

AN ARCHAEOLOGICAL GRAMMAR
AND A GLOBAL RECORD FOR
THE MONUMENTAL URBAN COMPLEX OF URKESH

A Proposal Submitted to the
Andrew W. Mellon Foundation
Emeritus Fellowship Program

by
Giorgio Buccellati
Professor Emeritus, Near Eastern Languages and Cultures
Professor Emeritus, Department of History
Director, Mesopotamian Lab, Cotsen Institute of Archaeology

UCLA

buccella@ucla.edu

April 21, 2008

Abstract

The *Urkesh Global Record* will provide a complete documentary publication of all the stratigraphic data, in digital format, of two excavation units from the Royal Palace and the Temple Terrace of Urkesh, with the inclusion of a large portion of typological analysis.

Publication will be innovative methodologically because it introduces a wholly new approach to digital thinking and publishing. Explicitly formulated as a theoretical model, there is at the same time a direct practical impact because the system allows for a full exploitation of the data during, and immediately after, excavation. The core principle of the system is that each field record is construed in its entirety as a script through which a full fledged browser edition is automatically produced on a daily basis..

The proposal explains briefly how the project is meant to provide an answer to the vexed question of archeological publishing, or *non-publishing* as the case may be. It is suggested that the chronic delay (often resulting in the total non-appearance of final reports) derives from deep-seated intellectual presuppositions rather than from practical or other factors. Discussed in this proposal is how I plan to apply a novel understanding of what an archaeological publication should be, and how the experience gained over the years will serve us in good stead in order to meet our goals. A preliminary version of two earlier volumes of the *Urkesh Global Record* is available for inspection online.

The system is well tested. The programs are all operative and a large amount of material has already been processed. So while the scope is vast, the intended outcome is realistic: two extensive digital volumes, accompanied by one support monograph in hard copy, and a theoretical volume (the *Grammar*) in traditional book format.

The most important contribution to the discipline (besides, of course, the publication of substantive primary data) is in the proposal of a wholly new concept, having the following characteristics:

- radical transparency
- seamless integration of all the data, with comprehensive statistics
- fusion of database and narrative functions
- non-restrictive narrative paths with automatic hyperlink saturation
- independence of each author's voice within a unified and coherent whole

The amount requested is \$34,949, to cover expenses for the final preparation of the publications, plus \$15,214 subvention for the Cotsen Institute of Archaeology. The research is linked to the 2008 Summer season, and will last from October 2008 through the rest of the academic year, leading up to completion in September 2009 of the two digital volumes (with supporting monograph) and of the *Grammar* paper volume. While ambitious, this plan is realistic because of the extensive work that has already been conducted in recent years.

Table of Contents

Abstract	0
Table of Contents	1
1 Introductory	2
2 The Excavations	2
2.1 Background	2
2.2 Urkesh and the Hurrians	3
2.3 The finds	3
2.4 Publication program	4
3 First goal for the proposed research: A Grammar of the Archaeological Record	5
3.1 The problem of archaeological non-publishing	5
3.2 Guidelines for a proposed solution	6
3.3 The notion of grammar	7
3.4 The uses of the grammar	8
3.5 The intended volume of the <i>Grammar</i>	9
4 Second goal for the proposed research: Two volumes of the Urkesh Global Record	9
4.1 In-house editions of the Global Record	9
4.2 Aspects of the digital publication	10
4.3 The built-in narrative	11
4.4 Access and portability	12
4.5 The intended two digital volumes	12
4.6 A synthetic monograph	13
4.7 A pilot project	13
5 Work plan	14
5.1 Details of personnel	14
5.2 Details of schedule	14
5.3 Details of operation	15
5.4 Details of the intended results	15
6 Budget	16
7 Bibliography	17

1 Introductory

This proposal combines two different aspects of the same project. (1) The digital publication of two excavation units of the Urkesh Monumental Urban Complex, in the format of the Global Record. (2) Publication of the theory and practice that underlie the concept and structure of the same Global Record.

Over the years, I have been deeply involved with both aspects. As co-director of the Mozan/Urkesh field project, I have since its inception been responsible for all practical aspects of the excavations and especially for the ensuing stratigraphic analysis. In line with this task, I have developed a *Grammar of the Archaeological Record*, a theoretical statement of principles which serves at the same time as the framework within which the full publication of the excavation results takes place.

These two aspects of practice (excavations) and theory (grammar) result in a new approach to archaeological publishing, one that meets, head on, a chronic problem in the field. The endemic delays in publishing final excavation reports are not due, I submit, to extrinsic factors, but to basic intellectual presuppositions. In the present conception of things, it is systemically impossible to produce final reports that are not only rapid, but in fact fully comprehensive and properly objective. This is a considerable charge to level at any scientific field of inquiry.

My research proposal aims at answering this charge, and at providing a concrete example of how to remedy the situation. The *Grammar* deals with the theoretical framework, and it provides the background to understand the *Urkesh Global Record*, i.e., the new digital publication of the full record of the excavations at our site. The Mellon grant for which I am applying would give me a chance to bring all of this to fruition – completing the *Grammar* for publication as a traditional book, and completing two digital volumes (along with a paper support monograph) on two excavation units within the Urkesh Monumental Complex.

The proposal is also presented as a pilot project. The results of the project outlined in this proposal will serve as a model for reworking all the material from earlier seasons in such a way that they may be published in the same format, thereby providing a corpus of data that is unparalleled in archaeology. This will require a considerable effort, from harmonization of the data that were entered according to earlier versions of the *Grammar* to the digitation of older photos and drawings. For this I will seek separate, additional funding, that will be conditioned by the successful completion of the present phase of the project as outlined in this proposal.

2 The Excavations

2.1 Background

Urkesh, today a small village known as Tell Mozan, was a major political and religious center of the Hurrians – an elusive population of the ancient Near East. Our excavations have shown that they had developed a strong urban civilization, at the very dawn of history,

some 5500 years ago. The site is located in a very favorable geographical setting (Fig. 1) and is one of the largest for the third millennium in Syria (135 hectares), the central mound being about 25 meters high (Fig. 2). The material from both surface surveys and excavations/soundings throughout the High Mound and the Outer City have indicated a remarkable homogeneity of settlement: we find extensive third millennium evidence immediately below the surface, plus several localized early second millennium strata, and scattered modern graves.

2.2 Urkesh and the Hurrians

The identification with Urkesh has given special cultural significance to our project. We can now point for the first time to excavated evidence for the existence of an independent Hurrian kingdom (Fig. 3) in the third millennium (before our excavations, there were only later myths and historical documents acquired on the antiquarian market). This evidence makes of Mozan/Urkesh the only Hurrian city of the third millennium, specifically documented as the capital of a Hurrian dynasty, sung in myth as the seat of a primordial Hurrian god, and located at a specific archaeological site. The evidence consists of cuneiform texts inscribed on the seals of previously unknown kings and queens of Urkesh, and of members of the royal household. Several of the personal names can be interpreted as Hurrian (Tupkish, Zamena, Tuli, Unap, Ewrim-atal), and the title for “king” is the Hurrian word *endan*, now also duplicated (on a seal impression) by the Sumerian word *lugal*. The discovery of a monumental underground structure where necromantic rituals were performed has made the link with Hurrian culture and ideology all the stronger. The presence of a large terrace-like structure supporting an earlier version of Temple BA is now linked to the palace (Fig. 4), and together they constitute a unique urban monumental complex on a scale and of a design that is unique in third millennium Syro-Mesopotamia. The terrace is firmly dated to the later Early Dynastic period, to which time dates as well an administrative complex at the extreme edge of the Outer City (about 2500 B.C.). All of this indicates that Urkesh was an urban center of major proportions already in the first half of the third millennium B.C. Some limited but significant evidence suggests that the Temple Terrace and the city around it go back a thousand years earlier, to the middle of the fourth millennium.

Because of the central role played by Urkesh in Hurrian mythology, which reflects the most archaic periods of Hurrian ethnic identity, we can safely assume that Mozan was indeed Urkesh already at that early date, thus documenting a Hurrian urban presence in Syro-Mesopotamia long before it was ever suspected. The ethnic dimension to which our excavations call attention does more than add one more group to the kaleidoscope of populations of the ancient Near East. The Hurrians were significantly different from the others, and exercised a subtle but pervasive influence in the development of later civilizations, on a level that almost parallels that of the Sumerians.

2.3 The finds

The architectural layout of the royal palace (Figs. 5-6) is imposing: with about 1,600 m² excavated, and the promise that the entire building may be up to 4,500 m² (almost 50,000 square feet), this is emerging as one of the most complex structures of third millennium

Syro-Mesopotamia. Walls are standing in places to almost 3 meters, and conservation is excellent. It was the nerve center of a political and cultural area which, though of great historical significance, has remained little known until now. We have completed the excavations of a large service wing of the Palace, and are currently excavating the formal area that presumably served as the residence for the royal family and the seat of the government. A clearer definition of the political significance of Urkesh at the time of the Royal Palace came when evidence from our excavations showed that Urkesh was allied to Naram-Sin of Akkad, who had otherwise conquered every other major kingdom in Syria, from Mari to Ebla.

From beginning to end, Urkesh was a religious center of prime importance for the Hurrians, and we have recovered two major religious structures, both highly distinctive of Hurrian culture. One is a deep necromantic shaft (Fig. 7), where the spirits of the Netherworld were summoned on behalf of the king and the queen. The other is a high Temple Terrace (Fig. 8), which most likely was dedicated to the main god of the Hurrian pantheon, and which is extremely well preserved. The Temple at the summit was a good twelve meters higher than the level of the royal Palace, and was accessed through a monumental stone stairway, framed by a wide wing, also made of stone, and a long stone revetment wall that encircled the base of the Terrace.

Of the artifactual remains, the most important are the seal impressions (Fig. 9), of which almost 2000 have been recovered. The vast majority was found in the accumulation that goes with the earliest floor of the service wing of the Palace and from a cache in the formal wing. They are dated to the early period in Naram-Sin's reign or even slightly earlier (around 2250 B.C.). The fragments of the seal impressions were scattered on the floor and contained within a well defined accumulation, no thicker than 30 cms, thus allowing us to infer a relatively limited time span for the build-up: in other words, all of the seals evidenced by the deposit were in use at the same point in time. The identification of Urkesh rests on just five such minute fragments – nothing but the most dedicated archaeological method could have brought these small clay fragments back to light, nothing but the skill of the glyptic analysts and conservators could have made them readable, nothing but the full record of the context could have made them relevant for historical understanding. The iconographic and stylistic peculiarities of the glyptic material document clearly the existence of a distinctive artistic tradition. The following characteristics are especially noticeable: the strong realism in the representation of the human and animal figures; the close match between scenes and legends; the programmatic nature of the representations (in particular the affirmation of dynastic connections); the extensive use of positive carving of the inscription on the seals, resulting in a negative impression upon rolling.

2.4 Publication program

Our project's bibliography lists 6 books, 48 articles and 13 shorter communications (see section 6 below). These titles include preliminary reports on individual seasons of excavations, research papers on particular topics, and overall presentations of the site and its history. Two more books are in advanced state of preparation (seals and seal impressions, ceramics). In terms of their style of presentation, these are conventional publications.

Since the beginning of the project, however, our recording has been structured with a view towards achieving a digital publication that is not only electronic because of the medium in which it appears, but properly digital because of the intellectual project from which it derives. It rests on a coding system that extends rigorously to all the data, from the stratigraphic observations made during the excavation to the typological analysis of the artifacts, from photographs to drawings, from topographic measurements to bio-archaeological and geo-physical records. The efficiency of the coding lies in the coherence of the larger structure which it generates. And from this has developed the notion of a “grammar” that articulates the vast number of categories into a single unified system, held together by specific distributional rules. It is this “grammar” that makes it possible for the data to be used in a script-like environment that transforms automatically the primary field records into a coherent whole (the process will be described in some detail below, 4). Completion of the *Grammar* as a self-standing volume is the first goal of this proposal.

Full application of the grammar to specific excavation data underlies the second goal of the proposal, namely the publication of two volumes of the *Global Record*. These volumes contain all the data from two excavation units of the Royal Palace and the Temple Terrace, respectively, to be selected during the 2008 season. The data are presented in the format of a browser edition (described below, 4.2). An excavation unit is a fairly large segment of the entire operation, corresponding approximately to an area of 8 standard 5 x 5 m² squares, excavated generally to a depth of some 2 to 3 m, with a staff of 3 to 4 and a group of 15 to 20 workmen. This is to indicate the scope of the area covered in the publication. From preliminary editions of the same type of publication, each excavation unit adds up to a total of some 10 to 15,000 files, including text and graphic files.

3 First goal for the proposed research: A Grammar of the Archaeological Record

3.1 The problem of archaeological non-publishing

The delay in archaeological publishing is a chronic fact. As often as not, the delay is so total as to be, in effect, a non-appearance.

The best tradition in the field has been to provide interim or preliminary reports that offer an overview of the latest season (or seasons) of excavation. The amount of detail varies greatly from author to author, but the goal is quite similar in all cases: to provide a synthesis of the excavator’s current understanding of his or her finds.

A final report is the next step in this tradition. It provides a larger synthesis, with a greater amount of detail, and the final statement of the excavator’s understanding of the finds. At best, and save for few exceptions, these reports are published several years after the finds were made (decades are not uncommon). At worst, the reports do not appear at all.

Awareness for these facts was heightened by the advent of computer techniques applied to data gathering and to publishing in general. Such applications, one thought, would make it possible to speed up the process and to bypass the financial hurdles. But it did not happen.

Nor have things fared better with the Internet. Many archaeological websites serve as expanded electronic brochures, or else they reproduce electronically interim reports that have appeared as articles in print. The more complex and ambitious sites provide some abundance of primary data, but they are in the form of databases, without a narrative that develops an argument, and they often lag behind in schedule.

What is at the root of this widespread and widely recognized problem, and what remedy can be sought? As in every such case, these two aspects (the problem and its remedy) are closely interrelated. It is my contention that there is a pervasive misapprehension of the nature of the problem, and that it is for this reason that a proper remedy has not been found. The misapprehension rests on exaggerate beliefs in the merits and virtues of state-of-the-art technology, of massive infusion of funds, of stricter editorial discipline, or even of a change of character in the directors of the excavations (as if laziness were endemic with archaeologists).

3.2 Guidelines for a proposed solution

My assessment of the situation is quite different. It grew out of years of experience during which I have become just as culpable as most. (We are laboring now on the final publication of an excavation we started in 1976 – the excavations at Terqa. In spite of a large number of titles to our credit, some basic stratigraphic data are only now being published.) In the process, it became clear to me that the problem is, in a sense, one of perspective. Here is how.

The main interest of archaeologists is in the understanding of the function of things that we find in the ground (a house, a sherd scatter), and their depositional history, i.e., how they have come to rest in the position in which we find them (a house collapse, abandonment). Undoubtedly, this is a valid and appropriate goal for one's excavation. However – and this is so simple a fact that it generally remains unrecognized – we never observe a house or even a sherd scatter during the excavation process. What we observe are a few bricks today, some more tomorrow, but it is only after many a tomorrow (sometimes spanning over more than a single season) that we can see the full house. If the wall were made of compact cement and the matrix around it were sterile dust or sand, the process would take a short time, and we might claim that we observe a whole room almost all at once. But our walls are segments and ruins; our matrix is rich and complex, it does not blow away in the wind. So we observe the small individual fragments long before we know they belong to a room which belongs to a house. It is a simple fact that we never observe the room or the house until we have removed a vast amount of material thus leaving open for inspection those fragments that we think constitute the room or the house.

Now, while the interest of archaeologists is, as we have seen, the function (a house) and the depositional process (a collapse), their primary duty should in fact be the documentation of the primary observation. This I call emplacement – very simply, the way things are in the ground. To repeat: we do not observe a collapse; what we observe are scattered bricks so emplaced that we infer the collapse. It follows that what we document is not the collapse, but the emplacement on which the inference is based.

Two fundamental conclusions emerge. First, we must question the objectivity of a record that privileges function and deposition over emplacement. Since we cannot observe function or deposition, how can we document it? What we think we document is in fact our understanding of function and deposition, our inference. These may well rest on faulty presuppositions. But we only publish the presuppositions that support our interpretation, so that an independent review is impossible. And this not because of an ethical lapse, but simply because it is the accepted method that we should publish function and deposition – emplacement being adduced only in support of such an understanding. It is exactly as if a text editor were to publish only those passages that support a given literary interpretation. If repeating the experiment is impossible in the sense of re-excavating what has been excavated, it becomes doubly impossible because we cannot even re-examine the initial observation.

The second conclusion takes us back to the central issue of publishing. If one seeks to publish deposition and function, one is encouraged to wait until all the pieces are in, with the inescapable and regrettable consequence that the longer one waits, the better. By waiting and by excavating further, the larger picture comes more sharply into focus, the comparative material suggests new interpretations, and the analysis of the objects supports the stratigraphic understanding. The advantages of delay are such that one is hard put not to delay publishing: delays are de facto built into the logic of the system. More ominously, delay is not just a factor of time. It also affects the nature of the documentary process. The longer one waits the more convinced one becomes of one's own interpretation, and thus the lesser the interest for the data that do not fit that particular interpretation. They may have been observed, they may have been recorded, but most of them do not get published.

3.3 The notion of grammar

Against such a background, it becomes apparent that the remedy for chronic delay in archaeological publishing has to do with basic presuppositions, not with logistics. I submit that, if the problem of archaeological non-publishing is epistemological, then the remedy is grammatical in nature.

By “grammar”¹ I mean a structured coded system in which the basic constituents are tied to each other by univocal relationships. It is a closed system, wherein each element elicits of its own accord a fixed set of correlations to other elements, and to no others. This is familiar to us from the concept of a linguistic paradigm. If in Latin we hear the words *amor*, *amoris*, we know what the distinctive sequence is going to be (*amori*, *amore*, *amore*), and the functional valence of each element (“love”, “of love”, “towards love”, etc.), even if we ignore the meaning of the word. But a paradigm occurs in a variety of situations, and in each the valence of individual elements is predicated on their correlation to the other elements: thus red in juxtaposition to green and yellow/orange means “stop”, but red in a flag held high may mean “go.” The power of grammar lies precisely in the fact that it allows systemic predictions. The sum total of all possible word combinations in a given language is a sort of

¹ I use the term “grammar” advisedly. I have published a sizeable linguistic grammar that deals at length with methodological issues: *A Structural Grammar of Babylonian*, Wiesbaden: Otto Harrassowitz, 1996, and I have also written a number of articles that discuss linguistic, grammatical issues.

grammar, but a most unwieldy one. A powerful grammar, on the other hand, allows a maximum of predictions with a minimum of rules.

In our case, this means that there has to be an archaeological grammar that accounts fully for emplacement, and that articulates at the same time the immediate inferences that can be drawn from it with regard to deposition. A coding system that allows merely an ordered catalog is insufficient. It would be like an alphabetical list of all word forms of a language. And a publication resulting from it would be a “dump” of data, rather than a structured whole.

The reason why such a grammar is indispensable is that only in this way can we prepare the record for publication at the very moment of excavation. Publication requires a profound integration of all observations, and if such integration is to take place at the birth moment of each observation, then the observation itself must be, precisely, grammatical. Matters are made even more complex by virtue of the fact that so many persons take part in the process of documentation (excavator, curator, conservator, photographer, draftsman, etc.). All of this must flow into a unified single whole that can be made ready quickly for inspection by others, i.e., for “publication” in the precise sense of “making public.”

3.4 The uses of the grammar

It is obvious that electronic data processing is enormously useful for such an enterprise – in fact, it is indispensable in the current state of affairs. But what is required is that, here too, the approach be fully grammatical. It is not sufficient to use a variety of programs, whether state-of-the-art or not, if they do not interact with each other harmoniously. If a dump of data is not a publication, neither is a congeries of programs that are simply juxtaposed. An integrated program base, on the other hand, that interfaces smoothly with all the data, graphic and otherwise, will be decisive in preparing a publication in the full sense of the word.

Three important aspects of digital applications must be stressed in this respect. First, the input must be intuitive, simple and flexible. My approach has been to develop a script oriented approach. A variety of formats (text, EXCEL files, directories, etc.) are transposed by appropriate programs into intermediate uniform ASCII files, that are then processed to produce a coherent whole that is readable in browser format and consists of data bases, narratives, graphics, etc. The basic intermediate input is in either ASCII or JPG/TIFF formats, to ensure the maximum possible portability and durability.

Second, the process should be as fully automated as possible. Field notes must be so articulated that they can all be immediately transferred to a single coherent data base, in a script-like environment, where programs can operate without delay on the “raw” data – which are in fact not at all “raw” since they are structured (“grammatical,” if you will) from the very moment of the initial observation. For it must be stressed that ultimate success is as much a function of the grammaticality of the encoding as it is of the quality of the programming. Extensive correlations among data can be established automatically only if the structure of the initial coding adds up to a rigorously interlocking system. I have written the bulk of the programs we use, which made it possible to effectively correlate the grammatical encoding of the data and the desired output.

The third important aspect is that the digital data bank should allow for easy interfiling of new data. This is the key to any attempt at publishing a global record such as we have in mind at the end of each season. The material excavated in the following season cannot become an appendix to that of the preceding season: it must be interfiled. In such a way, the record will grow not as a sequential aggregation of disparate components, but as an organic whole. The global record is such not only because it includes all stratigraphic observations ever made, but also because it integrates them within the confines of an overarching and unified system.

3.5 The intended volume of the *Grammar*

The conception of the *Grammar* dates back a number of years, and I have published a few preliminary statements concerning it – one being the UCLA Faculty Research Lecture of 1999, entitled “The Discovery of Ancient Urkesh and the Question of Meaning in Archaeology” (available as a webcast at the following website: <http://www.oid.ucla.edu/Webcast/FRL/Buccellati>). I have avoided publishing extended programmatic statements because the theory presented there is difficult to understand without the support of a corpus of data that illustrates its use – precisely what the Urkesh Global Record is intended to do, in the form of the two volumes envisaged in this proposal. The *Grammar* volume as such has progressed through several partial rewrites, some abbreviated versions of which have been used over the years as an encoding manual in the field. Some 150 pages are now fully completed, and a full set of notes is ready for the remainder (probably an equivalent number of pages). The assistance I need for this part of the project is for library work and Internet searches, and for the chapter on the history of the research.

4 Second goal for the proposed research: Two volumes of the Urkesh Global Record

4.1 In-house editions of the Global Record

It is just such a grammar that I have been applying to our excavations. The system has become second nature for the staff, so that it is applied consistently. I have also written a body of in-house programs that makes full use of the data and prepares them, if needed, for interface with commercial programs (for instance for statistics or graphics).

Over the years, we have produced a number of in-house volumes for various excavation units. These volumes are not however ready for publication for two reasons. In the first place, the system was evolving at the same time that it was being applied, so that there are several revisions and additions needed (in particular with respect to the graphic component, which has become fully functional in our field situation only four years ago). The second reason is that the time frame of our seasons of excavation has not allowed us in the past to attend to the necessary editing and harmonizing that is required to make the publication fully viable.

Our volumes are born not as books, but as digital volumes, created during the excavation itself as a “browser edition,” i.e., as a complex data bank (or cluster of interrelated data

bases), which are made accessible in a browser format. The information is presented in such a way as to allow the fullest use of all data, through a large number of hyperlinks, of tabulations, of graphic displays.

The digital version will also be made available online, through an Urkesh website that is currently accessible as an alpha version (and soon as a beta version). Reviewers of this proposal may access this version (<http://www.urkesh.org> ; ID <tupkish>, password <urkeshbeta>), bearing in mind that it is in flux. The pertinent data are found under RECORD (top bar), and then the individual books on the left bar. In this proposal I will include as figures a few screenshots by way of illustration. Fig. 10 shows the opening page of a book currently available in the alpha version.

4.2 Aspects of the digital publication

It is obvious, in the light of what has been said, that pride of place should be given to information about emplacement. The grammar is very detailed in this respect, and yet sufficiently intuitive so that the record may be used even without an in-depth acquaintance with the specifics of the system. All observations are dated and initialed, so that their quality may be calibrated. Even conflicting observations are maintained, to give full evidence of the process of recovery and the preliminary assessment obtained.

Digital recording is universally associated with databases. But databases are inherently static: they serve as an ordered juxtaposition of data, without any narrative built into them (Fig. 11). So they are building blocks that await a builder. My approach presupposes databases, but they are integrated into a systematic (and automatically generated) flow that results in a “Browser Edition.” For this reason, the record that is produced is not just a collection of data, to be consulted. It is, properly speaking, a publication with its own thread and argument, to be studied. This distinction, between consulting and studying, or between user and reader, is an important one. For all archaeological websites I know, the two functions are kept separate: one consults a database (when available), and one reads a PDF narrative file (which is digital only in terms of the medium with which it is conveyed). In the Urkesh Global Record, instead, the two functions are co-present from the very moment the record is created: the record is, truly, born digital as a full-fledged publication. (This is discussed in detail in the website under RECORD > MZ sitewide > DIGITAL DIMENSION > digital narrative.)

As an example, one may refer to the use of photography. The standard use of photography in archaeological publication is essentially to provide a perceptual basis for the interpretive picture that the archaeologist is painting. It is of course documentary as well – but only for those features that support a given conclusion. The cost of publishing many photos plays a role in this attitude. But, as I have been arguing, there is, at the root, an intellectual posture that ultimately conditions the choice. In the Global Record, on the other hand, there are thousands of photographs (at no extra cost when in digital format) that document every observation made, and that are keyed to the argument through a very articulate coding system. We are not claiming to reproduce a global “site,” only a global “record”: everything that has been observed is documented. (I feel that this would remain valid even if technology were to make it possible to reproduce the “global site.”) We have experimented with this very con-

cept in the 2004 season through the application of a laser scanner. But even such a testimony remains insufficiently articulated if not supported by a full grammatical understanding of the data.

We also have a considerable amount of primary typological analysis included in the Global Record, although all finer points and comparative studies are reserved for later. For example, a figurine will be so identified, and the Global Record will further include measurements, color, ware, conditions of preservation, drawings, photographs, preliminary iconographic description (e.g., whether a horse or a sheep).

4.3 The built-in narrative

For all that has been said above concerning the primacy of emplacement with regard to documentation and publication, we lay as much stress on deposition and function as any other archaeologist would. It is only that we keep the levels of analysis separate, and that we do not subordinate publication to some final (and ever postponed) interpretive closure. Accordingly, a number of fundamental inferences are an essential part of the Global Record, for instance, with the notion of stratum. As a category of time, a stratum is never observed, any more than a depositional process is (we do not observe the collapse nor the concomitant moments). What we observe is only space, and specifically spatial contacts between discrete elements. But the inference about a collapse and the concomitant factors (i.e., a stratum) is an integral part of our reasoning, and cannot be ignored.

One reason why this is so is that inferential arguments about strata and other depositional processes condition our excavation strategy. It is not as if we could proceed in our excavation on the basis of emplacement only, disregarding deposition and function. Rather, we wish to obey two fundamental procedural laws: not to mix levels of analysis, and not to postpone a documentary publication of emplacement until interpretive closure is reached.

For this reason, we address a reader as much as a user. This means that the digital volumes develop an argument, and do not just present a catalog of information. The argument is woven into the fabric of the Global Record in such a way that it can be pursued on its own merits, with the benefit of having available the full panoply of information on which the argument rests – as well as all the other evidence which might contradict it (Figs. 12-15). The best proof of the validity of our approach would be for a colleague to rapidly propose a counterargument, an alternative interpretation conflicting with ours, on the basis of the independent documentary base we have provided. This would mean coming as close as possible to the ideal of verifying an experiment by repeating it.

It is for the same reason that, while essentially conceived as a digital publication, a hard copy companion of these volumes will also be provided, at least at the beginning of our publication program. The Global Record is born as a digital volume, but, precisely, as a “volume,” thus it may in some limited way be seen under two covers (without the essential benefit of interactivity). It is to be expected that at some future date such hard copy publications may no longer be needed, as familiarity with the digital environment grows, and also in consideration of the savings that this entails. One concern will be the durability of the record, i.e., the concern that the electronic form might survive the relentless rhythm of change in hard- and software. To this end, we insist on the basic record retaining a universal format

(see presently). We are also in touch with the Etana project and the California Digital Library to insure that uniform standards be applied.

Clearly, however, there is no way that the printed page can do justice to the digital publication resulting in the Browser Edition. For this reason, the plates which included in this proposal can only be viewed as simple pointers to a much vaster reality that can only be explored interactively, online.

4.4 Access and portability

A further concern that underlies our publication project pertains to the question of the portability of the data. This term refers essentially to accessibility, which is important especially in the light of the rapid rate of change in electronic media. While the major platform used is Windows, the basic version of the data is in plain ASCII format, except of course for graphic files that are in standard JPG and TIFF formats. The elaboration offered online (whether hypertext or statistical tabulation) builds on the ASCII database. The fundamental structure of the presentation is in HTML format. The structure of this database is fully defined, so that additional programs can be produced by the users to manipulate the data as desired.

It is also important to note that the substantive data currently being prepared for publication are of high cultural interest. The Royal Palace of Urkesh is one of the most important structures currently under excavation for third millennium Syro-Mesopotamia. Consequently, the methodological aims of our publication will attract more attention on account of the material presented.

4.5 The intended two digital volumes

This grant proposal refers to the full publication of two excavation units. By publication I mean a full-fledged and complete volume, available to everyone online, at no charge. The choice of which two units will be covered by this grant is left open, because it will depend on a number of factors that are not fully known at present, such as the results of the 2008 excavations and the staff members that are most suited for the work. But the various alternatives are equivalent. The potential candidates among the units are (please refer to Fig. 16): A7 and A9 (the service courtyard of the Palace and the second millennium settlement above it); A10 (sector C of the service wing of the Palace and later strata); A21 (a building connecting Temple and Palace); J1 (the western portion of the Temple Terrace); J2 (the monumental staircase of the Temple Terrace). J5 (the western bend of the Temple Terrace).

The experience gained has served us in good stead. We are at a point where we feel fully ready, from a logistic as well as an intellectual point of view, to implement the project in its full dimension. We have good models in the form of several volumes in an advance stage of completion. Two of these are available online through the Urkesh website currently accessible as the alpha version for in house use (<http://www.urkesh.org>; ID <tupkish>, password <urkeshbeta>; see under Record, A16 and J3): they should be ready for a public opening of the website by the end of the summer. At the moment, one will find on the website preliminary versions, sufficient to give a general idea of the aims pursued and the techniques used.

We have a large staff that is well versed in the methods and techniques that lead up to the Global Record publication, both during and after the excavation. The main obstacle has been the inability for key staff members to devote themselves full time to the publication project after the excavation period, because our project has been unable in the past to provide any compensation to any of the staff members. For this reason, the major figure in the budget for this proposal consists of a stipend for staff members who would work full time for a period of several weeks after the field season.

We also have the facilities that make it possible to put everything into operation. In particular, we have a well functioning server system housed at the Cotsen Institute of Archaeology, which provides a safe repository for the work done in various parts of the world. Our computer facilities in the expedition house at Mozan are excellent, with a number of high end personal computers, a variety of graphic devices, and a well functioning intranet (LAN) system that links all the computers in the expedition compound.

4.6 A synthetic monograph

We intend to have a printed monograph accompany the two digital volumes. It will serve two main purposes. First, it will offer a synthetic overview of the major substantive results which are included in the digital volume, along the lines of a traditional excavation report. Second, it will provide an introduction to the use of the digital volume itself. While the latter ought to speak for itself, and we feel it is in fact intuitive by virtue of being patterned on a normal website, it will nevertheless be useful in the beginning to provide a printed explanation that encourages the interactive use for scholars who may not be inclined to make full use of the digital capabilities of the tool.

4.7 A pilot project

An important result of this grant period is that the publication of the grammar and of the digital volumes will result in the creation of models that will substantially reduce production time in the future. Thus another intended result is to achieve the goal, in future seasons, of completing this type of publication for each excavation unit very shortly after the completion of the excavation season, without the support of additional grants.

In parallel with the publication of new excavation units, I will apply in the future for additional grants to re-visit the record from preceding seasons, so as to bring the same data up to our current standards. We will also need to scan drawings and photographs that were done before the advent of digital photography. Successful completion of the project submitted in this application will serve both as an intellectual benchmark for future work, and as a guarantee for the logistical feasibility of the larger project. The intended result will be a publication that to my knowledge is unique in our field by being the most thorough ever produced of primary archaeological data.

5 Work plan

5.1 Details of personnel

The specific choice of individuals will depend on the excavation unit chosen, according to the criteria indicated above (4.5). The following individuals (in order by institution) will be under consideration: M. Stancavage (Los Angeles), J. Walker (Los Angeles), R. Hauser (St. Paul), L. Ramos (Binghamton), C. Chaves (Boston), S. Comelli (Cambridge), P. Camatta (Berlin), F. Buccellati (Frankfurt), Pavan (Pisa), R. Endari (Damascus). As indicated in the budget, full time salary for a period of three months will allow these individuals to work effectively on the tasks at hand. Depending on the individual chosen, it is conceivable that the work may be carried out on half time basis over six months.

Two other individuals will be completing work on the graphic material that illustrates the publication, for photography and drafting respectively. The goal here is not to produce original photos or drawings, which have all been taken care of in the field, but to review the appropriate digital files, to make sure that formats are adhered to consistently, to generate lower resolution graphic files for display over the Internet, to produce thumbnails as appropriate. In the case of drawings, we may also need to trace in vector graphic format drawings that have not been so completed in the field. The two individuals who are likely to work on this are W. Orrange (Los Angeles) and E. Iorfida (Florence), who have already considerable experience in the field, but it is also conceivable that alternatives may be employed.

One assistant will help with the software aspect, F. Xu (Los Angeles). He has already contributed much over the years with regard to the management of the website and the browser edition in particular, and he will be assisting in making the final product fully operational. He will work on a part time basis for a period of 6 months.

A group of undergraduates will assist with a number of ancillary tasks, in particular the logistic aspects of library work and Internet searches, data entry, harmonization of data formats, double-checking of links. Four UCLA undergraduates will be available who have worked with me in the past (Selma Lee, Calvin Hom, Christine Hoang, Linda Nguyen), as well as two new ones who will be hired in the Winter. They will work on a part time basis for a period of nine months.

5.2 Details of schedule

The 2008 excavation season is planned for the summer and early fall. We will prepare for the work to be done in the following months, in particular reviewing the central portion of the record, i.e. the primary descriptive information, the photographs and drawings.

The first phase of the grant will cover the period from October 2008 to September 2009. The Graduate Research Assistants will work on the digital volumes at different times depending on their respective schedules: they will not necessarily overlap, which will make it easier for the Principal Investigator to supervise more fully their work. During the same period, the undergraduate students will work regularly on a part time basis, i.e. an average of 10 hours per week. I will, as Principal Investigator, work on this project with the dual task of supervising the GRAs and the undergraduates, and of completing the writing of the *Grammar of the Archaeological Record*. I will receive no compensation from the grant.

The second phase of the grant will be in the summer 2009, during the excavation season, when there will be a chance for a final check in the field on such matters as photographs of details of stratigraphy and architecture, disposition of object, ceramic counts, etc.

5.3 Details of operation

The documentation available at the end of the excavation is already in good shape. The data set for an average excavation book contains a vast amount of information (see sample on Fig. 18). This immense data set is all channeled automatically by our programs into a unified and coherent ensemble, the Browser Edition. But three main tasks require further time. One is careful editing. We insist that nothing of substance be changed in the record, since the original observation must remain intact. But there are aspects of language (spelling, style) that need to be attended to, and especially types of cross-reference that cannot adequately be handled during the excavation. Also part of the editing entails checking that the data have been entered accurately and reviewing the selection of the best photos (eliminating for instance bracketed views) and the final computer tracing of drawings.

The second main task entails the preparation of additional material, additional, that is, to that produced during the excavation. This includes a variety of other tasks in turn. We need to write narrative segments that provide an overarching view of the excavation and its results. We need to update information that was not noted in the record. (Some of this may entail a reliance on memory, which is of course not desirable; but the date of the entry in the record will always make it clear what distance there may be from the moment the observation had taken place and the moment it was written down.) We will enlarge in some limited way the typological record (leaving for later study a full typological and comparative analysis). We need to complete the conservation of key objects that are then to be photographed and drawn. We need to work on comparative data to better explain our finds – although this aspect of the research will be rather limited as the main goal is the primary publication of the data uncovered during the excavation.

These first two tasks will remain central to our effort in future years as well. The third task, on the other hand, will apply only for excavation units that are no longer current, like the ones on which we intend to work under the terms of the grant. It entails a harmonization of old entries for which the format has been changed in the course of the intervening years. Also, as the full treatment emerges in its final version, it will become desirable to make some modifications in data structure and book configuration, which will also require additional time. Both the record and the underlying *Grammar* have developed over two decades, and thus we need to rework thoroughly the older material, harmonizing it in format and, in some cases, even entering it in digital format, because some of the earlier record was coded in a paper copy, but not entered. (Such harmonization will become less and less of an important factor as the old excavation units are revised and published.)

5.4 Details of the intended results

For clarity sake, I am summarizing here the concrete results envisaged

- (a) Two digital volumes of the *Global Record* and an accompanying monograph

The challenge we are posing is to complete for publication two complete digital volumes of the Urkesh Global Record by the end of the grant period (September 2009). They will be “global” in the specific sense that no stratigraphic information will ever again be found that can be added to them. In fact, this will be the kind of publication to which the qualification “definitive” may properly be applied. Further typological analysis will certainly be possible, and encouraged. It will also be possible to improve our depositional understanding of the stratigraphic data: this will result from a more refined analysis, from a more thorough comparative study, from continued excavations. But every single bit of stratigraphic information that has been observed, with all its virtues and its limits, will appear in these volumes – and it will never be possible to improve on that.

Each of the two volumes will contain the complete data for a given excavation unit from the Royal Palace and the Temple Terrace as excavated up to 2008. The two units will be selected during the 2008 field season depending on the nature of the finds and the state of the documentation.

As indicated in section 4, the publication will be primarily in digital format, but a hard copy monograph will accompany the digital publication. The size of each digital volume will be similar to what we have described for A16 (Fig. 18), while the hard-copy volume will be around 130 pages (the length will depend in part on the choice of graphics to be included). It will be posted on the www.urkesh.org website, and thus available for free.

(b) *The Grammar of the Archaeological Record*

Besides publication of the two volumes of the Urkesh Global Record, I will also complete for publication a book in hard copy format, entitled *A Grammar of the Archaeological Record*. This is supported by the grant in the form of library assistance, as explained above in 3.5. It is an important conceptual component of the whole enterprise, since it will explain the purpose and operation of the Global Record.

If these goals seem overly ambitious, I should point out that, as explained above, this will be the climax of a long gestation period that has already occurred. The main difference that the grant will make is that for the first time we will have sufficient time and support to bring together, over a period of nine months, the material assembled during the excavation.

6 Budget

Travel	\$ 3,650
Graduate Student Researcher	\$ 24,499
Three Step III Graduate Student Researchers (GSR) for support with preparation of publication (see above, 5.3) @ \$18.56/hour for 20 hours for 22 weeks	
(Some of the graduate assistants reside away from Los Angeles, specifically in Binghamton (NY), St Paul (MN), Cambridge, Berlin, Frankfurt, Florence (Italy). Consultations will be necessary, as well as travel to the field for final checking.)	
Three undergraduate work study students	\$ 5,400
\$12/hour, 50% (\$6) charged to grant 10 hours a week for 30 weeks	

Office Equipment and Services:	\$ 1,400
Postage, Xeroxing, Mail, Phone, Computer, Printer, Software, Miscellaneous Office Supplies, CD's and DVD's.	
Total:	\$ 34,949
Subvention Support:	
Payroll Support (Grigorova) at 5.0%	\$ 2,057
Purchasing & Finance (Lliguin) 5%	\$ 1,800
Publications Support editing (Mecartea) & layout (Gardner) at 10%	\$ 7,846
Benefits at 30%	\$ 3,511
Total Subvention Request:	\$ 15,214
Total Request to the Mellon Foundation	<u>\$ 50,163</u>

7 Bibliography

Following is a bibliography of items published by various members of the project staff or by other scholars who utilize primary data provided by the Expedition. Please note that this is not a list of references about Urkesh, nor my personal bibliography, but only a list of the “official” publications pertaining to the data recovered during our excavations.

The project directors and other members of the staff have given a number of public lectures and symposia during the years. They are listed individually in the Urkesh website. An important symposium was included in the 2007 program of the Society for American Archaeology in Austin, TX, where five members of the staff discussed the details of the Global Record system: the presentation elicited a very positive response from the two external discussants and from various members of the audience.

Bonetti, Sophie (ed.)

- 2001 Gli Opifici di Urkesh. Papers read at the Round Table in Florence, Novembre 1999, Urkesh/Mozan Studies 4

Bonetti, Sophie and Giorgio Buccellati

- 2003 “Conservation at the Core of Archaeological Strategy: The Case of Ancient Urkesh at Tell Mozan,” Conservation. The Getty Conservation Institute Newsletter 18 (online at http://www.getty.edu/conservation/resources/newsletter/18_1)

Buccellati, Giorgio and Marilyn Kelly-Buccellati

- 1988 Mozan 1. The Soundings of the First Two Seasons. Bibliotheca Mesopotamica 20, Malibu.
1990 “Tell Mozan,” in *Syrian Archaeology Bulletin* 2, pp. 4-7.
1990 “Tell Mozan,” in *Mille et une capitales de Haute-Mésopotamie. Les dossiers d'Archéologie*, No. 155, 18-23.

- 1991 "Mozaan" in *American Journal of Archaeology* 95, 712-714.
- 1994 "Mozaan" in *American Journal of Archaeology* 98, 131-133.
- 1995 "Mozaan, Tall," in *Reallexikon der Assyriologie* 8 (5/6), 386-393.
- 1995 "The Identification of Urkesh with Tell Mozaan (Syria)," *Orient-Express* 1995/3, cover page and pp. 67-70.
- 1996 "The Royal Storehouse of Urkesh: The Glyptic Evidence from the Southwestern Wing," *Archiv für Orientforschung* 42-43 (1995-96), 1-32.
- 1996 "The Seals of the King of Urkesh: Evidence from the Western Wing of the Royal Storehouse AK," *Wiener Zeitschrift für die Kunde des Morgenlandes* 86, 65-100, Pl. 1-7.
- 1996 "Una manciata di secoli," *Bollettino dell'Associazione Archeologica Ticinese* 6 (1996) 16-23
- 1996 "Evidence for a Royal Palace at Tell Mozaan/Urkesh," *Orient-Express* 1996/3, 72-76
- 1997 "Mozaan, Tell," *The Oxford Encyclopedia of Archaeology in the Near East*, Vol. 4, New York-Oxford: 60-64.
- 1997 "Urkesh. The First Hurrian Capital," *Biblical Archaeologist* 60: 77-96
- 1997 "The Seventh Season of Excavations at Tell Mozaan, 1992," *Chronique Archéologique en Syrie* 1, 79-84
- 1998 "The Courtiers of the Queen of Urkesh: Glyptic Evidence from the Western Wing of the Royal Storehouse AK," *Subartu* 4/2, 195-216
- 1998 *Urkesh and the Hurrians*. A volume in Honor of Lloyd Cotsen. Urkesh/Mozaan Studies, 3. Bibliotheca Mesopotamica 26. Malibu: Undena Publications. (Contributions by F.A. Buccellati, G. Buccellati, R. Hauser, H. Hoffner, V. Ivanov, M. Kelly-Buccellati, M. Salvini, P. Steinkeller, G. Wilhelm)
- 1999 "Das archäologische Projekt Tall Mozaan/Urkesh," *Mitteilungen der deutschen Orient-Gesellschaft zu Berlin* 131, 7-16
- 2000 "The Royal Palace of Urkesh. Report on the 12th Season at Tell Mozaan/Urkesh: Excavations in Area AA, June–October 1999," *Mitteilungen der Deutschen Orient-Gesellschaft* 132, pp. 133-183
- 2001 "In Search of Hurrian Urkesh," in *Archaeology Odyssey* 4 (2001) 16-27
- 2001 "Überlegungen zur funktionellen und historischen Bestimmung des Königspalastes AP in Urkesh. Bericht über die 13. Kampagne in Tall Mozaan/Urkesh: Ausgrabungen im Gebiet AA, Juni-August 2000," *Mitteilungen der Deutschen Orient-Gesellschaft* 133, pp. 59-96
- 2002 "Tar'am-Agade, Daughter of Naram-Sin, at Urkesh," in L. Al-Gailani, J. Curtis, H. Martin, A. McMahon, J. Oates and J. Reade, *Of Pots and Plans*. Papers on the Archaeology and History of Mesopotamia and Syria presented to David Oates in Honour of his 75th Birthday, London: Nabu Publications, 2002, pp. 11-31.
- 2002 "Die Große Schnittstelle. Bericht über die 14. Kampagne in Tall Mozaan/Urkesh: Ausgrabungen im Gebiet AA, Juni-Oktober 2001," *Mitteilungen der Deutschen Orient-Gesellschaft* 134, pp. 103-130

- 2003 "Tell Mozan (Ancient Urkesh)," in J. Aruz (ed.), *Art of the First Cities. The Third Millennium B.C. from the Mediterranean to the Indus*, New York and New Haven, pp. 224-227.
- 2004 "Der monumentale Palasthof von Tall Mozan/Urkeš und die stratigraphische Geschichte des ābi," *Mitteilungen der Deutschen Orient-Gesellschaft* 136, pp. 13-39
- 2005 "Urkesh as a Hurrian Religious Center," *Studi Micenei ed Egeo-Anatolici* 47 (2005), pp. 27-59.
- 2007 "Urkesh and the Question of the Hurrian Homeland," *Bulletin of the Georgian National Academy of Sciences* 175, 2, p 141-151
- 2007 "The Ceramics of Urkesh: Statistics for a Browser Edition," for *H. Kühne Festschrift* (in proofs)
- in press "The Eighth Season of Excavations at Tell Mozan, 1993," *Annales Archéologiques Arabes de Syrie* (submitted 1994)
- in press "Mozan/Urkesh: A New Capital in the Northern Jezirah," *Proceedings of the International Colloquium The Syrian Jezira* (submitted 1996)
- in press "Preliminary Report on the 12th Season of Excavations at Tell Mozan/Urkesh (June-October 1999)," for *Chronique Archéologique de Syrie* (submitted 2000)
- in press "From Protoliterate to Mittani: *Longue durée* at Urkesh," for *P. E. Pecorella Memorial Volume*

Buccellati, Federico

- 1998 "3-D Rendering and Animation at Tell Mozan/Urkesh," in *Urkesh and the Hurrians* (cited), 51-62
- 2001 "Digital Photography and Architectural Modeling as Elements of Conservation," in Bonetti, *Opifici*, pp.82-88

Buccellati, Giorgio

- 1998 "Urkesh as Tell Mozan: Profiles of the Ancient City," in *Urkesh and the Hurrians* (cited), 11-34
- 1999 "The Royal Storehouse of Urkesh," in M. Fortin, *Syria, Land of Civilizations*, Quebec: Musée de la Civilization, p. 170
- 1999 "Urkesh and the Question of Early Hurrian Urbanism," in M. Hudson and B. A. Levine, eds., *Urbanization and Land Ownership in the Ancient Near East*, Peabody Museum Bulletin 7, Cambridge: Peabody Museum of Archaeology and Ethnography/Harvard University, pp. 229-250
- 2000 "Urkesh: archeologia, conservazione e restauro," *Kermes* 13, 41-48
- 2004 "A LU E School Tablet from the Service Quarter of the Royal Palace AP at Urkesh," *Journal of Cuneiform Studies* 55, 45-48
- 2005 "The Monumental Urban Complex at Urkesh. Report on the 16th Season of Excavations, July-September 2003," in *Studies in the Civilization and Culture of Nuzi and the Hurrians*. 15, 3-28

- 2006 “Conservation qua Archaeology at Tell Mozan/Urkish,” in N. Agnew and J. Bridgland (eds.), *Of the Past, for the Future: Integrating Archaeology and Conservation, Proceedings of the Conservation Theme at the 5th World Archaeological Congress, Washington D.C. 22-26 June 2003, Los Angeles: The Getty Conservation Institute*, pp. 73-81
- 2006 “Presentation and Interpretation of Archaeological Sites: the Case of Tell Mozan, Ancient Urkish,” in N. Agnew and J. Bridgland (eds.), *Of the Past, for the Future: Integrating Archaeology and Conservation, Proceedings of the Conservation Theme at the 5th World Archaeological Congress, Washington D.C. 22-26 June 2003, Los Angeles: The Getty Conservation Institute*, pp. 152-156
- 2006 “An Archaeologist on Mars,” in S. Gitin, J. E. Wright and J. P. Dessel (eds.), *Confronting the Past. Archaeological and Historical Essays on Ancient Israel in Honor of William G. Dever*, Winona Lake: Eisenbrauns, pp. 17-21.
- 2006 “A Browser Edition of the Royal Palace of Urkish: Principles and Presuppositions,” in P. Butterlin, M. Lebeau, J.-Y. Montchambert, J. L. Mntero Fenollós and B. Muller (eds.), *Les Espaces Syro-Mésopotamiens. Dimensions de l’expérience humaine au Proche-Orient ancien. Volume d’hommage offert à Jean-Claude Margueron*, Subartu 17, pp. 49-55.
- 2006 “On (e)-tic and -emic,” *Backdirt. Newsletter of the Cotsen Institute of Archaeology* Winter 2006, pp. 12-13
- 2007 “Between Heaven and Hell in Ancient Urkish,” *Backdirt. Newsletter of the Cotsen Institute of Archaeology* 2007,, pp. 68-73 (with M. Kelly-Buccellati)
- 2007 “Non-linear Archaeology,” *Backdirt. Newsletter of the Cotsen Institute of Archaeology*, 2007, pp. 37-39.
- 2008 “The Semiotics of Ethnicity: The Case of Hurrian Urkish,” for *G. Wilhelm Festschrift* (submitted)
- 2008 “The Scroll and the Codex: The Question of Digital Thought,” for *V. Ivanov Festschrift* (submitted)

Hauser, Rick

- 1997 “The Figurines of Urkish,” *Biblical Archaeologist* 60: 87
- 1998 *Unwrapping Urkish* A film produced for the Radio-Televisione della Svizzera Italiana, with L. Fedele, G. Buccellati and M. Kelly-Buccellati
- 1998 “The Equids of Urkish: What the Figurines Say,” in *Urkish and the Hurrians* (cited), 63-74
- 2008 *Figurines from the Service Wing AK of the Royal Palace, Urkish and Mozan Studies*, 5. Malibu: Undena Publications.

Kelly-Buccellati, Marilyn

- 1990 “Trade Metals in the Third Millennium: Northeastern Syria and Eastern Anatolia,” in *Resurrecting the Past: A Joint Tribute to Adnan Bounni*, ed by P. Matthiae, M. Van Loon, and H. Weiss. Nederlands Historisch-Archaeologisch Instituut, pp. 117-130.

- 1990 “Three Seasons of Excavation at Tell Mozan,” in S. Eichler, M. Wäfler, D. Warburton, *Tall al-Hamidiya* 2, Orbis Biblicus et Orientalis: Series Archaeologica 6, Göttingen, 119-132.
- 1990 “A New Third Millennium Sculpture from Mozan,” in A. Leonard and B. Williams, eds., *Essays in Ancient Civilization Presented to Helene J. Kantor*, SAOC 47, Chicago, 149-54, Pl. 26.
- 1996 “Nuzi Viewed from Urkesh, Urkesh Viewed from Nuzi: Stock Elements and Framing Devices in Northern Syro-Mesopotamia,” *Studies on the Civilization and Culture of Nuzi and the Hurrians* 8, 247-268.
- 1998 “The Workshops of Urkesh,” in Urkesh and the Hurrians (cited), 35-50
- 2002 “Ein hurritischer Gang in die Unterwelt,” *Mitteilungen der Deutschen Orient-Gesellschaft* 134, pp. 131-148
- 2003 “Andirons at Urkesh,” A. Sagona, ed., *A View from the Highlands: Studies in Honor of Charles Burney*. Peeters Press.
- 2005 “Urkesh and the North: Recent Discoveries,” *Studies on the Civilization and Culture of Nuzi and the Hurrians*, 15, pp. 29-40
- 2005 “Introduction to the Archaeo-zoology of the ābi,” *Studi Micenei ed Egeo-Anatolici* 47, pp. 61-66
- 2006 “Gilgamesh at Urkesh? Literary Motifs and Iconographic Identifications,” in P. Butterlin, M. Lebeau, J.-Y. Montchambert, J. L. Montero Fenollós and B. Muller (eds.), *Les Espaces Syro-Mésopotamiens. Dimensions de l’expérience humaine au Proche-Orient ancien. Volume d’hommage offert à Jean-Claude Margueron*, Subartu 17, pp. 403-414.
- in prep. The Glyptics of the Service Wing AK of the Royal Palace, to appear in *Urkesh Typological Record*

Milano, Lucio, Mario Liverani et al.

- 1991 Mozan 2. The Epigraphic Finds of the Sixth Season, *Syro-Mesopotamian Studies* 5/1, Malibu.

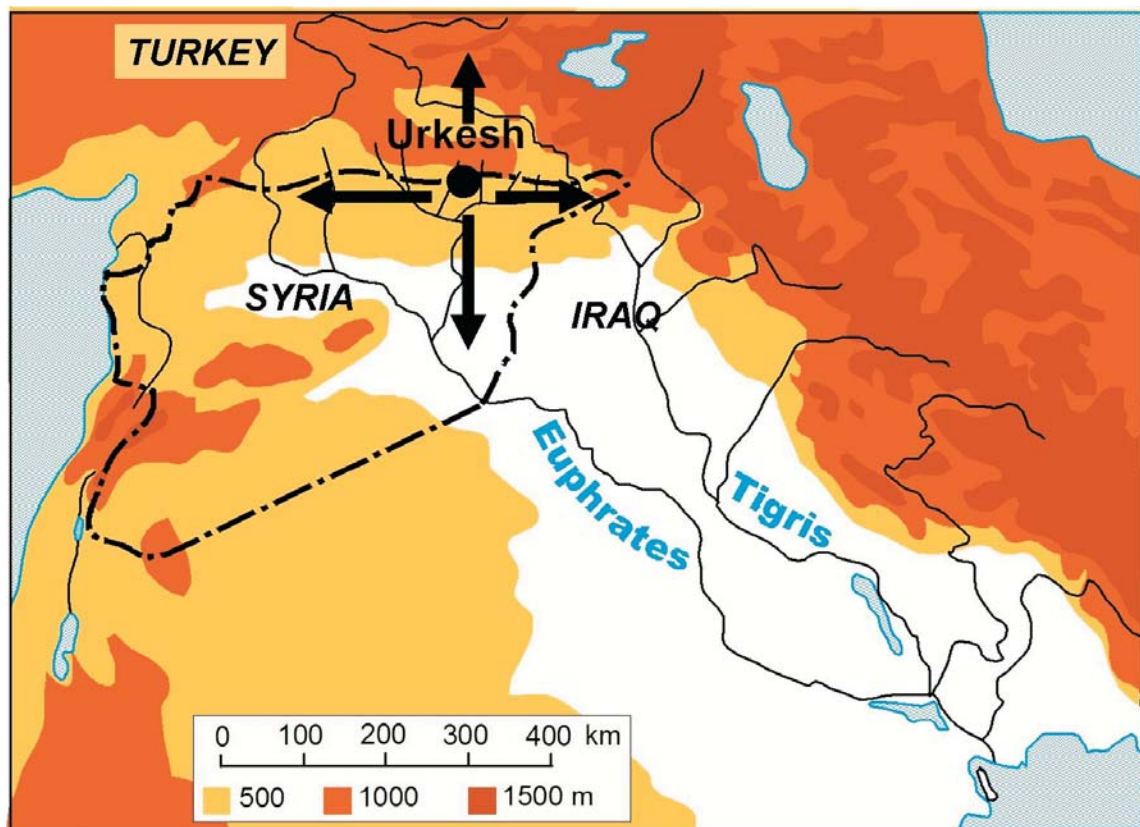


Fig. 1 Geographical and modern political setting. The site is at the crossroads of the trade between the mineral resources in the mountains and the burgeoning new urban settlements in the plains.



Fig. 2 The site seen against the backdrop of the mountains and surrounded by fertile fields where abundant wheat grows today as in antiquity.

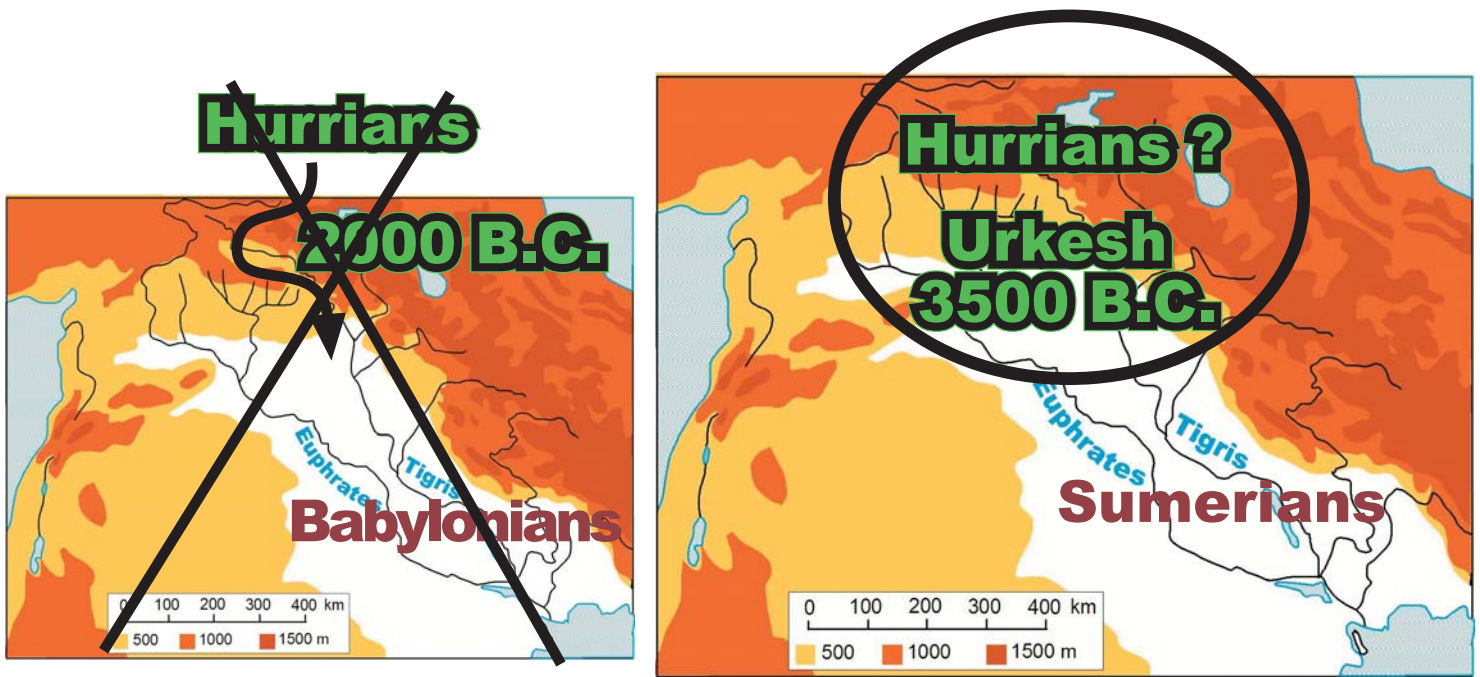


Fig. 3 Revision of the historical picture following the Urkesh excavations: Hurrian civilization is shown to be autochthonous rather than a late arrival

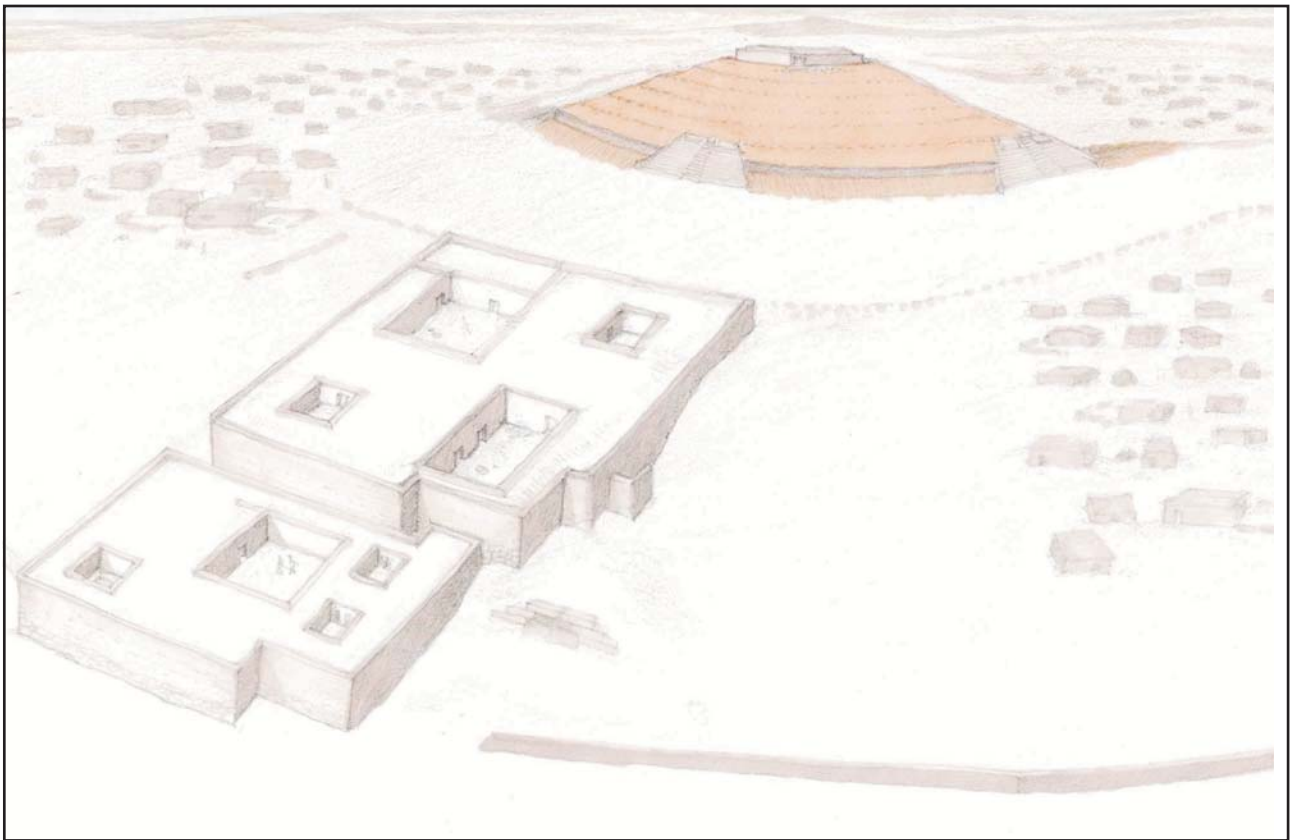


Fig. 4 The monumental urban complex of Urkesh, with the Royal Palace of Tupkish below at the great Temple Terrace at the top.



Fig. 5 The Royal Palace of king Tupkish: in green the service wing (fully exposed), in yellow a portion of the formal wing excavated to date.

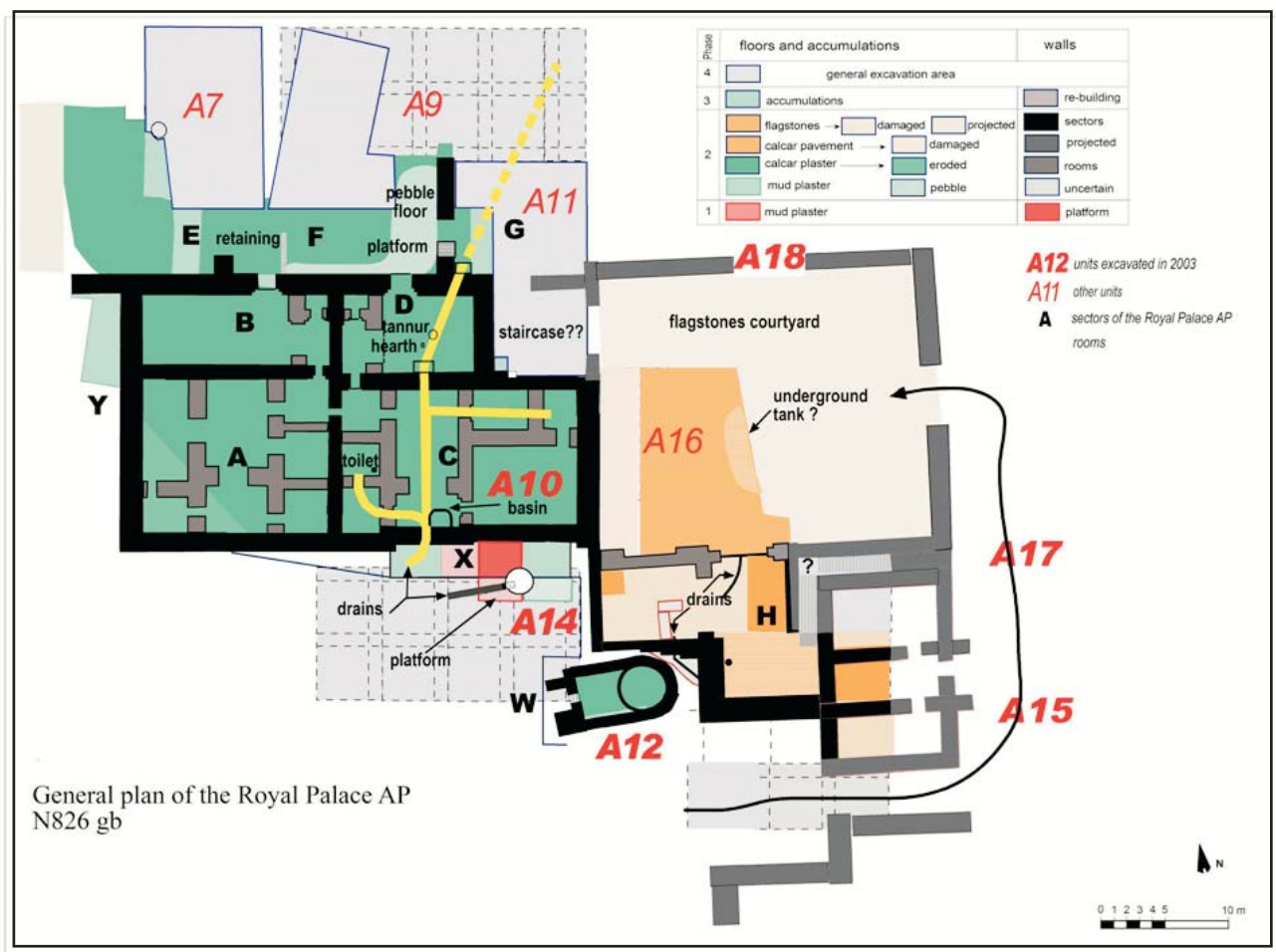


Fig. 6 Floor plan of the Royal Palace of king Tupkish, with excavation units shown in bold red



Fig. 7 The underground necromantic shaft, next to the Palace: here the spirits of the Netherworld were summoned to obtain responses for the king and the queen. This is a ritual that shows a very specific Hurrian (non-Mesopotamian) religious sensibility

Fig.8 The monumental Temple Terrace, dating to about 2500 B.C. but probably going back 1000 years earlier. It is one of the best preserved third millennium structures in Syro-Mesopotamia.





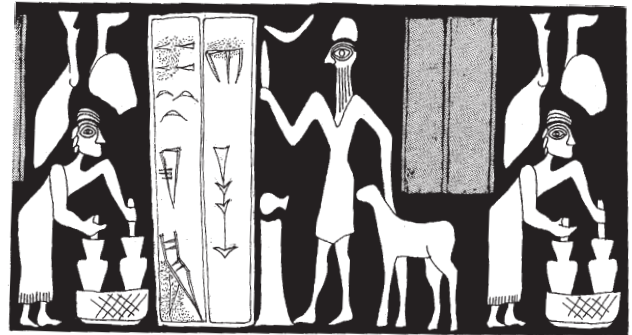
King Tupkish



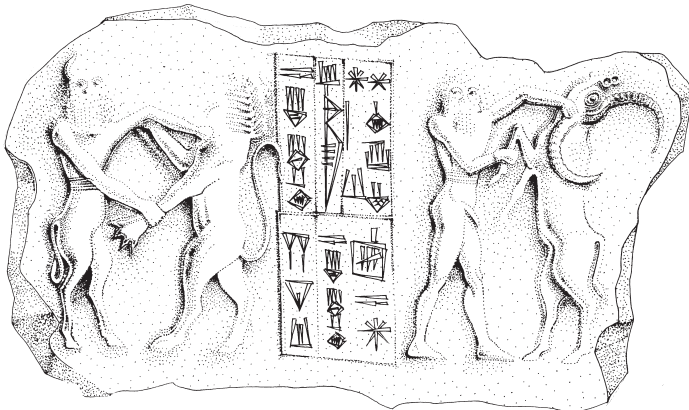
Queen Uqnitum



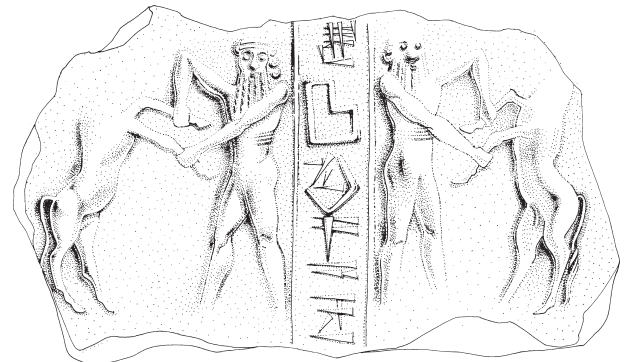
The nurse of the queen, Zamena



The head cook of the queen, Tuli



Tar'am-Agade, daughter of Naram-Sin



Ewrim-atal, a courtier of Tar'am-Agade



Ishar-beli, a courtier of Tar'am-Agade

Fig. 9. Impressions of inscribed seals from the royal court of Urkesh, about 2250 B.C.

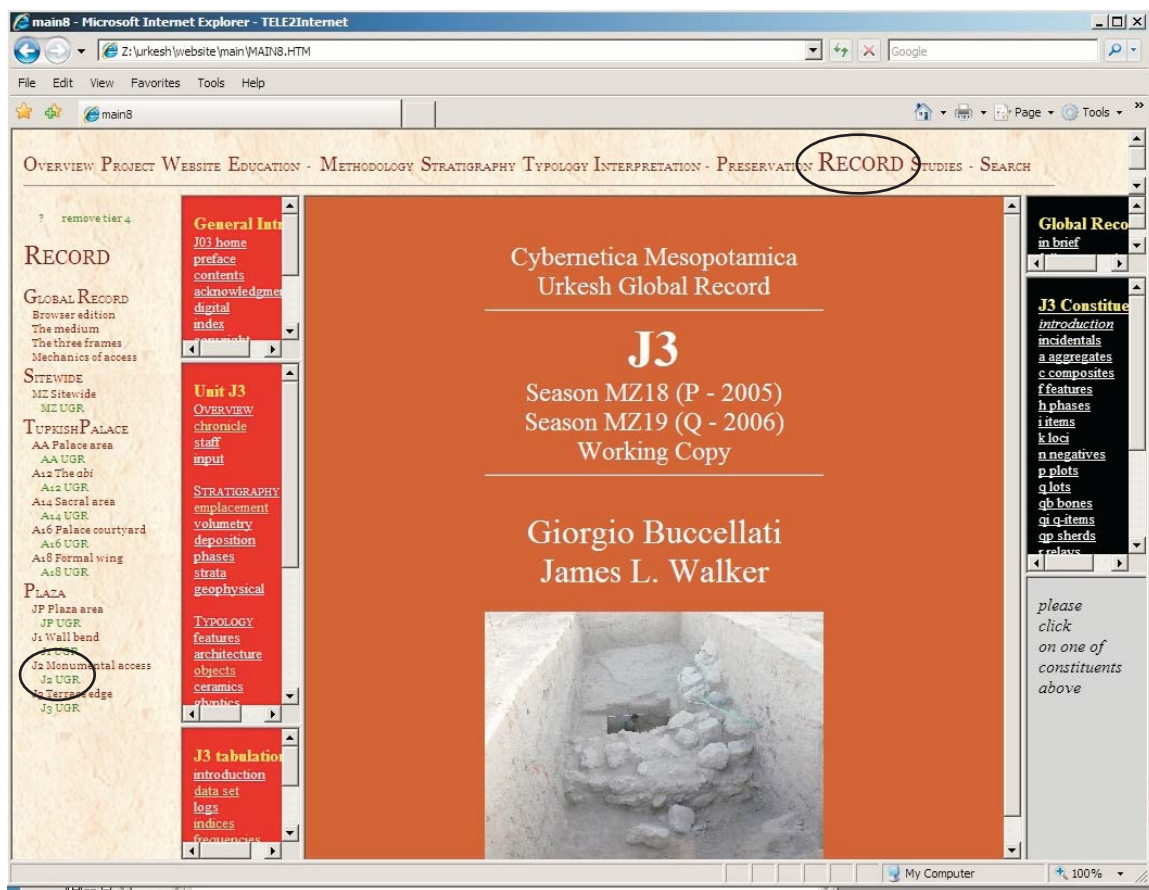


Fig. 10.
Opening page
of an excavation
unit (J3).

It may be
accessed
online
by clicking
on RECORD
and on J3.

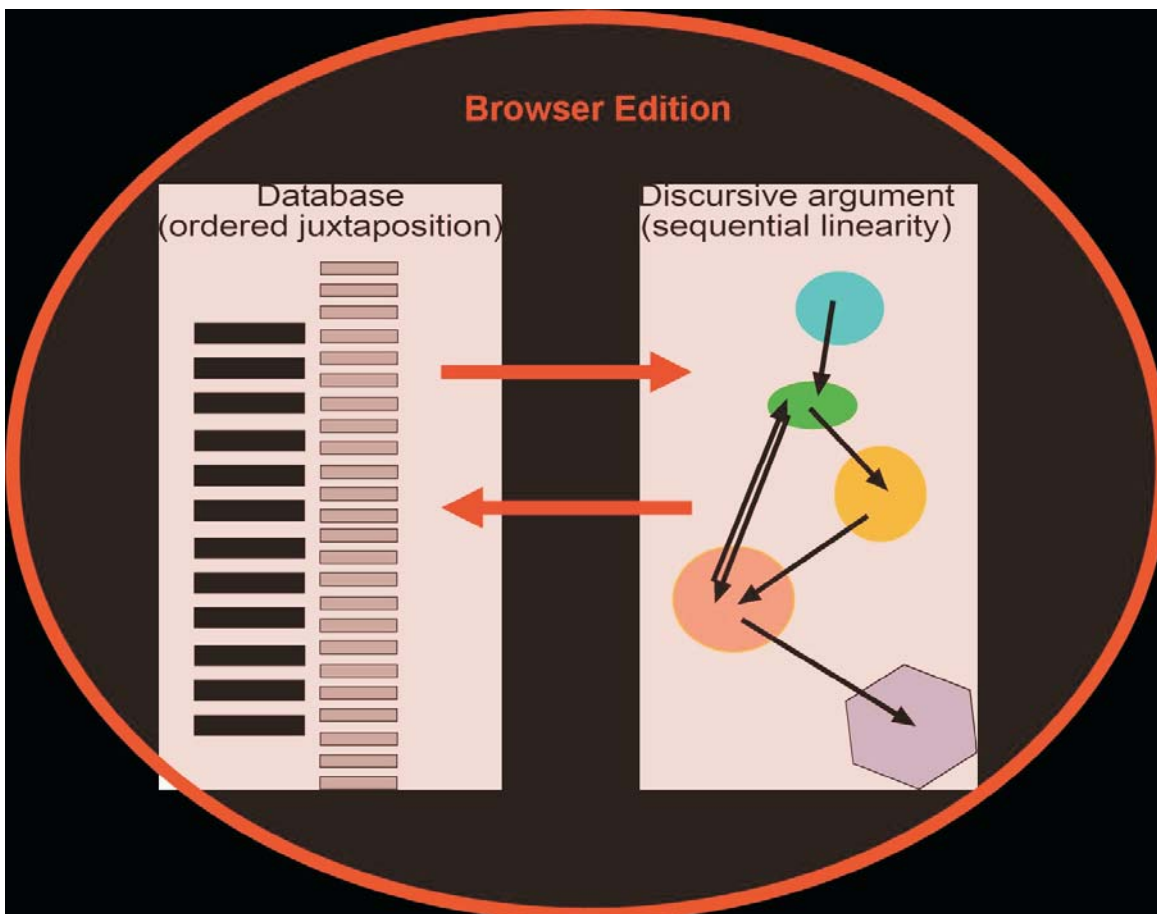


Fig. 11.
The goal
of the
Browser Edition
is to
merge
database functions
and narrative
in a single
construct.

This is done
almost entirely
through the
application of
programs,
hence automatically

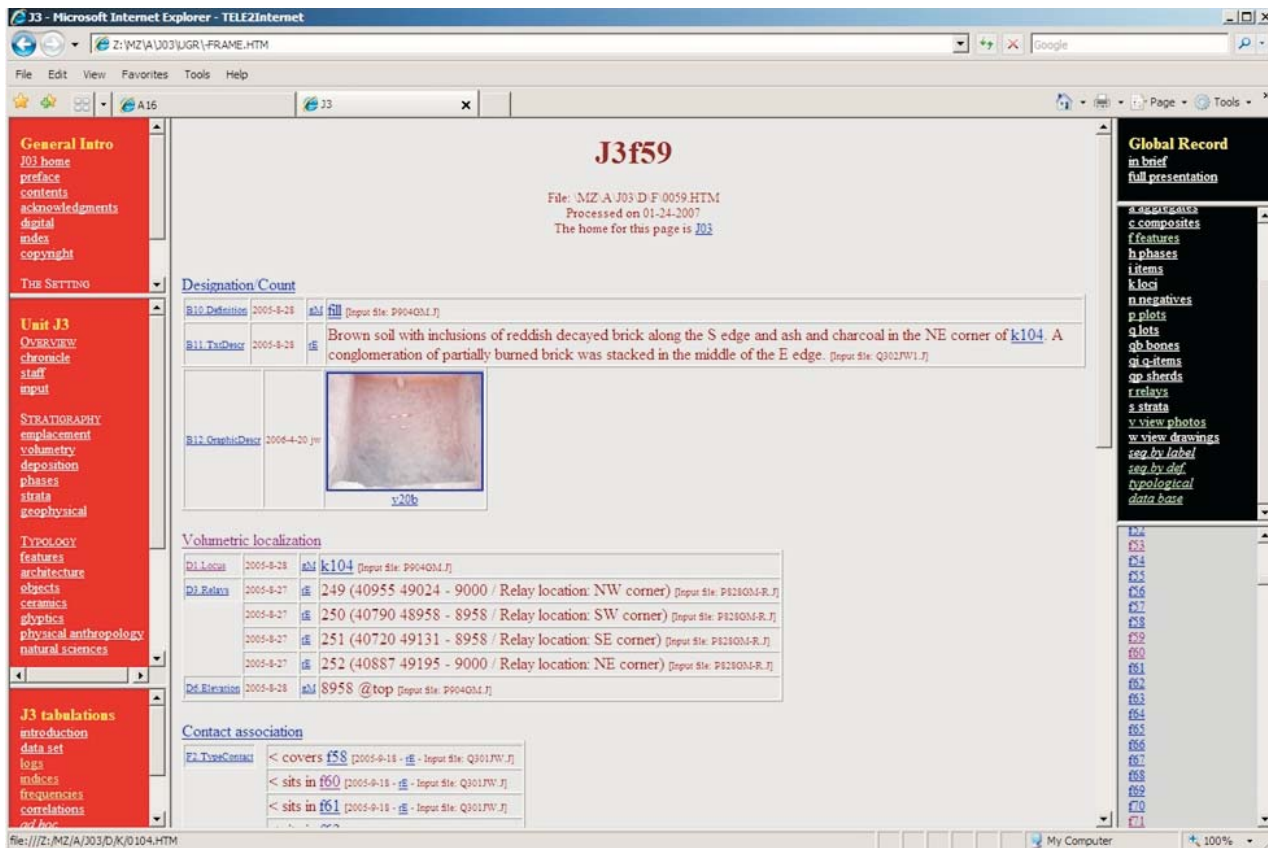


Fig. 12. A sample page with all the information about a given feature

The logical flow presents a built-in narrative.

The hyperlinks provide avenues for non-restrictive narratives.

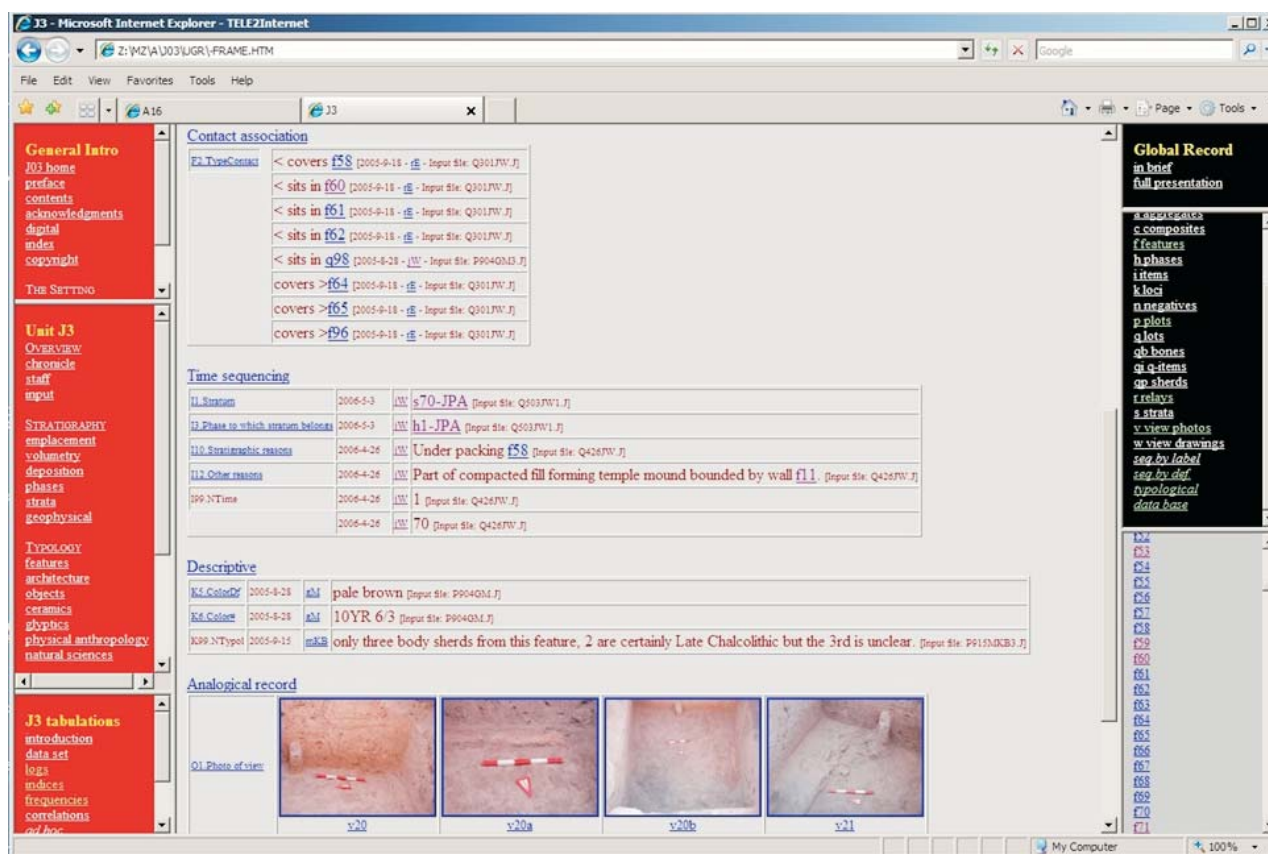


Fig. 13. Scrolling down, the page adds more information.

Note in particular the view web, i.e., the cluster of photos taken from different angles.

Clicking on any photo, one obtains not only a larger image, but also annotations (see Fig. 14-15).

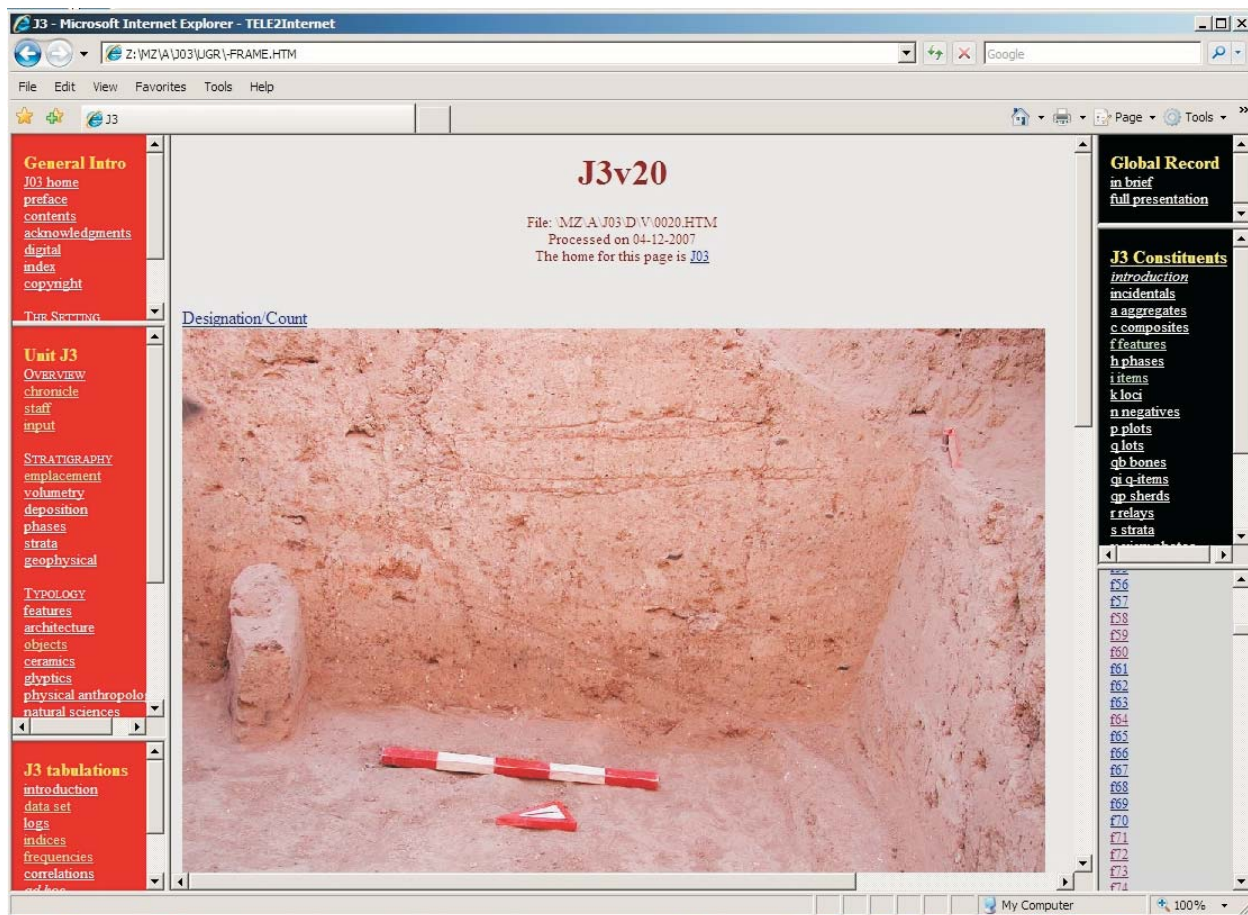


Fig. 14.
Full image of
the first photo
in the photo
web (Fig. 13)

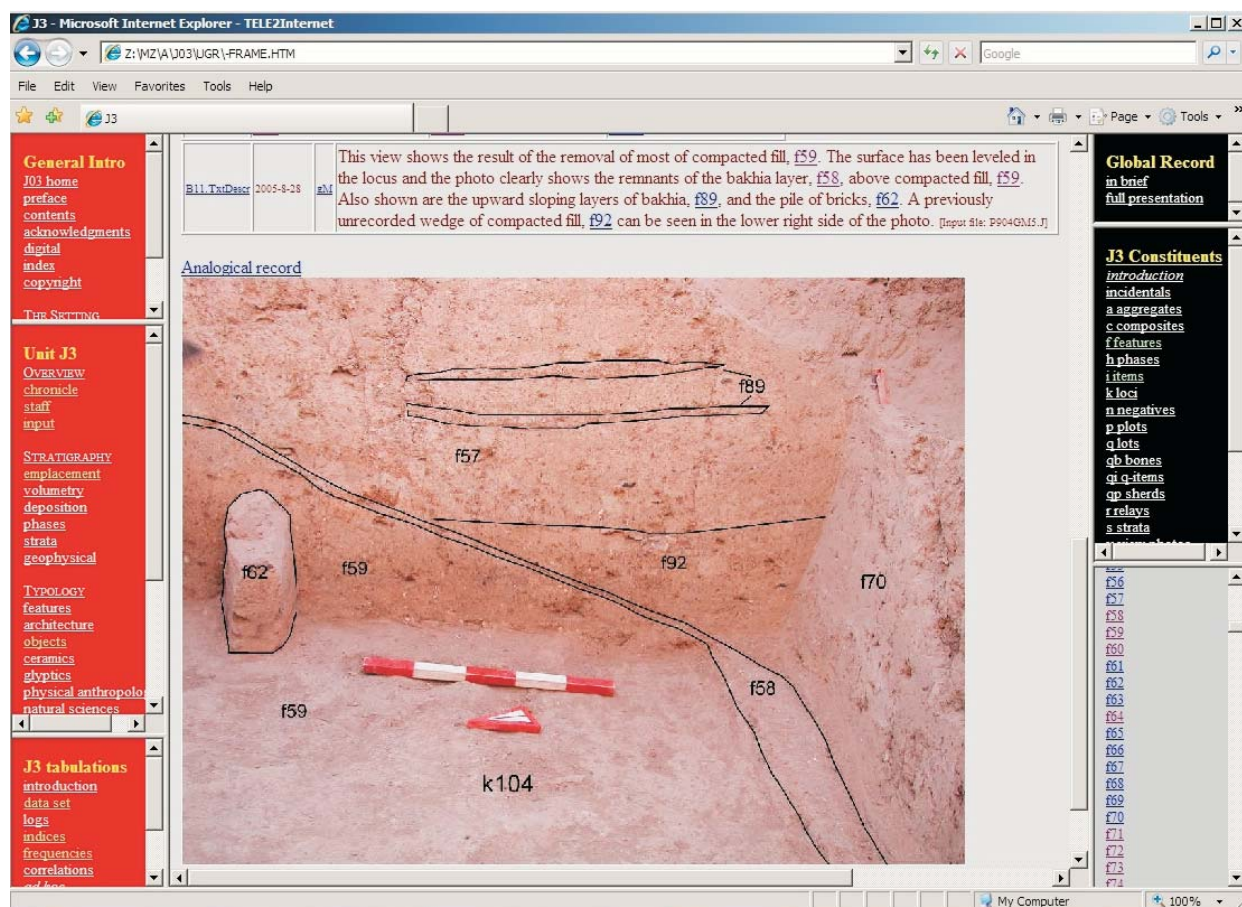


Fig. 15.
By scrolling
down, one
gets a
“template,”
i.e. the photo
with overlaid
annotations.

The written
text above
provides a
description of
the view, with
hyperlinks to
the individual
features and
items shown
in the photo.

Photos and
hyperlinks
are all
organized
automatically.

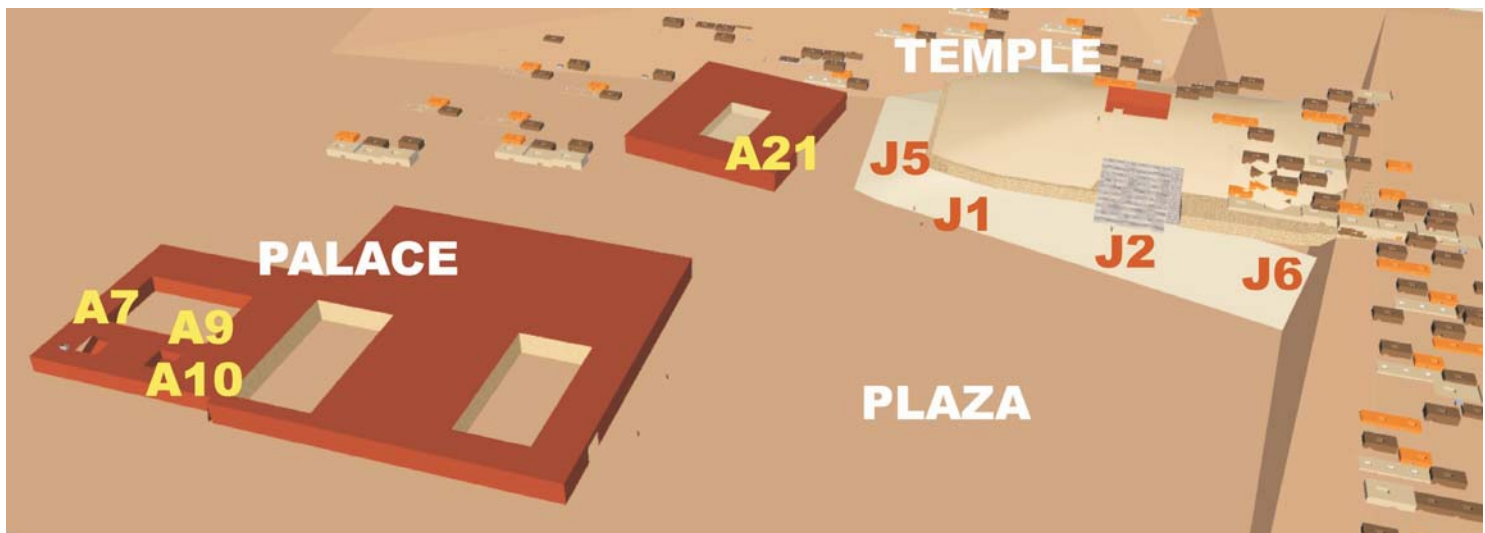


Fig. 16 Palace and Temple Terrace: excavation areas being prepared for online publication.

Alphanumeric labels refer to excavation units being prepared for online publication.

The five units in the upper right will be under excavation in the summers 2008-9.

Two of these will be selected for publication under the terms of the grant



Fig. 17. Sitewide volume of online edition.

This volume combines an overall narrative presentation of the site, and gives detailed indices with discussion for individual categories of features and items.

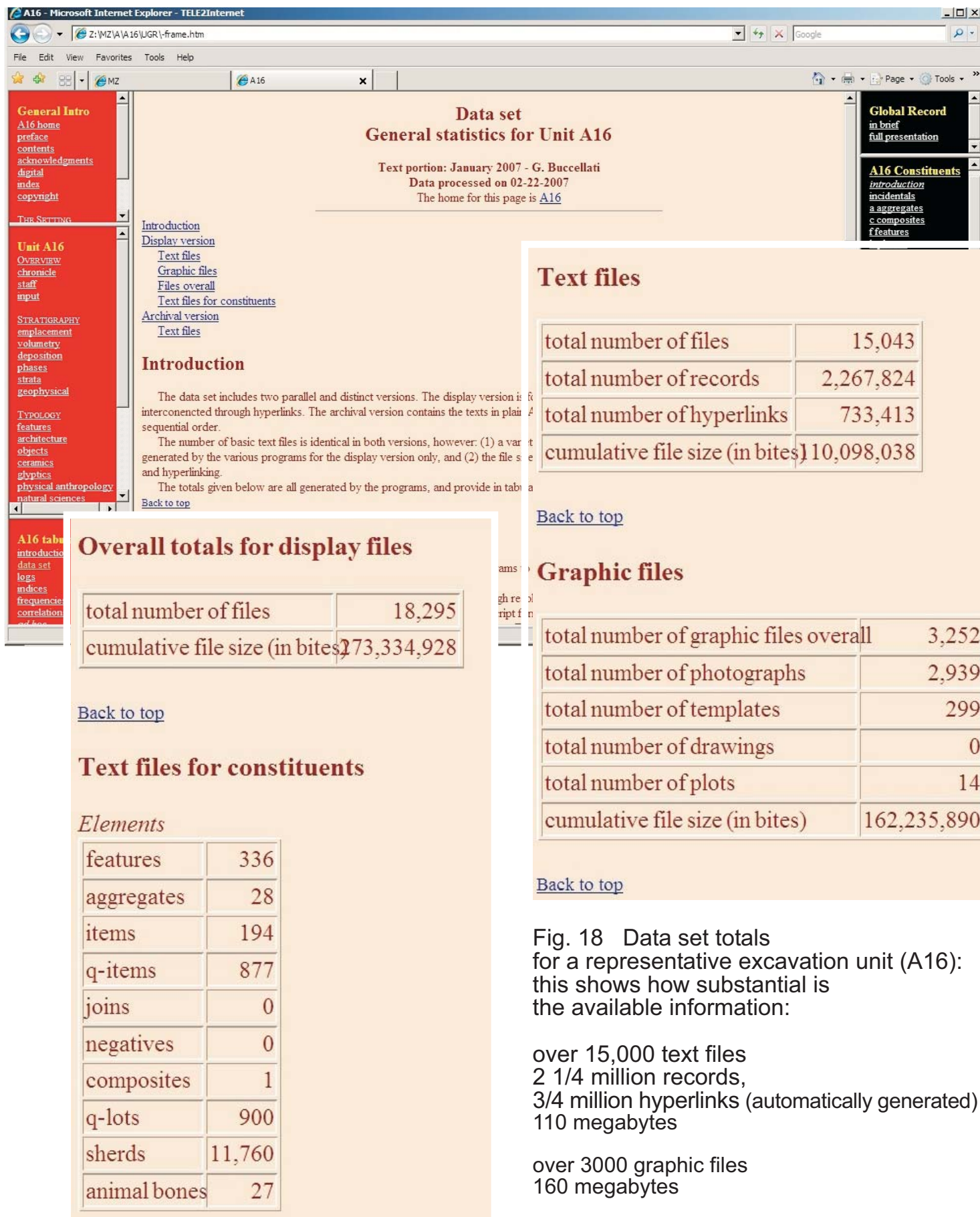


Fig. 18 Data set totals for a representative excavation unit (A16): this shows how substantial is the available information:

over 15,000 text files
 2 1/4 million records,
 3/4 million hyperlinks (automatically generated)
 110 megabytes

over 3000 graphic files
 160 megabytes