

## **NIPPUR**

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For a short time each spring, small flowers bloom on the mound of Nippur. In years with exceptional amounts of winter rain, the coverage is much more noticeable. This was one of those years. But even with the rains, which finally broke a drought which has gripped the country since 1998, there will be almost no wheat and barley in the area this year. The necessary irrigation water is coming down the canal only two days a week, and that is not enough to raise a crop. The cause of the problem is the filling of several dams on both the Euphrates and Tigris in Turkey. The last time water was in such short supply was in the early 1970s, when the Tabqa Dam was being filled in Syria. At that time, the Iraqi government had to evacuate about twenty thousand people who lived on the canal south of Nippur and send them to a rain-fed farming area northeast of Baghdad. They were able to return a few years later, after the linking of the Tigris and Euphrates systems by means of a giant canal above Baghdad. With this connection, as long as the Tigris had water, the Euphrates canals can easily supply most of the water for agriculture in the south. But now that Turkey is building several dams on the Tigris as well as the Euphrates,

## RESEARCH

Iraq's supply of water and its continued existence as an irrigation-based agricultural country is threatened. The most drastic effect of the situation has been on the marshes of southern Iraq.

The marshes were not only beautiful and full of fish, turtles, and migrating birds, but also the home of the Madan, who have continued a way of life based on reeds that had its beginnings in prehistory. As a United Nations (UN) report recently made clear, the marshes are essentially gone, due to a combination of the new dams and increased irrigation in Turkey, Syria, and Iraq. Newspaper articles and BBC reports, inspired by the UN report, ignored most of the findings and put the blame on Saddam Hussein for draining the marshes so that it is impossible for dissidents to find refuge. But such deliberate action has played a very small part in the loss of one of the world's greatest wetlands. All through the 1970s and 1980s, we at Nippur witnessed the gradual shrinking of the marshes, as more and more water was diverted upstream. The last time members of the Nippur team went to visit the marshes, in 1989, they reported a surreal landscape of boats lying in desert, and even the town of Chibayesh, where tourists went to experience the marshes, was miles from the water.

Since the Gulf War, there have been major projects aimed at bringing Babylonia back under cultivation, and each new field takes more water, but these projects are, themselves, denied water that is being consumed upstream. And every dam that is finished creates a large reservoir that loses water to evaporation at a tremendous rate. The international tensions over the two rivers is only one example of the increasing crisis in global water supply. The logical thing to happen would be an agreement among the three countries, Turkey, Syria, and Iraq, to share the water on a fair basis. But there are power politics at work here, and nothing is strictly logical.

The growth and decline of irrigation, as well as the growth and decline of the marshes, are part of a process that we can trace to antiquity. We, at Nippur, began to appreciate the fragility of the ecological system in southern Iraq when we initiated environmental studies in the 1970s.



*Early Dynastic (c. 2600 BC) Administrative building (palace) excavated by Iraqi Department of Antiquities at Umm al-Aqarib*

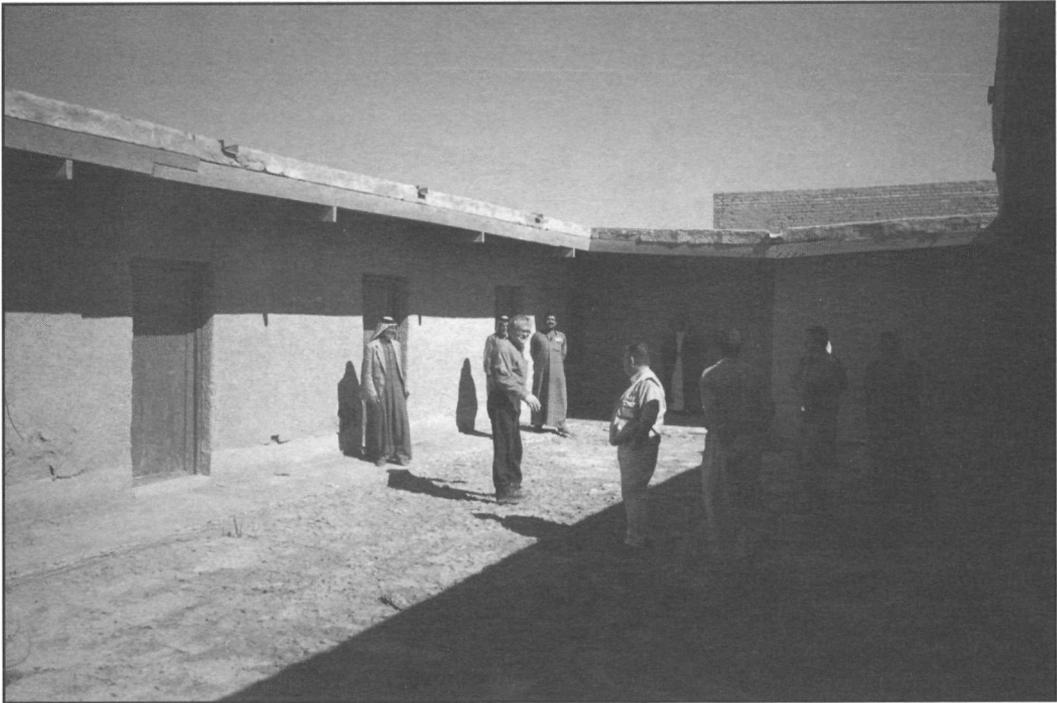


*Expedition house at Nippur, damaged portion*

We knew that the desert had existed since the decay of the Abbasid state in the thirteenth century AD, but we assumed that before this time the areas under dune had been cultivated continuously, forming the basis for what Bob Adams has called the Heartland of Cities. But the situation was not as simple as that. When Nippur was first excavated in the 1890s by the University of Pennsylvania, it was surrounded by a marsh, with fields and desert some distance away. By the time Penn left in 1900 the marsh had dried up, and there was an open desert, without dunes in sight. During the 1920s, new irrigation ditches brought cultivation to the area, but by 1948, when Chicago arrived to begin work, Nippur was overrun on the eastern side by a massive dune belt. But during the 1980s, the dunes began to recede and to dwindle rapidly. Clearly, we were witnessing an intricate interaction of natural and human forces.

Our excavations in the early 1970s made us aware that there were similar fluctuations between cultivation and desert in ancient history. We found Kassite (c. 1350 BC) buildings resting directly on Old Babylonian (c. 1750) ones, and we began to relate that fact to sharp breaks in the pottery sequence and to the well-know, but unappreciated break in dated cuneiform tablets, with nothing written at the site between the eighteenth and the fourteenth centuries. We suggested that there was an abandonment of the city during that time. That was a pretty radical suggestion at the time, but parallel work by the Belgian Expedition at Tell ed-Deir, with whom we have been collaborating, resulted in the same conclusion. In addition, at Nippur, we could see that there was yet another break after the Kassite period, from about 1200 to at least 900 BC. Then we found in the excavation trenches major sand deposits marking both of the abandonments.

Although, for now, we are barred by the embargo from working in Iraq, we can carry out ecological research with the aid of satellite images. We can interpret what shows up on the images in light of knowledge of the landscape gained through surface survey done by Adams and others, including myself and Tony J. Wilkinson. Carrie Hritz, a graduate student working toward a doctorate, has been manipulating images that were taken by Corona satellites between 1966



*Expedition house at Nippur, undamaged portion*

and 1972 and Spot satellites of much more recent date. Those images, that look like black and white photographs taken from the air, can be overlaid with the standard maps of southern Iraq done in the 1920s and the survey maps of Adams. Concentrating on the area between Nippur and Babylon, Carrie can identify sites that were located by the surveys, but she can also locate many more that were missed by the surveys or are in areas where no survey took place. She has started to separate the different lines of ancient riverbeds and canals, some of which are still visible from the air, although many are buried under the silt. A very important tool for the work is a satellite-derived set of data that shows the details of the terrain, the lower and higher elevations. In a landscape that looks almost flat to the naked eye, there are, in fact, minor differences that we can see when the terrain grid is laid over the Corona and Spot images. This part of the work will allow us to see buried levees of ancient courses of the rivers and canals. A preliminary report on the project was given by Carrie to a meeting at the Argonne National Laboratory in the spring. I should mention that in this kind of investigation, we are also collaborating with the Belgian Expedition, and Carrie went to Ghent last November to be trained in their techniques of analysis.

Although the Iraqis have been willing to have us back since at least 1993, we cannot resume research at Nippur until the United Nations lifts its embargo. I have been able to visit the site and can report that, although our expedition house was partially burned in a tribal dispute in 1994, as of March there was no illicit digging there. That is certainly not the case for many other sites, especially in the south, where dozens of ancient Sumerian cities like Lagash, Larsa, Zabalam, and Umma have been looted very systematically. A country that used to have virtually no illegal digging and smuggling of antiquities has become a major source for the international antiquities market.



***Iraqi Department of Antiquity excavation of huge Ur III (c. 2100 BC) temple/palace complex at Umma***

Because of the embargo, the Directorate of Antiquities did not have the money to retain its academic staff, and it even had to lay off hundreds of guards who have kept Iraq relatively free of illicit digging. The tremendous increase in prices for all antiquities during the past twenty years has been especially marked in Mesopotamian artifacts. Because of the escalating prices, thousands of cuneiform tablets, cylinder seals, and other objects have flooded the international antiquities market. What started as minor digging by people looking for something that could be sold to feed their families has become a well-orchestrated operation, financed by people outside Iraq, and involving elaborate smuggling procedures. Hundreds of men are hired to dig on a site, while being guarded by others. The sites out in the desert are especially endangered, but even well-known tourist attractions near towns, such as Nineveh, Nimrud, and Babylon, have had thefts.

One site in particular, ancient Umma (modern Tell Jokha, about 50 km southeast of Nippur) was clearly being butchered, judging by the number of tablets from there that were showing up in London. When the magazine *Natural History* decided to do a feature on the damage to Iraq's antiquities, it sent a photographer to Iraq. She asked my advice on what to photograph, and I urged her to make a special effort to go to Umma. The Directorate of Antiquities did get her there, with a strong army escort. The damage shown in her photographs was dramatic, with one large area of more than two acres dug down more than 6 m. The Antiquities officials with her also took photographs and were able to use them to gain funding for a salvage operation. Working under extreme conditions, with heat, dust storms, lack of water, and the constant threat from illicit diggers who had to be chased off the sites by the army, the archaeologists have been working for two solid years at four sites — Umma, Umm al-Agarib, Tell Smid, and Bismaya (ancient Adab) — all of which are to the southeast of Nippur. One of the sites, Bismaya, was excavated in 1904/05 by Edgar James Banks for the University of Chicago. Bismaya has been badly dam-



***Huge pits left by illegal diggers at the site of Umma, southeast of Nippur***

aged, and the Directorate of Antiquities worked there for a few weeks, calling off the effort because of extreme sand storms. But at the other sites, they have made major exposures.

I was able to view their work when I was in Iraq in March for a conference on Five Millennia of Writing. At Umma, alongside the huge illegal holes, the archaeologists are exposing large buildings of the third millennium BC. More impressive, however, is a huge building with baked brick walls that feature niches and buttresses and a plan that seems to me to be a combination of temple and palace architecture. Dating to the Ur III period, when the kings were considered divine in their lifetimes, this building is probably similar in function to the Palace of the Rulers at Tell Asmar, dug by the Oriental Institute in the 1930s. On another part of the site is a pottery-making complex, with potters' wheels still in place and kilns that are unusually well preserved.

Umm al-Aqarib, which is still unidentified by its ancient name, is the next town south of Umma, only a few kilometers distant. Here, a cemetery has been extensively damaged, but the new work by the archaeologists has exposed a palace of the Early Dynastic period (c. 2600 BC) and a very large temple complex centering on a high platform (early ziggurat). The temple is preserved to a height of 6 m and its walls are up to 3 m thick. The plan is very unusual. A picture of the temple was featured in a *Chicago Tribune* report (25 March) by Hugh Delios. The finds at this site and Umma will rewrite the history of Sumerian architecture.

There is a more academic report, accompanied by a cover photograph, in the 5 July issue of *Science*. Here, Andrew Lawlor, who attended the conference and visited the sites with us, details the damage done to Mesopotamian archaeology during the embargo and the importance of the new salvage operations.

The obvious need for the resumption of scholarly investigations in Iraq has already led several of the foreign expeditions to resume digging. An Austrian team has been working since the early 1990s, and the Italians returned in a small way, doing restoration work at Hatra. But now the Germans are working at Assur and Uruk, and the French will begin this year on two sites,



*Part of Early Dynastic (c. 2600 BC) temple complex at Umm al-Agareb, dug by Iraqi Department of Antiquities*

one in the north of Iraq, the other in the south. A Japanese team resumed working at Kish last year. Other teams are planning to return. The British and US expeditions probably will be the last to return, due to the position of our governments that the embargo does not exclude cultur and education. We hope for a change in that position and our return to Nippur some time soon.

I cannot end without saying, once again, that there is some progress on the finishing of reports on previous work. I know I have said before that some of the manuscripts are almost ready to hand over to the editorial office, but this time it looks more likely. Augusta McMahon will be coming to Chicago for two weeks in July to go through her report on the Early Dynastic-Akkadian Transition, which deals with much that we did in the eighteenth and nineteenth seasons. This time, the book will be done.

If I could put aside two months to do nothing but work on the Umm al-Hafriyat report, I could finish it. This site, out in the desert east of Nippur, is currently being dug illegally and there is, I am told by a local driver, a lot of damage. That site is extraordinarily important because it was a pottery making center, with more than 400 pottery kilns visible on the surface. It dates from the fourth through first millennia BC. With my current involvement in Hamoukar, that dedicated two months looks a long way off. If the current flow of gifted students continues, I will have the necessary help to do this and other reports, and there will even be a couple of dissertations to come out of the work.