

Newsletter

SOCIETY FOR THE STUDY OF EGYPTIAN ANTIQUITIES

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Gilbert and Stewart Bagnani at Tebtunis

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Spring 2019 #2

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CANADA

An only child, Gilbert Bagnani was born in Rome 26 April 1900. After graduating from the University of Rome in 1921, he studied archaeology at the Italian School in Athens for two years. While there he met Carlo Anti, who had also been a student there several years previously.

After the death of Ernesto Schiaparelli February 17, 1928, the senior Egyptologist in Italy, the Classical archaeologist Carlo Anti was chosen to lead the Italian Archaeological Mission in Egypt. At the same time, the Florentine papyrologists Girolamo Vitelli and Medea Norsa asked Evaristo Breccia, the Director of the Greco-Roman Museum in Alexandria, to undertake excavations at the Greco-Roman site of Tebtunis, extensively plundered throughout the 1920s for its papyri. Ever since Grenfell and Hunt first excavated Tebtunis in 1899-1900 and found over 20,000 papyri, the site had been relentlessly plundered for papyri, especially in the 1920s. Major collections of Tebtunis papyri were acquired by museums in Copenhagen and the University of Michigan.



Carlo Anti's team in Egypt, Tebtunis 1932. Gilbert Bagnani is standing at the back on the right with Stewart Bagnani on the left.

In 1929 Breccia cleared a few houses but found scarcely any papyri. When Anti visited Breccia at the site, Anti saw all the pits resembling an abandoned lunar landscape but believed that this site would be ideal for a study of urbanism in the Greco-Roman period. So, after an unproductive season, Anti persuaded Breccia to transfer the concession to him. He asked Breccia and Vitelli for their permission to dig at the site. Anti would assume the responsibility, while agreeing to send any exportable papyri to Vitelli and Norsa at Florence since they were providing part of the funding. For the 1930 season, Anti invited Fausto Franco to join him as the excavation architect.

Only recently it was discovered that many cartons of Carlo Anti's personal papers donated by the late Prof. Luigi Polacco to the Istituto Veneto in Venice contained academic material such as his excavation papers in addition to his administrative papers. Anti's excavation goals for the Mission at Tebtunis were both laudable and ambitious: to excavate the town methodically in order to reveal its urban planning. So instead of digging in untouched mounds where he was more likely to find papyri, Anti was self-disciplined and prepared to excavate

even in places where others had preceded him in order to clarify and understand the layout of the town itself.

After his first season digging at Tebtunis in 1930, Anti realized that he needed an assistant knowledgeable in Egyptology. He first thought of Giulio Farina, Schiaparelli's successor at the Turin Museum. But after the two men had a falling out, Anti then wrote to Gilbert Bagnani, his acquaintance from the Scuola Archeologica di Atene. Politics did not play a role in Anti's decision because neither Bagnani nor Farina were Fascists, and indeed Anti overlooked Bagnani's aristocratic disdain for the Fascists as nouveaux arrivistes. Anti must have had faith and confidence in Bagnani's abilities because at this point Bagnani, though thoroughly trained in Classical archaeology and sculpture, had never formally studied Egyptology! Bagnani had, however, traveled throughout Egypt in 1928 with acquaintances including his fiancée, Stewart Houston. He may not have told Anti what he thought of Egypt at that time: "I have never been so disappointed with any place as I have been with Egypt. ... Everything from the scenery to the antiquities is simply monotonous and very very dull. ... We shall have a week in Cairo in which I think I shall concentrate on the Mosques and Coptic Churches. I am certainly not going to be an Egyptologist!" (27 February 1928)

Anti and Bagnani met in July 1930. "I have just seen Anti. ... Anyway Anti has asked me officially, on behalf of Paribeni, to take up Egypt. Anti has had one last row with Farina & has broken with him now." Bagnani threw himself wholeheartedly into Anti's project, traveling to see Egyptian collections in museums in Berlin, Hildesheim, Amsterdam, Leiden, Brussels, Paris and Turin. His initial interest was the sculpture and it helped that he had a near photographic memory.

Anti and Bagnani reached Tebtunis 9 January 1931. "We found that the *sebakhin* had destroyed practically everything that had been found the season before and Anti was rather annoyed. He cheered up however in the evening when I produced a bottle of ouzo which I had bought at Mallawi and he has taken to the custom like a duck to water. Every evening now before dinner we have an elaborate meze and our glass of ouzo." (14 January 1931 to Stewart) Mezedes with ouzo would have reminded both men of their student days in Athens.

They first encountered a series of unique mud-brick structures now labelled *deipneteria*, or dining halls. Surrounded internally on three sides by an elevated platform, they each had a storage compartment under the

right-hand side. In fact, they soon uncovered a paved street lined with identical brick buildings leading northward to a limestone kiosk or pavilion. Within a few days they discovered a "façade with reliefs." Southward by Thursday 29 January, Bagnani discovered that the street was "closed by a building with yards and yards of apparently Ptolemaic reliefs." He had come upon the top courses of the reliefs where the sand was about three metres deep. They could see at once that they were dealing with a crocodile deity.

Anti "had found in front of the entrance to the Temple the feet of an over life size statue and the lower part of the torso, in Egyptian style, and a complete statue of a man in Greco-Egyptian style about 1 metre high." On Sunday 8 "we have got an inscription to Ptolemy Neos Dionysos and dated 55 BC. I started clearing the reliefs and putting on solution." "They are really most annoying. The sculptors have cut the place for the hieroglyphs but they haven't cut the hieroglyphs themselves, most remiss of them." The inscription on the now lost block, one of very few from the site, was found on the west wide of the vestibule but it has been plausibly suggested that it was the socle of the large pharaonic statue. "Great King Ptolemy god Neos Dionysos Philopator and Philadelphos [year] 26 Pharm[outhis] 12," i.e., April 15, 55 BCE. As such, it is the earliest known inscription of Ptolemy XII after his exile in Rome, and provides a date for the statue. On Monday 16 February, Anti and Bagnani "completed our colossal statue by finding the trunk. ... It is over 2.10 metres high and, though not beautiful, is rather effective and imposing. Of course he has no name on him, confound him, but I think he must be Ptolemy Neos Dionysos," an identification now accepted. This sculpture is now preserved in the Greco-Roman Museum in Alexandria.

There are many recently re-discovered documents preserved in Anti's archive at the Venetian Institute made by his architect, Fausto Franco, relating to the vestibule: he left plans, images and measured drawings of the structure. Franco drew a large coloured plan of the processional dromos leading to a sanctuary, a version of which was published in 2004 by Vincent Rondot in his publication of the sanctuary.

Anti and Bagnani went on to uncover an entire sanctuary surrounded by an enormous brick temenos wall 5 m. thick and 50 m. wide by 110 m. long. Moreover, they found the two-roomed cells of the priests and their workshops mostly intact. Unfortunately, they would find in 1932 that the stone temple itself had been demolished in antiquity. According to Bagnani, in a lecture he gave at the University of Michigan in the fall of 1935, "All round

the temple against the girdle wall are the cells of the ordinary priests, consisting of two rooms, an ante-room with a cellar, and a bed or bed-sitting room behind.” (p. 18) Thus more than one house had evidence for subterranean rooms.

According to Rondot’s chronological reconstruction, there was a processional avenue or dromos at a lower level with a now buried Ptolemaic kiosk. The limestone vestibule was added when the dromos was paved with limestone slabs early in the last century BCE. The sculpted reliefs were carved around 55 BCE, late in the reign of Ptolemy XII Neos Dionysos Auletes, the father of Cleopatra VII, after his return from exile in Rome. In the 24th year of Augustus, about 4 BCE, the dromos was repaved at a higher level and altars were added. The *deipneteria* were not constructed until the reign of Trajan, as indicated by a coin found in a *deipneterion*. The Roman mud brick *deipneteria* were all similar in plan. At a higher level than the dromos, each was entered by a few steps up into a rectangular space surrounded on three sides by a wide bench, itself approached by a few steps on the left. Below the bench on the right was an underground storage room which contained remains of amphora stoppers, terracotta cups, some lamps, and inscribed ostraka. The *deipneteria* may have been shaded by no more than canvas. Inscriptional evidence indicates each belonged to a religious association or synodos. The lamps suggest night time activities.

During the 1931 season, Bagnani spent a great deal of his time back and forth fetching supplies, etc. in Cairo. Anti told Bagnani, “What I appreciate in you is your excellent understanding of the needs and conditions of a life in common, not only during the work, but also out of office hours. Also you have excellent organizing gifts and are wonderfully reliable and can foresee almost any eventuality.” (11 March 1931 to Stewart) “It isn’t my knowledge that Anti wants, it’s simply that I make myself useful to him in an immense variety of ways. I am doing all the official correspondence in English and French (wonderful luck I took the typewriter with me). Then I bring people on the dig. I look after almost everything and do almost anything. He told me he considered me the ideal companion on this kind of show, since I am able to foresee almost every contingency that may occur.” (Thursday 12 March 1931 to Mother)

Below the *deipneterion* inside the outer court of the sanctuary at the lower Ptolemaic level they discovered over 800 fragments of glass paste inlays intended for furniture and framed pictures. But this pales into

insignificance when compared to their truly spectacular find of papyri.

“We had been working on some houses on the east wall of the temenos of the Temple and had been finding bits of papyrus. We were very much afraid that it had already been plundered since we knew from our workmen and also from the Cairo dealers that some natives had dug there last year and had found a very large quantity of papyri. So we hadn’t much hope, but we thought that perhaps some small cache might have been overlooked. We got down to two small cellars side by side and we began to empty them at about half past ten. At once we began to get small fragments of papyri. ... Very soon we found, however, that the cellar had been filled practically to the top with papyri ... We worked at that cellar all the morning. ... When night fell we got the lanterns and by seven at night we got those cellars clear. We got about 18 large baskets full of papyri. The quantity is so enormous that we have made no attempt at sorting them, but have filled three large suitcases and some eight tin boxes with them and on Saturday Anti is going to take them to Cairo and deposit them at the Bank. The star piece is a hieratic papyrus that when unrolled will measure some eight to ten feet in length. ... As the refuse was thrown out of the cellar there were eight boys who went over it all and got some six baskets full of stuff just of the small bits that weren’t taken up in the cellar itself. It was wonderful, our return in the darkness with the lamps and the baskets of papyri!”

This long intact hieratic papyrus Anti assigned to Bagnani to translate and publish but, after many years including the war intervened, Gilbert yielded the task to Giuseppe Botti, who published it in 1959. This papyrus is only one version of several copies known of the “Book of the Fayyum,” a mythical description of the symbolic voyage around the Fayyum of the crocodile gods from death back to life.

Of two similar copies of albums of photographs taken at Tebtunis in 1930-1931 and glued into the albums, presumably by Anti, one is in Padua and the other in the Art Gallery of Ontario in Toronto. Each copy contains an identical photo of the location of the discovery, showing two parallel barrel-vaulted subterranean chambers. Below the photo the typewritten description reads “the small cellars of the cell of a priest where was found a treasure trove of Egyptian and Greek papyri.” Although aware of the great quantity of the papyri, its true nature eluded the excavators at the time of its discovery. While Anti certainly was aware that the most unique aspect of the sanctuary at Tebtunis as excavated was the extent of preservation of the



The vaulted chambers where the papyri were found

priests' houses and workshops surrounding the temple, many papyri were still rolled up while most others were in fragments. The relatively few Greek papyri were legible, as were the few hieroglyphic, but the contents of the vast amount of demotic remained unknown to them. As Bagnani wrote, "[Medea] Norsa has started work on the papyri and everyone at the museum is quite excited about it. Of course the Egyptian documents are by far the largest part which is rather disappointing for her. [Battiscombe] Gunn, when he saw all the mass of demotic, said to Anti: who on earth is going to read all this stuff? There are only three people who know it and one of them is dead and the other two are dying! He, though one of the best Egyptian philologists, doesn't pretend to read it."

According to Kim Ryholt, the Demoticist at the University of Copenhagen who has spearheaded the recent revival of examination of these unique papyri, "The Tebtunis temple deposit is the largest, single assemblage of ancient Egyptian literary texts ever found. ... In absolute numbers there are *c.* 200 demotic and *c.* 100 hieratic texts. In addition to these, there is a small group of about 15 hieroglyphic and a few Greek texts. ... The latter included fragments of three literary texts: two medical treatises and an astrological calendar. ... The cultic works ... are divided into five subcategories: manuals of priestly knowledge, ritual manuals, religious poetry, magic, and priestly teaching-material." Thus it is now plausibly inferred from the contents of the papyri and their findspots that they originally derived from the temple library itself, the so-called House of Life. As such it is a unique assemblage in Egypt.

The papyri allowed to be exported from Egypt in 1931 were sent to Florence, as per the Agreement between Anti and the Florentine papyrologists. Other papyri, such

as those in Copenhagen, which join the fragments in Florence, are now presumed also to have derived originally from the temple library and been discovered in other subterranean chambers around the sanctuary in unrecorded clandestine plundering from the site not long before the Anti-Bagnani excavations in 1931. It was Anti's desire to study town-planning that led him to choose Tebtunis, just in the nick of time. In other words, there were many more than two underground cellars under the priests' houses discovered by Anti and Bagnani in 1931. Since Vincent Rondot, unfortunately, was not able to re-investigate any of these for his publication of the sanctuary in 2004, it isn't known how many of these chambers had been used to conceal and preserve papyri, but they are undoubtedly the source of so many papyri sold to the Carlsberg Papyrus Collection in Copenhagen in 1930, in addition to those purchased by other museums and universities.

Since these papyri may have been rescued from their original location in the library of the limestone temple as it was being dismantled to its foundations, it would seem possible that they were removed from the "House of Life" and hidden by the priests in order to protect and preserve them from the imminent demolition of the temple. We do not know if the temple walls at Tebtunis had ever been inscribed with hieroglyphs, but whether or not they had, their hieroglyphs if any would likely have replicated what was written on some of the papyri. It was the spoken word which would give renewed life during the rituals and, thus, the papyri could well have been regarded by the priests as among the most sacred and precious part of the relics of the temple. They were no longer accessible while concealed in the cellars but their ritualistic power may have continued, at least in the minds of the surviving priests, until perhaps one day being returned to light and effective use. We can only guess at the circumstances of the demolition of the temple.

(Part 2 will follow, next newsletter)

This is the first part of an article based on a paper presented by Ian Begg in co-scholarship with Giulia Deotto (University of Padua) and Giorgia Cafici (Scuola Normale Superiore, Pisa), at the 2017 Scholars' Colloquium and Symposium, held in Toronto, entitled 'Reconsidering the Roman presence at Tebtunis: the area of the vestibule of the Soknebtynis temple.'

The Society for the Study of Egyptian Antiquities/ La Société pour l'Étude de l'Égypte Ancienne

2019 Scholars' Colloquium

First Call for Papers

The Society for the Study of Egyptian Antiquities/Société pour l'Étude de l'Égypte Ancienne invites all doctoral level graduate students and senior scholars to submit proposals for papers to be given at this year's Scholars' Colloquium, to be held **October 3rd - 6th, 2019** in Toronto. The deadline for submission is **August 31st**, 2019. Those who need early acceptance to apply for travel grants are urged to apply before this deadline, and to indicate the reason for needing early notification in their covering email.

Proposals for Scholars' Colloquium papers will be accepted from graduate students and senior scholars in the fields of Egyptology, Anthropology, Classics, Fine Arts, Archaeology, Nubian Studies and related fields on ANY topic connected with predynastic, pharaonic, Hellenistic, Roman or Coptic Egypt, but must represent an original contribution to the field. Presentations may be given in either English or French. Papers may not exceed 20 minutes in length.

Since a limited number of proposals will be accepted, papers will be vetted by committee. Interested scholars should send a title and brief abstract of their proposed paper to the Scholars' Colloquium Coordinators at scholarscolloquium@thessea.org or sseacolloquium@gmail.com. Please note that only proposals submitted in electronic format [i.e. via email and in the appropriate template] will be considered. Abstracts must not exceed 350 words in length.

The SSEA/SÉÉA is also holding its 43rd Annual Symposium on October 5th. Papers accepted for the Scholars' Colloquium are not limited to the topic of the symposium, and no preference will be given to proposals based on topic. Please also note that the SSEA is soliciting proposals for the Scholars' Colloquium only. **All participants in the Scholars' Colloquium will be expected to pay the appropriate registration fee in advance.**

Call for Posters

SSEA/SÉÉA Annual Meeting

October 3rd - 6th, 2019

The Society for the Study of Egyptian Antiquities/Société pour l'Étude de l'Égypte Ancienne is now inviting proposals for poster contributions for its Annual Meeting, to be held **October 3rd - 6th**, 2019 on the campus of the University of Toronto, Toronto, Canada.

Proposals for Poster Session will be accepted from organizations, projects, expeditions, graduate students and senior scholars in the fields of Egyptology, Anthropology, Classics, Fine Arts/Art History, Archaeology, Nubian Studies, ancient Coptic Studies and related fields on must represent an original contribution to the field. Posters may address any aspect of ANY topic connected with predynastic, pharaonic, Hellenistic, Roman or Coptic Egypt. However, poster presentation is best suited to material with a strong visual impact, rather than a great reliance on text. Posters may be in either English or French. (Ideally, posters will be available in a bilingual version.)

Poster abstracts will be published in the conference abstracts booklet. Authors of posters will have the option of uploading a pdf of their poster to the SSEA/SÉÉA website. **Please note that the production and delivery of posters to the conference is the responsibility of presenters. If they wish the SSEA/SÉÉA to deal with printing and mounting the posters on their behalf, they must cover the costs.**

There will also be a limited number of poster positions available for notices of scholarly projects or organizations in Egyptology, Nubian Studies, Coptic Studies, Near Eastern Studies or Ancient Mediterranean Studies.

Since a limited number of proposals will be accepted, posters will be vetted by committee. Interested scholars should

send a title and brief abstract of their proposed poster to the Scholars' Colloquium Coordinators at scholarscolloquium@thessea.org or scholarscoll@thessea.org. Please note that only proposals submitted in electronic format [i.e. via email] will be considered. Proposals must not exceed 350 words in length.

The final deadline for receipt of proposals for posters is **September 15th, 2019**.

Colloque Annuel de la Société pour l'Étude de l'Égypte Ancienne/ The Society for the Study of Egyptian Antiquities, Édition 2019 Premier Appel À Contributions

La Société pour l'étude de l'Égypte ancienne/The Society for the Study of Egyptian Antiquities a le plaisir de vous annoncer qu'elle prépare l'édition 2019 de son colloque annuel qui se tiendra du 2.3 au 6 octobre 2019 sur le campus de l'Université de Toronto à Toronto au Canada. À cette occasion, la Société invite les doctorants, les chercheurs postdoctoraux, les professeurs et les autres membres de la communauté scientifique à soumettre leur proposition de présentation orale avant la date limite du **31 août 2019**.

Les candidats doivent démontrer que leur proposition constitue une contribution nouvelle et non publiée à l'avancement du savoir dans les champs de l'égyptologie, de l'anthropologie, des études classiques, de l'histoire de l'art, de l'archéologie, des études nubiennes ou dans tout autre domaine dont le cadre spatio-temporel est l'Égypte prédynastique, pharaonique, gréco-romaine ou copte. Les présentations, qui peuvent être faites en anglais ou en français, ne devraient pas durer plus de vingt minutes.

Le temps de présentation étant limité, seul un certain nombre de propositions pourra être accepté, suite à leur évaluation par un comité de sélection. Les personnes intéressées à faire une communication au colloque sont invitées à en envoyer le titre et le résumé [d'un maximum de 350 mots, par courriel et dans le modèle approprié sera considéré] au comité organisateur à l'adresse courriel suivante: scholarscolloquium@thessea.org ou scholarscolloquium@gmail.com.

Veuillez prendre note que la SSEA organise également la 43^e édition de son symposium annuel **le samedi 5 octobre 2019**, soit la même fin de semaine que le colloque. Le présent appel à contributions ne vaut que pour le colloque et les sujets proposés par les candidats n'ont pas à être en lien avec la thématique principale du symposium. Tous les participants au colloque des chercheurs seront tenus de payer les frais d'inscription appropriés à l'avance.

Recherché: Propositions d'Affiches Réunion Annuelle de la SÉÉA/SSEA 3e au 6e octobre 2019

La Société pour l'Étude de l'Égypte Ancienne / The Society for the Study of Egyptian Antiquities est présentement à la recherche de résumés de présentations scientifiques sous forme d'affiches en vu de sa réunion annuelle qui se tiendra du **3^e au 6^e octobre 2019** sur le campus de l'Université de Toronto à Toronto au Canada.

Les propositions acceptées auront été soumises par des étudiants universitaires des cycles supérieurs ou par des chercheurs seniors œuvrant dans les domaines de l'égyptologie, de l'anthropologie, des études classiques, des beaux-arts, de l'histoire de l'art de l'archéologie, des études nubiennes ou coptes, ou encore de tous domaines reliés. Les affiches elles-mêmes pourront porter sur n'importe quel thème relié à l'Égypte prédynastique, pharaonique, hellénistique, romaine ou copte, pour peu qu'elles présentent une nouvelle contribution à la discipline n'ayant jamais fait l'objet d'une publication antérieure. Considérez de plus qu'une présentation sous forme d'affiche est particulièrement appropriée pour du contenu à forte teneur visuelle et sied moins bien à une quantité importante de textes. Les affiches pourront être en français ou en anglais ou, encore mieux, bilingues.

Les résumés des affiches seront publiés dans le livret de l'événement. Les auteurs des affiches auront aussi l'option de télécharger une version pdf de leur affiche sur le site web de la SSEA/SÉÉA. Veuillez s'il-vous-plaît noter que la

production et l'envoi de l'affiche jusqu'au site de la conférence relèvera de la responsabilité du présentateur. Si celui-ci veut que la SSEA/SÉÉA s'occupe de l'impression et de l'installation de l'affiche, il devra en défrayer les coûts.

Il y aura aussi un nombre limité d'emplacements d'affiches disponibles pour la présentation de projets académiques ou d'organisations œuvrant en égyptologie, études nubiennes, coptes, proche-orientales ou des antiquités méditerranéennes.

Puisqu'un nombre limité de propositions pourront être acceptées, les soumissions seront choisies par l'entremise d'un comité. Les intéressés doivent faire parvenir un titre et un bref résumé (d'un maximum de 350 mots) de leur proposition d'affiche au comité organisateur, à scholarscoll@thessea.org ou à scholarscolloquium@thessea.org. La date limite pour la réception des résumés est fixée au **15 septembre 2019**. Les réponses aux soumissions commenceront à être annoncées dès la mi-septembre.

Look out for
news of the
Symposium 2019
"Animals in Ancient Egypt"



Surveillez les nouvelles du
Symposium 2019
*"Les Animaux en Égypte
ancienne"*

The Queen's University Coffin Project: 2018 Update

M. Trumpour, M. Monette, A. Anastassiades and A. Nelson

The last update for the SSEA Newsletter (Summer 2017, #3) described work carried out in the first phase of the study of three fragmentary Egyptian coffins by the Master of Conservation Art Program (MACP) at Queen's University in Kingston. The coffin fragments come from:

Two Yellow Type V coffins, common to Thebes, and dating to ca. 950 BCE

One coffin dating to the 25th Dynasty, of a type known at Akhmim, and informally referred to as the "white coffin". As the less common of the three types, and in more fragile condition, the latter has been the focus of most of the work to date.

The last Newsletter report spoke of the plans for the upcoming year as consisting of further study of the Dynasty 25 coffin in the following areas:

- * historical background and provenance
- * micro-CT (computed tomography) scanning to investigate the wood species
- * photogrammetry to capture 3D images of the coffin's surface

Here is what has been accomplished to date in these areas:

The coffin fragments originated at the Stanford University Museum. Thanks to Stanford University's curator Christina Hodge, archivist Peg Brady, and assistant Justin Muchnick, additional background information was turned up. While this material was helpful in confirming individual donors of the Stanford Museum's material that we already knew, the donor names were did not include images of the coffins beside them, with a couple of exceptions, and the archival descriptions were essentially non-existent. However, there was enough information to indicate the possibility that at least one of the coffins, AA2190.B, comprising the almost-complete lid, had been part of the original collection of Leland Stanford Jr.

Photogrammetry involves taking digital photographs of objects and utilizing a computer program to create a 3-D model capable of being rotated through 360 degrees. This digital model has the potential to be used as a digital surrogate for the object due to the high resolution and intensively detailed surface recreation. This has been completed for the Dynasty 25 coffin by Mitchell Gleason of the Department of Classics, working under Prof. George Bevan, who completed all necessary photography and data acquisition, created the 3-D photogrammetry models of the 18 fragments and uploaded them to the website. The results of his work can be viewed at:

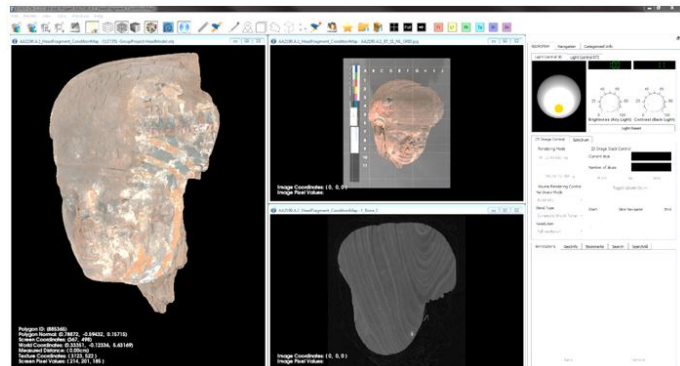


Fig. 1: CHER-Ob interface with head fragment's photogrammetry model, CT scan, and standard 2D photograph.

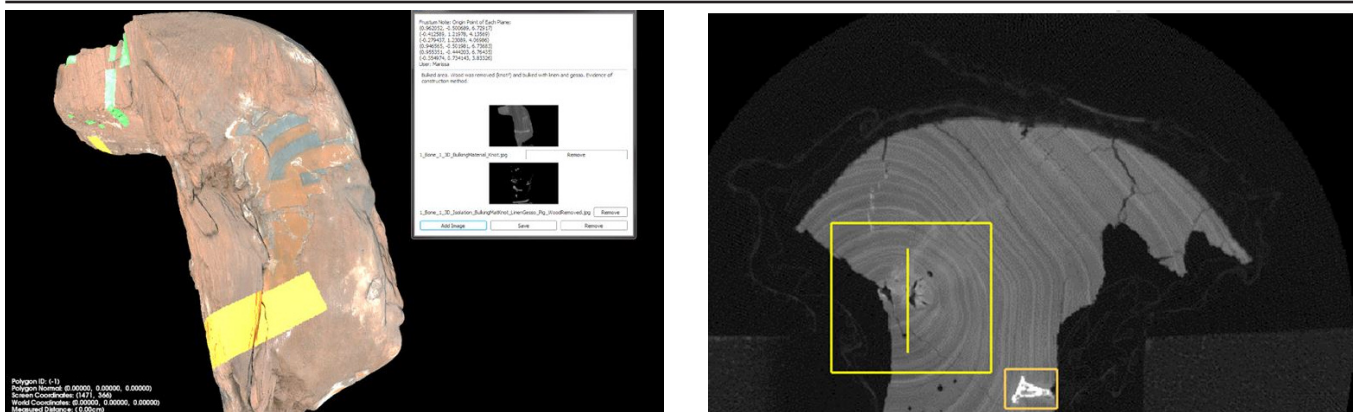


Fig. 2: CHER-Ob annotations on the photogrammetry model (left), annotations on the CT scan (right).

<https://sketchfab.com/queensu/collections/the-white-coffin-fragments>

Marissa Monette took the data one step further by using an open-source program, CHER-Ob (Cultural Heritage Object), to analyze the photogrammetry models with the CT scan data sets. The aim of the project was to set a precedent for using the extensive amount of data for condition mapping. Out of all the fragments that were scanned using CT scanning and photogrammetry, she focused on the head fragment, using the chest and pedestal fragments for comparisons. The main objective was to see if it was possible to combine the two types of data (CT scans and photogrammetry) to view them simultaneously. This simultaneous view would have enabled the researchers to understand the relationship between the highly textured surface and the cracks, dowels, and other physical characteristics of the wood under the surface, as revealed by the CT scans.

Unfortunately, the program only facilitated side by side viewing (Fig. 1). However, CHER-Ob was useful for its color-coded annotation system, measuring tools, and note taking. This program is a useful repository of information where all the relevant research, photographs, and results for testing and sampling can be combined. It was found that although CHER-Ob has some difficulties processing the mass amount of data contained in the CT scans, all the benefits and features specifically designed for research projects with advanced digital data sets of cultural heritage objects was found to be successful and could be used in the future.

The final work, to identify the types of wood making up the coffins (at least two types), is still in progress, led by Dr. Andrew Nelson (UWO). Fragments have been studied using micro-CT scanning to examine the density and anatomy of the wood, and the layering of wood, gesso and linen on the coffin lid. Micro-CT offers a non-destructive means of examining the structure of coffin fragments in 3-D. These scans were done at Sustainable Archaeology using a Nikon XT H 225ST micro-CT scanner using the molybdenum target using a low kVp technique (76 kVp, 135µA, 1 second exposure, 3141 projections). The structure of the peg and board wood is clearly different; Figure 3 shows cross sections of the board and peg wood.

The micro-CT does not yield the degree of magnification preferred by wood anatomists, but the structure of the board wood is consistent with that of sycamore fig, *Ficus sycomorus* (Arlen Higgenbotham, Conservator, The J. Paul Getty Museum, personal communication with A. Nelson). The identification of the peg wood is more ambiguous and not yet determined. Stay tuned. A journal article is planned when this work is complete.

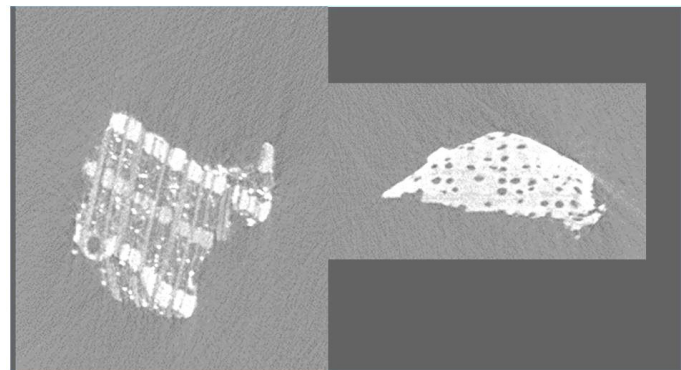


Figure 3 - Specimen AA.2190.A.1 – board wood left; peg wood right. Cross sections. 12.5 µm voxel size

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