



*Fig. 2. Dor (Tantura) DW2. Sampling one of the frames for  $^{14}\text{C}$  analysis (Photo: N. Sheizaf)*

Science (Fig. 2). The samples were taken from specific timbers, those with bark remaining, and from ropes. Additional samples for  $^{14}\text{C}$  dating were sent to Georges Bonani of the Institute of Particle Physics, Zurich, Switzerland, and a few selected timbers, with as many tree rings as possible, were sampled and delivered to Nili Liphshitz for dendrochronology analysis. Organic materials, such as ropes, caulking, sealing and resins, were sampled and sent for analysis to the Department of Chemistry at the University of Pisa, Italy (headed by Maria Colombini and Erika Ribechini). This laboratory gained much experience in analyzing similar materials after its involvement in the excavations of the shipwrecks recently found and excavated in San Rossore, Pisa.

During the excavation, the drawing of the shipwreck was completed by Jamie Brandon and Katherine Brandon, supervised by Chris Brandon. More photographs were taken for recording and to fully back up the information.

After four days, we were able to sandbag and cover the ship. It is hoped that the recent excavation is the last one. The recording, drawing, photography, measuring and the laboratory analyses are now being completed.

**Idit Yovel**

## TELL ABU HAWAM

Tell Abu Hawam, a site on the estuary of the Qishon River north of the Carmel ridge in modern Israel, has been a constant companion to archaeologists in the quest of international contacts and trade, especially between the Aegean and the Levant. The favorable position of the site as an anchorage in antiquity was matched by its central location in the modern industrial development of the area, starting during the British Mandate and continuing after the establishment of the State of Israel.

Since the mid-80's, the then Center for Maritime Studies has been involved with the excavation projects at the tell alongside Jacqueline Balensi from the CNRS. Besides a Spanish team headed by Dolores Herrera, Avner Raban conducted some geomorphological tests which became the basis for an M.A. thesis of Yitzhak Galanti, and Michal Artzy conducted an educational excavation for students of the University of Haifa.

The modern history of this important early harbor, presently in the Haifa municipality, has not been good. The estuary and its general position at the foot of the Carmel Ridge is tempting for an anchorage. The narrowness of the country and its proximity to important sources of revenue in the Middle East made the area even more attractive. Industrial development following the port development started in the 19<sup>th</sup>, and especially the early 20th centuries. With the British Mandate industrial development came 'salvage' archaeological projects in the area of Tell Abu Hawam, which culminated in that of William Hamilton, who also proceeded to publish the results of his, at times, hurried project. Even before the Hamilton project some damage to the site was done by contractors, although its extent is questionable. Off and on, smaller excavations of the site took place, for instance that of Anati in 1963. The 1985-6 excavations followed Balensi's tenacious belief that parts of the site remained intact, despite the fact that following Hamilton's extensive project the site was no longer recognized as such.

With new public works in the area, Michal Artzy was approached to conduct two separate excavation projects in the area of Tell Abu Hawam. The work was carried out in the second part of 2001 and 2002. Shalom Yanklevitz and Yossi Salmon were joined by Uzzi Ad and Amani Abu Hamid from the Israel Antiquities Authority.

The first, and main, project, was carried out on the northeastern outskirts of the tell, as it was known by Hamilton and Balensi. The squares were laid in the road leading to the modern Qishon harbor, an active area, teeming with trucks. This is an area that had never been previously exposed. Despite the difficult physical conditions of the layout of the



Fig. 1. Metal caissons with baulk in center (Photo: M. Artzy)

excavation, it was successful. A bonus were metal caissons, which were placed in the 5 x 5 squares, with 30 meters between them, by the Yefe Nof Transportation and Infrastructure Company (Fig.1). Balensi envisioned the area as being the 'lower city', although the finds from our excavations could not substantiate that assumption. Core samples for a geomorphological study were collected by Eduard Rheinhardt and his graduate students from McMaster University in Canada, as well as our own students.

The second excavation was carried out on the western side of the tell, in close proximity to areas previously partially investigated by Balensi. This was done without caissons, and indeed ground water caused great problems, despite the extensive use of pumps; some supplied by the maritime workshop of the Institute, and others by the Israel Antiquities Authority.

The finds from the project were beyond our expectations. They extend mostly to finds assigned by the previous excavators to Level V, as specified by William Hamilton, although small numbers of Persian and Hellenistic finds were noted as well. Among the special finds are a clay mask (Fig. 2), an Egyptian cartouche of Ramses II on a store jar handle, and a lovely clay figurine, all comparable to the Late Bronze Level V. The ceramics include the usual Cypriote wares, although the varied types might indicate diverse provenience within the island. Among them are the usual Base Ring, White Slip, Monochrome, White Shaved and Red Lustrous Wares (Fig. 3). It includes Mycenaean IIIa and early IIIb pieces, some Minoan wares, a very small number of recognized Egyptian wares, Trojan and Anatolian Grey Ware (Fig. 4). But it is the many pieces of wares, which until now have not usually been recognized in Israel, which caught our immediate interest while still in the excavation itself. Among them are the Plain



Fig. 2. Late Bronze clay mask

White Wheel Made, of which there are numerous examples and which might well be of Cypriote origin, Ayios Dhimtrious and Enkomi are just two possible sites from which these might have originated, although there may be a local or Syro-Lebanese origin for some of these. Others are the cooking wares that defy the imagination and our ability to categorize them just by shape. Of course, in the case of many of these pieces the possibility of comparative study built solely on published material is limited, due to the sparse publications dealing with them. There is yet another family, which is usually handmade, often burnished, usually a small krater, cooking pot shape, in colors ranging from red to grey/black. Possible proveniences range from Cyprus to Cilicia and Western Anatolia, or even further west. The finds also include Cypriote pithoi along with wall brackets.



Fig. 3. Cypriote White Slip Ware (Photo: M. Artzy)

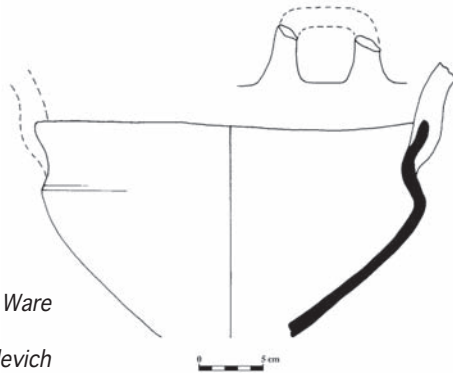


Fig. 4. Anatolian Grey Ware  
I. (Photo: M. Artzy)  
II. (Drawing: N. Yoselevich)

We are already working on the material, including pilot projects using petrography with the kind help of Yuval Goren of Tel Aviv University, to establish possible provenience to improve our understanding of the trade network and the position of Tell Abu Hawam as the focus of the maritime and the terrestrial sea to desert routes. Several students from the Departments of Maritime Studies and Archaeology are already working on particular wares and questions towards their M.A. degrees. Inbar Hai-Baruch has already submitted her study on some of the mollusks from limited areas in Balensi's and our excavations. Geological samples have been sent to our colleagues at McMaster University, and most of the other studies, such as stones, bones, shells, etc., are in progress. We have applied for further financial aid to enable us to carry out Neutron Activation Analysis and other tests.

We hope that next year we will be able to report some of the results of this project to our readers. We would like to take this opportunity to thank Jacqueline Balensi for making her material and maps available to us, as well as the Israel Antiquities Authority, the Yefe Nof Transportation and Infrastructure Company and the Israel Electricity Company for the opportunity to carry out these projects, which, we hope, will shed new light on the Qishon estuary and the most ancient port of Haifa.

**Michal Artzy**

## LIMAN TEPE 2002

The third season of the underwater project at Liman Tepe took place in the last weeks of August and the first part of September. As usual, we were met by our Turkish counterparts headed by Hayat Erkanal, the head of the Institute for Archaeology and Near Eastern Studies at Ankara University and the Izmir Regional Project. The project was directed as previously by Michal Artzy, aided by Avner Raban. Area supervisors were Greg Votruba, helped by Idit Yovel (Area A) and Arad Haggi, helped by Amani abu Hamid (Area D). Beverly Goodman from McMaster University in Canada, aided by Hendrik Dey (Univ. of Michigan), carried out the ancient ecology studies. Yossi Salmon was our information technologist and in charge of mapping, Noga Yoselevich, aided by Svetlana Zagorski and Amit Rosenblum, was in charge of processing the finds. Noa Sheizaf, Greg Votruba and Amir Yurman photographed under water. Teoman Iplici served again as our in-house physician. The smooth running of the project owed much to our maritime workshop team: Steve Breitstein, Amir Yurman; Levent Keskin and Oguz Bostanci were in charge of coordinating the logistics. Students from both universities and volunteers completed the team.

The objectives of the project were:

- I. Continuation of land and underwater mapping using DGPS, echo sounder and total station.
- II. Continuation of coring, both on land and in the sea.
- III. Excavation of Area A, a possible marine construction.
- IV. Excavation of Area D, the land-mass with remains of terrestrial construction.

More detail was added to the map. The mapping with the aid of the DGPS and the echo sounder in the sea was not successful because of unfavorable sea conditions during most of the underwater project. This season's mapping was carried out by using the total station (Fig. 1).

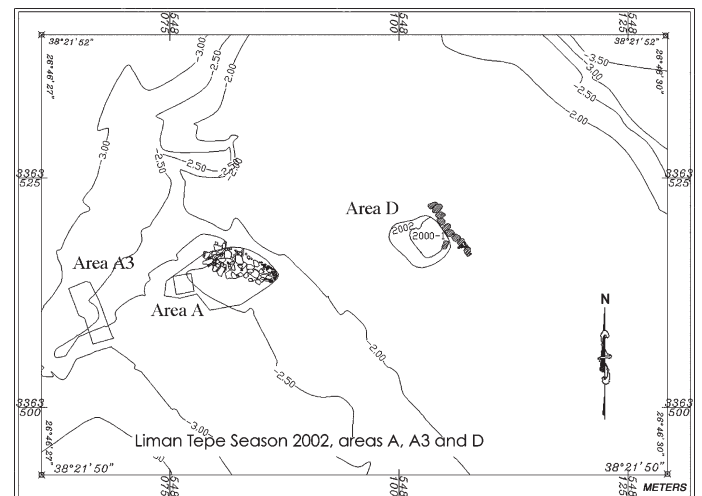


Fig. 1. Map of the excavated areas (prepared by Y. Salmon)