

# THE ORIENTAL INSTITUTE NEWS & NOTES

NO. 160

WINTER 1999

©THE ORIENTAL INSTITUTE OF THE UNIVERSITY OF CHICAGO

## NETWORKING THE PAST ARCHAEOLOGICAL DATA MODELS AND ELECTRONIC PUBLICATION ON THE WORLD-WIDE WEB

DAVID SCHLOEN, ASSISTANT PROFESSOR OF SYRO-PALESTINIAN ARCHAEOLOGY

Now that "Internet" is a household word and people routinely "get on the Web" to find information of all kinds, it is time for archaeologists to make effective use of computer network technology in order to publish their discoveries and interpretations. Indeed, many archaeologists, including Oriental Institute archaeologists, have been actively experimenting with electronic publication in recent years. But there is still a long way to go. To make good use of the Internet, archaeologists need to sit down and do the hard work of devising a common approach to electronic publication, rather than just adopting generic off-the-shelf techniques that were invented for other purposes. True, it is very easy nowadays to produce what is essentially a computerized imitation of the traditional printed page — a relatively static, unchanging collection of text and pictures intended to be read and referenced by human readers — and to disseminate this world-wide over the Internet. This is certainly a big step forward, because when the familiar "page" metaphor is enhanced by "hyperlinking" (the ability to click on a word or picture and jump immediately to another related page), as it is in the World-Wide Web, a wide variety of published information can be referenced far more quickly and efficiently than with printed books. In many cases, also, information can be made available that would never see print because of the prohibitive expense of traditional publication, e.g., large numbers of color photographs. The advantages

for publishing complicated archaeological reports, in particular, are obvious, because a reader can move easily from the general interpretation of an excavated site to detailed maps, photographs, and other data, and back again, without a lot of time-consuming paper shuffling.

The Web as it exists today is a valuable tool and many archaeologists are making use of it. But at present the Web falls far short of its potential as a means of sophisticated archaeological research. This is because it is not "searchable," except in a very limited way. The Web is great for "human navigation" in which one sits down and clicks manually to jump from page to page, perusing what is of interest, but there is no way to use the power of the computer to trawl through huge quantities of data in order to retrieve information according to specified search criteria. In a way this defeats the purpose of electronic publication, because information that is published on computers should be "machine readable" as well as "human readable." Archaeologists, in particular, would benefit from computerized searches and analyses of the large amounts of data that they record on a routine basis and that they and their colleagues could easily place on the Web. Archaeological research would be greatly enhanced by the ability to get quick answers to specific questions about exactly what has been discovered and where it was found, searching either within individual archaeological sites or across many sites. Such answers could be obtained with a rapidity, level of detail, and

*continued on page 2*



The Oriental Institute and more than 180 organizations join Project Millennium, developed to explore themes relevant to our lives as we approach the 21st century, to present nearly 1,000 exhibits, performances, festivals, and educational programming throughout 1999 around the Chicago area and the state of Illinois. See page 13 for more information.

|                                          |            |
|------------------------------------------|------------|
| From the Director's Study                | 2          |
| Calendar of Events (Detachable)          | 7          |
| Travel Program: Central Anatolian Turkey | 9          |
| Registration Form (Detachable)           | 10         |
| Sunday Films                             | 11         |
| Members Lectures                         | 11         |
| Adult Education Courses                  | 12         |
| Special Events                           | 13         |
| Family Programs                          | 15         |
| Development News                         | 15         |
| Turkish Film Festival                    | Back Cover |
| Suq News                                 | Back Cover |

### From the Director's Study

The lead article in this *News & Notes* draws once more attention to an area which has come to occupy a place in ancient Near Eastern studies which few would have foreseen a few short years ago, and an area in which the Oriental Institute took an early lead and plays now a commanding role. As regular readers of this newsletter, or visitors to our website, know, the Oriental Institute, through services such as the electronic reference collection ABZU, has become a planetary resource for information about the ancient Near East. More recent initiatives in instructional materials and methods, such as Janet Johnson's Mellon-funded Egyptian language instruction project, and in electronic text and data processing, such as our recently posted trilingual Persepolis text editions, are only pilot projects for what is to come. The exact shape of things to come cannot yet be predicted in detail, but it will certainly involve the three magic letters of the newest Net buzzword "XML" — as David Schloen's article will begin to explain.

comprehensiveness that are not currently feasible, and the automatically generated results could be presented in a variety of forms, e.g., lists, charts, statistical graphs, or color-coded distribution maps. Time and energy would then be freed to ask further questions and to detect patterns that might otherwise be missed. In this way a real qualitative improvement in research could be achieved simply by increasing the speed and scope of information retrieval, in comparison to the laborious and much less comprehensive kind of manual search-and-retrieval that is done with printed reports.

Internet experts have long been aware of the Web's deficiencies in terms of "searchability" and they have recently addressed this problem. The standard page-oriented method of putting information on the Web using the "Hypertext Markup Language" (abbreviated as "HTML") does not provide the computer with any information concerning the *meaning* of the text or pictures that it is handling. HTML merely specifies the way in which text and pictures are to be *presented* on the computer screen. The computer has no knowledge of what a Web page it displays is

actually about — it might be an archaeological report, a stock market quotation, or a cooking recipe, for all it knows. To correct this deficiency of HTML, therefore, a new "Extensible Markup Language" (abbreviated as "XML") has been invented. Information stored in XML format can be "marked up" or "tagged" to whatever degree is necessary in order to convey not just the data itself but also detailed "metadata" which tells a computer what the information is about. For example, a description of an ancient bronze tool unearthed in an excavation could be tagged in such a way that a computer would know not just how to display the description as human readable text in a certain font, color, and point size (which is all that HTML can do now), but would also know that the description referred to a metal artifact with certain characteristics that was found in a specific location. Computers could then retrieve this information in the course of automated searches based on the characteristics and locations of individual artifacts. Similarly, a photograph of the same bronze tool could be tagged so that the computer would know not just where to display the photograph on the screen, but would also know what it was a photograph of, so that photographs of all bronze artifacts, for example, could be retrieved automatically.

Archaeologists must do some work, however, before they can make use of the "searchability" features of the new XML format. XML itself does not specify how archaeological data should be organized and tagged for delivery over the Web. It simply provides a way for Web publishers to define their own tagging schemes suitable to the type of information that they are publishing (hence the name "*Extensible* Markup Language"). In order to take advantage of the opportunity to create fully searchable Web publications, archaeologists must collaborate to create a standard tagging scheme for archaeological data — an archaeological "markup language" which captures all of the information that they want to publish, and also captures all of the interrelationships among different pieces of information that they wish to record.

With the advent of XML the need to establish common standards for representing archaeological data is greater than ever. At the same time, however, XML creates an environment in which standards-setting efforts can be highly focused

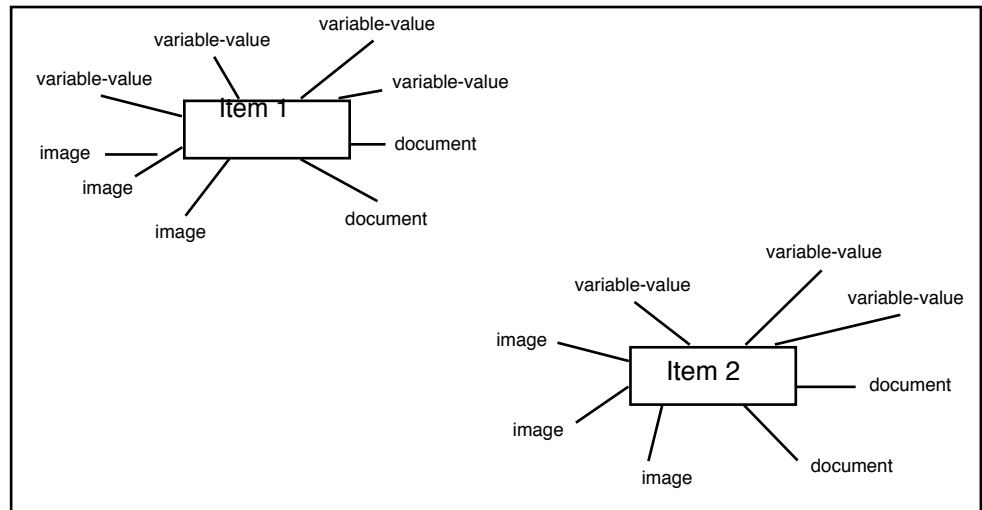
| Class A | Variable 1 | Variable 2 | Variable 3 | Variable 4 | ..... | Variable m |
|---------|------------|------------|------------|------------|-------|------------|
| Item 1  | value(1,1) | value(2,1) | value(3,1) | value(4,1) | ..... | value(m,1) |
| Item 2  | value(1,2) | value(2,2) | value(3,2) | value(4,2) | ..... | value(m,2) |
| Item 3  | value(1,3) | value(2,3) | value(3,3) | value(4,3) | ..... | value(m,3) |
| Item 4  | value(1,4) | value(2,4) | value(3,4) | value(4,4) | ..... | value(m,4) |
| .....   | .....      | .....      | .....      | .....      | ..... | .....      |
| Item n  | value(1,n) | value(2,n) | value(3,n) | value(4,n) | ..... | value(m,n) |

Figure 1. Schematic diagram of the class-based data model

and efficient. Over the past few years the tremendous success of the World-Wide Web and the rapid development of related software and techniques have created optimal conditions for the development of data representation standards in many different information domains. It is timely, therefore, that the Institute of Archaeology of the University of California at Los Angeles has just announced plans to convene a “working group” to devise standards for the electronic publication of primary archaeological data. A variety of archaeological professionals and institutions, including the Oriental Institute, will be represented in this working group.

The task is daunting, however. Although archaeologists have used computers for years, there has been a decided lack of standardization to date. Archaeologists are notoriously individualistic, and every archaeologist understandably wishes to customize his or her database system for the project at hand. Unfortunately, the resulting chaos of incompatible file formats prevents easy electronic merging of detailed information from different projects, thus hindering computer-based archaeological research conducted on broad spatial and temporal scales. The situation is not improved simply by publishing idiosyncratically structured databases piecemeal on the Web without any modification, because there is no consistent framework within which they can be searched and analyzed. If the new XML format were used by archaeologists simply to encode their own favorite terminologies and recording systems, thus duplicating their existing database structures, the potential of Web publication would not be realized. Some kind of common data representation standard is needed.

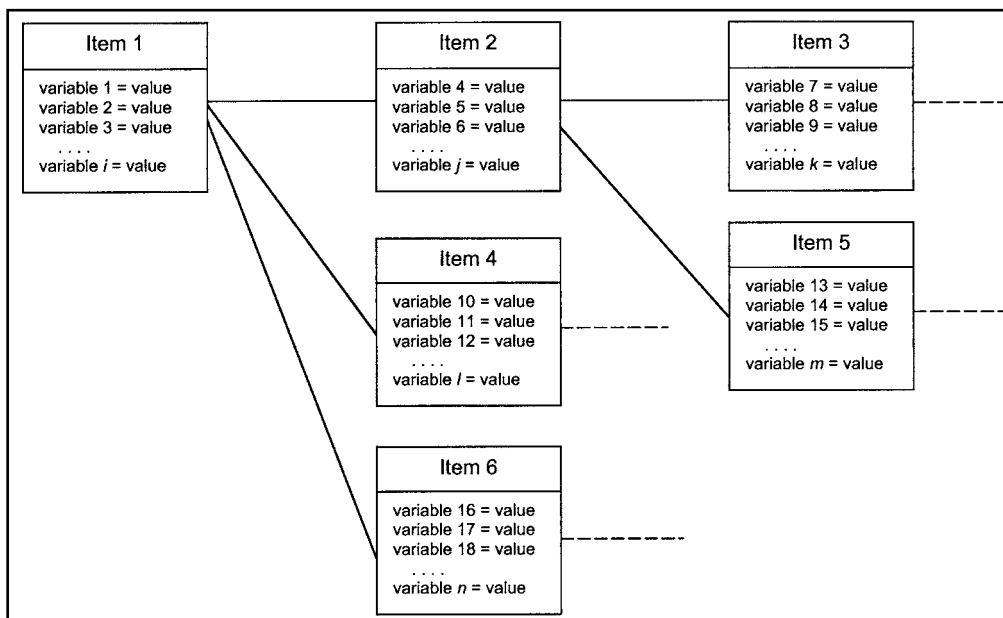
On the other hand, almost all archaeologists would agree that no detailed prescriptive scheme adopted at the outset for recording the data from diverse excavation and survey projects can or should be enforced, even within a single geographical region. Every site is different and each investigator should be free to employ the terminology and the recording system that is best suited to his or her project. Furthermore, as archaeological methods develop, there is a danger that any standard which is adopted now could become obsolete and counterproductive in the future. The development of archaeological data standards has been hindered because it is not immediately obvious how any standardized format could be sufficiently flexible and open-ended and still provide the benefits of standardization, in terms of a consistent framework that would permit automatic searching and retrieval. Thus the legitimate requirements of individual projects appear to conflict with the widely-shared ambition to combine many different archaeological databases for detailed multi-site comparison and analysis.



**Figure 2. Item-based data model**

There is a way of resolving this conflict, however. Despite the inevitable variety of archaeological recording systems and terminology, there are basic features common to all archaeological data which permit a standardized format or “data model” and a correspondingly uniform and intuitive user interface — although at a more abstract level than has usually been considered. Moreover, the standardized data model which I am advocating does not prescribe the use of any particular terminology or recording system. The requisite level of standardization can be achieved by using a flexible “item-based” data model instead of the more rigidly structured “class-based” data models that have been common in archaeology. Class-based databases typically provide one data structure (usually represented as a two-dimensional table) for each class or subclass of archaeological observations — ceramic, lithic, faunal, botanical, architectural, stratigraphic, etc. In each class’s table there is a fixed number of columns which predetermine the variables (e.g., “length,” “weight,” “color”) that are available to describe the items belonging to that class. Each item (i.e., unit of observation) is therefore represented as a row in a table with a predefined structure (fig. 1). Each cell of the table, at the intersection of a row and a column, contains the value of a given variable for a given item. Rigidly structured databases of this sort employ what has been called a “strictly typed” data model. As applied to archaeology, this means that decisions about the typology of archaeological observations — how many classes of observations will be considered and how many and what kind of attributes each class will possess — are all “hard-coded” into the structure of the database from the beginning and cannot be changed very easily afterwards.

Conventional class-based systems are not well suited to representing the variety and complexity of archaeological data, as a number of researchers have pointed out. Unfortunately, strictly typed class-based data formats are nearly universal in archaeology today, not for any archaeological reason but largely



**Figure 3. Schematic diagram of hierarchical item-based data model**

because readily available database software tends to encourage this approach. To be sure, commercial software does not actually require a class-based data model, but in most business applications and in the standard working practice that has been derived from them, database tables tend to be equated with particular classes of data in the manner described above. Yet it is the rigidity of the prevailing class-based data model, in which a predetermined set of attributes is prescribed for each of a limited set of predetermined classes, which prevents the automated searching of information derived from multiple projects, each of which might employ a different typology for recording archaeological observations. This is because combining such databases within a uniform, searchable framework requires much more than just specifying equivalences or translations between the different terms used by different archaeologists. It requires mapping the entire class structure of each database onto the possibly quite different class structures of every other database that is being considered.

An item-based data model, by contrast, makes the automated combination of multiple databases much easier. In an item-based database the fundamental structural component is not the predefined class of items but rather the abstract archaeological “item” itself as a unit of observation with which any number of descriptive variables may be associated. A “class” is thus not a fixed structural component of the database but merely an ad hoc grouping of items based on a particular set of search criteria. The building blocks of the database are the individual items themselves, whose specific attributes the archaeologist defines by associating each item with a potentially unique set of descriptive variables and with any relevant images, documents, or other data (fig. 2). For this reason an item-based database can be easily adapted and extended as needed by the individual archaeologist,

without special programming, by permitting him or her to add new variables and values to the pool of available attributes and to rename or delete these as necessary. Similarly, the description of any item can be changed by associating different variables with it without affecting any other items. Indeed, in an item-based database system, it is easy to assign multiple sets of variables to any item, representing distinct and even conflicting observations made by different persons or at different times. A full description of any item, no matter how atypical, can be achieved simply by creating appropriate variables and attaching them to it, thereby minimizing the

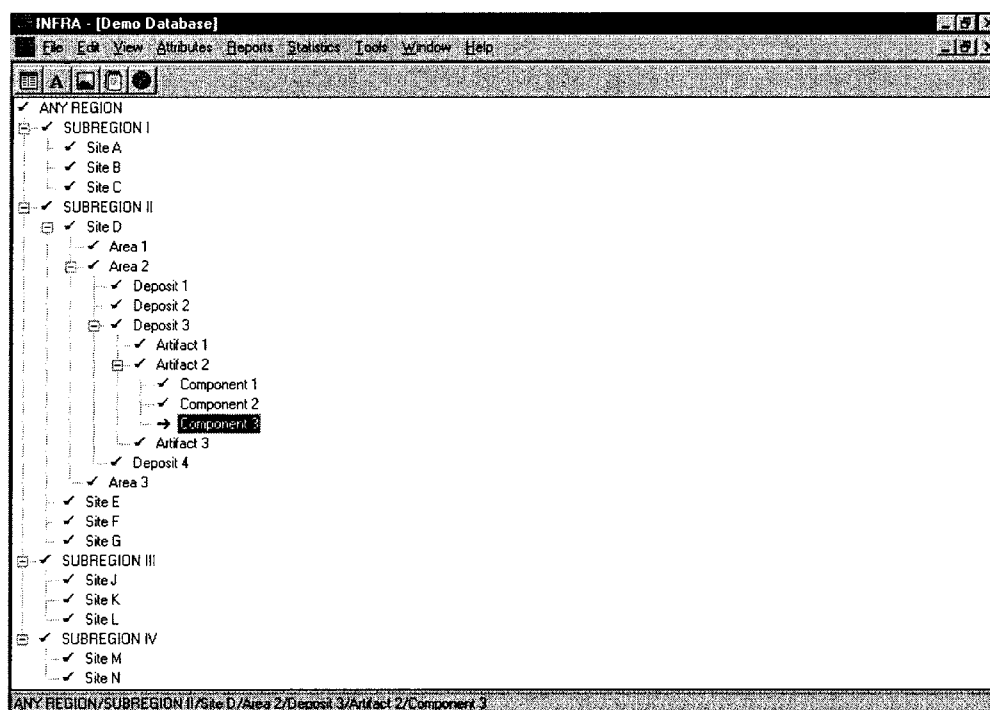
need for ad hoc prose descriptions that are stored as unstandardized free-form notes (although such notes may also be associated with each item, of course).

In an item-based database, therefore, the information produced by an excavation or survey project is not represented as a collection of rigid tables corresponding to a limited set of classes but is represented instead as a large collection of independent data elements which correspond to the individual archaeological items to be described. Every separately registered find becomes an independent item in the database, whether it be a layer, feature, or smaller find. Each such item may then be described by a unique set of any number of variables together with their associated values for that item. New variables may be defined individually by the investigator at any time as new subtypes or unusual finds appear, without the need to restructure tables or create new tables.

An important advantage of the item-based data model is that a clear separation is maintained between the relatively primary attribution of descriptive variables to potentially unique individual items, on the one hand, versus the multitude of possible secondary and overlapping classifications of those items, defined according to investigators’ changing interests and assumptions, on the other. This approach therefore respects the tremendous variability of archaeological data, because researchers might want to create hundreds if not thousands of overlapping classifications of the many items observed in any large excavation. In this way the item-based model takes into account the special characteristics of archaeological data. But most importantly from the point of view of electronic publication, databases from different projects can be combined quite easily in order to do a comprehensive search on the Web. All that is needed is to establish synonyms among the individual terms used in each project. There is no need to map the entire class structure of each database onto that of every other database.

In the absence of predefined classes or database tables, however, it is necessary to find some way to group and organize the many different items in an item-based archaeological database. This is done by organizing the individual items into a hierarchical “tree” that represents the spatial containment relationships among the various units of observation (fig. 3). Of course, spatial hierarchy is only one possible view of the relationships among archaeological items, but it is the most comprehensive and inclusive view, in the sense that every archaeological observation may be located at some place in a spatial hierarchy. In addition, because a tree structure is self-replicating and has the same properties recursively at all levels, the spatial hierarchy of archaeological items is infinitely extensible in both directions, both macroscopically and microscopically. This means that a hierarchical item-based data model can easily accommodate data from multiple artifacts, sites, and regions on all spatial scales, and from both excavation and survey projects, using the same simple design of independently linked items-with-their-attributes.

Note that the concept of an archaeological “item” is completely generalizable here. A unit of observation encompassing an archaeological site as a whole would be represented as a single item with its own description in the form of associated variables, images, and documents. Indeed, an entire geographical region could be represented as a single item that has its own position in the hierarchy and spatially contains a number of archaeological sites, represented as lower-level “child” items. Each site in turn contains sub-sites (e.g., excavation areas), stratigraphic units (features and layers), small finds (artifacts and ecofacts), and artifact features or components, in a descending spatial hierarchy. Thus the basic spatial relationship — “this is found within that” — is represented simply and consistently at every level of detail, from the broadest region of interest to the smallest aspect of an individual find. Furthermore, the comprehensive spatial tree of independent archaeological items itself serves as the primary interface for entering and displaying information and is the principal means of navigating among the large number of items in a typical archaeological database. This kind of interface also has the advantage of being familiar to many computer users because of the use of hierarchical trees in Microsoft Windows and other operating systems for organizing computer files into folders and subfolders.



**Figure 4. INFRA spatial containment “tree” view**

An important point to remember about this hierarchical item-based data model is that because of its abstract structure it provides robust standardization in terms of a basic framework consisting of a tree of items with their attributes, but it does not force standardization in terms of specific content. It is left to the creator of each database to determine the arrangement and labeling of the items in the tree, the names of variables and values, and the association of items with variables, images, documents, and other information. What is more, the hierarchical item-based data model is especially suitable for archaeological purposes. First, the hierarchical tree structure has an obvious archaeological interpretation in terms of spatial containment and thus is intuitively grasped by any archaeologist. Secondly, the flexible item-with-its-attributes data structure can capture the idiosyncrasies of highly variable archaeological data in a way that class-based data models cannot. Finally, the open-ended extensibility of this data model facilitates the electronic publication of archaeological data by making it easy to combine data from multiple sources for search and retrieval purposes.

Electronic publication on the Web or elsewhere will be of limited value in archaeology unless its intended audience can easily view and analyze published data in full detail using visual interfaces and complex queries, with the goal of testing investigators’ interpretations and combining data from disparate sources to permit more broadly based retrieval and analysis. There is a long history in archaeology of creating localized special-purpose databases in order to test specific hypotheses or construct particular models, but what is needed to enhance future research is a tool that will permit rapid, efficient, and open-ended “explorato-

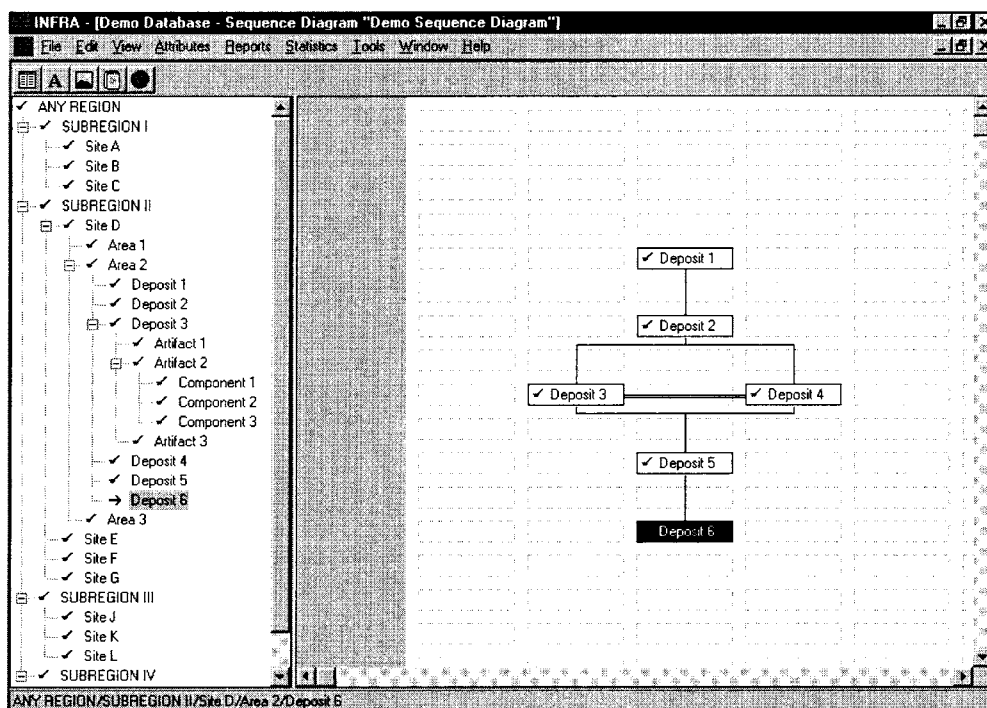


Figure 5. INFRA temporal sequence "Harris Matrix" view

ry data analyses" on broader spatial and temporal scales. In this way patterns in the data may be detected that currently go unnoticed, and patterns that are found may be explored further with a speed and rigor hitherto impossible. The achievement of such benefits is what makes the adoption of a flexible yet standardized archaeological data model so desirable.

I contend that archaeological publication on the Web would be greatly enhanced by the adoption of a hierarchical item-based data model, but this data model must first be expressed in a Web-oriented format; i.e., in terms of a specific XML tagging scheme. I am currently refining the technical details of such a scheme as part of my proposal to a newly formed working group on archaeological data standards sponsored by UCLA. This XML scheme is closely based on existing Microsoft Windows software for archaeological data management that I have developed over the past several years using the hierarchical item-based data model. This Windows software is named "INFRA," which is an acronym for "Integrated Facility for Research in Archaeology." In addition to a primary tree diagram showing the *spatial containment* relationships among archaeological items (fig. 4), INFRA uses other diagrammatic interfaces to represent various kinds of inter-item relationship. These are shown in separate window "panes" or "frames" beside the tree pane.

Like spatial containment the *temporal sequence* of archaeological items is readily represented in an item-based data model (fig. 5), although instead of linking items together into a hierarchical tree this involves linking items to form a stratigraphic sequence diagram of the kind developed in the 1970s by Edward Harris and now used by many archaeologists.

Still another kind of inter-item relationship is *spatial adjacency* or conjoinment, which is represented using an undirected "network" diagram that shows which items directly touch

others (fig. 6). The containment tree, Harris Matrix, and network diagram are all, in mathematical terms, node-link "graphs" which represent various complementary views of the database, neatly encapsulating the extrinsic relationships among units of archaeological observation that are difficult to represent in conventional class-based data management systems.

INFRA can use its various graphical views of inter-item relationships in queries that determine which items belong to a given class; thus computer-aided selection of archaeological items may readily be extended to consider their extrinsic as well as intrinsic attributes. In this way, a given class of items can be retrieved according to easily defined but quite complex criteria because any combination of the variables used to represent an item's intrinsic attributes, together with the

extrinsic spatial and temporal relationships represented in schematic diagrams, may be used in data retrieval. For example, one might wish to select all artifacts of a certain type which are found within a particular kind of architectural feature that also contains artifacts of a second type and that occurs stratigraphically after a certain kind of deposit. Similarly, "phase plans" of contemporaneous items can be generated automatically, reflecting current stratigraphic interpretations as these have been entered via a Harris-style sequence diagram. INFRA uses the sequence diagram to select automatically the items that are to be drawn together on a single plan or in the same color.

INFRA's query facility is a central component of the software because it is the vehicle by which the potentially huge assortment of information in an archaeological database may be filtered into named classes of items for display and analysis in a variety of forms. Each set of user-defined class criteria is given a meaningful name by the user and may be saved for repeated use, together with the list of items retrieved the last time a query was executed in order to find the items that match those criteria. The resulting set of items may then be used in the creation of customized reports, statistical graphs, tables, and composite plans which contain data pertaining only to that class of items. This approach provides maximum flexibility because classes are defined not as fixed tabular templates into which items must be inserted irrevocably in the course of primary data entry, but simply as dynamic groupings of items matching user-defined query criteria which may be created, named, saved, and then used at any time to retrieve groups of related items based on their intrinsic and extrinsic attributes.

It is worth emphasizing again that INFRA and the item-based data model that it implements prescribe no rigid format or specific terminology for recording archaeological information.

*continued on page 14*

## JANUARY 1999

3 Sunday



**Egypt: The Habit of Civilization**  
2:00 PM, Breasted Hall

See page 11 for more information

9 Saturday



**Egypt at the Dawn of History**  
Frank Yurco  
A Project Millennium Program  
Continues through 13 March  
10:00 AM–12:00 NOON, Oriental Institute  
See page 12 for more information

10 Sunday



**Champollion: Hieroglyphs Deciphered**  
2:00 PM, Breasted Hall  
See page 11 for more information

16 Saturday

**Egypt — Dawn of History (cont.)**  
See 9 January

17 Sunday



**Pyramid**  
2:00 PM, Breasted Hall  
See page 11 for more information

19 Tuesday



**Women in Ancient Egypt**  
Alexandra O'Brien  
Continues through 23 February  
7:00–9:00 PM, Oriental Institute  
See page 12 for more information

23 Saturday



**Egypt in Chicago**  
Emily Teeter, Frank Yurco, Mary Greuel  
9:30 AM–2:30 PM  
See page 13 for more information

23 Saturday



**Journey of Hope**  
2:00 PM, Breasted Hall  
See back cover for more information

23 Saturday

**NO EGYPT CLASS**

24 Sunday



**The Face of Tutankhamun: The Great Adventure**  
2:00 PM, Breasted Hall  
See page 11 for more information

26 Tuesday

**Women in Ancient Egypt (cont.)**  
See 19 January

30 Saturday



**Somersault in a Coffin**  
2:00 PM, Breasted Hall  
See back cover for more information

30 Saturday

**Egypt — Dawn of History (cont.)**  
See 9 January

31 Sunday



**The Face of Tutankhamun: Wonderful Things**  
2:00 PM, Breasted Hall  
See page 11 for more information

## FEBRUARY 1999

2 Tuesday

**Women in Ancient Egypt (cont.)**  
See 19 January

6 Saturday



**Baba (The Father)**  
2:00 PM, Breasted Hall  
See back cover for more information

6 Saturday

**Egypt — Dawn of History (cont.)**  
See 9 January

7 Sunday



**Moving King Tut**  
Emily Teeter  
A Project Millennium Program  
2:00 PM, Breasted Hall  
See page 13 for more information

9 Tuesday

**Women in Ancient Egypt (cont.)**  
See 19 January

13 Saturday



**Yol**  
2:00 PM, Breasted Hall  
See back cover for more information

13 Saturday

**Egypt — Dawn of History (cont.)**  
See 9 January

14 Sunday



**The Exodus from Egypt in History and Tradition**  
Frank Yurco  
2:00 PM, Breasted Hall  
See page 13 for more information

16 Tuesday

**Women in Ancient Egypt (cont.)**  
See 19 January

20 Saturday



**Iki Yabaci (Two Strangers)**  
2:00 PM, Breasted Hall  
See back cover for more information

20 Saturday

**Egypt — Dawn of History (cont.)**  
See 9 January

21 Sunday

**Ancient Egypt Goes Hollywood:  
The Mummy**Michael Berger  
A Project Millennium Program  
2:00 PM, Breasted Hall

See pages 11 and 13 for more information

22 Monday

**Ancient Egyptian Law and Ethics,  
Part II: A Course by Mail (Start  
Date)**

Frank Yurco

See page 12 for more information

23 Tuesday

**Women in Ancient Egypt (cont.)**

See 19 January

24 Wednesday

**Archaeology and History in the  
Ancient Territory of Nikopolis**James Wiseman  
8:00 PM, Breasted Hall

See page 11 for more information

27 Saturday

**Istanbul Kantalarimim Altinda  
(Istanbul Under My Wings)**

2:00 PM, Breasted Hall

See back cover for more information

27 Saturday

**Ancient Animals**Frank Yurco  
A Project Millennium Program  
9:30 AM–2:30 PM

See page 15 for more information

27 Saturday

**NO EGYPT CLASS**

28 Sunday

**Ancient Egypt Goes Hollywood:  
Cleopatra**Michael Berger  
A Project Millennium Program  
2:00 PM, Breasted Hall

See pages 11 and 13 for more information

13 Saturday

**Egypt — Dawn of History (ends)**

See 9 January

14 Sunday

**Ancient Skywatchers**Paul Sipiera  
A Project Millennium Program  
2:00 PM, Breasted Hall

See page 15 for more information

17 Wednesday

**Between the Tigris-Euphrates Basin  
and the Mediterranean Sea**Aslıhan Yener  
8:00 PM, Breasted Hall

See page 11 for more information

21 Sunday

**As It Was in the Beginning**

2:00 PM, Breasted Hall

See page 11 for more information

28 Sunday

**Chronicles and Kings**

2:00 PM, Breasted Hall

See page 11 for more information

**LATER 1999**

11 June

**Gods, Saints, and Kings**Richard L. Chambers  
Continues through 25 June  
See page 9 for more information

24 September

**Gods, Saints, and Kings**Emily Teeter  
Continues through 8 October  
See page 9 for more information**MARCH 1999**

6 Saturday

**Egypt — Dawn of History (cont.)**

See 9 January

7 Sunday

**Ancient Egypt Goes Hollywood:  
Land of the Pharaohs**Michael Berger  
A Project Millennium Program  
2:00 PM, Breasted Hall

See pages 11 and 13 for more information

**KEY TO SYMBOLS**

ADULT EDUCATION COURSES



CORRESPONDENCE/INTERNET COURSES



DINNERS/LUNCHEONS



FAMILY/CHILDREN'S PROGRAMS



MEMBERS LECTURES



SPECIAL EVENTS



FILMS



TRAVEL PROGRAMS

## Gods, Saints, and Kings: Discovering Central Anatolian Turkey

**11–25 June and 24 September–8 October 1999**

The Oriental Institute, in conjunction with the Center for Middle Eastern Studies, is delighted to offer *Gods, Saints, and Kings: Discovering Central Anatolian Turkey*, which first departed in September 1998. For 1999, we will be offering the tour twice, once in June and once in September. The June departure will be led by Professor Emeritus Richard L. Chambers, while the September tour features Associate Curator Emily Teeter, Ph.D.

**Cost (per person, double occupancy): \$2,975 (land only); \$650 single supplement; air rates available on request. For more information or to reserve space on the tour, please call the Membership Office at (773) 702-1677.**

### ITINERARY

**Day One — USA/Istanbul:** Departure from USA for Turkish Airlines direct flight to Istanbul. (Meals in Flight)

**Day Two — Istanbul:** Arrival Istanbul mid-morning. Transfer to the newly-renovated deluxe **Istanbul Hilton Hotel**, situated on thirteen acres of beautifully landscaped gardens overlooking the Bosphorus and within walking distance of Istanbul's main business, shopping, and entertainment district. All rooms overlook the Bosphorus. Afternoon at leisure. Meet your fellow tour members for a briefing followed by dinner at the hotel. D

**Day Three — Istanbul:** A full day of sight-seeing, visiting Aya Sofia Museum, considered one of the world's greatest architectural marvels, and the Mosque of Suleyman the Magnificent, designed by the master Ottoman architect, Sinan. Enjoy lunch at a local restaurant before your cruise along the Bosphorus, the 20-mile waterway linking the Black Sea and the Sea of Marmara. The cruise provides a beautiful view of the city, including the many traditional wooden houses, mosques, and palaces along the shore. Stop at the Rumeli Hisar Fortress to view the massive structure by Sultan Mehmet the Conqueror and Sadberk Hanım, a private museum located in two charming wooden villas and featuring decorative arts. Dinner at the elegant Kurugesme Divan Restaurant on the Bosphorus. B/L/D

**Day Four — Istanbul:** Resume sight-seeing, starting with a visit to Topkapı Palace, home of the Ottoman sultans and center of the imperial government from the mid-fifteenth to the mid-nineteenth century. Marvel at the treasury with its jeweled thrones and other incredible riches, the legendary Harem Quarters, and the kitchens where one of the greatest Chinese porcelain collections in existence is on display. Visit the Blue Mosque of Sultan Ahmet, the Roman Hippodrome, the Underground Cistern and Kariye Museum (St. Savior in Chora) with its spectacular Byzantine frescoes and mosaics. Lunch followed by a visit to the Grand Covered Bazaar with its dazzling array of jewelry, handicrafts, leather, rugs, furniture, and antiques displayed in over four thousand shops. This evening is at leisure for you to explore on your own. B/L

**Day Five — Istanbul/Ankara:** morning transfer to the airport for your flight to Ankara. Proceed directly to a visit to the Museum of Anatolian Civilizations, winner of the 1997 "European Museum of the Year" award and famous for its outstanding collection of Hittite artifacts, and the impressive Atatürk Mausoleum and Museum. Lunch at a traditional restaurant in the Old Town area around the citadel. Visit Old Town and the Temple of Augustus built in the second century BC. Dinner and overnight at **Merit Antique Hotel**. B/L/D

**Day Six — Ankara/Bogazkoy/Cappadocia:** Early morning departure from the hotel for Cappadocia region, stopping to visit the Hittite sites at Bogazkoy (Hattusas and Yazilikaya), the seat of their mighty empire around 1400 BC. Lunch en route. Reach Cappadocia late afternoon and check in at the **Kapadokya Lodge**. Dinner at hotel. B/L/D

**Day Seven — Cappadocia:** Full day of sight-seeing in the region including the rock-carved chapels of Goreme, the red monastic complex at Zelve, and the villages of Ortahisar and Uchisar. Dinner at hotel. B/L/D

**Day Eight — Cappadocia/Adiyaman:** Early morning departure for the long drive to Adiyaman via Kayseri, Darende, and Malatya. Lunch at Malatya. Dinner and overnight at **Bozdogan Hotel**. B/L/D

**Day Nine — Adiyaman/Mt. Nemrut/Urfa:** Depart from hotel at about 4 AM to drive to Mt. Nemrut. Climb to the summit where the gigantic funerary sanctuary of King Antiochus of Commagene was erected over 2,000 years ago. See the colossal stone statues of the gods and kings, the toppled heads of which are lying on the ground. Stop to visit Atatürk Dam, Turkey's largest and the sixth largest in the world. Depart for Sanli Urfa, known in ancient times first as Ur and later as Edessa. Lunch en route. Dinner and overnight at **Edessa Hotel**. B/L/D

**Day Ten — Urfa:** Morning visit to Harran, one of the oldest continuously inhabited spots on earth and believed to be ancient Charan, noted in the Old Testament as the place where Abraham and Sarah spent several years. See the strange beehive houses, ancient fortress, the city walls, and remains of an early Islamic university. Said to be the place where Abraham was born in a cave near the present day Mevlid Halil Mosque, Urfa is a pilgrimage site. Visit the Halil Rahman Mosque, which is built around a quiet pool in which holy carp swim, and stroll through the vaulted Eastern Bazaar and the courtyards of the Old Hans. Lunch at local restaurant. Dinner at hotel. B/L/D

**Day Eleven — Urfa/Antakya:** (Biblical city of Antioch) Morning departure for Antakya, once the third largest city of the Roman Empire, surpassed only by Rome and Alexandria, with lunch and a stop at the Hittite site of Yesemek en route. Dinner and overnight at the **Buyuk Antakya Hotel**. B/L/D

## Gods, Saints, and Kings: Discovering Central Anatolian Turkey (cont.)

**11–25 June and 24 September–8 October 1999**

**Day Twelve — Antakya:** Today is devoted to the sites of Antakya. Visit the Church of St. Peter, Antakya's Archaeological Museum (famed for its marvelous Roman mosaics), and the "old town" where little has changed since Biblical times. Dinner at hotel. B/L/D

**Day Thirteen — Antakya/Adana/Istanbul:** Morning departure stopping to visit the Hittite ruins at Karatepe, a site only recently discovered and now an open air museum with artifacts displayed where they were found. Lunch en route. Upon arrival, enjoy a short visit of Adana with dinner and overnight at **Seyhan Hotel**. B/L/D

**Day Fourteen — To Istanbul:** Transfer to the airport for mid-morning flight to Istanbul. Arrive Istanbul and transfer to deluxe **Polat Renaissance Hotel**, located not far from the airport. Balance of the day at leisure for last-minute shopping or sight-seeing. Farewell dinner at the internationally renowned **Beytl Restaurant**, famous for its grilled meats. B/D

**Day Fifteen— Istanbul/USA:** After breakfast, transfer to the Istanbul airport for return flight home. Transfers to other airports or cities, interline transfers, additional hotel nights, and sight-seeing can be arranged in advance at a supplemental charge. B

### EDUCATION OFFICE REGISTRATION FORM

| <i>Title</i>                                                                                        | <i>Members<br/>Price</i> | <i>Non-Members<br/>Price</i> | <i>Comments</i>        | <i>Total</i> |
|-----------------------------------------------------------------------------------------------------|--------------------------|------------------------------|------------------------|--------------|
| _____ Egypt at the Dawn of History                                                                  | \$115                    | \$135                        | 8 wks                  | _____        |
| _____ Women in Ancient Egypt                                                                        | \$89                     | \$109                        | 6 wks                  | _____        |
| _____ Ancient Egyptian Law and Ethics, Part II (Correspondence)                                     | \$215                    | \$235                        | 15 wks; includes tapes | _____        |
| _____ Egypt in Chicago: An Oriental Institute Field Trip                                            | \$24                     | \$29                         |                        | _____        |
| Please make _____ reservations for me (at \$18 per person) at the Restaurant on the Park (optional) |                          |                              |                        |              |
| _____ Rotini Pasta Salad    _____ Grilled Chicken Salad (both include beverage and dessert)         |                          |                              |                        | _____        |
| _____ Ancient Egypt Goes Hollywood: A Three-Part Seminar                                            |                          |                              |                        |              |
| _____ <i>The Mummy</i> (21 February)                                                                | \$9                      | \$11                         |                        | _____        |
| _____ <i>Cleopatra</i> (28 February)                                                                | \$9                      | \$11                         |                        | _____        |
| _____ <i>Land of the Pharaohs</i> (7 March)                                                         | \$9                      | \$11                         |                        | _____        |
| _____ <b>All Three Seminars</b>                                                                     | \$22                     | \$28                         |                        | _____        |

To register for Ancient Animals, please call the Lincoln Park Zoo at (312) 742-2053

### TOTAL EDUCATION PROGRAMS

\_\_\_\_\_ I would like to become a member of the Oriental Institute. Enclosed is \$35 for individual membership or \$45 for family membership. **Please send a separate check for membership fee.**

I prefer to pay by \_\_\_\_\_ Check    \_\_\_\_\_ Money order    \_\_\_\_\_ MasterCard    \_\_\_\_\_ Visa

Account number: \_\_\_\_\_ Expiration date: \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_ Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_ Daytime phone: \_\_\_\_\_

**Send to: The Oriental Institute Education Office, 1155 E. 58th St., Chicago IL 60637**

**ADULT EDUCATION REGISTRATION AND REFUND POLICY** For multi-session courses, a full refund will be granted to anyone who notifies us about his/her cancellation before the first class meeting. A student who notifies us of his/her cancellation after the first class meeting, but before the second class meeting, will receive a full refund minus a \$45 cancellation fee. After the second class meeting, no refunds will be given unless the course is canceled by the Education Office. Full refunds for correspondence courses will be given if cancellation is received one week prior to the announced starting date of the course. After the starting date, no refunds will be provided. Those who are not registered may not attend classes. The Education Office reserves the right to refuse to retain any student in any course at any time. All schedules are subject to change. Most courses will be subject to a small materials fee which will be announced at the first class meeting. No refunds are granted for single-session programs, but if the Oriental Institute is notified that you cannot attend at least 48 hours before the program begins a credit voucher will be issued for the full amount paid, less a \$5 cancellation fee. The credit voucher will be usable for any Museum Education single-session program for one full calendar year from the voucher date.

## MEMBERS LECTURES

**Archaeology and History in the Ancient Territory of Nikopolis****Professor James A. Wiseman, President, Archaeological Institute of America****Wednesday 24 February****8:00 PM, Breasted Hall (Reception Following)****Co-sponsored by the Archaeological Institute of America**

The Oriental Institute is honored to have been chosen to host the first Oscar Broneer Lecture. This Lectureship, established by the Archaeological Institute of America, honors the late Oscar Theodore Broneer, Professor of Classics at the University of Chicago, and a mainstay of excavations at ancient Corinth and Isthmia.

Professor Wiseman will discuss all the historical periods of Nikopolis, with special attention to the Hellenistic and Roman eras. Nikopolis, founded to celebrate the final Roman victory over the Egyptians, had a profound effect on life and landscape in surrounding regions.

**James Wiseman** is American Principal Investigator and Co-Director of the Nikopolis Project, and Professor of Archaeology, Art History, and Classics at Boston University.

**Between the Tigris-Euphrates Basin and the Mediterranean Sea: Excavations at Tell Kurdu, a Fifth Millennium B.C. Site in the Amuq Valley, Turkey****K. Aslihan Yener, Associate Professor of Archaeology, The Oriental Institute****Wednesday 17 March****8:00 pm, Breasted Hall (Reception Following)**

Tell Kurdu, an 18 hectare Early and Middle Chalcolithic site, is situated close to the eastern edge of the former Amuq lake (Lake Antioch) in the southernmost part of Turkey, the State of Hatay. Its immense size, location, and date (Phases C–E, sixth–fifth millennium B.C.) has important implications in understanding the rise of early complex societies and urban centers. Previously excavated by Oriental Institute teams that included Robert Braidwood in a rapid two week season in 1938, full-scale operations were resumed this year from 22 August to 12 October 1998. Consisting of two mounds connected by a saddle, ten trenches of various sizes were placed on the northern and southern sectors of Tell Kurdu. As part of the overarching Amuq Valley Regional Project the excavations at Tell Kurdu introduce the second phase of research that began in 1995 with intensive geoarchaeological and archaeological surveys.

## SUNDAY FILMS

The Oriental Institute Museum invites you to enjoy the best in documentary and feature films on ancient Near Eastern history, art, and archaeology. All films begin at 2:00 PM on Sunday afternoon and last approximately one hour, except where noted. Admission is free.

In January, we present **Archaeology on Film**, five fine documentaries that explore the history and culture of ancient Egypt.

3 January *Egypt: The Habit of Civilization* — from the PBS series *Legacy: Origins of Civilization*. (1991)

10 January *Champollion: Hieroglyphs Deciphered* — how a brilliant 19th century French scholar used the famed Rosetta Stone to unlock the mysteries of ancient Egyptian hieroglyphs. (1976)

17 January *Pyramid* — this acclaimed live-action and animated film will captivate both children and adults, but it's the children in the audience who will receive a free pyramid souvenir. (1989)

24 January *The Face of Tutankhamun: The Great Adventure* — the first episode of the epic Arts and Entertainment (A&E) series that describes the discovery of the tomb of Tutankhamun and the recovery and preservation of its contents. (1992)

31 January *The Face of Tutankhamun: Wonderful Things* — the second episode of the A&E series. (1992)

7 February Special Event: "Moving King Tut" (see page 13 for additional information)

14 February Special Event: "The Exodus From Egypt in History and Tradition" (see page 13 for additional information)

On the following three Sundays we present *Ancient Egypt Goes Hollywood*, a film festival that features classic Hollywood portrayals of ancient Egypt. Each movie will be introduced by Egyptologist

Michael Berger. See page 13 for information on a three-part seminar that accompanies the films.

21 February *The Mummy* — a horror classic starring Boris Karloff as a revived Egyptian mummy. Remarkable make-up and atmosphere make this film chills ahead of its many later imitators. (1932, 72 minutes)

28 February *Cleopatra* — this grand Cecil B. DeMille epic starring Claudette Colbert offers dramatic action in lavish and remarkably authentic settings. Cleopatra's costuming was researched with special care, as Ms. Colbert appears in clothing and jewelry that recreate treasures found in ancient Egyptian tombs. (1934, 101 minutes)

7 March *Land of the Pharaohs* — a Howard Hawks film based on William Faulkner's screen play of an aging king dealing with palace intrigue. Jack Hawkins is the pharaoh and Joan Collins is a scheming princess. (1955, 103 minutes)

14 March Family Program: "Ancient Skywatchers" (see page 15 for additional information)

On the remaining Sundays in March, we present two episodes from the *Testament: The Bible and History* series (1989), which *Archaeology* magazine has described as "the best program of this type ever made."

21 March *Chronicles and Kings* — how accurate is the Bible as a geography, archaeology, and history text? This second episode compares archaeological evidence with Biblical history.

28 March *Mightier Than the Sword* — this episode explores the importance of the written word in Judaism, as John Romer visits Qumran and Masada in search of the origins of the Dead Sea Scrolls.

### EGYPT AT THE DAWN OF HISTORY

**Frank Yurco**

**Saturdays**

**9 January–13 March**

**7:00–9:00 PM, Oriental Institute**

Discover ancient Egypt in the era before written records. Based on the most recent archaeological evidence, this class will follow Egyptian history from the earliest appearance of kingship to the emergence of a unified land that rapidly evolved into one of the earliest Bronze Age states. This class is the first in an



eight-part series that will trace the history of Egypt from its beginnings to the nation that exists today.

**Frank Yurco** is an Egyptologist who has taught numerous courses on ancient Egyptian history, culture, and language, both at the Oriental Institute and the Field Museum of Natural History. This course will meet on Saturday mornings from 10:00 AM to 12:00 NOON beginning 9 January and continuing through 13 March 1999, except 23 January and 27 February.

#### **Required texts:**

*Egypt Before the Pharaohs.* Michael Hoffman. New York: Knopf, 1984.

*Early Hydraulic Civilization in Egypt.* Karl Butzer. Chicago: University of Chicago Press, 1976.

*Ancient Egypt: Anatomy of a Civilization.* Barry J. Kemp. London and New York: Routledge, 1989.

See page 10 to register.

### WOMEN IN ANCIENT EGYPT

**Alexandra O'Brien**

**Tuesdays**

**19 January–23 February**

**7:00–9:00 PM, Oriental Institute**

What was life like for women in ancient Egypt? This six-week course explores women's roles that range from wives



and mothers to priestesses and queens and examines the lives of women as they are portrayed in ancient Egyptian literature and art. Discover the power ancient Egyptian women had in the home, in business, and in the royal family.

**Alexandra O'Brien** is a Ph.D. candidate in Egyptology in the Department of Near Eastern Languages and Civilizations. Her main interest is in social history and how this can be reconstructed from documents relating to everyday life. This course will meet at the Oriental Institute on Tuesday evenings from 7:00 to 9:00 PM beginning 19 January and continuing through 23 February 1999.

#### **Required text:**

*Women in Ancient Egypt.* Gay Robins. London: British Museum, 1993.

See page 10 to register.

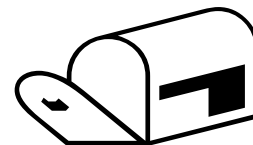
### ANCIENT EGYPTIAN LAW AND ETHICS, PART II: A COURSE BY MAIL

**Frank Yurco**

**22 February (Start Date)**

**(Part I is not a prerequisite)**

From property lawsuits to criminal cases, the law codes and trial records of ancient Egypt reveal a highly sophisticated legal system that evolved and changed with the times over a span of more than 3,000 years. Featuring audiotape lectures by Egyptologist Frank Yurco, this course by mail focuses on the New Kingdom and Late period, when court cases describing conspiracies, royal assassination attempts, and tomb robbing mirror the societal problems and changing social structure of the era.



Listen to the lectures at home — or in your car — and then examine supplemental readings that include translations of ancient court cases as well as myths and stories involving legal disputes. The tapes and readings are organized into eight lessons. With every lesson the instructor will provide a brief assignment that allows you to demonstrate your understanding of the course material. Complete each assignment and return it by mail or fax. The instructor will review the lesson, give comments, answer any questions, and return it by mail. The course will begin on Monday 22 February 1999 and continue for fifteen weeks. Registration must be received by Friday 12 February.

#### **Required texts:**

*Ancient Egyptian Literature*, Vols. I, II, and III. Miriam Lichtheim. Berkeley: University of California Press, 1973.

*The Literature of Ancient Egypt.* William Kelley Simpson, ed. New Haven: Yale University Press, 1973.

See page 10 to register.

## PROJECT MILLENNIUM

Several special events, indicated with the  symbol, are presented as part of Project Millennium, sponsored by The Chicago Tribune. The promotion of the Origins theme (January–February 1999) is underwritten in part by the ITW Foundation. The promotion of the Environment theme, (March–April 1999) is underwritten in part by ComEd. For further information, contact the Project Millennium offices at (312) 322-8889.

### ANCIENT EGYPT GOES HOLLYWOOD: A RETURN ENGAGEMENT

If you missed *Ancient Egypt Goes Hollywood*, last year's Sunday afternoon film festival and seminar, now is your chance to view and discuss three classic Hollywood portrayals of ancient Egypt. Come to Breasted Hall at 2:00 PM to see:

*The Mummy*, with Boris Karloff (1932), on 21 February

*Cleopatra*, the Cecil B. DeMille classic (1934), on 28 February

*Land of the Pharaohs*, starring Joan Collins (1955), on 7 March

After each movie, join Egyptologist Michael Berger to explore ways the film represents fact and fantasy about ancient Egypt. Clips from other well-known movies of the genre will be shown during each seminar session; hand-outs will be provided and refreshments served.

**Michael Berger**, Manager of the University of Chicago's Language Faculty Resource Center, is an Egyptologist interested in ways popular film can be a springboard for the study of ancient cultures. This three-session seminar will meet at the Oriental Institute on Sunday afternoons from 4:00 to 5:30 PM beginning 21 February and continuing through 7 March.

Pre-registration is required. Participants may sign up for individual sessions or receive a reduced rate by pre-registering for all three sessions. Space is limited.

Fee: \$9 per session for Oriental Institute members; \$11 for non-members. Fee for entire series: \$22 for members; \$28 for non-members. See page 10 to register.

### MOVING KING TUT

**Emily Teeter**

**Sunday 7 February**

**Breasted Hall**

**2:00 PM**

How do you move a 15,000 pound, 3,000 year-old Egyptian statue? Going beyond the obvious answer ("very carefully"), this slide-illustrated talk by **Emily Teeter**, Oriental Institute Museum Associate Curator, takes you behind the scenes to review the complex engineering, conservation, and curatorial processes involved in moving the Museum's colossal statue of King Tutankhamun. Free; reservations not required.



## THE EXODUS FROM EGYPT IN HISTORY AND TRADITION

**Frank Yurco**

**A Graham School of General Studies/Oriental Institute Museum Presentation**

**Sunday 14 February**

**Breasted Hall**

**2:00 PM**

Egyptologist **Frank Yurco** discusses the Biblical story of the Israelite exodus from Egypt from an archaeological and textual perspective. Co-sponsored by the Graham School of General Studies and its Basic Program of Liberal Arts for Adults, this lecture is part of the *Works of Mind Series*, free public lectures offered on the campus of the University of Chicago. Reservations not required.

## EGYPT IN CHICAGO

**Saturday 23 January**

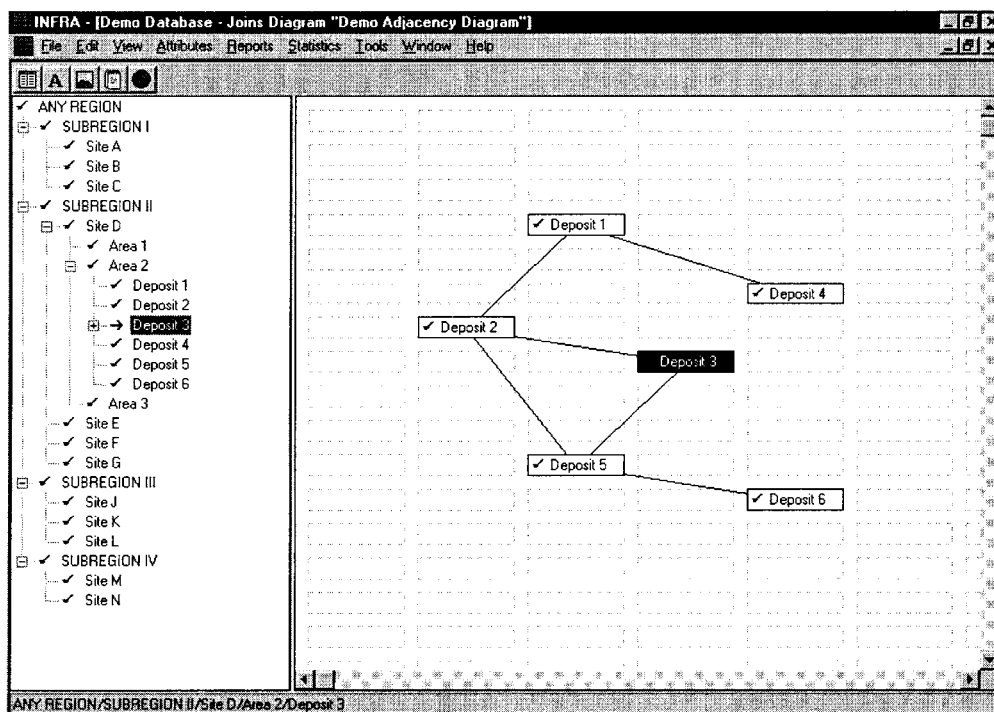
**9:30 AM–2:30 PM**

The fourth repeat of our most popular field trip, *Egypt in Chicago* presents insiders' views on the city's three major collections of ancient Egyptian art and artifacts. Plan to register early — this event fills rapidly! The trip will be led by **Emily Teeter**, Oriental Institute Museum Associate Curator; **Frank Yurco**, consulting Egyptologist for the Field Museum of Natural History; and **Mary Greuel**, Research Associate in Classical Art at the Art Institute of Chicago.

Begin the day at the Field Museum with a continental breakfast and slide lecture by Teeter, who will offer lively commentary on Egyptology in Chicago, past and present. Then join Yurco for a visit to the Field Museum's "Inside Ancient Egypt" exhibit to learn about recently installed displays. The program continues with a bus trip to the Art Institute for lunch on your own at the Restaurant on the Park or the Cafeteria, followed by a tour and discussion with Greuel on the planning and installation of the Art Institute's exhibit of ancient Egyptian art, as well as the award-winning *Cleopatra* interactive computer program.

Fee: \$24 for Oriental Institute members; \$29 for non-members. Fee includes continental breakfast, admission and presentations at both museums, and round-trip bus transportation between the Field Museum and the Art Institute. Pre-registration is required. See page 10 to register. Lunch reservations at the Restaurant on the Park will be made upon request.





**Figure 6. INFRA spatial adjacency "network" view**

*continued from page 6*

The archaeologist can create and label individual items, variables, and values as needed, in a manner that is appropriate for the project at hand, and can associate items with one another in a variety of spatial and temporal (or "stratigraphic") configurations. Initially, this approach demands a higher degree of conceptual abstraction, yet it actually corresponds better to observed archaeological entities in the real world, which do not manifest themselves in the form of tidy classes of material but as idiosyncratic individual items. Moreover, the abstraction entailed in working with a few generic concepts such as "item" and "variable," and with a few graphically represented spatial and temporal relationships, permits both flexible customization from the archaeologist's perspective and rigorous standardization in terms of the underlying data structure. Most importantly, because of this standardization the task of combining databases from different projects is quite easily accomplished by grafting in the spatial tree of one database as a new branch of the spatial tree of a second database, and then defining equivalences between the terms used in the two original databases. The archaeologist is not forced to turn to a programmer to map one rigid and idiosyncratic table structure onto another because the comparison between different databases is done at a more basic level, between individual items and their attributes. The end result of such a combination is a comprehensive view of the constituent databases which preserves the standard underlying structure of a simple item-based hierarchy but which also reflects the naming conventions and recording systems of the individual projects whose data are incorporated within it.

INFRA is only one implementation of the item-based data model advocated here, although it demonstrates what I believe is the best approach to representing both the intrinsic attributes and the extrinsic interrelationships of archaeological items in a straightforward and standardized fashion. In its specific features it also demonstrates the benefits of an item-based design for integrating very tightly, within a single software application, an array of powerful yet easy-to-use functions that have been tailored for archaeological use. In addition to the diagrammatic interfaces mentioned above, these features include a "map view" for drawing archaeological plans and sections, an "image view" for displaying scanned photographs and other images and linking them to database items, a

"document view" for composing written summaries and interpretations of primary data with hyperlinks to the actual data, a "table view" for generating charts and tables of data, and a "statistics" feature to facilitate quantitative analysis of archaeological data.

Again, however, the most important practical benefits of the software design underlying both INFRA and the related XML tagging scheme now being developed will be fully realized only when a hierarchical item-based data model becomes the basis of a mode of electronic publication in which data from disparate projects may be easily combined. I have argued that electronic publication of archaeological data, and Web publication in particular, ought to facilitate comprehensive retrieval and analysis together with universal access, and this can be accomplished by using an item-based structure which will permit archaeological databases to be viewed or queried in any combination, simultaneously drawing on a variety of different Web sites, while maintaining a consistent user interface. This is possible because each published database is delivered as a subtree that can be dynamically integrated into an overall spatial hierarchy which may then be viewed as a seamless whole by the archaeologist. With the advent of XML such forms of electronic publication are now feasible, so the time is ripe to begin exploiting this new tool for the benefit of archaeological research.

---

*David Schloen earned a bachelors degree in computer science before going into archaeology. He is currently the Associate Director of the Leon Levy Expedition to Ashkelon, Israel. He is using this large-scale project to test his ideas about electronic publication of archaeological data.*

---

## FAMILY PROGRAMS

### ANCIENT ANIMALS

#### A LINCOLN PARK ZOO/ORIENTAL INSTITUTE MUSEUM FAMILY PROGRAM

**Saturday 27 February**

**9:30 AM-2:30 PM**

Meet animals that were worshipped, tamed, trained, hunted, or kept as pets in ancient Egypt and the ancient kingdoms of western Asia during this special family program. Begin at the Lincoln Park Zoo to see actual species or close relatives of animals that were part of everyday life thousands of years ago. Discover why ancient Egyptians, Sumerians, and Persians believed certain animals represented specific gods and why other animals were believed to possess magical powers.

Then, travel by bus to the Field Museum of Natural History to tour the "Inside Ancient Egypt" exhibit, where Egyptologist **Frank Yurco** will show you animals as the ancient Egyptians portrayed them. The day ends at the Oriental Institute, where you'll learn how to write about animals using ancient Egyptian hieroglyphs and create your own version of an ancient-style carving showing your favorite animal. Bring a brown bag lunch to enjoy with beverages and dessert provided by the Oriental Institute.

This program is designed for families with children ages 8 and up. Fee: Oriental Institute and Lincoln Park Zoo members: \$18 per adult/\$10 per child. Non-members: \$22 per adult/\$14 per child. Fee includes round-trip bus transportation, museum admissions, refreshments, hand-outs, and materials.

### ANCIENT SKYWATCHERS

**Sunday 14 March**

**Breasted Hall**

**2:00 PM**

Take a trip back in time to view the night sky through the eyes of ancient astronomers, who solved many mysteries of the cosmos thousands of years ago. See how the Babylonians used their observations of sun, moon, and stars to create one of the world's first calendars, and learn how the ancient Egyptians used the heavens to orient pyramids and predict Nile floods. Handle some samples of meteorites that may have crossed the skies at the time of the pharaohs and bring home a map of the heavens to try some skywatching of your own

**Paul Sipiera**, Professor of Geology and Astronomy at Harper College, leads this interactive program of slides, discussion, and hands-on experiences. Recommended for ages 12 and older. Free; reservations not required.



## BREASTED SOCIETY NEWS

The James Henry Breasted Society provides an annual source of unrestricted funds for the most pressing research needs of the Oriental Institute. 100% of Breasted Society funds are used directly for project and research support. Members of the Breasted Society meet periodically in small groups with Institute and visiting scholars and dignitaries. For more information, or to join the Breasted Society, please call Tim Cashion at (773) 702-9513.

The following members of the Breasted Society joined or renewed their memberships in the second half of 1998. The Oriental Institute is grateful for their support.

### Director's Circle

Mr. and Mrs. Anthony T. Dean

Mr. and Mrs. O. J. Sopranos

Mr. and Mrs. Jeffrey R. Anderson

### Patron

Dr. Miriam Reitz Baer

Leila Foster, J.D., Ph.D.

Mr. and Mrs. Robert M. Grant

Mr. and Mrs. Dietrich M. Gross

Dr. Henrietta M. Herbolzheimer

Mr. Richard Kron

Mr. and Mrs. Maurice D. Schwartz

Mr. and Mrs. Charles G. Shea

Mr. John Howell Smith

Ms. Roxie Walker

## DEVELOPMENT OFFICE NEWS

**Cynthia Echols**, who has guided our development efforts since April 1993, was appointed Associate Director of Foundation Relations for the University of Chicago, effective 1 October 1998. Cynthia not only led the fundraising efforts for the renovation and expansion but also achieved record levels of support for non-building research and projects. She leaves the Institute with our sincere thanks and best wishes.

**Tim Cashion**, formerly the Membership Coordinator at the Oriental Institute, was appointed its Director of Development in November 1998. Tim will be overseeing our efforts to support reinstallation and the research priorities of the Institute. Please stop by Room 236 to welcome Tim to his new position and to discuss the Institute's development plans; you may also call him at (773) 702-9513, or email [tcashion@babylon-orinst.uchicago.edu](mailto:tcashion@babylon-orinst.uchicago.edu).

**Emily Napolitano**, who has worked for Museum Education since April 1997, joined the Membership and Development Office as Development Assistant in August 1998. Emily's duties include managing the membership renewal system and providing general office support. Emily is in Room 233 every afternoon from 1:30 to 5:30; please join us in her welcoming her to her new position.

THE  
ORIENTAL INSTITUTE

The University of Chicago  
1155 East 58th Street • Chicago, Illinois • 60637  
(773) 702-9514

Non-Profit Org.  
U.S. Postage  
PAID  
Chicago, Ill.  
Permit No. 6784

**TURKISH FILM FESTIVAL**

**Saturdays, 2:00 PM, Breasted Hall**

The second in our series of contemporary feature films from the Middle East, this festival of films from Turkey is co-sponsored by the Oriental Institute, the Center for Middle Eastern Studies, and the Language Laboratories and Archives, University of Chicago. All films have English subtitles. A representative from the Center for Middle Eastern Studies will introduce each film and provide commentary and answer questions following each showing. Admission is free.

23 January: *Journey of Hope* — Oscar-winner for best foreign language film, this tale based on fact recounts the grueling journey of a Kurdish refugee family.

30 January: *Somersault in a Coffin* — Made with almost no budget, this film portrays the daily life and struggles of a homeless person in Istanbul.

6 February: *Baba (The Father)* — Yilmaz Guney, writer of the award-winning Turkish film *Yol*, directed this powerful story of a desperately poor boatman who agrees to be framed for murder in return for support of his family.

13 February: *Yol* — Cannes Film Festival winner based on the personal experiences of the filmmaker, this story describes the experiences of five Kurdish prisoners given a week's leave to visit their villages. Written by Yilmaz Guney, directed by Serif Goren.

20 February: *Iki Yabaci (Two Strangers)* — A film from the writer and director Halit Refig.

27 February: *Istanbul Kanatlarimim Altinda (Istanbul Under My Wings)* — Directed by Mustafa Altıoklar, this film offers accounts of the life and times of Sultan Murat IV in sixteenth century Istanbul.

**THE SUQ**  
**CORNER**

Thanks to a generous donation, the Suq will be closing for a complete renovation in early winter 1999; please call ahead before shopping to see if the Suq is open.

**News & Notes**

A Quarterly Publication of The Oriental Institute, printed for members as one of the privileges of membership

Editor: Tim Cashion • Telephone: (773) 702-1677 • Facsimile: (773) 702-9853 • oi-membership@uchicago.edu

All inquiries, comments, and suggestions are welcome • World-Wide Web site: <http://www-oi.uchicago.edu>