-Ajjul in the Gaza Strip, equating it with ancient Gaza (Petrie 1931–1934), although subsequently, Ahron Kempinski proposed that **Tell el-Ajjul** was ancient Sharuhem (Kempinski 1974), however, this interpretation has not been widely accepted (Hoffmeier 1989; 1991; Rainey & Notley 2006: 64f.). If New Kingdom Gaza is not located at Tell el-Ajjul, then its whereabouts remain unknown.

Around 600 meters north of Tell el-Ajjul is the site of **el-Moghraqa**, which was recently investigated by British archaeologists (Steel et al. 2004). They discovered some clay cones with the imprint of Thutmose III's name on them, and one with Hatshepsut's cartouche on it. Because of the site's proximity to Tell el-Ajjul, the excavators believe that this Middle Bronze Age IIC – Late Bronze Age I site was closely associated with the larger site. Based on the new material and the previously known military nature of sites in the area, the excavators observed that "clearly the Gaza region was of prime strategic military importance to the Egyptian New Kingdom empire in Syria and Palestine, and would have been crucial for the movement – by land certainly and presumable also by sea – of traded commodities and military and administrative personnel between Egypt and Palestine" (Steel et al. 2004: 221).

Since the Seti I Karnak reliefs show the final fortified cities at the east end to be Raphah and "the Canaan" (*p3 k3n3n*), which likely originated from *dmi n p3 k3n3n*, "the city of Canaan" (Kitchen 1993: 14f.), one might be inclined to think that this site was the entry point into Canaan as the name suggests. While it is possible that *p3 k3n3n* of the Seti I

list corresponds to Gaza, and Gaza not *p3 k3n3n* is the final toponym mentioned in the Papyrus Anastasi I sequence (Fischer-Elfert 1983: 153f.), some historical geographers remain cautious about the equation (Ahituv 1984: 84f.; Kitchen 1993: 15). Nevertheless, the road from Egypt to Canaan began at Tjaru/Sile and ended at Gaza. Seti's informative tableau at Karnak depicts the forts between Tjaru and *p3 k3n3n* (Gaza). The inscription accompanying Shasu battle at the site of *p3 k3n3n* offers the following description: "Regnal year one (of) the King of Upper and Lower Egypt, Menmaatre (Seti I); the devas[tation] which the energetic forearm of Pharaoh – may he live, prosper and be healthy! – made (of) [t]he Shasu enemies, from the fortress Tcharu to the Canaan" (Epigraphic Survey 1986: 7).

Raphah is probably to be identified with an unnamed site (07550/079250) northwest of Tell Raphah (i.e. Tell esh-Sheikh Suleiman) located just inside the Egypt-Gaza Strip border by the present-day town of Raphah (Ahituv 1984: 162). Surface survey work at this site indicates that it was occupied during the Middle Bronze Age II and Late Bronze Age periods (loc.cit.).

4.2. Deir el-Balah

About 10 km south of Tell el-Ajjul and about 15 km north of Raphah is **Deir el-Balah**. Trude Dothan excavated the remains of a fortified Egyptian military post. The small fort measures about 20 x 20 m, and beside it Dothan uncovered what she believed was an artificial lake or pool that was also about 20 x 20 m (Dothan 1993: 343f.). This arrangement looked to her like the typical Ramesside military site from north Sinai with fort and water reservoir adjacent to it, as depicted in the Seti I Karnak scene [Fig. 4]. The dating horizon for the site, the excavator concluded, was that it originated in the Amarna period and remained in Egyptian hands through the 19th dynasty (Dothan 1993: 344). A recent study by Ann Killebrew and two associates has argued that the large pit was not a reservoir or pool, but a pit from which nearby workshops obtained clay to make pottery, clay coffins and bricks (Killebrew et al. 2006). This study also proposed that the ceramic and stratigraphic evidence better suites a 19th through 20th dynasty horizon (op.cit.: 108–119).

Not all the excavators from Trude Dothan's team, however, agreed with the lower dating of the site. The final report of the excavations will appear soon, and Baruch Brandl has informed us that the late 18th dynasty date for the origin of Deir el-Balah will be maintained there.¹⁴

The Egyptian name of Deir el-Balah is not known, but its location between Raphah and the Gaza area indicates that it is neither of these sites, but apparently one not shown in the Seti I sequence. This factor might suggest that it either dates to late in Seti I's reign (i.e. after the completion of the relief) or that it was built during the reign of Ramesses II (1279–1213 BC).

From an Egyptian perspective, the road from Egypt terminated at Gaza, thus marking the end of the "Ways of Horus". That of course was not the end of the military road, as it continued north. Lately it has been suggested that the north Sinai military corridor in Ramesside times extended north beyond Gaza (Singer 1988). This new evidence led Anthony Spalinger to state the following: "All in all, military strongholds were probably established around every 20 km at locations from Apehek down to Gaza. Thus the 'Ways of Horus', the coastal road out of Egypt, was made more secure" (Spalinger 2005: 241).

We turn now to consider the military installations discovered in recent decades in north Sinai, which marked the Ways of Horus corridor. Those in the eastern and central sectors were uncovered by Eliezer Oren in the 1970s and early 1980s.

4.3. A-289 and A-345

The area of **Haruba**, situated 12 km east of El Arish and about 30 km west of Raphah, produced more than twenty sites in a zone that occupies 4–5 km² (Oren 1987: 84–95; 1993: 1390) [Fig. 2]. Site A-289 contained a **small fort (2500 m²)**. The mud-brick stronghold was made of 4 m thick walls, and a dual-towered gate that was 13 x 12 m provided the defenses for this fort and its extramural associated

structures. Most of the ceramic and epigraphic evidence shows that this site flourished during the 19th and 20th dynasties, although a seal of Thutmose III was discovered (Oren 1993: 1390), possibly indicating that the site was occupied earlier, but not fortified (Morris 2005: 511–514). Phase II of the mid-12th century was destroyed (Oren 1993: 1390).

Apart of the Haruba complex, and 400 m north of the fort, Oren uncovered an administrative center that lacked a defense wall (A-345; Oren 1987: 84–95; 2006: 281–288). Long rectangular storage facilities made up the heart of this outpost that traces its origins back to the 18th dynasty (Phase IV). Wares attested for the reigns of Thutmose III and Amenhotep II have been recorded, and the site continued in use into the 14th century (Oren 1993: 1390f.; 2006: 286f.).

4.4. BEA-10

Located by the modern town of **Bir el-Abd** in central Sinai is another New Kingdom site which bears Oren's survey number BEA-10 [Fig. 2]. It was established late in the 18th dynasty and continued through the Ramesside era. **Traces of a fort** were found, along with storage areas, and granaries that could store 40 tons of grain (Oren 1993: 1389). Encroaching sand dunes made it impossible to determine the size of the site, but it is evident that it was surrounded by a 3 m thick defense wall (loc.cit.). Seal impressions on ceramic materials with the name of Thutmose III on them attest to an 18th dynasty presence at this site (Oren 2006: fig. 6, nos. 12–14).

Having reviewed the data for the eastern end of the route (Gaza area and Haruba) and the central zone (Bir el-Abd), we move now to consider the western sector of the Ways of Horus. Since the mid-1980s, investigations have been ongoing, and they have been especially important as they not only mark the beginning of the military road, but since this area was also Egypt's frontier, it was the most strategic defensively.

4.5. Where is Tjaru/Sile?

Just as Gaza was the gateway to Canaan and marked the end of the Ways of Horus, Tjaru/Sile

14 James Hoffmeier was able to ask Baruch Brandl, a member of the excavation team and a key contributor to the final report, his opinion of Killebrew's lower dating of the site. He averred that he and other team members did not agree with Killebrew and they would argue for the earlier date in the final report.

was its beginning in Sinai. When Gardiner wrote his influential study of the Sinai military road, he assumed that Tell Abu Sefeh, located 3 km east of the Suez Canal at Qantara Sharq, was the ancient frontier town. Following the earlier research of C. Küthmann who first made the equation (Küthmann 1911), Gardiner confidentially asserted: “Today at all events, the question is finally settled; for in 1911 Küthmann produced convincing evidence that Thel (Tjaru), known from the hieroglyphs to have been the starting-point on the Egyptian frontier, was situated at Tell Abu Sefeh” (Gardiner 1920: 99).

One reason for identifying this site with Tjaru/Sile was Griffith’s 1887 discovery of the Ramesside blocks discussed previously, which refer to Horus of Mesen. Oren himself briefly investigated Tell Abu Sefeh and made a few sondages that yielded only Late Period ceramics and nothing from the New Kingdom (Oren 1987: 113, n. 3). A century earlier, when Griffith found the Ramesside blocks, he declared that “on this spot then was a temple of Ramesside epoch” (in Petrie 1888: 97). His excavations, however, signaled that something was amiss. After proposing that a Ramesside temple stood on this spot, he issued a cautionary note: “However, a fortnight spent in trenching the mound produced nothing further that was certainly of a period earlier than the later Ptolemies” (loc.cit.).

Not until a century later did full-scale excavations begin there, which confirmed that **Tell Abu Sefeh was not occupied during New Kingdom times** (Abd el-Maksoud 1998b; Abd el Maksoud et al. 1997). Clearly the misleading Ramesside blocks at Tell Abu Sefeh were moved there from a nearby New Kingdom site.

Mohamed Abd el-Maksoud, who had initiated work at Tell Abu Sefeh, began work in 1981 at Tell Hebua, a large site with at least four areas, located about 7 km NNE of Abu Sefeh [Fig. 5]. At **Hebua I** he uncovered remains of the Second Intermediate Period, 18th and 19th dynasties, including a **gigantic fort measuring 800 x 400 m**, which he thought was constructed by Seti I (Abd el-Maksoud 1998a; 1998b). Initially, Abd el-Maksoud thought that Hebua I might be the Dwelling of the Lion, the second fort on the Seti I sequence (Abd el-Maksoud 1987) [cf. Fig. 4], because he too was operating under the assumption that Tell Abu Sefeh was Tjaru/Sile. But as work at Abu Sefeh continued and it was clear that no strata from the New Kingdom

had come to light, he began to think, given the immense size of Hebua, that it was the illusive Tjaru/Sile.¹⁵ Over a decade ago Hoffmeier, after visits to the site and reviewing the published data, thought that Hebua I likely was Tjaru (Hoffmeier 1996: 187).

Confirmation of the identification came in 1999 when Abd el-Maksoud uncovered a Ramesside votive statue dedicated to “Horus Lord of Tjaru” (Abd el-Maksoud & Valbelle 2005: 19f.). Then in 2005, a cache of statues and inscribed objects was discovered. Among the group was a statue of the Second Intermediate Period with Tjaru written on it (op.cit.: 7–9). These two occurrences of Tjaru, in combination with the absence of any other toponyms on the inscriptions discovered thus far, **remove any doubt that Hebua is Tjaru.**

An examination of the beginning sequence of forts on the Seti I relief shows that Tjaru was divided by a water channel of some sort called *t3 dnit* [Fig. 4]. *Dnit* means dyke or canal (Erman & Grapow 1926–1931, vol. 5: 465). The water sign (𓂏) plus the water channel or canal sign (𓂏) act as determinatives for *dnit*. Gardiner thought that *t3 dnit* meant “the dividing waters” based on the root meaning “to sunder”, “to divide” and “to dam off” (Gardiner 1920: 104, n. 5).

The building complex depicted on the right or west side of *t3 dnit* contains no label naming it, while the features on the left or east side are called *htm n t3rw* – “the *htm*-fortress of Tjaru” (Epigraphic Survey 1986: pl. VI). Since the king is returning from Gaza, apparently the east-most point of this campaign, and traveling west along the Ways of Horus, he reaches Tjaru/Sile at the fortress on the east side of the water channel that separates the two parts of Tjaru/Sile. Hoffmeier and Abd el-Maksoud have previously proposed that Hebua I and II are the two sites indicated by the two fortress complexes on either side of the *t3 dnit* on the Seti I Karnak relief (Hoffmeier & Abd el-Maksoud 2003: 196).

The earliest investigations at Hebua II, surveys by a Franco-Egyptian team, revealed inscribed ma-

15 Dr. Abd el-Maksoud initially invited James Hoffmeier to work in Sinai when they first met in 1987. Since 1994 the two have worked together, and Dr. Abd el-Maksoud has graciously shared his results with us and permitted us to visit his work-in-progress. In the course of these years we have had many occasions to discuss our respective theories about site identification.

terial with the cartouche of Seti I on them (Valbelle et al. 1992: 17f.; Chartier-Raymond et al. 1993: 67f.). In 1999 a brief season of excavations revealed some architectural remains, which were recently published in a short account. The excavator reports that he uncovered the remains of a fort with long, rectangular storage facilities within it (al-Ayedi 2006). The fort was around 100 m², made of 4 m thick walls. Abd el-Rahman al-Ayedi proposes that this site is the Dwelling of the Lion of the Seti sequence, as the title of his article indicates (“The Dwelling of the Lion: A New Fortress on the Ways of Horus”), and the second site after Tjaru/Sile (al-Ayedi 2006: 39–41).

While al-Ayedi is to be commended for drawing attention to this site and beginning to investigate it, his interpretation of the data is somewhat problematic. According to his theory, Hebua I and II, which are only separated by slightly over a kilometer and had some sort of water channel passing between them [Fig. 5], are Tjaru/Sile and the Dwelling of the Lion respectively.¹⁶ However, the label *htm n t3rw* occurs on the fortification (Gardiner’s toponym B) on the east or left side of *t3 dnit* waterway (toponym A), whereas the fort identified as *t3 t p3 m3i* “The Dwelling of the Lion” (Gardiner’s toponym D) is shown some distance to the east [Fig. 4]. Secondly we note that no name exists for the stronghold on the right or west side of *t3 dnit*. This absence may be due to the fact that the two complexes on either side of *t3 dnit* shared the same name. This understanding is based on Gardiner’s interpretation of the scene who described the fort complex being “partly on one side and partly on the other of a canal full of crocodiles” (Gardiner 1920: 104). No new advances in interpreting Egyptian art have resulted in an alternative interpretation of this portion of the Seti I relief.¹⁷

In 2007, Mohamed Abd el-Maksoud began clearing Hebua II, and while his excavations are ongoing,

there have been brief and compelling reports in the press that show that Hebua II is most likely toponym B of the Seti I relief. The new work has revealed an enormous fort that measures 250 x 500 m (or 125,000 m²) with walls that are 13 m wide, and defense towers that were 20 m thick, and inscribed material from these excavations demonstrate that this fort dated to the New Kingdom.¹⁸

This new evidence makes clear that it is the *htm*-fort of Tjaru, and we wait with great anticipation for the results of Dr. Abd el-Maksoud’s ongoing excavations and publications. As Ellen Morris’ comprehensive study has shown, *htm*-forts were strategically located on Egypt’s borders at strategic entry points (Morris 2005: 804–809). The fact that the thickness of the walls of the New Kingdom fort at Hebua II significantly exceeds that of its counterpart at Hebua I suggests that the former was the major strategic defense and entry point of Egypt. Morris also points out that the *htm*-fort served as “a gateway” to Egypt (op.cit.: 809). The fact that the fort on the east or left side of the relief bears the name *htm n t3rw* and that it is the structure Seti I approaches on his chariot, suggests that it is the gateway to Egypt. The Dwelling of the Lion, one would expect, would be a smaller site east of this location.

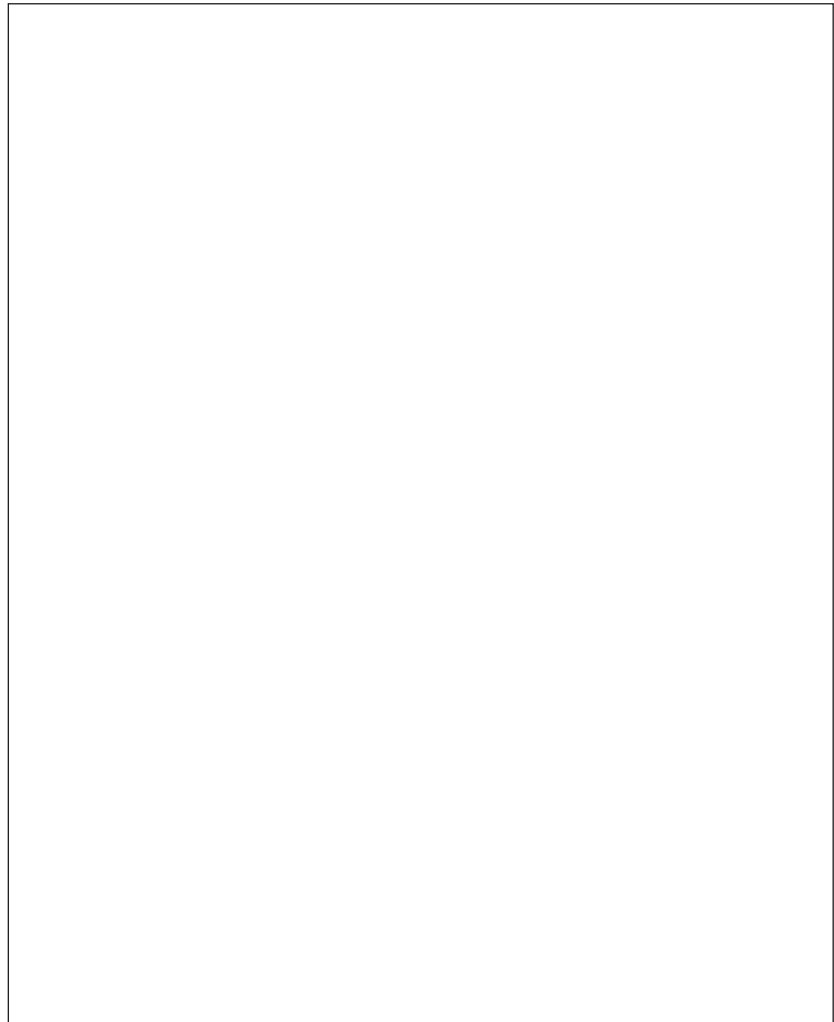
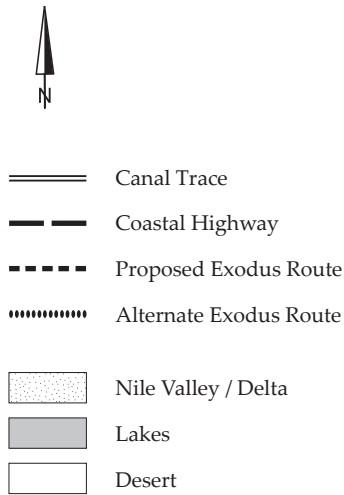
The discoveries of the forts at Hebua I and II, however, demonstrate beyond any reasonable doubt that they guarded the road into Egypt. The former site stood on a dune ridge on which the road from Tell el-Dab’a and Pi-Ramesses passed. From that point, as the Seti I relief shows, a bridge of some sort connected Tjaru west from Tjaru east [Fig. 4]. From that point the road from Egypt to Canaan formally began, but which direction did it go? Over a decade ago, and before the geological studies of the early 1990s had been fully understood and correlated with new archaeological data of the opening years of the 21st century, Hoffmeier had proposed that the route continued directly east

16 To quote the author directly: “Although in modern times the area is dry, a recent satellite survey indicates that in ancient times a waterway lay between the two sites which have been identified as Tjaru and the Dwelling of the Lion, Haboua I and Haboua II” (al-Ayedi 2006: 41).

17 See the recent discussion of the building complexes on either side of *t3 dnit* by the Epigraphic Survey (1986: 16f.). The Chicago epigraphers offer no refinement of Gardiner’s interpretation of 1920.

18 For a press report of this important discovery, see <<http://news.nationalgeographic.com/news/2008/06/080602-egypt-fort.html>> (May 2011). We are grateful to Dr. Abd el-Maksoud for showing us his work during his excavation season in May 2008. It is evident that this fort cannot be the structure that al-Ayedi uncovered. Obviously as Dr. Abd el-Maksoud publishes his data and site plans, the architectural history of the site will be clarified.

Fig. 6 Map of northwestern Sinai based on data available in 1995 (after Hoffmeier 1996: fig. 2).



from Hebua I towards the coast and on to Canaan [Fig. 6]. But the combination of paleo-environmental study (see above, section 3) and archaeological excavations have changed this. The lagoon, which was fed by the northern and southern branches of the Pelusiac Nile, was open to the Mediterranean, and could not be traversed. Consequently, from Hebua II the route had to go in a southeasterly direction toward The Dwelling of the Lion, the first fort in the sequence after Tjaru [Figs. 3; 5].

4.6. Tell el-Borg

In 1999 we began to investigate Tell el-Borg, located 5 km southeast of Hebua II [Figs. 3; 5].¹⁹ We were asked to explore the site by Mohamed Abd el-Mak-

soud – then the SCA director for north Sinai – as it was being threatened by agricultural development. Excavations were conducted between 2000 and 2007 (Hoffmeier 2002; Hoffmeier & Abd el-Maksoud 2003; Hoffmeier 2004; 2006b). Mention has already been made of the paleo-environmental work conducted by our team.²⁰ This work revealed that a

¹⁹ James K. Hoffmeier, Professor of Near Eastern History and Archaeology at Trinity International University (Deerfield, Illinois), was the director of the project, a project sponsored by Trinity, working under the auspices of the Supreme Council of Antiquities and the American Research Center in Egypt.

²⁰ Stephen O. Moshier, Professor of Geology at Wheaton College (Illinois), directed the paleo-environmental study. This aspect of the work was conducted in cooperation with the Geological Survey of Egypt.

water channel of around 100 m in width passed by Tell el-Borg in New Kingdom times (Hoffmeier & Moshier 2006; Moshier & el-Kalani 2008). We remain uncertain as to whether this channel was a branch of the Pelusiac Nile or a drainage channel extending from the nearby Ballah Lakes.

The scant remains of two forts were discovered in Fields IV, V and VIII. The earlier one dates to the 18th dynasty, likely from the period of Thutmose III and Amenhotep II (c. 1450–1400 BC), based on epigraphic, ceramic, and stratigraphic evidence (Hoffmeier & Abd el-Maksoud 2003: 188–195; Hoffmeier 2004; 2006a: 11–18). It continued in use until, if not through most of the Amarna period (Hoffmeier 2005; 2006a: 11–15). The main feature preserved of this fort is a unique moat made of fired (red) brick foundation that varied between nine and fourteen layers of brick [Fig. 7]. At the top the moat was approximately 8 m wide, and went to a depth of about 3 meters at a 45° angle [Fig. 8]. Enough of this structure was exposed to determine that the moat occupied an area of about 120 m long and about 78 m wide. The fort was oriented so that the gate, which was not preserved, would have faced southeast.

The second fort occupied Fields IV and V, which are separated by a modern drainage canal that was

Fig. 7 North side of 18th dynasty fired-brick foundation from Tell el-Borg, Field VIII. Photograph by Heather Alexander.

Fig. 8 South side of 18th dynasty fired-brick foundation from Tell el-Borg, Field IV, area 2. Photograph by Heather Alexander.

Fig. 9 Walls of Ramesside fort with modern canal and bridge, the construction of which demolished a large section of the fort. Field V, area 1. Photograph by Heather Alexander.

excavated in the mid to late 1990s, causing the destruction of around 50% of the walls of the stronghold [Fig. 9]. In Field IV, situated on the west side of the canal, walls C and D (approximately 3.8 meters wide), which come together to make the SW corner, were actually constructed over the SE corner of the moat of the 18th dynasty fort (Hoffmeier & Abd el-Mak-soud 2003: 190f., pl. XIII; Hoffmeier 2006a: fig. 9). This superimposition demonstrates that the fort with fired brick moat is earlier than the second fort [Fig. 10]. Furthermore, the remains of the latter included *talatat*-blocks in the foundations of its moat, along with Amenhotep II door-jambes which had the names of the deity Amun erased by the Atenists (Hoffmeier & Bull 2005: pls. XIV; XV). This indicates that the second fort was likely constructed towards the end of the 18th or very early in the 19th dynasty (op.cit.: 83–86). The badly destroyed gate area has revealed fragments containing the names of Ramesses II, Merneptah and Ramesses III, assuring that this fort remained in use throughout the Ramesside Period (Hoffmeier 2004: figs. 22; 23; 2006b: figs. 8–10).

These new data suggest that there was a continuous military occupation of this site from early in the 18th dynasty and down into the 20th dynasty, and it appears that the second fortification was con-

structed immediately after the earlier fort became unusable.²¹

The reason this site functioned throughout the New Kingdom, despite the event that required the abandonment of the earlier fort and the building of a replacement, is that it stood at a strategic defensive point at the intersection of the land route from Canaan as it turned north after coming around the

21 We have suggested that the NW area of the fort, which was situated by the water channel that passed by Tell el-Borg, was damaged by flooding, thus compromising the defensibility of the site. Hence the second fort was constructed on higher ground and further away from the channel (cf. Hoffmeier 2004: 97–99).

Fig. 10 Cut through Wall C (Field IV, Unit C5) of Ramesside fort, exposing the southeast corner of 18th dynasty fort. Photograph by Heather Alexander.

eastern paleolagoon, and the distributary that debouched into the same lagoon. This fort, then, guarded one of Egypt's entry points by land and by sea.

We have previously proposed that Tell el-Borg is the "Dwelling of the Lion" of the Karnak Seti I relief (Hoffmeier & Abd el-Maksoud 2003: 195–197), which in the reign of Ramesses II was renamed the "Dwelling of Ramesses Beloved of Amun" in Papyrus Anastasi V (24,8; cf. Gardiner 1937: 70,8) while in Papyrus Anastasi I a shortened form occurs, viz. the "Dwelling of Sese" (27,3; cf. Fischer-Elfert 1983: 151).

The gates of the respective forts opened toward the southeast, pointing toward the southern end of the eastern lagoon, the direction of the road.

22 We have this information via a personal communication with Eliezer Oren.

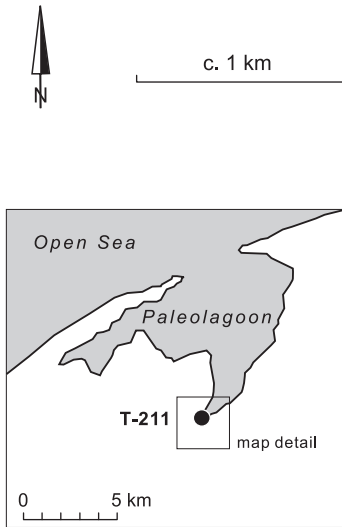
4.7. Migdol of Seti I

The next site on the road to Canaan according to the Seti I relief was the *mktr* of Menmaatre (pre-nomen of Seti I), the Migdol of Menmaatre. Migdol is a recognized Semitic term meaning tower or fort (Gardiner 1920: 107f.; Erman & Grapow 1926–1931, vol. 2: 164; Burke 2007; Yoyotte & Chuvin 1988; Chuvin & Yoyotte 1986). This fort is mentioned again in Papyrus Anastasi V (20,2; cf. Gardiner 1937: 67,4f.), where it is called the Migdol of Seti-Merneptah, which could be Seti I or II. It is also named and depicted as the place where Ramesses III celebrated his victory over the invading Sea Peoples in c. 1176/1175 BC (Nelson et al. 1930: pl. 42). The location of this fort remains elusive, although Hoffmeier has proposed that it was possibly located at the very southern tip of the lagoon at a site identified in Oren's survey as T-211 (Hoffmeier 2008) [Figs. 3; 11], or somewhere along the eastern shoreline of the lagoon. At an earlier stage of our research, we had suggested the possibility of locating it at Tell Ebedah or Abyad [Fig. 5], a small tell that stands around 2 km south of Tell el-Herr (see below). T-211 has not survived the recent agricultural development in the area, and cannot be investigated. But Oren was able to identify it as a New Kingdom site based on the potsherds discovered in his survey,²² and it could be that this site is visible in CORONA satellite images from the late 1960s. When enlarged, one can see what appears to be the outlines of walls [Fig. 11; cf. Fig. 3].

4.8. Tell Ebedah/Abyad

In 2002 our Bedouin guard at Tell el-Borg brought to our attention the existence of a small tell situated immediately beside his village, Gilbana. A small team of Tell el-Borg staff visited the site that season. It was covered with white shells (a clear indication of decomposed mud-bricks), hence the name *abyad*, "white". Based on the surface sherds we studied, only New Kingdom ones were identified and no later period samples were spotted. Because of its New Kingdom date and its placement along the western shore of the lagoon, we initially speculated that it might be a candidate for the Migdol of Menmaatre, the second fort after Tjaru/Sile.

Fig. 11 CORONA satellite image (US Geological Survey) from the late 1960s showing a New Kingdom site at southern tip of lagoon, identified in Oren’s survey as T-211 [cf. Figs. 3;5].



Excavations began there in 2007 under the directorship of Dominique Valbelle who is also currently excavating nearby Tell el-Herr (Valbelle 2001; Valbelle et al. 2007), a late Persian through Greco-Roman period site that might be Magdala (i.e. Migdol) of the Late Period (Seguin 2007). A magnetometer survey and limited excavations have uncovered the remains of a mud-brick building that exceeded 20 m in length with outer walls that are 1.05 m thick (Valbelle & Leclère 2008). No defensive structures are associated with this feature. Neither did the geophysical data indicate a feature that could be associated with a Migdol-type fort. The ceramic evidence points to a 19th dynasty date. The quality of the construction and the decorative schemes used suggest to the excavators that the site was some sort of royal residence used in travel between Egypt and Canaan, but was related to a nearby fortified military establishment (Valbelle & Leclère 2008: 32). The absence of defensive structures at Tell Abyad militates against identifying it with one of the known named forts from the Seti I list or the itinerary of Papyrus Anastasi I. It is inconceivable that a royal residence located outside of Egypt had no defenses associated with it. One

wonders if this site was incomplete. The discovery of this Ramesside structure reminds us that sources like the Seti I Karnak fort sequence may not offer a complete list of the structures along the military road, including some of the smaller military stations on the Ways of Horus.

The discoveries at Tell Abyad mark the eastmost New Kingdom site excavated in the western sector of the Ways of Horus. The next excavated site is at Bir el-Abd (BEA-10) that was discussed above (section 4.4). This means that for a stretch of 60–65 km we have little evidence beyond the survey data collected by Oren [cf. Fig. 2], although one might expect that two to three forts were situated between Tell el-Borg and Bir el-Abd.

5. The road

Thus far we have discussed the military road or Ways of Horus across north Sinai based upon the location of known archaeological sites discovered by Oren’s survey and recent excavations along the route. In addition to providing a basic course for the route because of archaeological sites, Oren has no-

ticed that sites are clustered at various points along the road, e.g. "Hebua, el-Nagila, Bir el-Abd, Madbaca, Bir Mazar, El Arish and Haruba" (Oren 2006: 280) [cf. Fig. 2]. This pattern suggests to Oren that Colin Renfrew's "central redistribution model" was in use in north Sinai during the Late Bronze Age (Oren 2006: 280). This means that at central sites, commodities were brought and stored and redistributed to satellite sites within its orb.

The lack of significant amounts of archaeological evidence for the early 18th dynasty leads Oren to think that the "Sinai corridor was not traveled by organized military expeditions between the reign of Ahmose and the joint reign of Hatshepsut and Thutmose III" (Oren 2006: 283). However, excavations at Hebua I have recently uncovered some inscribed material of Thutmose I (Abd el-Maksoud & Valbelle 2005: 11f.), and just in 2007 an inscribed block of the same Pharaoh came to light at Hebua II.²³ Perhaps in time as other military sites are investigated in north Sinai, additional early 18th dynasty material could emerge. Thus for the present, we urge caution in drawing firm conclusions about the early 18th dynasty since new material has been discovered at Hebua, and apart from only limited excavations at Bir el-Abd and Haruba, the area between Pelusium and Raphah is largely unexplored.

However, for the sake of argument, if Oren's observation is correct, then one must assume that logistics for the Asiatic campaigns of Ahmose and Thutmose I were handled more by sea and less by land. It is clear that under Thutmose III and Amenhotep II more serious attention was given to building up the administrative, logistical and military capabilities along the road. As it turns out, our work at Tell el-Borg suggests that this is the very period when the earliest fort had its origin.

Recently at Tell el-Dab'a, Bietak discovered the remains of an early 18th dynasty citadel, the walls of which actually cut into the Hyksos period defense walls (Bietak 1996: 67–73, figs. 57; 58; 1997: 115–117). It occupied 50,000 m² and remained in use until the period of Thutmose III/Amenhotep II. A substantial palace from the same period was also uncovered. In the light of these discoveries, Bietak believes that during the first century of the 18th dynasty Avaris served as the base for Theban military operations in Canaan, but then it was abandoned (Bietak 1997: 116).

Recent excavations at Hebua I have revealed a building phase at the military complex from Level 3 that is dated to the reign of Thutmose III (Abd el-Maksoud 1998a: 36f.). This information, in combination with the discovery of the mid-18th dynasty fort at Tell el-Borg, suggests that as Egypt's imperial designs in western Asia evolved and developed, a decision was taken during the reign of Thutmose III to shift the Avaris military base to Tjaru on Egypt's east frontier,²⁴ precisely at the strategic point where the Ways of Horus started across the desert of Sinai for Canaan. From this vantage point, the Egyptian military could launch campaigns as well as move men and materiel over land and by sea to control its military and economic interests in the Levant. From this location for the next two and a half centuries, the Egyptian military maintained and monitored the road to Canaan.

The north Sinai corridor enjoyed its share of traffic from ancient times to the present day. Assyrian and Persian armies traversed it, and Alexander the Great entered Egypt along this age-old route in 332 BC (for the Hellenistic through Byzantine periods see Figueras 2000). Between World War I and the 1960s, train tracks ran from Qantara East to Raphah, Gaza and beyond and were the principal means of transportation between Egypt and the Levant. After 1967, the Israelis constructed a highway surfaced with asphalt to connect Egypt with Israel/Palestine, and in the past three decades this road was expanded and improved by the Egyptians after Camp David. The road largely followed the Pharaonic route, a testimony to the ongoing vitality of the link between Africa and western Asia.

The Hebrew prophet Isaiah, in an oracle concerning Egypt (Isa. 19), envisioned a future "highway out of Egypt to Assyria" (v. 23). What the prophet had in mind is not clear, but it is inconceivable that it did not in some way include or incorporate the ancient Ways of Horus with the anticipated route.

23 See the National Geographic web-site: <<http://news.nationalgeographic.com/news/2008/06/080602-egypt-fort.html>> (May 2011).

24 Tjaru/Sile's location on the eastern frontier has raised some interesting questions about the various spellings used for the name, see Spalinger 2008.

6. Conclusions

The Ways of Horus, known to us largely from texts until recent years, has begun to emerge from relative archaeological obscurity. Surveys and excavations have revealed the basic route from the edge of the east Nile Delta to its termination in the area of Gaza. The data suggest that the route was regularly used from the middle of the 4th millennium, and that during the ancient Egyptian empire period the route was well fortified, as demonstrated by the recently discovered forts at Hebua I and II, Tell el-Borg, Bir el-Abd, Haruba, and Deir el-Balah, along with royal/military administrative centers at Tell Abyad and A-345 at Haruba. Not only was this desert road continuously used for transportation, commerce and military purposes throughout Pharaonic times, it continued in use, with some variation, in Persian, Greek, Roman, Byzantine and Arab periods, and the basic line of the ancient route connects the present day town of Qantara on the Suez Canal with Raphah, the current border town with Gaza/Palestine. The modern highway closely follows the ancient route, running across north Sinai, and it continues to serve nearly identical functions today as it did in ancient times.

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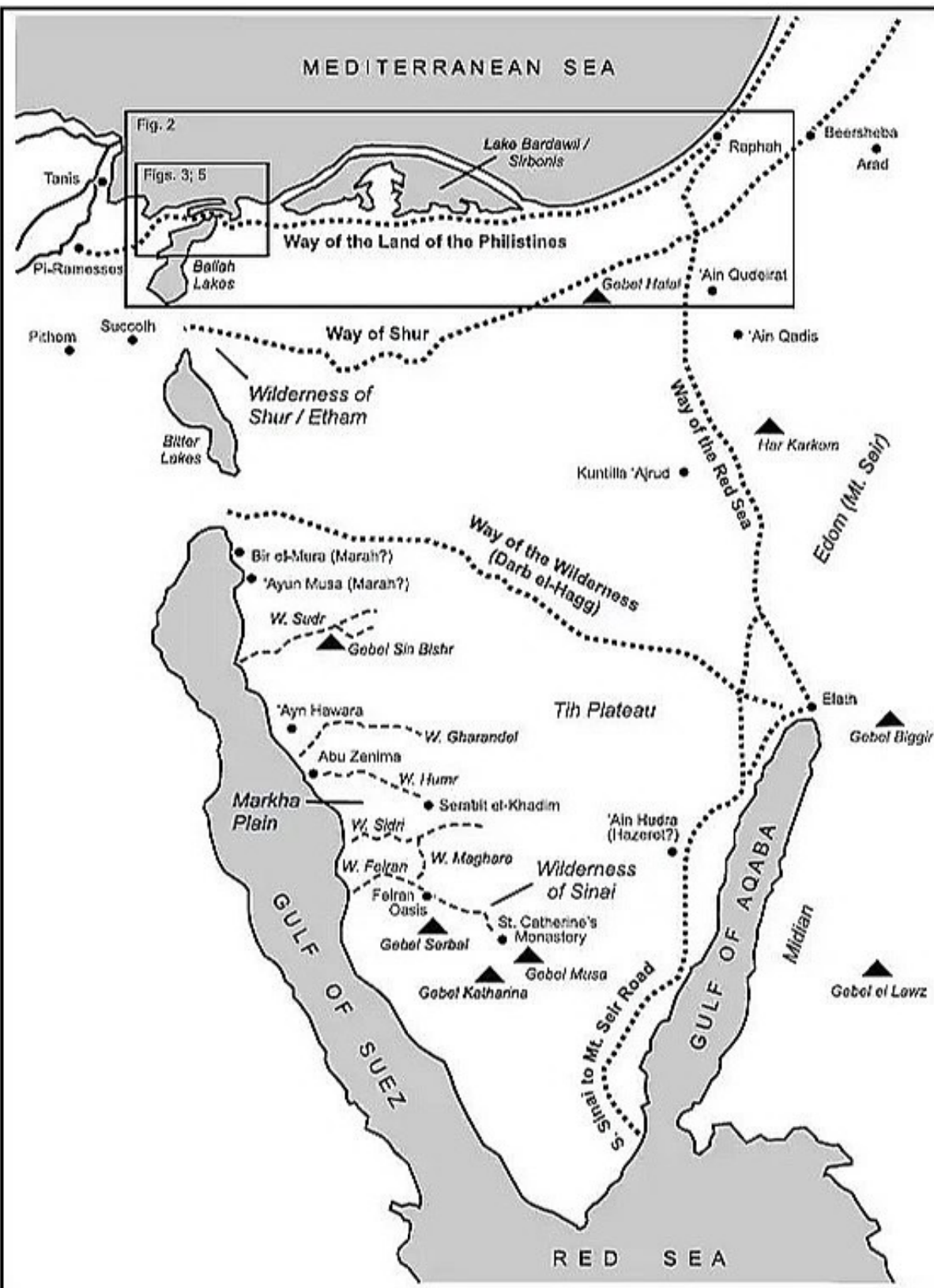
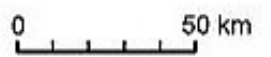


Fig. 1 Map of Sinai (based on a map made by Jessica Lim).



- City / Site
- ▲ Mountain
- Wadi
- Ancient Road

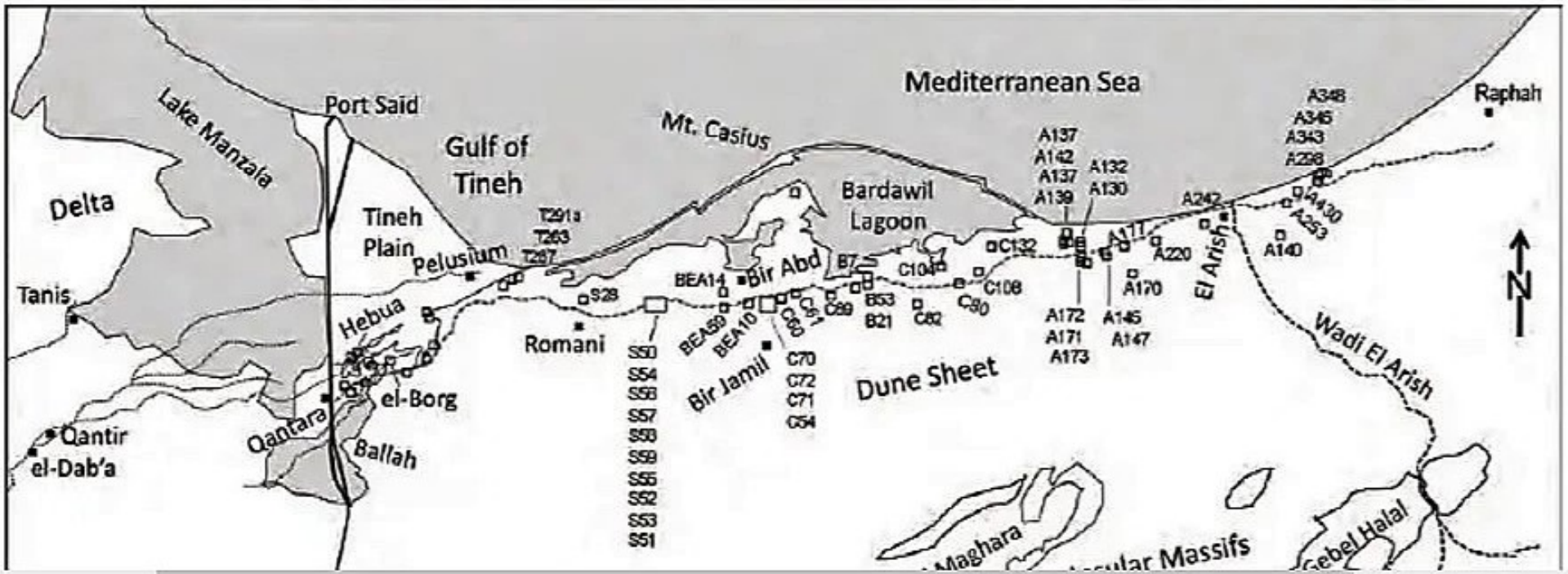
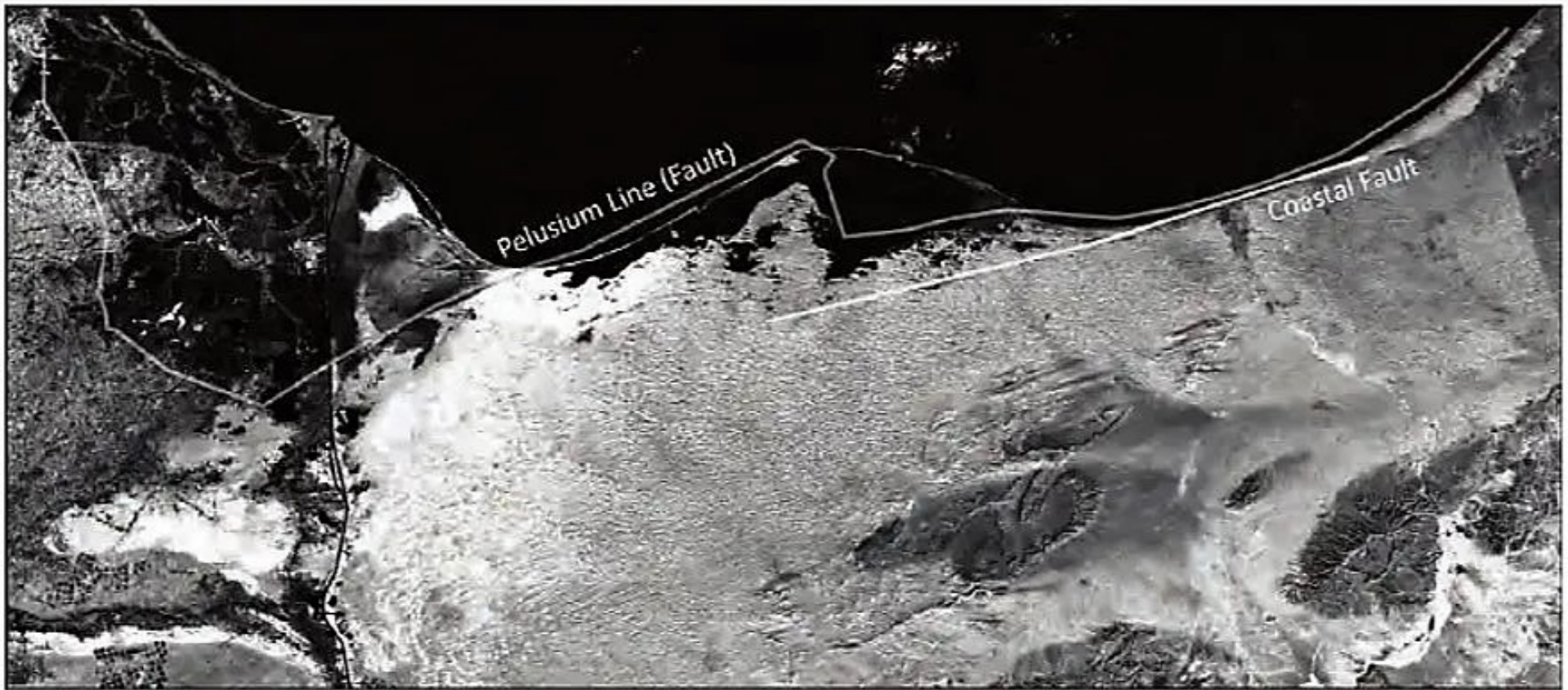
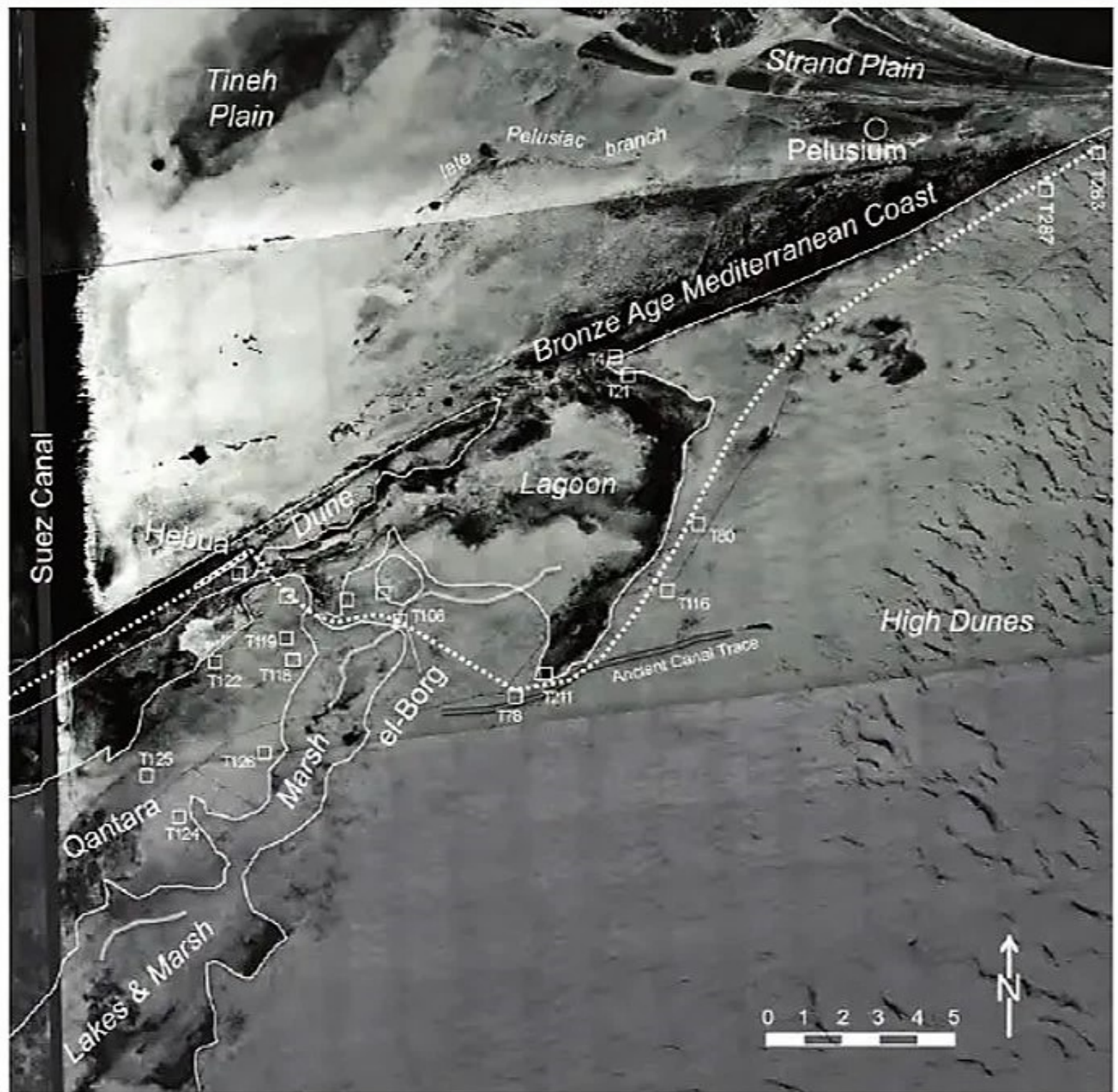


Fig. 3 Geo-referenced CORONA satellite images (US Geological Survey) serving as a base map for northwest Sinai, just east of the Suez Canal, include the following: locations of geomorphic features, modern towns, and archaeological sites referred to in text; locations of sites surveyed by Oren (1973) containing ancient Egyptian pottery (open boxes); and outlines of interpreted Late Bronze Age paleo-environments (after Stanley 2002; Moshier & el-Kalani 2008).



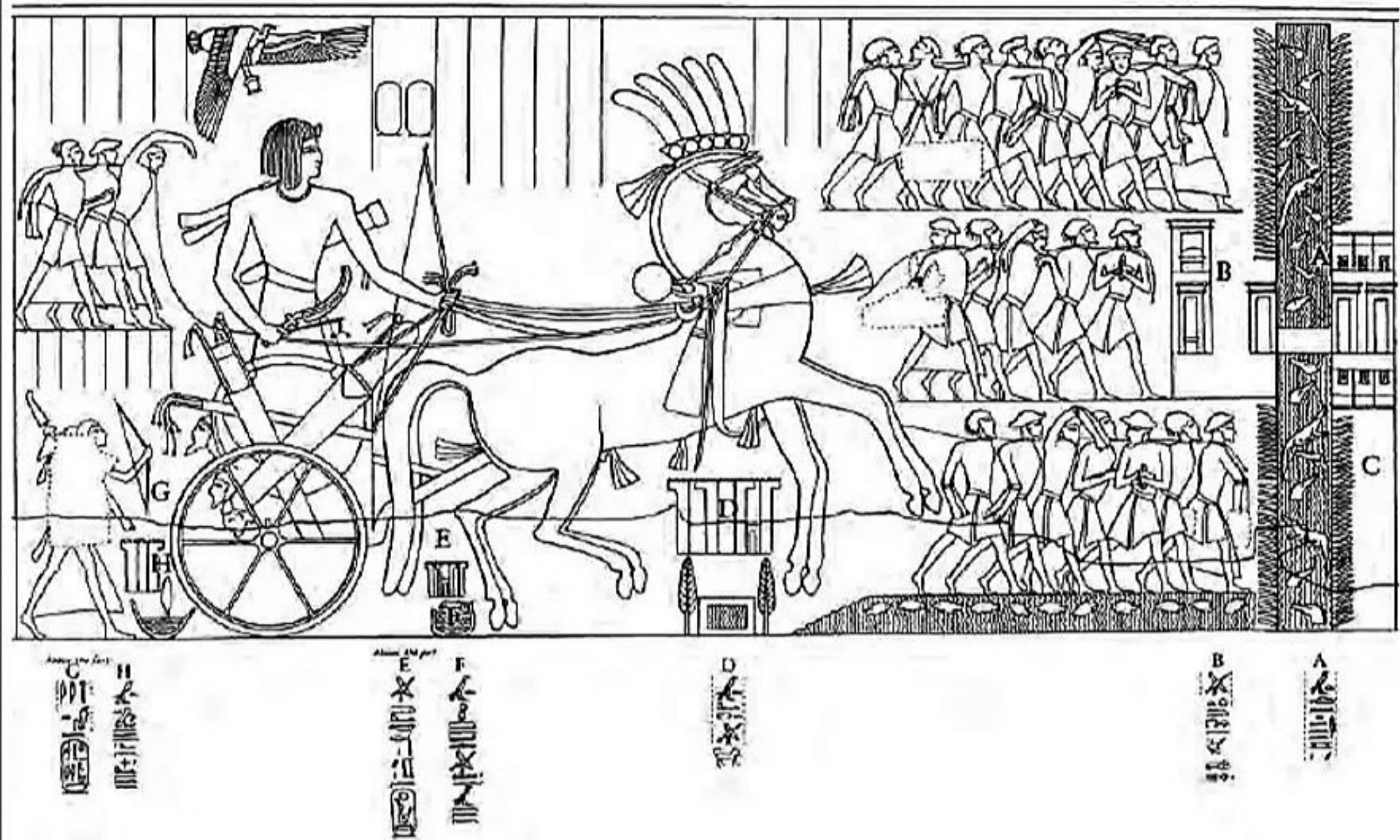
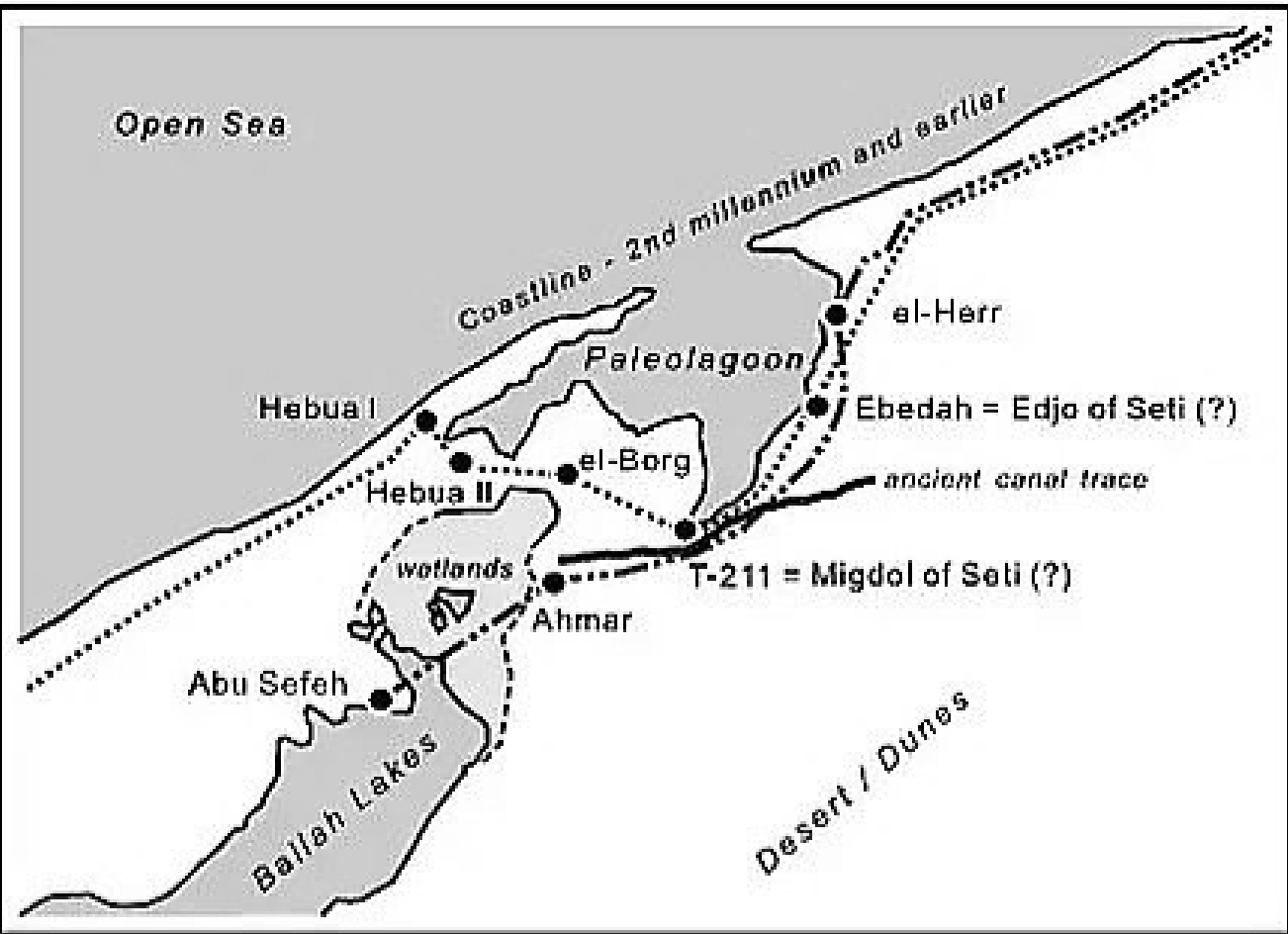


Fig. 4 Seti I Karnak relief on the north outside wall of the Hypostyle Hall depicting and naming some forts along the Ways of Horus (Gardiner 1920: pl. XI).



0 5 km



- Gardiner's proposed route, 1920
- Hoffmeier's proposed route, 2004

Fig. 5 Map of northwestern Sinai and the proposed course of the Ways of Horus based on the research of the East Frontier Archaeological Project, made by Jessica Lim, based on Stephen Moshier's data.

Fig. 6 Map of northwestern Sinai based on data available in 1995 (after Hoffmeier 1996: fig. 2).

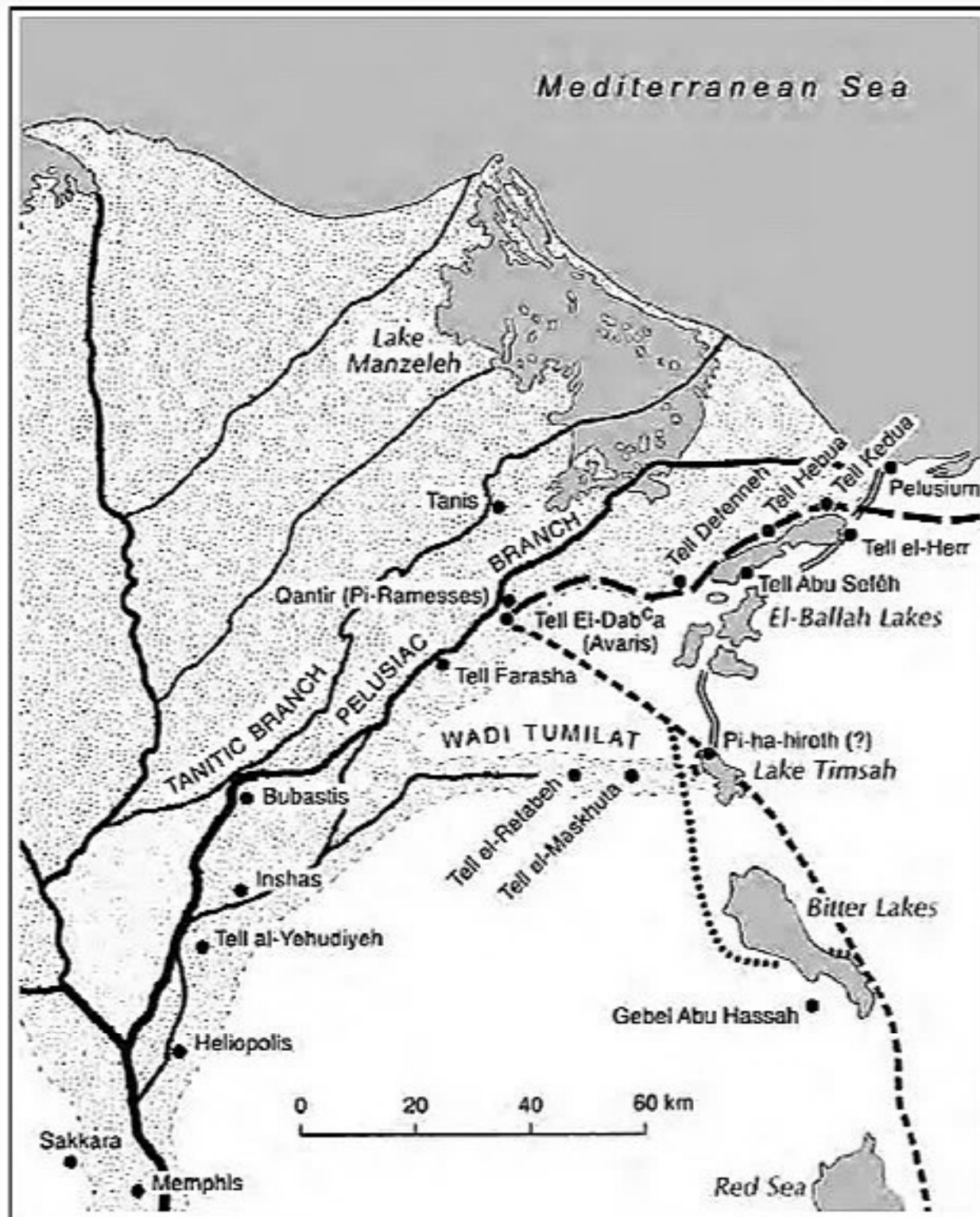
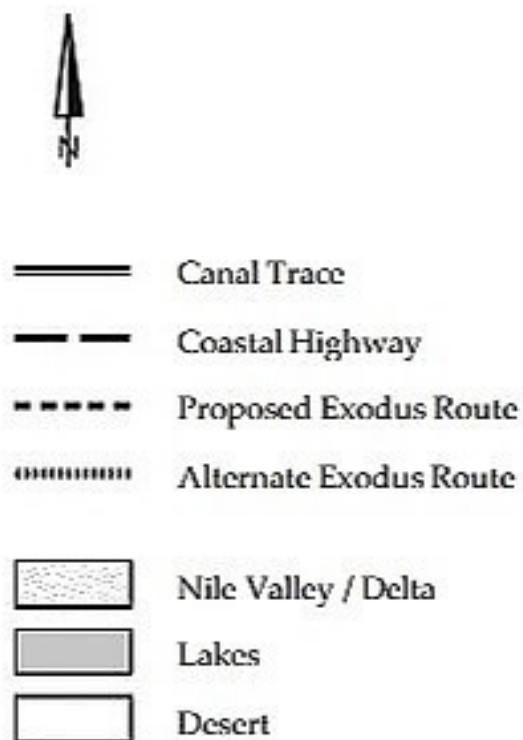




Fig. 7 North side of 18th dynasty fired-brick foundation from Tell el-Borg, Field VIII. Photograph by Heather Alexander.



Fig. 8 South side of 18th dynasty fired-brick foundation from Tell el-Borg, Field IV, area 2. Photograph by Heather Alexander.

Fig. 9 Walls of Ramesside fort with modern canal and bridge, the construction of which demolished a large section of the fort. Field V, area 1. Photograph by Heather Alexander.

excavated in the mid to late 1990s, causing the destruction of around 50% of the walls of the stronghold [Fig. 9]. In Field IV, situated on the west side of the canal, walls C and D (approximately 3.8 meters wide), which come together to make the SW corner, were actually constructed over the SE corner of the moat of the 18th dynasty fort (Hoffmeier & Abd el-Maksoud 2003: 190f., pl. XIII; Hoffmeier 2006a: fig. 9). This superimposition demonstrates that the fort with fired brick moat is earlier than the second fort [Fig. 10]. Furthermore, the





Fig. 10 Cut through Wall C (Field IV, Unit C5) of Ramesside fort, exposing the southeast corner of 18th dynasty fort. Photograph by Heather Alexander.

Fig. 11 CORONA satellite image (US Geological Survey) from the late 1960s showing a New Kingdom site at southern tip of lagoon, identified in Oren's survey as T-211 [cf. Figs. 3;5].

