

# REVELATIONS FROM MEGIDDO

The Newsletter of The Megiddo Expedition

## Horse Troughs at Megiddo?

**M**y excitement about digging at Megiddo began when I met Tom Moon, a retired lawyer, horse enthusiast, and Divinity student at Vanderbilt University. I also recently retired from the practice of law and decided to pursue Hebrew Bible studies at Vanderbilt. Tom participated in the 1998 Megiddo dig and was particularly impressed with the architecture of the 'stable' complexes.

My involvement with horses began 40 years ago and evolved into a business of importing, training, showing and selling European warmbloods for dressage and show jumping. As Tom described the 'stables' at Megiddo and particularly the usefulness of the square pillars separating the stone feeding troughs to prevent the usual fighting and intimidation games horses play at feeding time, I agreed that it sounded like a perfect solution to a most bothersome yet common problem. However, I wanted to review the evidence for myself, and the Megiddo 2000 Expedition seemed an exotic adventure.

In a class on the Ancient Near East with Prof. Jack Sasson at Vanderbilt, I learned that the issue of 'stables' at Megiddo (as opposed to barracks, storehouses or a market place) was quite controversial and still unresolved in academic circles. At his suggestion I wrote a research paper to review the pros and cons of the arguments and to focus on the major issues of the



dispute: 1) was the 12 cm. depth of the feeding troughs adequate for horses; 2) were the stalls large enough; 3) how were the horses taken out of the stalls; 4) the use of the wide, smoothly paved center aisles (2-3.5 m.); and 5) how to water the horses.

incisor teeth against a feeding trough while sucking in air. Also apparent was where the horse had pawed and indented the front of the trough with its front hooves, common during feeding time. The teeth imprints of the horse were evident on the inner edge of the troughs, which were the perfect shallow size for feeding.

I could see that Tom was right about the square pillars serving as effective dividers to stop fighting at feeding time. As the food approaches,



Two troughs and a pillar in the 'Northern Stables' complex.

My first days at Megiddo I had so much fun excavating that I almost forgot about the stables. But Prof. Sasson had forwarded my research paper to Prof. Finkelstein, and he had a few questions. So, we toured Area L, the 'Northern Stables' complex, dating (conventionally) to the time of King Ahab. I was stunned. There, between the square pillars, were the stone feeding troughs *in situ*, clearly marked

the horses will snort, whinny, kick, paw and lunge at each other—all tactics to establish dominance. In a stable such as Area L with no walls between the stalls, the large square pillars would be important not only to block their view of each other while eating, but to prevent them from biting each other.

What amazed me so much about the Megiddo structures is that they are almost identical in layout to the stables where I keep my horses today. The wide, smoothly paved center aisle is used in modern stables to deliver food to the troughs on either side via tractor. At Megiddo the center aisle had a smooth plastered floor and was wide

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Megiddo Expedition Directors: Israel Finkelstein, Baruch Halpern, and David Ussishkin. Excavation Directors: Israel Finkelstein and David Ussishkin. Head of Academic Program and Consortium Coordinator: Baruch Halpern.

## Horse Troughs, from page 1

enough for a donkey and cart to deliver grain and hay to the feeding troughs on one side, turn at the end and do the same on the other side. Also, some of the stone pillars had evidence of tethering holes at a height appropriate for putting the horses in 'cross-ties' for grooming in the center aisle, just as in our stables today. There was room to groom three horses—a typical chariot team—at once in the center aisle. The cobbled floors in the stall areas aided in proper drainage and served to toughen the horses feet. The entire area was likely covered in deep straw bedding that would allow the horses to lie down when necessary.

We had several early morning 'horse-care' sessions in the Area L 'stables' where a small group including Profs. Finkelstein, Ussishkin, Halpern, Killebrew, Cline and I discussed the horse's eating, drinking and sleeping habits, breeding procedures, birthing process, foal care, grooming needs, stable vices, training conditions, psychological bonding tendencies and, of course, dung removal requirements.

An especially momentous day at Megiddo was the visit of Lord and Lady Allenby, both of whom are accomplished equestrians. Lord Allenby is the current 'Lord of Megiddo' and served with the British cavalry. When consulted about the various horse issues we had been discussing, he enthusiastically confirmed the cribbing and pawing evidence on the troughs. As he told me, "We agree on everything about the horses that were here—except the size." He favors smaller horses in antiquity (under 14.2 hands). Upon reflection, I tend to agree.

My main concern was how the potentially 450 horses were watered inside the Megiddo fortress. Horses drink 15–20 gallons of water a day in hot weather. They also need water for washing off the sweat after exercise. On our inspection tour of the 'Southern Stables' complex, we found a huge stone basin behind the granary, partially hidden in the grass. It seemed perfect for watering two or three horses at once. It was in the right location,

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near the 'Southern Stables'. But, we must check the archaeological record to determine its original use and dating.

As I took a farewell tour over both stable complexes on my last day on the dig, I noticed what looked like several troughs in secondary use in a wall near the 'Northern Stables'. When I climbed up to inspect them, I discovered the corner of another large stone basin, submerged in the dirt. Prof. Eric Cline and I 'excavated' the perimeter of the basin and took the dimensions (85 x 52 cm). Since it could easily hold a hundred gallons of water or more, this seemed the perfect answer to the horse watering question. However, stone basins have many uses in antiquity so the answer must await further analysis by the specialists.

The Megiddo 2000 Expedition was an unforgettable experience and I look forward to returning in 2002.

**Deborah Cantrell**

## TimeScope Kiosks

**V**irtual Reality technologies and 3D computer modeling will hopefully make some of Megiddo's most important archaeological monuments and historical eras come alive for visitors. The Megiddo Expedition has begun an ambitious public interpretation program in cooperation with the Israel Nature Protection and National Parks Authority and the Ename Center for Public Archaeology and Heritage Presentation in Belgium.

The most innovative aspect of this program is the installation of advanced prototypes of the TimeScope system developed at the medieval site of Ename in Belgium, which provides visitors with a glimpse at "virtual reconstructions" of excavated archaeological remains. In place of the traditional (and sometimes damaging) physical reconstruction, this system combines computer modeling and multi-media presentation with real-time video of the exposed remains.

Two TimeScope kiosks containing video monitors are currently planned for installation in Area L. The 'stables' of Stratum IVA and the famous Palace 6000 of Stratum VA-IVB, first revealed by Yadin's excavations in the 1960s and further uncovered during the 1998 and 2000 seasons of the current expedition, will be the main focus of a

wider interpretative program about the period of the Israelite monarchy.

Palace 6000—popularly referred to as "Solomon's Palace"—is one of the most impressive structures on the site, and doubtless the residency of an important royal official of the Kingdom of Israel. This poorly-preserved but still imposing structure will serve as the background to the story of Megiddo as conveyed through virtual reality modeling and the personal perspective of twelve historically-based characters spanning several thousand years.



TimeScope kiosk at Ename, Belgium

This technique of character-based interpretation has been used effectively as a tool of public interpretation at archaeological sites in Europe and the U.S. At Megiddo, the extensively-researched characters will be grouped into a number of scenes, each set in particular historical periods. The characters range from an ancient Judahite scribe and Israelite noblewoman to a 19<sup>th</sup>-cent. Franciscan friar, rabbi, and village woman from Lejrun, to a 21<sup>st</sup>-cent. archaeologist, pilgrim, and teenager from Kibbutz Megiddo.

The characters and virtual reality reconstructions are not intended as mere entertainment. They are meant to assist scholars, historians, cultural administrators and public officials in communicating the results of archaeological and historical research to the public in powerful, visual ways. The Megiddo interpretive team, consisting of representatives from the Megiddo Expedition, the Ename Center and the Israel Nat'l Parks Authority, is keenly aware of the difficulty, and importance, of conveying a multiplicity of stories and perspectives about Megiddo, a site that is venerated not only by people in Israel, but also by pilgrims and visitors from all over the world.

The TimeScope kiosks in Area L are part of a larger program for the tel encompassing 14 additional structures and points-of-interest slated for interpretation. During the past few

years, a number of projects have already been completed by the Israel National Parks Authority with the cooperation of the Megiddo Expedition. These include the reconstruction of the Late Bronze Age gate which serves as the entrance to the tel today, two new signs, and a "contemplation cove" on the south-east edge of the tel which provides a peaceful view of the Jezreel Valley and a spot for meditation on the theme of Armageddon.

With a large number of tourists and pilgrims expected to visit Megiddo during the new millennium, the construction and installation of the initial elements of the interpretive program will hopefully be underway by the start of the next season of excavations.

**Ann E. Killebrew and  
Neil Asher Silberman**

## THE 2000 SEASON

**T**his season we continued to dig in the same six areas where we excavated in 1998: Area F on the lower terrace; Area H in the north; Area J in the EB cult compound of the east; Area K in the southeast; Area L in the northeast; and Area M in the center of the mound.

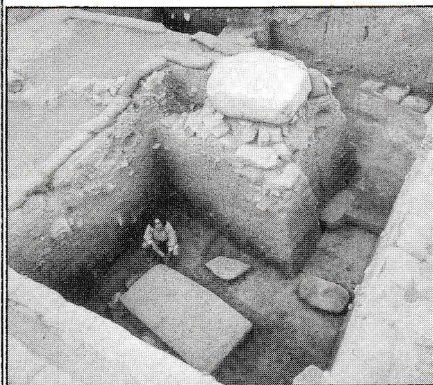
The senior staff of the 2000 season included: Israel Finkelstein, David Ussishkin and Baruch Halpern (directors), Norma Franklin (coordinator and area supervisor), Lynne Koppesser (team member coordinator), Paula Wapnish and Brian Hesse (archaeozoology), Benjamin Sass (finds), Adi Kafri (registration), Noga Blockman, Michele Burns, Eric Cline, Robert Deutsch, Yuval Gadot, Ann Killebrew, Axel Knauf, Gunnar Lehmann, Jennifer Peersmann, Lucas Petit, Dan Warner (area supervisors and assistant area supervisors), Judith Dekel, Dov Porotsky (architects), Pavel Shrago (photography), Lena Benenson (computers), Guy Avivi (administration).

**Area F:** investigation of the occupational history of the lower terrace. Previous seasons revealed an Iron I settlement (Level F-5) close to the surface, and underneath it, remains of a monumental LB II building (Level F-9), an unfortified LB I town (Level F-10, 15<sup>th</sup> cent. BCE) and an MB earthen embankment. This season we continued clarifying the various stages of the LB I settlement. Under the houses

of this level we encountered remains of two MB settlements (Levels F-11, F-12). The relationship between the earthen embankment and the settlements within it has not yet been established.

**Area H:** Iron Age stratigraphy. Previous seasons revealed remains of the last Israelite city (Level H-3), that was destroyed by the Assyrians in 732 BCE. Excavation in 1998 and particularly in 2000 uncovered remains of two earlier settlement phases (Levels H-4, H-5). All three phases correspond to Chicago Str. IVA. This IVA city is represented in other sectors of Megiddo, such as Area L, by a single public construction activity, while the domestic sector of Area H has revealed minute changes in its occupational history. The fortification of the Stratum IVA city—offset and inset City Wall 325 unearthed by the Chicago team—was built in Phase H-5 or H-4. The next settlement down, Level H-6, corresponds to Str. VA-IVB.

**Area J:** locating the EB Ib temple of Level J-4. We continued excavating on both sides—north and south—of the monumental parallel walls which probably enclosed the sacred compound (see *Revelations #3*). The picture has now become clear: there are no monumental remains south of the walls; the temple lies north of the parallel walls. There we uncovered two monumental pillar bases of the original temple as well as its back (northern) wall. The temple was apparently of the broadroom type, with two rows of pillars supporting the roof. In a later phase of this level (late J-4) the floor of the temple was raised and bones were deposited in the hall.



Area J's EB Ib Temple, note the two big pillar bases, one only partially excavated.

In the western end of the area we tried to locate the edge of the monumental, parallel temenos wall of Level J-4. To our amazement, we discovered

that the system—already 45 m. long—continues further to the west.

The stratigraphic situation inside the temple drew our attention back to the cache of Egyptianized vessels which was found in one of the corridors between the parallel walls in 1996 (see *Revelations #2*). In *Megiddo III*, Alex Joffe dated the cache to very late EB Ib, while Israel Finkelstein and David Ussishkin opted for a date in the EB III. It appears that Joffe was right: the cache fits the same phase as the later activity in the temple hall.

Excavation continued near (and under) the round altar of the EB III. Under the thick layer of bone deposits from Level J-4, unearthed in 1998, we uncovered two more floors from the EB I (Levels J-3 and J-2), corresponding to the two temples 'hidden' in Temple 4040, which was excavated by the Chicago team in the 1930s and by us in 1992-1994 (see *Megiddo III*).

Additional remains of the Level J-6 settlement (EB III) were exposed in different parts of Area J.

**Area K:** Iron I City. The removal of balks after the season of 1998, and of City Wall 325 this season, opened the way for a better understanding of the Level K-4 (Str. VIA) remains. The entire area is covered by a single courtyard building, constructed in the second millennium tradition. The eastern flank of the building was devoted to storage: numerous storage jars, including one collared-rim pithos, were found here.

Level K-4 has yielded an impressive ceramic assemblage of about 150 vessels. The assemblage does not include a single bichrome Philistine vessel and must therefore date later than the bichrome phase in the sequence of Philistine pottery. Fifteen samples of charred beams from Level K-4, extracted in 1996 and 1998, were sent to the Weizman Institute in Rehovot, Israel for radiocarbon dating. Six of the samples gave 11<sup>th</sup> century dates, while nine fell well within the 10<sup>th</sup> century.

Remains of Level K-5—seemingly still within the range of Chicago Str. VI—were uncovered near the end of the season under the K-4 building.

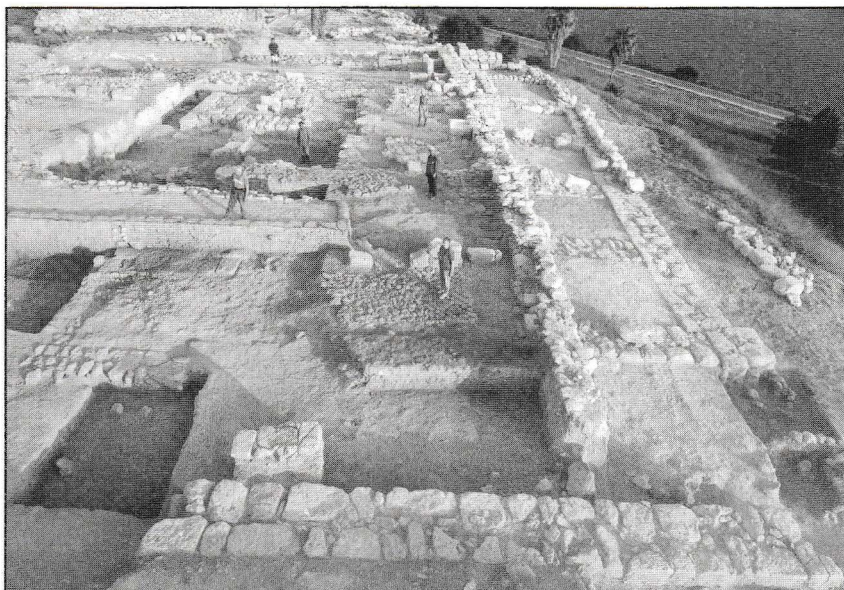
**Area L:** Iron II monuments. We concluded the excavation of a well-preserved pillared building of Level L-2 (Chicago IVA). It belongs to the set of 'Northern Stables' unearthed nearby in the 1920s. Their function—stables,

store houses, market places or barracks—has been fiercely disputed. Samples of earth and plaster taken from the floors of the building in 1998 failed to resolve the mystery of their function. Disagreement also continued among the Directors of the Expedition,

In 'upper M' we uncovered a few Iron II levels and under them the destruction layer of a large building belonging to Chicago Str. VIA. The collapse of the brick walls of the building, with evidence for a fierce conflagration, was over a meter thick.

more parts of the monumental EB I temple. Area K: investigate the history of Megiddo in the LB-Iron I transition phase. Area L: conclude the excavation of Palace 6000. Area M: clarify the nature of the massive Str. VIA building and its relationship to "Schumacher's tomb."

**Israel Finkelstein, David Ussishkin, Baruch Halpern**



General view of Area L showing the northern rooms of Palace 6000 (right).

with Israel Finkelstein and David Ussishkin opting for the stables theory while Baruch Halpern is looking for another explanation.

Excavation of Palace 6000 of Level L-3 (Yadin's VA-IVB) continued. The outer walls of the building are now fully exposed, though the clarification of the inner plan must wait until 2002.

Yadin, who discovered the building in the 1960s, argued that it was connected on both west and east to a case-mate wall. Our excavation of the north-eastern corner of Palace 6000 shows beyond doubt that there were no case-mates here. Rather, the walls of the palace cut through remains of simple houses of Level L-4 (Str. VB) and the destruction of Level L-5 (Str. VIA).

**Area M:** Clarifying the dates of the monuments unearthed a century ago. Here we expanded to two sectors: a lower one, inside the trench dug by Gottlieb Schumacher in 1903-05, and an upper one, east of the trench.

The most important find in the excavation of 'lower M' relates to the dating of the *Nordburg*, uncovered by Schumacher. This massive building has been interpreted as a palace and dated to the MB Age. Our investigation shows that the *Nordburg* was built in one of the later phases of the LB; remains from the LB and MB were discovered under its foundations.

The unique corbelled-roof stone tomb excavated by Schumacher has been dated by many scholars to the MB. After excavating around it in 1998, we proposed dating it to the last phase of the LB. The results of this season seem to indicate that the tomb was constructed in Chicago Str. VIA: the floor of the 'upper M' building rests directly on—and was adjusted to—the ceiling of the tomb.

**Next season**, in 2002, we plan to continue working in the same six areas. Goals are: Area F: uncover the earliest levels of the lower terrace and clarify the relationship between the earthen embankment and the settlements inside it. Area H: continue digging to shed more light on the minute stratigraphy of Iron I-II Megiddo. Area J: uncover

**The fifth season at Megiddo**  
June 7<sup>th</sup> – July 26<sup>th</sup>, 2002.  
More information will be available soon at our registration web site, [www.digmegiddo.com](http://www.digmegiddo.com)

### The News Corner

New Books: Judith Hadley: *The Cult of Asherah in Ancient Israel and Judah: Evidence for a Hebrew Goddess*. Eric Cline: *The Battles of Armageddon*. Israel Finkelstein and Neil Asher Silberman: *The Bible Unearthed*. Carolyn Higgenbotham: *Egyptianization and Elite Emulation in Ramesside Palestine*.

Adi Kafri gave birth to a baby boy on Sept. 22nd who is named Ittai.

Gunnar Lehmann has started a new dig at Tell el-Far'ah (South).

Mario Martin is in service in Jerusalem at the Austrian Hospice on behalf of the Austrian government.

Eric Cline now has a position at George Washington University.

Jennifer Peersmann and dig dog Shupy have moved to Holland where Jennifer is teaching at a high school.

The other dig dog, Max, who was adopted by the Finkelstein family, has had his name changed to Pax to avoid confusion with another family member of the same name.

Deborah Appler is now Assistant Professor of Old Testament at Moravian Theological Seminary in Bethlehem, PA.

The highlight of the Nashville SBL conference for Israel Finkelstein and Norma Franklin was a visit to Deborah Cantrell's stable.

Congratulations to Eveline Saoud (who returned to Zurich during the dig) on passing her MA exams in theology.

Baruch Halpern is finalizing a biography of King David.

### Megiddo in Cyberspace

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