

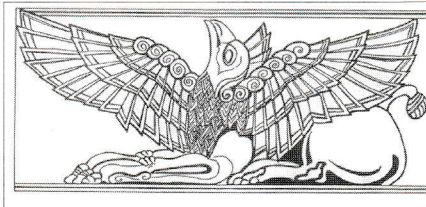
REVELATIONS FROM MEGIDDO

The Newsletter of the Megiddo Expedition

Fieldwork Update:
The 2002 Season

Due to the current situation in Israel, the fifth season at Megiddo was shorter than usual and limited in both the number of fields and the number of participants. We excavated for four weeks—between June 30th and July 26th—with about 60 people, including 30 Tel Aviv University students and 25 workers allocated to Megiddo by the National Parks Authority. Both groups worked extremely well and we managed to achieve quite a lot—more, in fact, than we had expected. Though the situation in the country was tense, the atmosphere at the dig was calm and cordial.

We operated in two areas: K and M. In Area K, in the southeastern sector of the mound, we worked in 12 squares, and in Area M, next to the Schumacher trench in the center of the tel, in over 6 squares. The supervising staff included the two of us; Noga Blockman and Mario



Martin, assisted by Eran Arieh (Area K); Norma Franklin and Robert Deutsch, assisted by Yitz Zehavi and Jane and Robert Grutz (Area M); Pavel Shrago (photography); Yuri Smertenko (surveyor), Michal Berg (registration), and Guy Avivi (administration).

Area K

In area K we removed the remains of the large Level K-4 courtyard house (late 11th–10th centuries BCE) and started going down. Immediately under the building we uncovered remains of Level K-5, which also dates to the Iron I. It should probably be identified with Stratum VIB of the University of Chicago (U of C) excavations.

The Level K-5 layout is simple: a single and relatively small house surrounded by open spaces, with an olive oil installation located on one side. The installation is quite well-preserved and we found several olive pits still inside (they've been sent to the Weizmann Institute for radio-

carbon examination). Raphael Frankl, an expert in ancient olive oil production, examined the installation and said it was typical of the Late Bronze and the Iron I in the western Jezreel Valley.

This level also yielded a rare imported Aegean stirrup-jar that was examined by some of the top-guns of Aegean pottery—Susan Sherratt, Maria Yacovou, and Assaf Yasur-Landau. The verdict, after endless deliberation: Late Helladic IIIC peripheral. Needless to say, this has far reaching implications for understanding the archaeology and history of the region. Level K-5 is also characterized by evidence of domestic metal production.

Under Level K-5 we reached the fragmentary remains of Level K-6, with walls of a few houses, some installations, and open spaces. The pottery that characterizes this level dates to the Late Bronze III and includes a large quantity of imported material—mainly Cypriote. Since we haven't "closed" the sandwich from below, we can't yet say whether these are the remains of the U of C Stratum VIIA, or of post-destruction squatter activity, which may have been detected in our excavations of the Late Bronze gate in 1993. It should be noted that there are no traces of a great conflagration here.

Area M

In the second session of the 2000 season we worked immediately to the east of the Schumacher trench. The aim was to clarify the stratigraphy above the "Nordburg" and to establish the date of the monumental stone-built "Aegean Tomb"—both excavated by Gottlieb Schumacher a century ago.

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Remains of Level's K-5 and K-6 in Area K, looking north.

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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.

Architectural Horse Sense

The Case for Lighter, Breezier Stables at Megiddo

For years now a debate has raged concerning the original use of the long parallel buildings found in abundance at Megiddo and other Iron Age sites in Israel. Some scholars say these buildings, with their long central aisle and two narrow, colonnaded side aisles, were really storehouses, not stables at all. At Megiddo, the case for stables is stronger than anywhere else, because of the apparent feeding troughs between each two pillars and because of the presence of a large courtyard adjacent to at least some of these buildings that makes sense in terms of horses. So at Megiddo, at least, stables it seems to be.

Does that mean we know all there is to know about these impressive buildings? Hardly.

The remains are mostly within the first meter up from the floor. Everything above that height is basically educated guesswork. How high was the roof over the buildings? Was it sloped or flat? Were there front doors to the stables, or just openings (which would have required that the horses be secured within)? We don't really know. How could light get in to these long buildings? We can guess, but we don't really know. And what about rainfall on the vast roofs (no drains or pipes of any kind have been found), and the oppressive summer heat? How were these issues handled architecturally? We simply don't know.

That of course hasn't stopped illustrators working with archaeologists from conjecturing. Some wonderful illustrations have been prepared over the years, and while they have differed in detail, they have

all agreed on a few basic things.

They all show a heavy building, built of plastered mudbrick walls and a low, flat two level roof. The lower level roof is over the stalls, and the higher level roof is over the central aisle. The difference in heights between the roofs allows light and air to enter through continuous "clearstory" windows (see illustration).



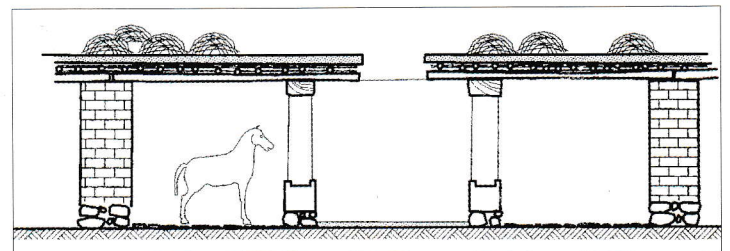
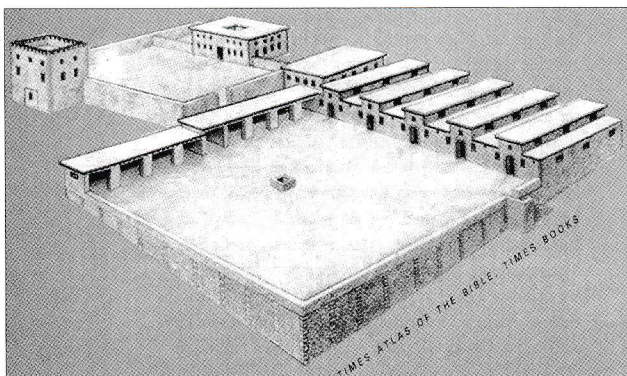
The intact pillared building excavated in Area L (2000).

It sounds good, and it fits what we know from the excavations, especially the existence of deep foundation walls under the columns, which would have supported this roof. It also fits the architectural requirements of a storehouse, if you still prefer that idea, so everyone can be happy with this design: everyone except, perhaps, the horses and their handlers!

Horses generally prefer a cooler temperature than humans and are considered most comfortable in temperatures of about 7° C (45° F). Their heat tolerance is lower than ours, and unfortunately for them, Megiddo's climate is notable more for its heat than for its cold.

This is true today, and it would also have been true 3000 years ago. Would the traditional Megiddo stable, as conceptualized all these years, really have been a good building type for a large-scale stable in that hot climate? After all, each of these buildings could have held as many as 50 horses, and the windows in the central roof could not have provided very large openings, given the building technology at the time. On top of that, the stables at Megiddo had only one door, at only one end of the building, with no side windows on the ground level at all; meaning cross-ventilation would have been awful. Dark, hot, and still. And the sanitation and smells! Would you want to go in there in summer temperatures of 30° C (86° F) or more, with 50 densely-packed 500 kg animals radiating body heat (and more)? Hmm.

Thinking about this is what caused me—an architect in charge of monument restoration and preservation in the Megiddo National Park—to suggest an alternative: that the stables were only partially roofed; that the two stall areas were roofed, pretty much as in all the old reconstructions, but that the central aisle was open to the sky, all the way from the front door to the back wall. Suddenly, the heavy buildings shown in illustrations turn into airy and breezy shelters, with a roof and back wall only. The horses would be secure and comfortable during mild Megiddo winters without suffocating in summer, not to mention the added comfort to their human handlers. Rainwater would aid in washing down the stalls. If needed, porous fronds could be laid across the open aisle at the roof level in a prolonged heat spell to give partial shade without cutting off ventilation. And as an added benefit, the roof portions of the stables would be



Left: The Oriental Institute's reconstruction of the "Southern Stables." The structures are fully roofed and the central aisle of each structure is elevated.

Above: A section through a "stable" with alternative reconstruction. The central aisle is unroofed.

handy storage areas for hay and straw, as feed and bedding under the horses' hoofs.

If something like this really existed, it might have looked like the new illustration we prepared (*opposite, right*). Notice that here a single building is no longer a single stable but rather a half stable back-to-back with another half stable. The central aisle of what we call a stable is really just the space between two buildings!

Can we be sure that our alternative is the real thing? Uh uh. Proponents of the fully roofed, stable model can tell you:

- Maybe the horses were left out to pasture in summer (counter to this: Middle East pastures are barren in summer).
- The heavy construction of mudbrick may actually have kept the stables cool in the summer, just as caves are cool even when it's hot outside (counter to this: the buildings would not have the mass necessary to create this effect, and given the body heat of the horses, ventilation, not wall mass, would be the critical factor).
- Modern stables are roofed even in hot climates such as the southwestern U.S. and Mexico (counter to this: overnight temperatures in those dry areas fall greatly while at Megiddo the humidity is high and the nights are hot. Besides, modern U.S. stables provide each horse with much more air space).
- The side aisles are lower than the center aisle. This would have caused the aisles to flood in a heavy rain if the roof were open, and horses should not stand at length in water (this is a tough one, although the troughs between columns create a pretty good dam, which might have prevented this from happening).
- If the ancient builders' plan was merely to provide sheds for the horses—why not use light wood columns? In other words, they must have built the columns to hold a heavy roof (counter to this: the side roofs are heavy, and would have required strong columns and strong foundations, and the wide stone columns had a secondary use: to separate the horses during feeding; see Deborah Cantrell's article in *REVELATIONS* Number 5).

You see, there is still plenty of room for debate. Perhaps the next excavation season will provide the answers!

Lawrence Belkin

Armageddon Strikes Toronto

Toronto was this year's venue for the well-known and prestigious annual conferences of the American Schools of Oriental Research (ASOR) and the Society for Biblical Literature (SBL). Megiddo was represented "big time"—in special sessions—at both of them.

At ASOR

The session in the ASOR conference, entitled "Ten Years of Renewed Excavations at Megiddo," was chaired by Baruch Halpern. The idea was to celebrate our first ten years in the field (1992–2002) with an overall summary of our main achievements, and with special emphasis on the last two seasons. The hall was fully packed with a crowd of about 400 ("standing-room only").

Yuval Gadot was the first on the podium. He presented the results of his survey along the Aruna Pass to the west of Megiddo. His main point was to examine the possible relationship between the importance of the international road from Egypt to Syria and the settlement patterns in the region. Norma Franklin described the results of the Megiddo Bedrock Project she conducted together with Jennifer Peersmann. They began by delineating the original bedrock hill, and followed with a reconstruction of the first large-scale settlement in the Early Bronze Age I. Benjamin Sass talked about the finds that shed light on the Megiddo-Egypt relationship in the Early Bronze I, and Noga Blockman described the exciting, rich Iron I finds from Area K. Noga discussed the distribution of pottery and other finds in the courtyard building of Level K-4 and presented—fresh from the field—some of the finds from Levels K-5 and K-6, which were unearthed in the 2002 season. Ann Killebrew and Eric Cline presented results from Area L: the late-Iron II pillared buildings (the "Megiddo Stables"—see Larry Belkin's article on pages 2–3) and the beautiful early Iron II Palace 6000, which was first excavated by Yadin in the 1960s.

And there were two summary presentations: David Ussishkin described the main highlights of the first ten years of the excavations of the Bronze Age

settlements, especially the Early Bronze temples compound, and Israel Finkelstein emphasized the importance of the Megiddo excavations for the archaeology of the Iron Age in the Levant and beyond.

At SBL

Two days later Megiddo "migrated" to the SBL, for a special session on the "Megiddo Stables." This topic, which has been at the core of archaeological research for the past 80 years, also attracted a large crowd and many scholars and students were forced to stand in the corridor since all the approximately 200 seats inside the hall were occupied.

The SBL session, entitled "Mounts on the Mound: The Megiddo Horses Revisited," was chaired, with usual charm and enthusiasm, by the Friend of the Expedition, Lord Allenby of Megiddo. Lord Allenby—who participated in the 2000 dig of the pillared buildings in Area L—opened the session with a short talk on his personal impressions as a British army cavalry officer.

The session opened with a presentation by David Ussishkin of the history of research of the Megiddo pillared buildings. David discussed past discoveries and the theories of previous scholars who worked at Megiddo, mainly P.L.O. Guy and Yigael Yadin. He then presented the results of the Megiddo Expedition dig in Area L in the 1998 and 2000 seasons. The next paper, entitled "Straight from the Horse's Mouth," was given by Deborah Cantrell of Vanderbilt University. Deborah—a specialist on the subject, who breeds and trains horses in Tennessee—is now writing a Ph.D. thesis on the Horses of the Northern Kingdom of Israel (see her article in *REVELATIONS* No. 5). Deborah showed how every detail in the buildings can be explained as belonging to stables. Deborah also removed some of the more thorny questions raised in the past against the stables theory. Israel Finkelstein followed Deborah with a paper entitled, "A Kingdom for a Horse." He proposed that Megiddo was a center for one of the most lucrative "cash-crop" industries of the Northern Kingdom. In his opinion, in the 8th century BCE, Israel was the intermediary between the famed Egyptian

or better, Nubian) horses and Assyria and Megiddo was the major installation for the breeding and training of these horses. Norma Franklin added another dimension. In her talk, entitled "Fair or Foal," she raised the possibility that Megiddo served as a periodic market or fair for horses and at other times other merchandise. Norma suggested that the Megiddo fairground included the large courtyard located next to the "southern stables" complex, which replaced southern Palace 1723 of the previous stratum.

Baruch Halpern did his best to balance the horse mania. In a paper entitled "Destabilizing Megiddo," Baruch described the difficulties regarding the stables theory—from the fact that no horse paraphernalia has ever been found at Megiddo to problems of ventilation and hygiene of the buildings. Ann Killebrew was the last to speak. She discussed questions related to the presentation of the Megiddo pillared buildings to the public. In order to demonstrate the different possible narratives, Ann recruited three volunteers from the audience: one "played" the role of an angry Israelite prophet who criticizes the reliance on foreign horses; the second was a proud Israelite chariotry officer, and the third an aristocratic Israelite woman.

In addition to the academic activity, many of the Megiddoites present at the ASOR meeting—about 25 people in all—gathered for a drink and a chat in the Bar of the Toronto Marriott. They ended the pleasant and friendly evening with a toast: "Next year at Megiddo"....



Two meter thick brick collapse of Level M-4 (the Oriental Institute's Stratum VIA).

2002 Season (contd.)

At the end of the 2000 season we noticed that a massive wall of Level M-4 (U of C Stratum VIA) is aligned with the tomb and its entrance shaft. We therefore raised the possibility that the tomb was constructed in Stratum VIA.

This season we extended the excavation in all directions. Fragmentary remains of Levels M1-3 (phases of the U of C Stratum V and possibly IV) were found close to the surface in all squares. Under these remains we reached the destruction collapse of Level M-4, which is far more impressive here than in Level K-4. In some places the collapse — with fully

preserved bricks turned to black, yellow and red by the fierce fire — reached over two meters! Further down, under the floors of this building (the nature of which has not been clarified yet), we reached a layer which is characterized by Late Bronze/Iron I sherds.

The 2002 season has not resolved the problem of the relationship between the "Aegean Tomb" and the remains around it. There are two possibilities:

The first is that the "Nordburg," which dates to the Late Bronze Age, went out of use before the end of the Late Bronze, and that the tomb was then "inserted" in the latest phase of the Late Bronze (U of C Stratum VIIA). The people of Level M-4 (U of C Stratum VIA) knew the tomb, probably revered it, and organized their buildings around it. This is the more logical of the two explanations.

The second is that the "Nordburg" functioned until the end of the Late Bronze Age and the tomb was inserted in Level M-4. Though this possibility cannot be eliminated, it remains the less logical of the two.

We hope to resolve this matter next season, when we reach the level of the entrance to the tomb in the square immediately to its east.

Israel Finkelstein, Baruch Halpern & David Ussishkin

News Corner

Three Babies and Two Weddings

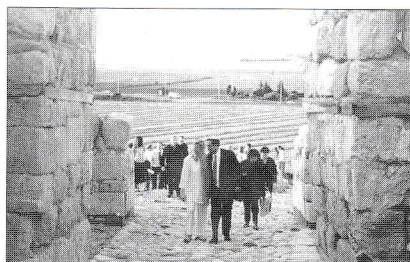
Three Megiddo babies—all girls—have been born since our last issue. Our congratulations and best wishes to the proud parents: **Jennifer Peersmann and Eli Gueta** on the birth of **Limor**; **Guy and Liat Avivi** on the birth of **Tamar**; **Gilad and Hanita Cinammon** on the birth of **Nitzan**.

Mazal Tov to **Michal (Burg) and Segev Appelbaum** and **Yitz and Juliette Zehavi** on their recent marriages.

Condolences

Our heartfelt sympathy to **Lynne Koppesser** and the **Halpern family** on the death of Lynne's father, following a lengthy illness.

Jennifer and Eli Gueta exchanged marriage vows in what was probably the first wedding held at Megiddo in 2,500 years. The romantic celebration took place at sunset last spring on the tel's observation platform, in the presence of family and friends.



Jennifer and Eli, with their guests, go through the Late Bronze Age gate, on their way to pitch the bridal canopy.

REVELATIONS FROM MEGIDDO is published by the Megiddo Expedition. Editors-in-Chief: Israel Finkelstein, Baruch Halpern, and David Ussishkin. Editor: Myrna Pollak.