

Crafts in the temple: the Ptolemaic inlay workshop in the Soknebtynis sanctuary

Introduction

The economic role of temples in Graeco-Roman Egypt has been stressed on various occasions. In fact, they constituted key points of the local administrative system and did not only cover religious functions. The main sanctuaries consisted in the temple building, home of the god, which contained his living effigy, and a series of connected paraphernalia. Warehouses, workshops and shrines inside the *temenos*, but also accommodations for the pilgrims, certain shops and workshops in the city and several hectares of cultivated land in the surrounding countryside were all part of the temple properties¹. The sanctuary of Tebtynis, for example, possessed a wealth of little more than 3000 acres in farmland between the II and I century BC².

Among the economic activities of the temples, in addition to the revenues derived from agriculture and processing of vegetal resources (for the production of oil, bread and beer, linen, papyrus etc.), textual sources document breeding, the monopoly on specific transport routes or fishing spots, tax collection, prostitution and religious activities, including divination and medical practices, mummification, organization of funeral ceremonies and daily rituals for the dead. Moreover, priests were sometimes asked to draft or translate private contracts for their ability to read and write³.

From an archaeological point of view, production facilities and warehouses inside the temples are often poorly visible, because they were mainly built of mudbricks, and therefore are more exposed to post-depositional processes.

¹ W. CLARYSSE, *Egyptian Temples and Priests: Graeco-Roman*, «Companion to Ancient Egypt», edited by A. B. LLOYD, Oxford 2010, pp. 274-290. doi: 10.1002/9781444320053.ch15.

² D. CRAWFORD, *Kerkeosiris: An Egyptian Village in the Ptolemaic Period*, Cambridge 1971.

³ A. J. CONNOR, *Temples as Economic Agents in Early Roman Egypt: the case of Tebtynis and Soknopaiou Nesos*, unpublished PhD dissertation, University of Cincinnati 2014.

Some interesting data, however, come from depictions decorating the walls of royal officials' tombs during the New Kingdom⁴. The burial of *Neferrenpet* (TT178) is particularly noteworthy in this regard, because it bears the representations of the workshops located within the temple of Amon in Karnak at the time of Ramesses II. On the northern wall of room B, several artisans are working on gilding a wooden statue, drilling stone beads, processing gold and producing metal (possibly bronze) vessels. The activities seem to be carried out within the same space, whose access is controlled by an armed guard.

In this context, the possibility of locating the workshops unearthed by the Italian Archaeological Mission in Egypt at the site of Tebtynis (years 1930-1936), thanks to the study of an extraordinary archival documentation preserved both in Italy and in Canada (cf. *infra*), offers the chance to obtain a preliminary topographic and typological overview of the annexes of the temples during the Graeco-Roman period.

The following sections aim to investigate, by way of example, that «laboratorio di smalti colorati tolemaici» (workshop of colored Ptolemaic enamels) which is described by Carlo Anti as the source of some of the most relevant «oggetti d'arte» (art objects) discovered during his excavations in Tebtynis⁵.

C. B.

Carlo Anti and Tebtynis

Tebtynis, the modern Umm el Breighat, was an agricultural and religious center, located on the south side of the Fayum oasis. It was probably founded during the Middle Kingdom, as documented by the findings coming from the necropolis, but it flourished during the Graeco-Roman era when the great temple dedicated to the god Soknebtynis was built and part of the town planning was set. The site maintained its importance in the Byzantine period and was abandoned only under the Arab presence in Egypt in XI century AD⁶.

⁴ J. MASQUELIER-LOORIUS. *Les activités artisanales dans les annexes des temples: la production et le stockage dans les temples mémoriaux du Nouvel Empire*, «Égypte, Afrique & Orient», Centre Vauclusien d'égyptologie 2008, pp. 57-64.

⁵ C. ANTI, *Gli scavi della missione archeologica italiana a Umm el Breighat (Tebtynis)*, «Aegyptus» XI (1931), pp. 389-391.

⁶ C. GALLAZZI, *Fouilles anciennes et nouvelles sur le site de Tebtynis*, «BIFAO» 89

It is not known exactly when the site was first discovered: the area was mentioned by Giovanni Battista Belzoni in 1819 and then excavated by Bernard Pyne Grenfell and Arthur Surridge Hunt in 1899 and in 1904 by Otto Rubensohn⁷.

Carlo Anti (Villafranca di Verona, 1889 – Padova, 1961), director of the Missione Archeologica Italiana in Egitto since 1928, arrived there in 1929 when Evaristo Breccia had been instructed to carry out excavations in Tebtynis to search for papyri for the Istituto Papirologico Fiorentino, under Girolamo Vitelli's supervision⁸. He visited the site with Breccia and together with him, he decided to cooperate with the Istituto to investigate the original town planning, study the structures discovered during the excavations and reconstruct the life and histories of its inhabitants through the analysis of the papyri and the artefacts retraced by the archaeological team on the field⁹.

«La scelta come cantiere di lavoro del *kôm* di Umm el Breighât (= la madre dei borghi), l'antica Tebtunis, poco a sud di Tatun, che ne conserva ancora il corretto nome, è presto spiegata. È uno dei rarissimi [*kôm*] nei quali si possa sperare di fare ancora qualche cosa, come giustissimamente aveva visto Evaristo Breccia, proponendone fin dal 1928 lo scavo alla Società italiana dei papiri. Infatti le rovine che furono scavate in passato sono abbastanza ben

(1989), pp. 179-191; P. DAVOLI, *L'archeologia urbana nel Fayum di età ellenistica romana*, Napoli 1998, pp. 179-212; C. GALLAZZI, *Tebtynis I. La reprise des fouilles et le quartier de la chapelle d'Isis-Thermouthis*, Le Caire 2000.

⁷ G. B. BELZONI, *Viaggi in Egitto e Nubia contenenti il racconto delle ricerche e scoperte archeologiche fatte nelle piramidi, nei templi, nelle rovine e nelle tombe di questi paesi seguiti da un altro viaggio lungo la costa del Mar Rosso e all'Oasi di Giove Ammone*, Milano 1825; B. P. GRENFELL - A. S. HUNT, *The Tebtunis Papyri*, London 1902; B. P. GRENFELL - A. S. HUNT, *The Tebtunis Papyri. Part II*, London 1903; B. P. GRENFELL - A. S. HUNT, *The Tebtunis Papyri. Part III*, London 1933; O. RUBENSOHN, *Aus griechisch-römischen Häusern des Fayum*, «JDAI» 1905, pp. 1-25.

⁸ G. BASTIANINI, *Papiri belli e meno belli*, «Studi Egittologici in Veneto» edited by P. ZANOVELLO - A. FASSINA - E. M. CIAMPINI, Padova 2014, pp. 51-58; G. BASTIANINI - G. DEOTTO, *Carlo Anti e Vitelli*, «Antichità Egizie e Italia. Atti del III Convegno di Egittologia (Venezia 14-15 settembre 2012)», edited by P. ZANOVELLO - E. M. CIAMPINI, Venezia 2014, pp. 47-51.

⁹ C. ANTI, *Un esempio di sistemazione urbanistica del III secolo a.C.*, «Architettura e Arti decorative», X, 3 (1930), pp. 97-107; A. MENEGAZZI, *Gli scavi "Anti" a Tebtynis: metodologia e prassi di una ricerca archeologica negli anni '30*, «Studi Egittologici in Veneto», edited by P. ZANOVELLO - A. FASSINA - E. M. CIAMPINI, Padova 2014, pp. 31-40.

conservate, solo in qualche punto ridotte allo stato di sconvolgimento totale che caratterizza l'opera dei *sebbakhîn* ...» (IVSLA, Anti's archive, folder 7, dossier 3, n. 4).

He conducted the researches on the site from 1930 to 1936, even if he was present only during the first three of the seven campaigns. Following his election as Rector of the University of Padova in 1932, he entrusted his assistant Gilbert Bagnani with the field operations¹⁰.

Anti and Bagnani devoted great attention to the collection and storage of the archaeological data relevant to their excavations, so it is possible working on both their archives in Italy and Canada to reconstruct the discovery of the various findings, such as here presented for the vitreous materials from the workshop¹¹.

P. Z.

The archaeological context and its findings through Anti's excavations

In Anti's archive, recently rediscovered and studied, are well preserved his journals, notes, letters, maps, photographs of the years from 1928 to 1936, dedicated to the excavations in Egypt¹².

Those papers were assembled by Anti himself, then reordered during and after his life and finally split after his death amongst three different locations: some notes and most part of the maps and photographs are now well maintained in the Museo di Scienze Archeologiche e d'Arte of the University of Padova (MSA), while journals, notes and letters are preserved in the Istituto

¹⁰ C. GALLAZZI, *Carlo Anti a Tebtynis: il lavoro svolto e le prospettive aperte*, «Carlo Anti. Giornate di studio nel centenario della nascita», Atti del convegno svolto a Verona-Padova-Venezia, Trieste 1992, pp. 129-148.

¹¹ The analysis of Anti and Bagnani's archives is part of a joint project between the University of Padova (Italy) and the Trent University (Canada). See: P. ZANOVELLO - A. MENEGAZZI - C. URBANI - I. BEGG - G. DEOTTO, *Location of the Deposit of Papyri from the Temple Library at Tebtunis Identified*, Arce 65th Annual Meeting (Portland, USA), «Bollettino dell'Istituto Veneto di Scienze Lettere ed Arti», Tomo CLXXIII (2014-2015), pp. 213-222.

¹² G. DEOTTO, *L'Università di Padova in Egitto. Analisi e ricostruzione dello scavo a Tebtynis attraverso la documentazione inedita*, unpublished PhD dissertation, University of Padova 2015.

Veneto di Scienze, Lettere ed Arti (IVSLA) in Venice¹³. A third section of the archive, not directly referring to Tebtynis or to Egypt, was donated by Clelia, Anti's wife, to the Museo Civico agli Eremitani in Padua¹⁴.

Through the interpretation of the notes left by Anti and their comparison with the images and maps present in the archive, it is now possible to retrace many references related to the glasses found in 1931 in the area of the *temenos* of the temple Soknebtynis¹⁵.

This year was the best documented among the seven campaigns, since notes on the excavations, lists of objects requested for the *partage*, a great map of the *temenos* of the temple and a large number of photographs together with a cinematographic film realized by the Istituto Luce were included by Anti himself in the archive¹⁶.

In these documents, the Director of the Mission reported the discovery of the workshop. Following Anti's reports, it was located in a structure, identified by him with the number 17 in the great map of the temple, set in the west side of the first court of the *temenos* (Figg. 1-2).

«L'edificio 17 ha avuto una vita assai lunga e varia. Il nucleo originale, in mattoni neri di 0,20x0,40x0,12, era a due vani principali con una porta larghissima ad est e una porta minore a sud. In un secondo momento, con mattoni da 17x34x12, la porta est fu ristretta con l'inserzione di due nuovi grossi stipiti e la porta sud fu chiusa. In quest'epoca i locali 17 D e 17 E servivano di laboratorio per smalti colorati come è provato dal materiale rinvenutovi e

¹³ P. ZANOVELLO - G. DEOTTO, *Carlo Anti a Tebtynis*, «Catalogo della Mostra Egitto in Veneto», edited by P. ZANOVELLO - E. M. CIAMPINI, Padova 2013, pp. 39-48; C. URBANI, *Carlo Anti e l'Istituto Veneto*, «Antichità egizie e Italia. Prospettive di ricerca e indagini sul campo. Atti del III Convegno Nazionale Veneto di Egittologia. Ricerche sull'antico Egitto in Italia», edited by E. M. CIAMPINI - P. ZANOVELLO, Venezia 2014, 155-159.

¹⁴ G. ZAMPIERI, *Diari ed altri scritti di Carlo Anti*, voll. I-II, Verona 2009; G. ZAMPIERI, *I diari di Carlo Anti, rettore dell'Università di Padova e direttore generale delle arti della Repubblica Sociale Italiana*, Verona 2011.

¹⁵ P. ZANOVELLO - G. DEOTTO, *L'archivio Anti e i reperti da Tebtynis all'Università di Padova*, «Studi Egittologici in Veneto», a cura di P. ZANOVELLO - A. FASSINA - E. M. CIAMPINI, Padova 2014, pp. 67-86.

¹⁶ ANTI, *Un esempio di sistemazione* cit.; C. ANTI, *Gli scavi della Missione Archeologica Italiana a Umm el Breighât (Tebtnis)*, «Bollettino dell'Associazione Internazionale degli Studi Mediterranei», II (1931), pp. 23-24, C. ANTI, *Archeologia d'Oltremare IV, Campagna 1931*, «Atti del Regio Istituto di Scienze Lettere ed Arti», Tomo XCI, 2 (1931-1932), pp. 1171-1172.

dal fornello esistente in 17 E. Finalmente in una terza fase fu rialzato il pavimento di 17 D, 17 E seppellendo il materiale del laboratorio e 17 B-C venne trasformato in un *deipneterion* identico per tipo a quelli del *dromos* anche se di maggior lusso» (IVSLA, Anti's archive, folder 6, dossier 2, n. 16).

Some pictures, taken by Anti's team in the field, allow us to see the building just after the excavations (Figg. 3-4) and to recognize the front of a little oven (Fig. 5), connected by Anti's interpretation with the workshop itself¹⁷.

Anti's identification of the structure 17 as a glass workshop was based on the discovery of the tools used for the production and processing of raw materials, and to the location of slags and finished products, such as a box entirely decorated with glass figures of gods and decorative motifs.

That evidence was mentioned by Anti's team in two lists, one written in Egypt for the *partage* at the end of the campaign of 1931¹⁸, while the other was composed by Anti himself for their first display after their arrival in Italy.

«Materiali di un laboratorio di smalti. / Vennero tutti raccolti all'interno del peribolo sotto il pavimento rialzato di un locale che in epoca romana era stato trasformato in *deipneterion*, cioè in sala per banchetti rituali dei sacerdoti. Che si tratti di un vero e proprio laboratorio è provato dalla presenza di attrezzi, forme, materia grezza e dal fatto che in un piccolo ambiente vicino esisteva un fornello fornito di lunghissima canna e quindi ad alto tiraggio. Esso documenta che entro il santuario accanto agli edifici di culto vivevano oltre i sacerdoti quanti erano utili o interessati alla vita del santuario, operai e artisti di ogni genere. / nn. d'inv. 340-349. Forme in terra refrattaria o in calcare per elementi a smalto figurati (gambe, corna, corona, geroglifici, etc.) / nn. d'inv. Crogiuoli piatti in terra refrattaria per la fusione della pasta vitrea. / n. d'inv. 352 Frammento di modello in gesso rappresentante il disco solare alato. Serviva per preparare gli elementi a smalto necessari a decorare analogo motivo in legno. / n. d'inv. 362. Frammento di modello in gesso in forma di cornice a gola, d'uso uguale al precedente. / nn. 355 e 356. Spatola e pestello in bronzo per la macinatura e la mesticazione delle polveri. / nn. 358 e 359. Due pesi in basalto / nn. [sic.] Elementi a smalto figurati da servire

¹⁷ G. DEOTTO - C. BETTINESCHI - P. ZANOVELLO - I. ANGELINI - G. MOLIN, "Sempre nell'interno del santuario è stato trovato il materiale di un laboratorio di smalti colorati ...": localizzazione e studio di un'officina tolemaica per intarsi, «Atti del workshop: Horus, visioni dall'alto dello spazio archeologico», Padova forthcoming.

¹⁸ IVSLA, Anti's archive, folder 8, dossier 1, n. 1.

per l'intarsio di mobili. / nn. [sic.] Elementi a smalto decorati da servire per l'intarsio di mobili / nn. [sic.] Campionario della materia prima (vetro filato di vari colori), usata per la preparazione degli smalti a mosaico. / n. 363. Tavoletta in legno intarsiata a smalto, esempio dei lavori che si eseguivano nel laboratorio. M. 0,21x0,125. In alto il disco solare alato (cfr. il modello n. 352) e sotto una striscia di stele bianche in campo azzurro (cfr. il n. [sic] tra gli elementi decorativi). / Sotto il Faraone seguito dalla Regina, adora Harpocrates e la dea Hathor. / n. d'inv. 425. Thoeris...» (IVSLA, Anti's archive, folder n. 6, dossier n. III, n. 4).

In both the papers, the finds had a proper number of excavation, so it is possible to connect them with the ones shown by some photographs (Fig. 6), in which the exact correspondence is reported¹⁹.

The method used by Anti to identify the objects, through the use of lists, with the number of excavation and photos was useful to keep a memory of the items traced during the field and to connect them to their original location, because just after the arrival in Italy of the boxes with the material from Tebtynis, the exact correspondence between numbers and boxes was lost, following what was reported to Anti by Bagnani in 1932. The boxes were signed, but the markers were a lot and it was not quite simple to identify the ones signed by Anti's team on the field with the ones related to the shipment of the material.

«10/06/32/6 via Pompeo Magno/ Caro Professore, / Grazie della sua lettera e dell'assegno che ho ricevuto oggi come pure in questi giorni ho ricevuto l'Engelbach e le fotografie, compresa quella di Petesuchos. / So, di capitelli, ne sono riuscito a trovare solo 6 ma ci riguarderò. Il guaio è che tra spedizionieri, dogane, musei e altri impicci quelle benedette casse hanno tanti numeri che sembrano delle tavole Pitagoriche! E di conseguenza non si possono identificare sulla sua lista. In ogni modo quando esporrò gli oggetti del laboratorio farò una revisione di tutto quanto. Avverto che le casse sono in condizioni abbastanza pietose: si sfasciano da sé...» (IVSLA, Anti's archive, folder 9, n. 53).

After many years, using the same documentation, it is possible to recognize, as Bagnani did, the objects from the workshop in the collection of the Museo

¹⁹ The same finds were shown also in some pictures preserved in Bagnani's archive, see BEGG *infra*.

Egizio di Torino²⁰.

Anti's documentation, created on the field and after the excavations with a very strict method, was thought to be used and implemented by all his team and in particular by Gilbert Bagnani, his partner on the field. It allows today to review the scholar's first interpretation of the structure 17 in the *temenos* of the temple of Soknebtynis, thanks to the new investigations on the glass materials found in Tebtynis²¹.

G. D.

Looking at Tebtynis glass through the eyes of Gilbert Bagnani

During his first season in 1931 excavating at Tebtynis with Carlo Anti, Gilbert Bagnani wrote letters every week to his wife, Stewart Bagnani, and to his mother, Florence Dewar Bagnani, both living in Rome²².

In his letters, Bagnani lists the artifacts found within building 17, which he defines as a “really big” discovery. Not only does he give an account of

²⁰ The identification of the objects found by Anti and Bagnani in Tebtynis is the subject of a joint project, followed by the University of Padova (P. Zanovello) and the Museo Egizio di Torino (C. Greco, A. Fassone), realized by G. Deotto.

²¹ On the analysis of the objects found by Anti and a first discussion on their possible use, see BETTINESCHI *infra*. The research is part of C. Bettineschi's PhD project supervised by G. Molin, I. Angelini, P. Zanovello and entitled *Archaeometric study of Egyptian vitreous materials from Tebtynis: integration of analytical and archaeological data*.

²² Stewart's letters are in the archives at Trent University, Peterborough, Ontario, and Florence's letters are in the archives of the Art Gallery of Ontario (AGO) in Toronto. We are grateful to the Archivists Jodi Aoki and Larry Pfaff respectively for permission to publish the following extracts. For a general overview on Bagnani's archives refer to D. J. I. BEGG, *The Canadian Tebtunis Connection at Trent University*, «Echos du Monde Classique», XLII (1998), pp. 385-405; D. J. I. BEGG, “It was Wonderful, Our Return in the Darkness with ... the Baskets of Papyri!”: *Papyrus Finds at Tebtunis from the Bagnani Archives, 1931-1936*, «Bulletin of the American Society of Papyrologists», XXXV (1998), pp. 185-210; D. J. I. BEGG, *Greece 1921-1924 in the Bagnani Archives*, «Scripta Mediterranea», XXIII (2002), pp. 55-81; T. BRENNINGMEYER - D. J. I. BEGG, *Reconstructing Tebtunis: Assembling a Site Model Using Archived Aerial Photography*, «Digital Discovery. Exploring New Frontiers in Human Heritage. CAA2006. Computer Applications and Quantitative Methods in Archaeology», edited by J. T. CLARK - E. M. HAGESMEISTER, Budapest 2007, pp. 338-343; ZANOVELLO *et. al.*, *Location of the Deposit of Papyri* cit. and related bibliography.

the tools and inlaid objects unearthed there, but also proposes his preliminary hypotheses about the function of the structure and the materials, which are well worth considering now since they agree with what is emerging from the revision of the archaeological data.

«We then went back to the camp and Anti took [Director-General Pierre] Lacau down to see the stuff in the storeroom. In one of the houses he had found a picture with its frame, unfortunately not in a good state of preservation, but always [sic] a piece of the greatest importance. Then in his tent he showed part of a really big find. Evidently the pilgrims of that day instead of getting oleographs and such like things, bought at the temple little sacred pictures done on stuccoed wooden tablets with the figures inlaid [sic] in coloured glass pastes. We have one of these pictures fairly complete and a number of fragments of pastes of the others, some perfectly lovely. The place where we found them must have been the dump of the shop that manufactures them since we have found a number of the fire-clay moulds, chisels, stones for the drills, lumps of pitch and molten glass, and a whole lot of other things» (Wednesday 4 March 1931 to Stewart Bagnani, at Trent University).

Bagnani's aesthetic appreciation and scientific enthusiasm towards the glass inlays discovered in Tebtynis is apparent from various other extracts of his letters.

«This is the last week of the dig, and the funny part is that we have started finding a certain number of quite interesting things: a very nice piece of wood with a seated god on it in gilt and glass inlay, and three pieces of limestone with drawings on them, also a certain number of papyri, but not in very good condition» (Monday 4 April 1932 to Florence Bagnani, at the AGO).

«The stuff is perfectly lovely. All Ptolemaic glass pastes for inlays, the men red the women a heavenly blue, and the [clothes] all the most wonderful colours. Some of the prettiest stuff I have seen for long time. Of course the worst of it is that most of it is going to be nabbed by the Museum which is not rich in pieces of that kind» (Wednesday 4 March 1931 to Florence Bagnani, at the AGO).

Here, Bagnani is referring to the *partage*, a system by which excavated artifacts were divided between Egypt and the international archaeological missions during the early XXth century. The law was enacted in 1924 following the exceptional discovery of the Tutankhamen tomb and stated that all Egyptian antiquities were owned by the local government which, however, could agree to return those which were not necessary for implementing

national collections to the foreign excavation teams²³. As for the Tebtynis inlays, Rondot²⁴ recognized some of the finds present on the 1931 pictures at the MSA in the storage depots of the Cairo Museum. Contrary to Bagnani's prediction, the framed glass inlays were allowed to be sent to Rome, and are now on display in Turin.

In February - March, 1933, the Italian royal family paid a state visit to Egypt. The usual tourists' itinerary was altered so that the Italian excavations at Tebtynis in the Fayum could be included in their visit on March 6. Moreover, while touring the Cairo Museum, they were to be shown one of the glass inlay heads. This is probably the same the head of which Gilbert's wife Stewart painted a watercolor after her arrival in Egypt in 1932. Again, this highlights the huge interest and consideration reserved for the inlays unearthed within the sanctuary, two years after their discovery.

«On Monday [20] I was at the Museum at 8 & went round with Lacau & Engelbach fixing up all the details of the programme [for the upcoming royal tour that week]. They had got their little glass paste head that we found & put it in a place of honour on a black background, very attractive, very decent thing to do» (Friday 24 February 1933 to Florence Bagnani, at the AGO).

I. B.

To be or not to be (a workshop), that is the question

Thanks to the study of Anti's archival documents, Deotto and colleagues²⁵ have recently identified in rooms 17 D and E the location of the Ptolemaic inlay workshop uncovered by Carlo Anti during the 1931 campaign in Tebtynis.

The workshop was set in the first courtyard of the temple²⁶, in a building later transformed into a Roman *deipneterion*. The location and type of vitreous materials discovered find their closest comparison in Soknopaiou Nesos,

²³ A. STEVENSON, *Artefacts of excavation: the British collection and distribution of Egyptian finds to museums, 1880 - 1915*, «Journal of the History of Collections», XXVI/1 (2014), pp. 89-102.

²⁴ V. RONDOT, *Le Temple de Soknebtynis et son dromos*, Le Caire 2004.

²⁵ DEOTTO - BETTINESCHI - ZANOVELLO - ANGELINI - MOLIN, *Sempre nell'interno del santuario* cit.

²⁶ RONDOT, op. cit.; DEOTTO, op. cit.

excavated since 2001 by the University of Lecce²⁷. The archaeological expedition there discovered a concentration of evidence for manufacture, such as semi-finished products and glass wastes, and fragments of inlaid wooden furniture within layers dating back to the Late Antiquity inside the *temenos* of the temple (and specifically within room E, in the first courtyard). However, the chronology of inlays and wooden fragments refers to the III century BC; Cervi²⁸ has therefore speculated that such furnishings were stored for a long time after disposal because of their religious significance or that room E was originally intended as a warehouse and spare inlays were kept there for maintenance after the closure of the workshop that had produced them.

This interpretation raises doubts on the role of structure 17 as an effective workshop and prompts for a comprehensive review of the archaeological evidence found in Tebtynis in order to understand the real function of the investigated spaces. Our archival data, in fact, show certain limitations: the documentation does not always clearly distinguish the phases or functions of the different areas, the photographs do not offer an overview of the inner rooms of the workshop and specific finding locations are given only for a few particularly significant materials (cf. *supra*). Finally, the temple has not been excavated systematically since 1936 and most of the structures have now been lost (at the hands of *sebâkhin* or antiquities hunters) or were buried again under the sand²⁹. The opportunity to investigate the collection of findings from Tebtynis preserved in the Egyptian Museum in Turin was indeed crucial to solve the issue.

We believe, therefore, that a methodological perspective is needed: for this reason, we will first focus on defining the features that can contribute to characterize a production context. Taking up and reassessing the elements mentioned by Mannoni and Giannichedda³⁰, we will examine the meaning and the presence of: a) fixed pyro-technological installations; b) instruments

²⁷ A comprehensive edition of the excavations is published in M. CAPASSO - P. DAVOLI, *Soknopaiou Nesos Project, I (2003-2009)*, «Biblioteca di studi di egiptologia e di papirologia» 9, Pisa-Roma 2012.

²⁸ A. CERVI, *L'arredo ligneo del tempio di Soknopaios*, «*Soknopaiou Nesos Project*» cit., pp. 269-314.

²⁹ RONDOT, op. cit., conducted a series of surveys within the temple trying to identify the structures excavated by Carlo Anti and his team, but he could not locate with certainty the glass workshop, nor other productive contexts.

³⁰ T. MANNONI - E. GIANNICCHEDDA, *Archeologia della produzione*, Torino 1996.

and tools; c) production evidence (e.g. semi-finished objects, droplets and process wastes); d) raw materials; e) traces in the stratification; f) finished products.

a) The presence of pyro-technological installations is definitely the safest indicator for the location of production activities. Anti recalls the existence in room 17 D of a «fornello fornito di lunghissima canna e quindi ad alto tiraggio» (a kiln with long chimney and thus with high draught)³¹. The examination of the archives allowed Deotto and colleagues³² to identify a photograph of what is likely to be interpreted as the opening of the fire chamber (Fig. 5). The caption on the back of the image describes it as «il fornello del *deipneterion*», that means the kiln of the *deipneterion*. It is, perhaps, possible to identify the furnace in the quadrangular structure located on Franco's map along the eastern wall of 17 D; that structure is also characterized by a small appendix embedded in the wall, which can possibly be interpreted as the chimney used to regulate the draft that Anti was referring to in his notes. The dimension of the combustion chamber measures approximately 65-80 cm per side; these values conform to those of a secondary workshop for glass-working and do not agree with a primary production center³³.

Shape and size find an accurate comparison in Karnak, where the mission of the Brooklyn Museum identified a pyro-technological installation in the area between the first pylon of Mut's temple and the so-called temple A³⁴. The excavations unearthed the remains of a furnace dating back to the Ptolemaic period; the structure was preserved only in a foundation after a functional transformation of the area in Roman times (I-II cent. AD). However, ashes, coal, baked bricks and fragments of burnt clay with metal debris and glass wastes were also found in the area. Furthermore, investigations have discovered a jar containing traces of blue pigment and five terracotta molds of the type known for the production of inlays.

³¹ ZANOVELLO - DEOTTO, *Carlo Anti a Tebtynis* cit.

³² See DEOTTO - BETTINESCHI - ZANOVELLO - ANGELINI - MOLIN, *Sempre nell'interno del santuario* cit.

³³ Simplifying, the manufacture of glass artifacts can be described as a two-steps process: in primary workshops glass is produced from its raw materials, while in secondary workshops glass is heated and shaped into objects. As for the structure and the size of the primary furnaces in Graeco-Roman Egypt see M. D. NENNA, *Primary glass workshops in Graeco-Roman Egypt: preliminary report on the excavations of the site of Beni Salama, Wadi Natrun (2003, 2005-9)*, «*Glass of the Roman World*», edited by J. BAYLEY - I. FREESTONE - C. JACKSON, Oxford 2015, pp. 1-22 and related bibliography.

³⁴ R. FAZZINI, *Report on the Brooklyn Museum's 2010 Season of Fieldwork at the Precinct of the Goddess Mut at South Karnak*, unpublished preliminary report 2008 (website: https://www.brooklynmuseum.org/features/mut/uploads/Preliminary_Report_2008.pdf).

b) Anti's excavations brought to light several types of instruments. A selection of tools from the workshop, including domed weights, stone and terracotta molds, chisels, pestles and plaster models are registered in a historic photograph (Fig. 6) taken soon after the discovery³⁵. The objects themselves were partly recognized in the storage depots of the Egyptian Museum in Turin and are now under study.

c) Among the more than 800 inlays from Tebtynis preserved at the Egyptian Museum of Turin, we could identify various types of manufacture evidences such as wastes and semi-finished products (glass lumps, rods and bars, sometimes with pincers marks). Moreover, we could reconstruct the different step-by-step modeling processes involved in the assembling of a series of intermediate elements³⁶. It must, however, be considered that not all manufacture evidences have the same value and meaning for interpretative purposes, both qualitatively and quantitatively. In fact, a few wastes and droplets may be sufficient to identify a craft area, while, for example, the presence of glass ingots may not, since they could be placed in the foundation deposits of the temples or even traded over long distances³⁷.

d) Among the semi-finished and raw materials used in the workshop, we identified a lump of blue glass and a mass of organic material that was used as glue³⁸. Traces of a similar substance were found on the back of finished inlays and in the hollows of wooden furniture.

e) Obviously, it is not possible to address the complex problem of stratigraphic interpretation relying on archival data without any ground feedback. However, it should be emphasized that Anti mentions the presence of a layer rich in ashes and coals just below the benches of the *deipneterion* in room 17 B³⁹.

³⁵ A copy of the same image without the handwritten reference numbers was first published in ZANOVELLO - DEOTTO, *Carlo Anti a Tebtynis* cit.

³⁶ Preliminary data were presented in a poster at the International Symposium on Archaeometry (ISA), see: C. BETTINESCHI - I. ANGELINI - G. MOLIN - P. ZANOVELLO - A. FASSONE - C. GRECO, *Egyptian Glass Inlays from Tebtynis workshop: first steps of the research*, «ISA - Book of Abstracts», Kalamata 2016, p. 215.

³⁷ This is known as early as the Bronze Age, during the Egyptian New Kingdom. See, for example, the discovery of Uluburun shipwreck, which was carrying ca. 175 ingots of colored glass as mentioned in G. F. BASS, *A Bronze Age Shipwreck at Ulu Burun (Kas): 1984 Campaign*, «American Journal of Archaeology», XC/3 (1986), pp. 269-296.

³⁸ F. SILVANO - E. RIBECHINI, *Adesivi e collanti nell'Egitto tardo Romano*, «EVO» XXXVII (2014), pp. 123-131.

³⁹ The original text is reported in DEOTTO - BETTINESCHI - ZANOVELLO - ANGELINI - MOLIN, *Sempre nell'interno del santuario* cit.

f) Finished products, including the famous «tavoletta intarsiata a smalto con il faraone adorante le divinità» (tablet inlaid in glass with the pharaoh worshipping the gods)⁴⁰ on display in Turin, have already been reported numerous times in the literature⁴¹ and, therefore, will not be discussed in detail here.

All these elements contribute to the characterization of structure 17 as a production space and, in particular, a workshop for the production of wooden furniture inlaid with glass. The effective identification of a glass-working workshop of Ptolemaic age is extremely interesting, because the number of such contexts known for this period is relatively small⁴². Among the most significant, we can cite Gumaiyima in the northeastern Delta⁴³, Dyonisias on the western side of Lake Qarun⁴⁴, 'Ayn Manawir in the oasis of Kharga⁴⁵ and, of course, Karnak and Soknopaiou Nesos, as previously stated.

In order to reconstruct the production processes used in the Tebtynis workshop, an archaeological approach exclusively based on typological and stylistic studies does not appear to be sufficient. From the iconographical point of view, although craft scenes are relatively frequent in Egyptian funerary representations (either in clay models, paintings or reliefs), neither in this nor in the previous periods do we

⁴⁰ C. ANTI, *Gli scavi della missione archeologica italiana a Umm el Breighat (Tebtunis)*, «Aegyptus» XI (1931), pp. 389-391.

⁴¹ Among others E. VALZ, *Italian excavations at Tebtynis 1930-1935: the objects at Egyptian Museum, Torino*, «Proceedings of the VI International Congress of Egyptology», I, Torino 1992, pp. 625-628; M. D. NENNA, *Les artisanats du verre et de la faïence. Tradition et renouvellement dans l'Égypte gréco-romaine*, «L'Apport de l'Égypte à l'histoire des techniques», edited by D. MEEKS - B. MATHIEU - M. WISSA, Le Caire 2015a, pp. 185-206; M. D. NENNA, *L'Artisanat de l'incrustation en Égypte et à Rome*, «Les Verres antiques du Musée du Louvre III: parures, instruments et éléments d'incrustation», Paris 2011, pp. 350-353; M. D. NENNA, *Les Éléments d'incrustation: une industrie égyptienne du verre*, «Alessandria e il mondo ellenistico-romano. Atti del II congresso internazionale italo-egiziano», Roma 1995, pp. 377-384.

⁴² M. D. NENNA - M. PICON - M. VICHY, *Atelier primaires et secondaires en Égypte à l'époque gréco-romaine*, in *La route du verre. Ateliers primaires et secondaires du second millénaire av. J.-C. au Moyen Âge*, «Travaux de la Maison de l'Orient méditerranéen» 33, Lyon 2000, pp. 97-112.

⁴³ W. F. PETRIE - F. L. GRIFFITH, *Tanis II*, London: 1887.

⁴⁴ J. SHWARTZ - H. WILD, *Qasr-Warun/ Dionysias*, The Cairo 1950.

⁴⁵ M. WUTTMAN - B. BOUSQUET - M. CHAUVEAU - P. DILS - S. MARCHAND - A. SCHWEITZER - L. VOLAY, *Premier rapport préliminaire de travaux sur le site d'Ayn Manawir (Oasis de Kharga)*, «BIFAO», XCVI (1996), pp. 385-451.

have representations of glass working or glass production⁴⁶.

Ongoing archaeometric studies are allowing us to combine macroscopic appearance with chemical, mineralogical and textural data of the samples and are therefore particularly important for understanding the processing techniques used⁴⁷. This is helping us to appreciate the natural and technological knowledge of the artisans involved in the manufacture of glass. Moreover, this approach provides the chance to reconstruct trade contacts (both for the provenance of raw materials and the distribution of finished products) and, ultimately, to better understand the role of Tebtynis in its chronological, cultural and technological context.

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⁴⁶ For an overview of New Kingdom burials with craft scenes see P. MARINI, *Una scena di metallurgia e oreficeria dalla tomba M.I.D.A.N.05 a Dra Abu El-Naga*, «EVO» XXXVII (2014), pp. 89-100. The only representation possibly associated with the manufacture of vitreous materials is located in the tomb of Ibi (TT36, XXVI dynasty) and refers to the modeling of faience as suggested in P. T. NICHOLSON, *Materials and Technology*, «Gifts of the Nile: Ancient Egyptian Faience», edited by F. D. FRIEDMAN, London 1998, pp. 50-64.

⁴⁷ Archaeometric investigations are in progress as part of C. Bettineschi PhD research supervised by G. Molin, I. Angelini and P. Zanovello.

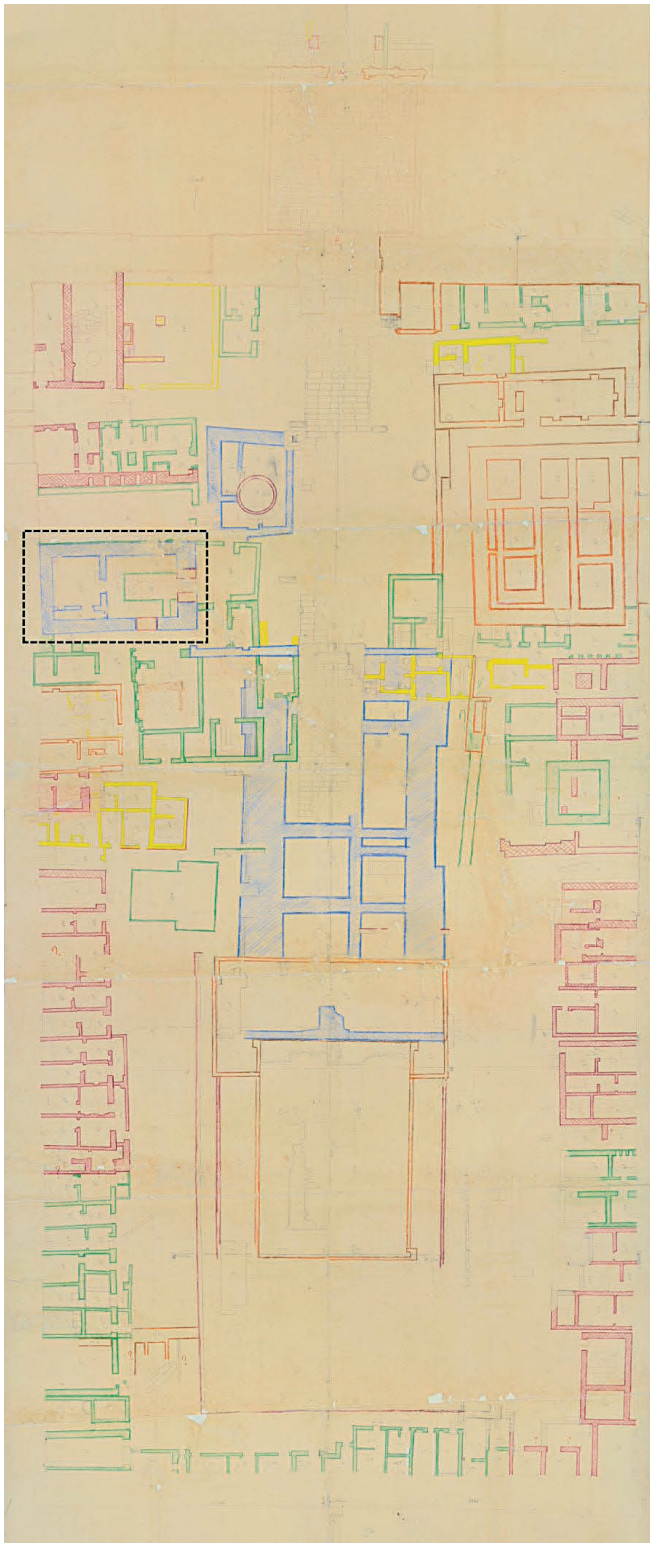


Fig. 1 - General plan of the temple. Building 17 is framed by a black, dashed border. Courtesy of MSA. For details about the map and the digitalization project see A. CARPINELLI - G. AZZALIN - G. BILOTTI - M. COGO - G. MASON - F. E. PERUZZO, *Soknebtynis: planimetria digitale del tempio e del suo dromos*, in *Atti del workshop: Horus, visioni dall'alto dello spazio archeologico*, Padova forthcoming; A. MENEGAZZI, *La mappa del tempio tra restauro e ricomposizione*, *ivi*.

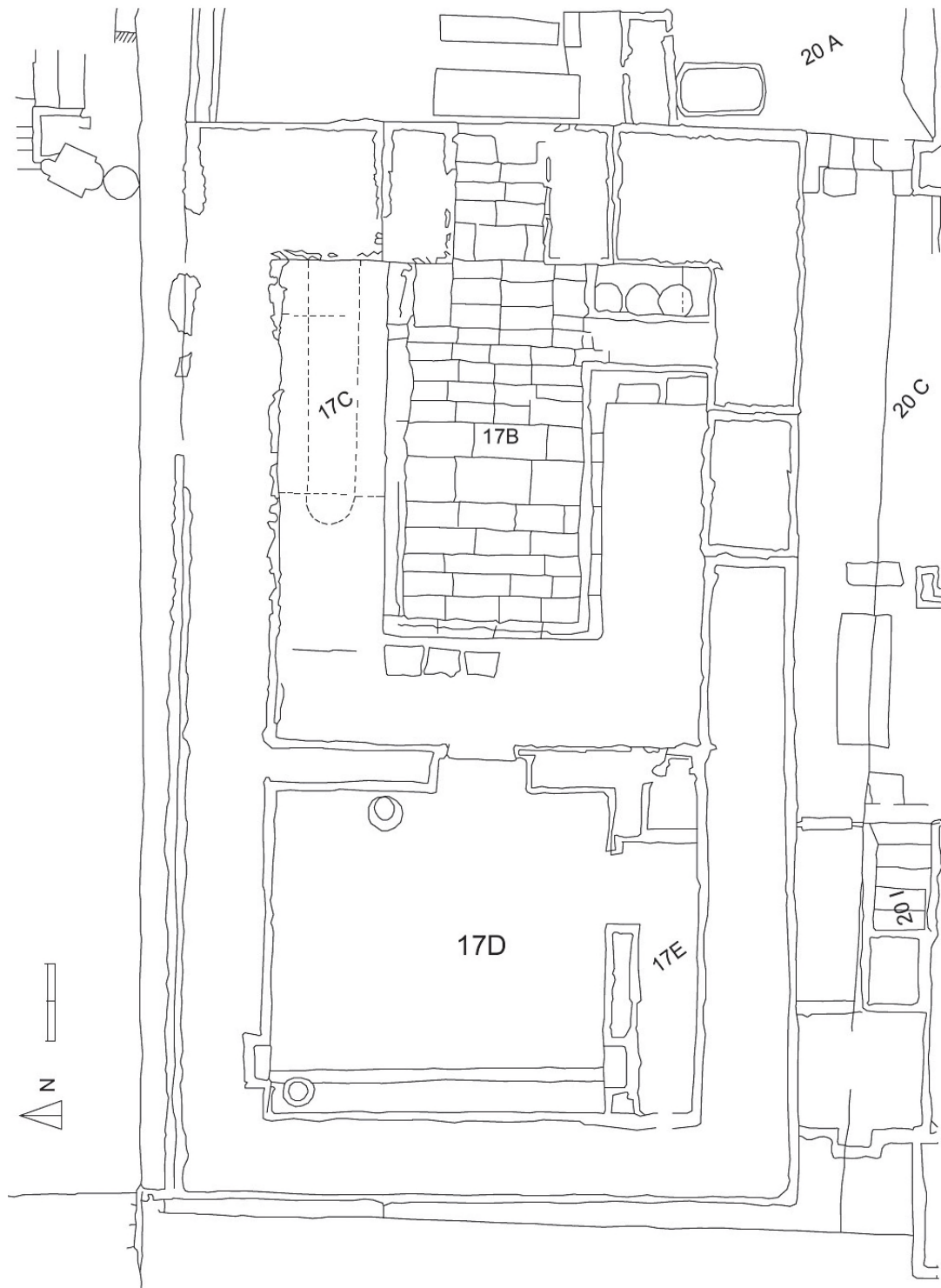


Fig. 2 - Detail of building 17 on the general plan in Fig. 1. Tracing by G. Deotto, courtesy of MSA.



Fig. 3 - The first courtyard of the Soknebtinis temple looking south. On the right side, the front of building 17 is framed by a black border. Courtesy of MSA.



Fig. 4 - Building 17, front view. Courtesy of MSA.



Fig. 5 - Detail of the kiln of the *deipneterion*. Courtesy of MSA.



Fig. 6 - 1931 picture showing a selection of tools and instruments found in the inlay workshop with handwritten reference numbers. Courtesy of IVSLA.