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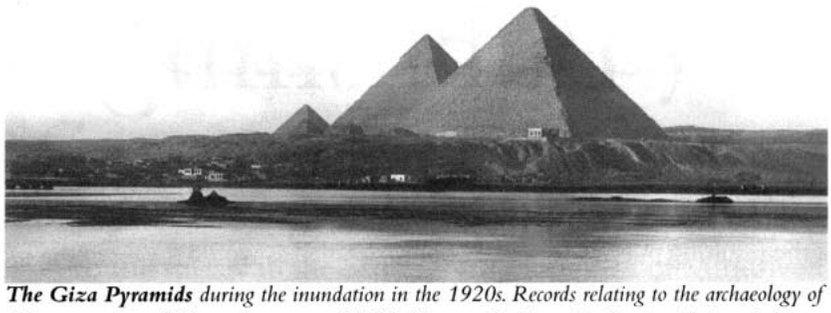

The Giza Pyramids *during the inundation in the 1920s. Records relating to the archaeology of Giza are now available on-line, see pp. 31-33. Photograph: Egypt Exploration Society Archive.*

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Cover illustration: *Saqqara, excavations of the Louvre Museum. The northern part of a Late Period underground gallery with heaped-up coffins and funerary equipment. See pp.20-24. Photograph © Christian Déscamps.*

The Giza Archives Project

A new internet resource aims to serve as a centralised online repository for all archaeological activity at the Giza Necropolis, beginning with the Harvard University/Boston Museum of Fine Arts excavations from the first half of the twentieth century. **Peter Der Manuelian**, who first reported on the genesis of the work in *EA* 17 (pp.25-27), now provides an update and describes plans for the Project's future.

The Giza Pyramids may be the most famous, if not the most important, archaeological monuments in the world. Surrounding these royal monuments are hundreds of mastabas and rock-cut tombs, in addition to workmen's barracks, industrial areas, royal administrative buildings, and quarries. Along with the other Memphite cemeteries further to the south, Giza is one of the primary sources for almost every conceivable aspect of Old Kingdom society, and it also contains significant monuments from the Archaic Period, the New Kingdom, and the Late Period.

Two of the founding fathers of modern scientific archaeological method, Flinders Petrie and George Reisner, both worked at Giza and several expeditions, down to the present day, have over the decades made important contributions to our understanding of the site. In fact, the 'explosion' of information amassed by various expeditions is so overwhelming that it is almost impossible to gain a clear overview of all the relevant data, for it does not reside in any one location, and much remains unpublished. Similarly, the artefacts, from the coarsest beer jars to the life-sized royal statues and other masterpieces of Old Kingdom sculpture, are now spread throughout museums in Egypt, Europe and the United States.

The Giza Archives Project has now taken a step towards providing access to all this material and scholarly research. Since 2000 the Project has been working to digitise Giza materials and to present them to scholars and the interested public over the internet free of charge. The work of the Project was made possible in the autumn of 2000 by a generous award made by the Andrew W Mellon Foundation (www.mellon.org), which recognised that the largest single corpus of Giza data was in the Museum of Fine Arts, Boston, and awarded the MFA a $750,000 archives grant. Thanks to the contributions of 200 Egyptologists, students, interns, museum docents and volunteers in Boston and elsewhere, plus a second Mellon Foundation award of an additional $545,000 (2004–2007), phase 1 of the Giza website is now available online at www.gizapyramids.org or www.mfa.org/giza

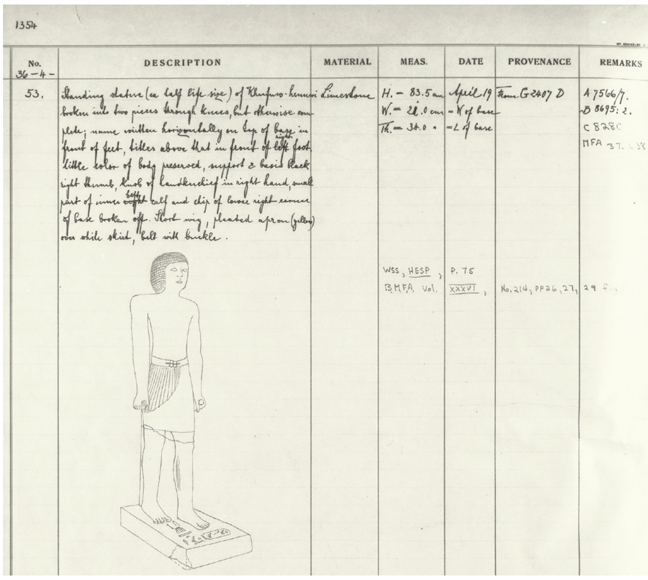
Giza Archives Project staff members at the Museum of Fine Arts, Boston

Sunrise at Giza, looking southeast, on 1 September 2004

The Giza Archives Project converted Reisner's Harvard–MFA Expedition's approximately 21,000 glass plate photographic negatives to digital form, complete with all their accompanying descriptive information. It also digitised and created databases and text files for the complete corpus of Expedition Diaries and Object Register books, recording each day's work at the site from 1909 to 1940, and all the finds discovered. To date, 10,000 maps and plans have been scanned and posted online, ranging from general plans of large portions of the site to detailed section drawings of individual burial shafts. But the goal is not just to present this massive, unwieldy archive in a new (digital) medium, but rather in an integrated and cross-referenced collection, uniting and linking the diverse archaeological materials automatically. If massive amounts of archaeological data cannot be sifted, gathered, and presented in a user-friendly manner, they are as good as lost.

To simplify access to Giza's legacy, the individual mastaba tomb was selected as the single unifying 'feature', to use the archaeological term, around which diverse data 'revolves'. The chart illustrated here on p.32 shows how the individual mastaba tomb resides at the centre of this diverse 'data universe'.

In addition to a range of general navigational web pages (news, staff, copyright use, user feedback, site map and



1354

No. 36-4-	DESCRIPTION	MATERIAL	MEAS.	DATE	PROVENANCE	REMARKS
53.	Standing statue (ca half life size) of Khufu-hennui broken into two pieces through knees, but otherwise complete; name written horizontally on top of base in front of feet, titles above that in front of right foot. Little color of body preserved, support & basis black right thumb, knob of handkerchief in right hand, small part of inner left calf and chip of lower right corner of base broken off. Short wig, pleated apron (yellow) over white skirt, belt with buckle.	Limestone	H. – 83.5 cm; W. – 21.0 cm – W of base; Th. – 34.0 " – L of base	April 19	from G 2407 D	A 7566/7. B 8695: 2. C 8280 MFA 37.638
			WSS, HESP, B.M.F.A. Vol.	p. 75; XXXVI,	No. 214, pp 26, 27,	29 fig.

Detail of Expedition Object Register page 1354 of 18 April, 1936, recording the statue of Khuienkhufu (MFA. 37.638)

help), the Giza website attempts to accommodate all types of searching, from the general to the specific, from the textual to the visual. Multiple search options are necessary because individuals tend to access information in different ways, depending on their needs and methods of research. Three main paths allow users to sift through Giza data: 'Quick Search', 'Advanced Search', and 'Visual Search'.

The 'Quick Search' box is designed to search across all of the website's underlying diverse database fields. This is the place to type words or phrases, such as 'pyramid' or 'sphinx', ancient or modern proper names, tomb numbers or object accession numbers. The 'Advanced Search' button allows users to search for specific types of photographs, diary pages, object finds, plans and drawings, or people. Users could, for example, search for all the finds from the tomb of Ankhhaf (G 7510), or all images whose descriptions contain the word 'skeleton'.

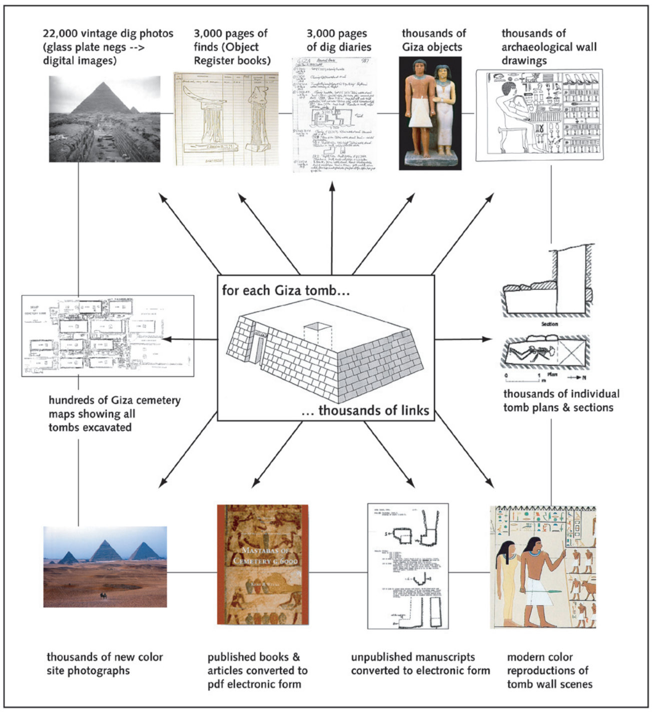
These types of searches are fairly standard but the site also offers a more unusual 'Visual Search' featuring a black-and-white aerial photograph of the entire Giza Necropolis. Button controls at the bottom of the image allow the user to zoom in to a very high magnification. Two features then give maximum access to the necropolis, with no specialised Egyptological or computer programming knowledge required; just the ability to 'point and click'. First, every tomb has a red 'button' that flashes when the mouse cursor rolls over it. Clicking on the tomb compiles for the user a list of all available photos, finds, maps and plans, diary pages, and individuals relevant to that tomb.

The second feature on the 'Visual Search' page consists of round, pulsating yellow or blue buttons placed all over the aerial site photograph. These represent almost 700 different standpoints; clicking on one of these round buttons takes the user down to the ground at that very location, shown in a colour image in a new browser window. However, these are no ordinary photographs, but are rather contemporary 360-degree interactive panoramas,

G 1039, deposit of statues in the vestibule, July 1904. (Photograph: George Reisner, Harvard–MFA negative B 10750, courtesy Museum of Fine Arts, Boston)

known as 'Quicktime Virtual Reality' movies, which the user can manipulate to survey the area in all directions. Yellow dots represent outdoor (exterior) locations, while blue dots take the user inside a decorated chapel, pyramid, or rock-cut chamber.

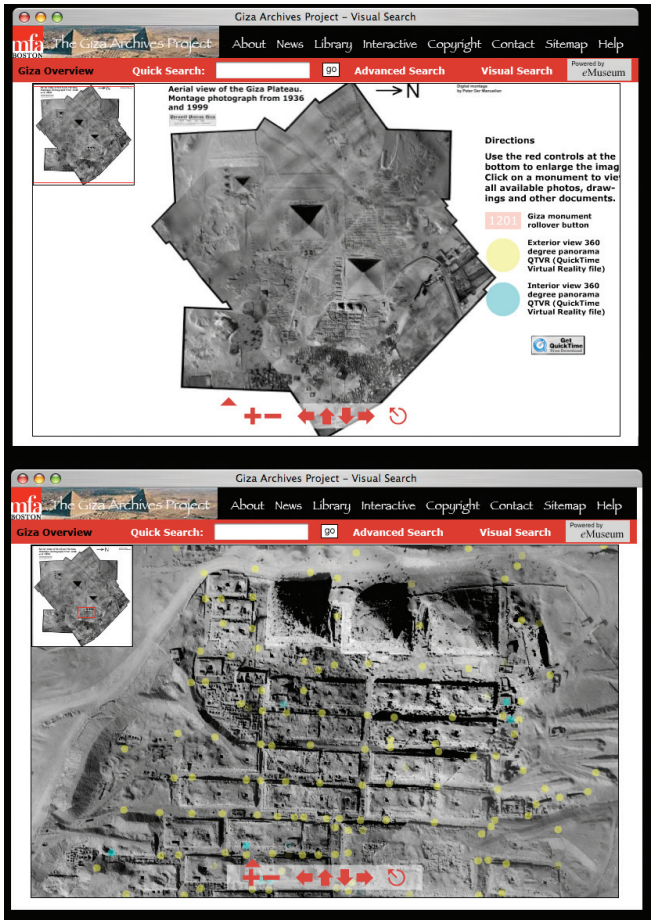
Serious scholarly research on the internet is often hindered by bandwidth limitations which require images to be formatted far too small in size for detailed analysis. In an effort to solve this problem and render the Giza Archives useful for even the most meticulous study, the website employs a special technology which takes very large image files and digitally breaks them down into smaller 'tiles'. The result is that the user can zoom in very closely on a photograph, viewing only a portion or 'tile' of the image detail desired, without having to download an entire large image file. This single feature transforms the Giza website from the realm of internet curiosity to serious research tool. To date, all 40,000 items on the website have been converted using this zooming technology.



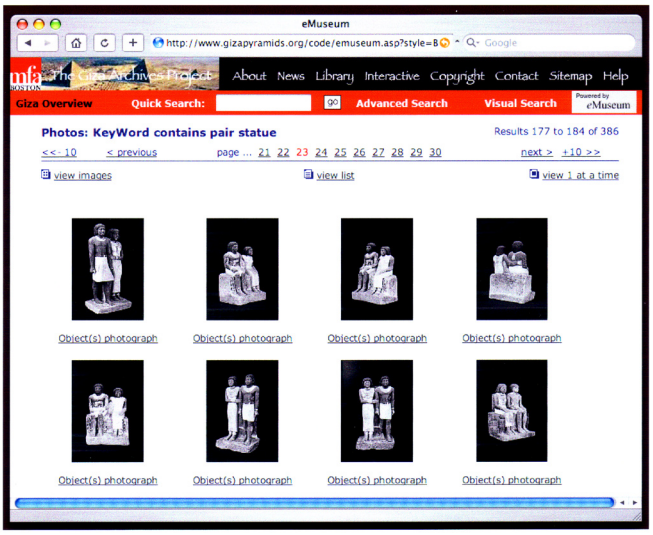
Schematic chart showing the relationship of diverse archaeological data linked to a specific mastaba tomb (centre of diagram)

One other aspect of the Giza website will be of great value to researchers who may not have easy access to a conventional Egyptological library or need access to a vast bibliography while 'in the field': the 'Giza Digital Library' where, to date, about 200 works have been posted for free downloading. This page currently contains every Giza-related book and article ever written by Harvard–MFA Egyptologists George Reisner, Dows Dunham and William Stevenson Smith. It also contains works by a host of other scholars, both past and present. All seven volumes of the MFA's *Giza Mastabas* series are online, and all 166 *Bulletin of the Museum of Fine Arts* articles are likewise available for free downloading. These PDF files reproduce the look and feel of their original publications' design and layout, but they also contain a second, 'hidden' layer beneath each page where the text has been converted to searchable type. This means that one can search for terms within the PDF file: one major advantage of digital publication over print publication.

Thousands more images and documents have yet to be processed in the coming years at the Museum of Fine Arts, Boston, and added to the website. They concern primarily the Harvard University–Boston Museum of Fine Arts Expedition and its derivative field seasons, but there have been, of course, other important excavations at Giza besides those conducted until 1942 by George Reisner. For those studying Giza *in toto*, the arbitrary pres-



Giza website Visual Search page and magnified detail view of the Eastern Cemetery, with yellow and blue dots representing clickable standpoints for 360-degree rotating panoramas



The results obtained by making a picture search on the phrase 'pair statue'

ence or absence of data on the Giza website - based solely on who happened to do the digging - can be frustrating. Thus it is critical in future phases of the Giza Archives Project to move beyond the Harvard–MFA Expedition to include as many expedition archives as possible, past, present, and even future. Discussions are either already under way or are about to begin with several of the major 'Giza collections' around the world, and international collaboration is the next major phase of the Project. Should this approach prove successful, it might serve as a model for the presentation of archaeological materials for other sites. And there are always new technologies to test and include, such as digital epigraphy: the production of computer-aided facsimile drawings of wall reliefs and inscriptions (see *EA* 17, pp. 25–27).

Like all ancient Egyptian archaeological sites, the Giza Necropolis is threatened by time, the elements, tourism,and a dearth of conservation funding. It is thus critical that we turn our attention to documenting, preserving and publishing the site in the widest possible sense of these terms. The opportunity has now arrived, thanks to new technologies, to create unprecedented access to Giza, access that can be used in countless ways, from the inventory and tracking of the monuments over time to new avenues of scholarly research. We have only begun to discern where these exciting new research and documentation tools can take us.

❑ Peter Der Manuelian is Giza Archives Project Director at the Museum of Fine Arts, Boston, and Lecturer in Egyptology, Tufts University. He is grateful for the support of many individuals at the Museum of Fine Arts, Boston and The Andrew W Mellon Foundation (see: www.gizapyramids.org/code/emuseum.asp?newpage=staff, in particular Diane Flores (Giza Research Associate) and Rita Freed, John Cogan, Jr. and Mary Cornille (Chair of Art of the Ancient World). The Giza Archives Project welcomes suggestions, feedback and support, and can be contacted at www.gizapyramids.org/code/emuseum.asp?newpage=contact In addition, those with knowledge of or documents pertaining to the history of George Reisner's archaeological career, or that of his immediate colleagues, are urged to contact Project staff. All illustrations, unless otherwise indicated, are by Peter Der Manuelian.