

#### The Harbor of the Sea Peoples at Dor

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## The Harbor

### By Avner Raban

he tell of ancient Dorcalled Khirbet el-Buri by the Arabs – is located on Israel's Mediterranean coast, south of Mount Carmel. North, east, and south of the tell are a series of large, well-protected, but rather shallow bays and lagoonsformed as a coastal sandstone ridge has been partially eroded and flooded by the sea. Although there are at present sandy beaches next to it, it may have been virtually an island 4,000 years ago when the postglacial transgression of the sea reached its highest level.

The site has a long nautical history (see Wachsmann and Raveh 1984), but it is of particular interest because it is the only harbor attributed by historical testimony to one of the Sea Peoples (see Sandars 1978, as well as the sidebar accompanying the present paper).

The first archaeological excavations at Tel Dor, directed by John Garstang, were carried out by the British School of Archaeology in Jerusalem between 1923 and 1925. Bedrock was reached in only one section, the southwest slope of the tell, exposing some pottery of the twelfth to thirteenth centuries B.C.E.,

**Above:** The Philistines in battle (around 1200 B.C.E.). The armor is based on that shown in the reliefs at Medinet Habu; the sword is in the style of those found at Gaza; and the shield decorations are based on those found on Philistine pottery of the early Iron Age. Drawing is adapted from a reconstruction by Gertrude Levy. **Left:** The submerged quay in the bay south of Tel Dor. Note the ashlar masonry that comprises the ancient loading stage. Because of centuries of undertrenching through wave action, the quay today inclines toward the sea.

# of the Sea Peoples at Dor

including decorated pieces of the Philistine style. Trial excavations were conducted by Israel's Department of Antiquities in the 1950s, but they dealt only with the Roman theater on the northeastern side of the site.

In 1980 Hebrew University, The Israel Exploration Society, California State University at Sacramento, The University of California at Berkeley, and Boston University undertook a joint expedition to conduct largescale annual excavations at Dor. Its leader, Ephraim Stern of the Archaeological Institute of Hebrew University (see Stern 1980, 1982, 1983, and 1985), sought the participation of Haifa University's Center for Maritime Studies in studying the archaeological evidence for ancient maritime activities.

The center has studied such issues since the mid 1960s, primarily by conducting longshore and underwater surveys, tracing archaeologically dated evidence for ancient sea levels, and plotting man-made structures and installations that might refer to changes in land-sea relations over the centuries (see Sneh and Klein 1984). In our collaboration with Professor Stern, however, we have expanded our research and conducted a series of trial excavations along the shoreline of the tell (see Raban 1981, 1982, 1983, 1985a, and 1985b). These excavations, although far from being completed, have already revealed a multitude of installations

An artist's reconstruction of the topography of Dor around 1200 B.C.E. Note especially the sandstone ridge protecting the harbor from the open sea, and the rock-cut passage, which served an antisilting function. View is from the south.



Excavations at Dor have revealed such installations as quays, shipyards, fish tanks and piscinas, wave catchers, and washing channels.

dated to between the Middle Bronze Age and the Byzantine period. The discoveries, which have included such harbor features as quays, landing stages, shipyards, fish tanks and piscinas, purple-dyeing facilities, wave catchers, and washing channels, testify to the richness and complexity of maritime activities throughout the history of Dor and the everchanging sea levels and water lines to which her installations had to be adjusted.

In this paper I would like to report on the work done thus far on the southern side of the tell. Before doing this, however, I will briefly sketch what we know of Dor and the Sikuli (the group of Sea Peoples who used Dor as a harbor) from historical sources.

## Historical References to Dor and the Sikuli

The earliest known historical reference to Dor comes from the reign of Ramesses II (who ruled in the first half of the thirteenth century B.C.E.). It is mentioned in a list of coastal cities in Canaan that was found in his temple at El-Amra (Nubia).

Another Egyptian reference is in a papyrus dated to the time of Judges — around 1100 B.C.E. The papyrus tells the story of Wen-Amon, an Egyptian official sent to Byblos to buy cedar logs for the sacred barge of Amon (see Pritchard 1955: 25–29)



A plan of present-day Tel Dor and vicinity. The fish pond of Kibbutz Nahsholim is the site of the Middle Bronze Age haven. The islands once were part of a coastal ridge or peninsula, which protected the harbor area from the open sea.



Plan of the quay area on the southeast side of Tel Dor. Note the retaining wall (H), the western segment of the quay with ashlar headers (B, C), the well and drainage channel area (D), the Hellenistic city-wall (F) cutting the eastern end of the retaining wall (H), the tenth-century-B.C.E. cross-wall (M), and the remains of earlier ashlar headers (E).

and it contains the passage, "I reached Dor, a town of the Sikilaia [Sikkulo]."

In addition to the reference in the story of Wen-Amon, the Sikuli are mentioned in an Egyptian papyrus that gives a final summary of the activities of Ramesses III in the north (Papyrus Harris I: LXXVI, 7; see Pritchard 1955: 262). Written soon after his death, it says:

I extended all the frontiers of Egypt and overthrew those who had attacked from their lands. I slew the Denyen in their islands, while the Sikuli and the Philistines were made ashes.... I settled them in strongholds, bound in my name. Their military classes were numerous as hundred-thousands. I assigned portions for them all with clothing and provisions from the treasuries and granaries every year.

There is also a reference in a twelfth-century text from Ugarit (RS 34.129) to the Sikuli as pirates dwelling in ships (see Dietrich and Loretz 1978).

Dor is mentioned several times in the Bible. Three occur in the book of Joshua. The first (11:2) identifies Dor as an ally of Jabin, king of Hazor; the second (12:23) is in a list of thirtyone kings defeated by Joshua;1 and the third (17:11) mentions Dor among the cities designated to be within the western half of the inheritance of Manasseh. (The last does not refer to the city of Dor but, rather, to "the inhabitants of Dor and its villages.") In the book of Judges (1:27) it is emphasized that "Manasseh did not drive out the inhabitants of . . . Dor, nor her villages [daughters]." Finally, it is mentioned in 1 Kings (4:11). It seems that Dor was not taken by the Israelites until early in the tenth century B.C.E., during the reign of David, whose son, Solomon, made Dor one of his twelve districts (1 Kings 4:11).<sup>2</sup>

The Bible's references to the Sea Peoples are confined to the Philistines. They are described only as militarily superior urban people, ironsmiths, farmers, and wine-makers, with no reference to their undertaking maritime activities of any kind. The single exception — if one accepts that Dan is the equivalent of Denyen, as suggested by the late Yigael Yadin — comes from the Song of Deborah (Judges 5:17): "And why does Dan remain in ships?"

#### **Excavating the Southern Side**

Our excavations of the southern side of Tel Dor have thus far revealed many interesting features, including quays and a well and drainage channel. The guays. The southern side has two sections: a fingerlike promontory to the west and accumulated occupational levels to the east. The promontory, based on the coastal sandstone ridge, is the highest point of the tell and was probably used as the town's citadel or acropolis from its earliest days. It later became the site of a Crusader castle, Castelum Marle. The rocky base terminates on the lee side in a vertical cleft surrounded by an abrasive shelf just below the water level. This is where Garstang's expedition dug its trench in 1923-1924. The eastern half has no underlying bedrock, and the occupational levels were built into the lee side of the coastal ridge. This section is washed by the water of the big southern bay at its base, but its eastern edge faces a sandy beach – a product

of a recent influx of sand that filled in part of the originally deeper bay.

In the washed section is an ashlarpaved quay, or landing stage, made from three or four lines of long rectangular slabs, their narrow sides facing the sea. It now tilts slightly towards the sea – perhaps the effect of centuries of undertrenching wave erosion. The quay is some 35 meters long on its east-west axis and 11 to 12 meters wide. The eastern and western ends seem to have been flanked by great rectangular structures; only the bases of the southern walls of these structures remain, to the height of two courses of the huge ashlar "headers." about 3 meters long and 1 meter high. The western structure reaches the eastern cleft of the coastal ridge; the eastern one is partially buried under the sand of the beach. The lee side of this quay is covered with building stones that over the years have eroded and fallen from the southern slope of the tell. After tracing and surveying the quay, we began clearing off some of these blocks in order to establish an architectural/stratigraphic continuity from the sea-washed part of the quay to the undisturbed occupational levels of the tell proper.

The original surface of the platform, at the waterfront, is comprised of two or three courses of flat slabs laid on fine wind-blown sand without any shells or pottery sherds; it is at about the present mean sea level (m.s.l.). It is quite clear that when this landing stage was built, the body of water next to it was separated from the open sea and thus exerted no wave energy-a topography similar to the present lagoon basin of Tanturah on the southern side of the bay. The base of the eastern flanking structure was found to sit on muddy loam at about 1 meter below mean sea level. The presence of some pottery sherds from the Chalcolithic and Early Bronze I periods on the top of this mud represents an early stage during which the sea was much lower and farther



**Above:** Various phases of the quays at area A. The ashlar floor higher up on the beach represents the later phase, constructed after the rise in sea level, while that lower on the beach represents the initial phase of the harbor facilities. **Right:** Ashlar headers from area C dating to the twelfth century B.C.E. are among the earliest yet found. Until now, such headers have been found only in much later structures dating to the eighth to the fifth centuries B.C.E.

away, west of the coastal ridge. The pottery sherds at the base of the structure are to be dated to the late thirteenth and perhaps early twelfth centuries B.C.E.

At the lee side of the quay, below the fallen blocks and on the western segment (areas B and C), is a course of slim ashlar "headers" that resemble a type known until now only from much later seawalls and quaysdated to the eighth through fifth centuries B.C.E. – of such Phoenician sites as Tabat el Hammam in Syria, Tyre in Lebanon, and cAthlit in Israel (see Hult 1983). This is a step towards another. later platform whose surface is some 35 to 40 centimeters above mean sea level. In places the surface of this higher stage is covered with a layer of limey marine encrustation, a sign of its once being flooded by the rising sea.

The eastern segment (area A) is overlaid with a 4-by-9-meter plat-



form, on top of whose ashlar base is a pavement of carefully dressed and laid rectangular slabs. The platform was connected to the now-buried occupational level by a 2-meter-wide pavement of similar construction. It seems that the connecting pavement was added at a later stage, for, while the platform sits on fine sand, it lies on wave-carried shells and stones. Also found below the pavement were some water-worn pottery sherds of the Late Bronze Age. The platform was later dismantled and the paving slabs used, laid on their narrow sides,



Two views of the rectangular well in area D.

to raise the pavement to about 1.8 meters above the present mean sea level.

The higher pavement was soon after incorporated into a long retaining wall (H) that runs along over 50 meters of the foot of the tell. At this stage it was only two ashlar courses high and served as some sort of quay; its face was covered with large, flat, rectangular slabs (measuring  $1.8 \times 1.0 \times 0.3$  meters), each with a rectangular groove on two adjacent corners. This type of slab, with the same twin holes in the face (probably to enable connection to a hoisting device), is known also from ashlar walls at Enkomi, Cyprus. The best parallel, though, is from the paved face of the "Bastions" found outside and below the earliest defense walls at Kition. These rectangular structures, two of which were found by Vassos Karageorghis (1976: 53-55), have been dated to the late thirteenth century B.C.E. It is very probable that their original function was as quays or landing stages in the inner harbor of the sacred area of Kition's temples.

The wall (H) was later, at its eastern end, cut by the Hellenistic city-wall, and, at its western end, replaced by the cross-walls of the tenth century B.C.E. A rubble wall that is in parts preserved to a height of over 3 meters was built on top of the ashlar courses, probably during the second half of the eleventh century B.C.E. It was lined on its southern (sea) side with a compact floor of crumbled sandstone mixed with red loam that was laid on the tumbled rocks and wave-carried shells covering the earlier quays.

This floor seems to have been well protected from the then-receding sea. Many crushed pottery vessels, mainly conical holemouth jars of the eleventh century B.C.E., were found on its surviving parts. The sediments on it are mainly black muddy substances deposited while the enclosing walls to the south were still intact. It is therefore clear that the sea had regressed from its earlier level on the south side of the site during the eleventh century B.C.E. and that the people of Dor had used what had been the waterfront to build some "terrestrial" structures.

The well and the drainage channel. Just to the west of the series of quays, Garstang's excavations uncovered an impressive, retaining wall from the early Iron Age that seems to follow the contours of the rocky southeastern edge of the promontory. Much of the debris that covered its lee side has since been eroded by sixty years of exposure to the elements; the erosion has revealed its crescent shape and shown us that there was a topographic hollow to the east of it that was paved before the wall was erected. Apparently this pavement was within the first quay's western flanking structure.

A rectangular well, measuring 1.8 by 1.6 meters, with ashlar paving stones lining its inner faces, was sunk through the pavement and the underlying abrasive rocky platform to a depth of about 50 centimeters below the present mean sea level. The well's sidewalls were originally built to a height of 85 centimeters above the paved floor. Considering that it was to draw from the freshwater table, which lies just on top of seawater in the ground, the well's depth indicates a sea level of about 60 to 80 centimeters below today's. This technique of utilizing a shallow coastal water-table was known along the Levantine coast as early as the Neolithic period. At nearby Tanturah the local Arab villagers had their main well on the southwest side of the lagoon, where it is still visible, although partly submerged, today.

Pottery sherds found on the floor around it date the well at Dor to the late thirteenth century B.C.E. Its walls were subsequently heightened by the addition, in two stages, of more courses of ashlar slabs. In the first stage a new limev floor. 60 centimeters higher than the original one, was laid. This seems to be contemporary with the retaining wall to the west. The second stage was the addition of a drainage channel, which runs by the eastern side of the well and leads from the built area within the tell southward, towards the sea. To build the channel, 60 centimeters high, rectangular stone slabs were placed 45 centimeters apart on the flat stone pavement; they then served as supports for the larger slabs of the same type that covered the channel.

The covering slabs were incorporated into the floor of the third, and highest, phase of the well. The construction of this floor – crumbled sandstone mixed with compact red loam – seems to correspond with the one found further to the east. Many crushed, clay jars (with conical mouth-holes) and some other pottery types, dated to the late twelfth or early eleventh century B.C.E., were recovered from the floor. The top of the well then reached 2.7 meters above mean sea level, its surrounding floor some 60 centimeters lower. The well went out of use some time later. A rubble wall was built across its mouth and a corresponding floor was laid next to it – dated by pottery finds to around 1000 B.C.E.

More or less the same date is attributed to the two massive crosswalls to the east (M and L), whose foundation trenches were cut into the red floor. Curiously, they and most of the other massive structures of the early tenth century B.C.E. at Dor were made from huge limestone rubble blocks. It seems that the newcomers who rebuilt this coastal site

### The Sea Peoples

In the twelfth century B.C.E., the relative peace and prosperity of the Aegean was brought to an abrupt end. The balance of power in the entire eastern Mediterranean was upset as the superpowers, weakened by internal troubles, were assaulted by a series of marauding peoples: the Mycenaean civilization of the Aegean, the Hittite empire in Anatolia, and the city-states of the Levant all collapsed between 1250 and 1150 B.C.E. Only Egypt, albeit in a much weakened state, managed to ward off the catastrophe that shook the rest of the known world. Egyptian inscriptions and reliefs on monuments at Luxor and Karnak commemorating the victories of the pharaohs Merneptah and Ramesses III over the invaders (1210 and 1176 B.C.E.) coin the term "Sea Peoples" and are the only written source for our knowledge of those responsible for the upheaval.

The foreign countries . . . made a conspiracy in their islands. All at once the lands were on the move, scattered to war. No country could stand before their arms. . . . Their league was Peleset, Tjeker, Shekelesh [Sikuli], Denyen and Weshesh. (From the victory stele of Merneptah at Medinet Habu)

Some of the Sea Peoples seem to have come from the Aegean and western Anatolia, and some had little or no connection at all with the sea or the "islands," though they originated in lands that the Egyptians associated with the sea. Troy and the people of the Troad in northwestern Anatolia may be represented by the Weshesh, if they are the same as the people of Wilusa (possibly Ilion) known from Hittite letters, and by the Tjeker if they are the people known by the Romans as Teucre, Trojan ancestors of the Etruscans. The Amarna letters in conjunction with Hittite documents link the Denyen with the area just north of Ugarit on the Orontes river. If these are to be recognized as the Danaans (Greeks) of Homer, then they may represent Mycenaeans at the trading city of Ugarit. As for the Peleset, there is an etymological connection with the Philistines of the Levantine coast, though on the stele of

carried large calcite boulders all the way from the inland Carmel range, for a while unaware of the better quality of the local sandstone. This suggests that their origin was the hilly hinterland of the country and that they were thus the Israelites of the time of David.

**Evaluating the data.** The archaeological research conducted thus far at Dor's southern side suggests the following succession of events from the late thirteenth to the early tenth century B.C.E.

In the late thirteenth century B.C.E., when the maritime installations were first erected, the topography was somewhat different from

The well and adjacent drainage channel in area D.



Ramesses III they are paired with the Teresh, who are believed to have been coastal Anatolians. Finally, the Shekelesh [Sikuli] have origins that seem to be found not in Anatolia or Syria but rather in Sicily. (See Sandars 1978 for a detailed discussion of origins.)

The Sea Peoples themselves were probably set in motion by large factors. Though the civilizations of the eastern Mediterranean were highly sophisticated, they accounted for only scattered or isolated urban pockets with bureaucracies intensely self-centered and preoccupied with details. There were two basic economic classes: those that dwelled and worked within the palatial walls and the overwhelming majority that lived outside them. Pirates infested the shorelines, and barbarians, always just beyond the narrow confines of the known world, took advantage of any opportunity to plunder the rich towns. Rainfall in this area is always scarce – a seasonal shift in the trade winds could mean a catastrophic drought and famine, with the only relief found in the granaries of the fortified palaces. Such a fragile ecology, economy, and society meant that the civilizations of the Aegean and Near East stood precariously balanced. In any of these civilizations or in any of their socio-economic facets, a minor crisis could quickly turn into a major catastrophe, setting marauding bands of dispossessed or starving people on the move.

Whatever the reason for the invasion, Egypt, having repulsed them, allowed some of them to settle in the southern Levant under her suzerainty. Among the sites inhabited by these peoples were the Philistine city-states of Gaza, Ashkelon, Ashdod, and Gath, as well as the harbor-town at Tel Dor.

For further information, see Nancy K. Sandars, *The Sea Peoples* (London: Thames and Hudson, 1978); Edward E. Hindson, *The Philistines in the Old Testament* (Grand Rapids: Baker Book House, 1971); R. A. Crossland and Ann Birchall, editors, *Bronze Age Migrations in the Aegean* (Park Ridge, New Jersey: Noyes Press, 1974); V. R. d'A. Desborough, *The Last Mycenaeans and Their Successors* (Oxford: Clarendon Press, 1964); Trude Dothan, *The Philistines and Their Material Culture* (Jerusalem: The Israel Exploration Society, 1982).

John S. Jorgensen



An artist's rendering of a Sikuli ship unloading at the quay in the well area (D) of Dor. Note that the original landing stage, now under water beneath the ship, has been rendered useless by the rising sea.

"The foreign countries made a conspiracy in their islands. All at once the lands were on the move, scattered to war. No country could stand before their arms."

today's. The sea level was over a halfmeter lower, and what is at present a bay open to the sea southwest of the tell was the innermost part of a long narrow lagoon that opened to the sea about a mile further south. The series of rocky islets that today give partial protection to the lagoon from the open sea was more continuous (that is, the islets were less eroded); less sand lay on the lee side; and no tombolo divided the lagoon from the bay. This paleotopography allowed ships to moor anywhere in the lagoon (Late Bronze Age anchors and jars were found on its bottom); the establishment of a quay at the northern inner end, within the built site of Dor, enabled the movement of goods and the conduct of various commercial and military activities in the port.

The sea level rose constantly, albeit gradually, from the late thirteenth to the early tenth century B.C.E. The people of Dor had to adjust the quays and the well at least twice, perhaps three times, to the realities of that transgression. The rising of the sea would have exacerbated the incursion of sand into the lagoon. The answer was to cut a channel through the rocky shelf then enclosing the bay's western side. This completed the circulation of water, and though the rising sea permitted the tide to surge over the further eroded shelf—as confirmed by the concentrations of wave-carried stones and shells—the additional turbulence itself slowed down the siltage and helped to keep the haven navigable.

When the eustatic trend reversed, from transgression to regression, toward the middle of the eleventh century, the harbor facilities at the south side of the tell fell into disuse. and the area was incorporated into the built, terrestrial settlement. By this time the local Sikuli may have ceased to be one of the Sea Peoples in the true sense of the term-that is, they may have not actually been involved in maritime activities. The growing power of the Israelites in the hinterland and of the Tyrians and Sidonians on the high seas weakened their domain. A generation later David took the site and added it to his kingdom.

#### Conclusion

Although our research is far from complete, what we have learned thus far is significant: The harbor installations at Dor are the first to be securely attributed to one of the Sea Peoples. Furthermore, the architectural and engineering concepts found there can now be sought in similar, earlier structures around the Mediterranean.

The only Bronze Age harbor that has stone quays known to date is the Minoan one at Malia, Crete (see Van Effenterre 1980: 75–77). There, the quays are made accessible via a rock-cut navigational channel leading from the open sea to an inner lagoon. This was paved on one side with rectangular slabs. (See Van Effenterre 1980.)

As mentioned above, there are quay platforms at Kition that resemble and are contemporary with the one in area A at Dor. The two sites were settled by maritime people during the late thirteenth century B.C.E.; and many "composite" three-hole, stone anchors (probably another technical innovation of the Sea Peoples) were found in both. Recent excavations at Maa-*Palaeokastro* on the west coast of Cyprus and Ras Ibn Hani in Syria have revealed more ashlar "header" structures; these have been related to newcomers from the sea with a material culture similar to that of the Sea Peoples (though not exactly that of the Philistines).

It seems that our discoveries at Dor have confirmed Claude F. A. Schaeffer's assumption, based on his excavations at Enkomi and Ugarit, that a new ethnic group settled the Levantine coast and that the "ashlar builders." with their technical knowhow and material culture, should be sought among the Bronze Age cultures of the Aegean (see Schaeffer 1962). The courses of slim "headers" in the seawalls at Dor are instrumental in testing another assumption. This type of marine structure became the trademark of later Phoenician harbor installations. Were the engineering and nautical technologies brought by the Sea Peoples to the Levant indeed the trigger that set off the burst of maritime activities of their "children." the Phoenicians. only one or two generations after the total destruction of the great Bronze Age civilizations of the Near East?

#### Notes

<sup>1</sup>It should be noted that the first two references in Joshua bear the additional adjective "napha." M. Ben-Dov (1976) recently suggested that "napha" was reminiscent of the Homeric term "napee," which means "a forest or wood in the plain." It might be a Sea People's equivalent of the biblical term "Sharon." See also Rainey (1982).

<sup>2</sup>Again, with the appellative "napha."

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