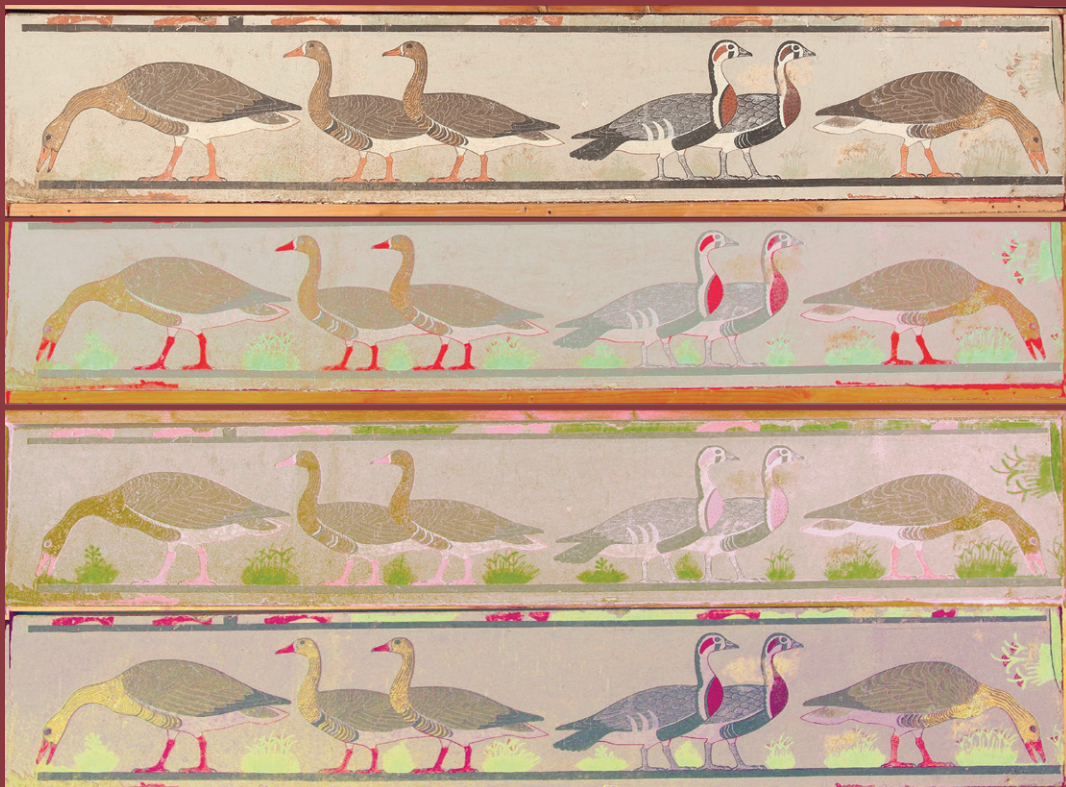Edited by

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VII

ARCHAEOLOGICAL SCIENCE
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GESHAEM – The Graeco-Egyptian State

Hellenistic Archives from Egyptian Mummies[**]

THE AIM of the following paper is to present goals and first results of the scientific initiative GESHAEM—the Graeco-Egyptian State: Hellenistic Archives from Egyptian Mummies. It is coordinated by Marie-Pierre Chaufray, research fellow in papyrology of the French National Centre for Scientific Research (CNRS), hosted by the Ausonius Institute at Bordeaux Montaigne University (UMR 5607) and funded by the European Research Council (ERC–StG 758907). The purpose of the project is to enhance our knowledge of the administration of the Fayyum during the first centuries of the Ptolemaic rule, thanks to the study of the Jouguet collection.

Between 1900 and 1902, the French Government financially supported Pierre Jouguet for two excavation campaigns in the Fayyum. After having briefly explored Medinet Madi, he went to the South-Western sites of Medinet Ghôran and Medinet en-Nahas, the latter identified with the ancient Magdôla thanks to an inscription found *in situ*. In their cemeteries he discovered more than three hundred mummy *cartonnages* in total: they were usually made of linen cloths or palm tree fibres, but these materials were often replaced by reused papyrus sheets, covered with plaster and then painted.[1] For this reason, many scholars of that period turned their attention to these objects more for their textual content, especially for literary works unattested in manuscript tradition, than for their inherent value as archaeological finds.[2] As a result, most of them were dismantled soon after their discovery: this operating procedure explains why many of these texts are fragmentary, but at the same time allowed to find, for instance, an otherwise lost comedy by

1. Jouguet 1901, pp. 380–385, 401–406 and 411; Jouguet 1902, pp. 346–355; Jouguet, Collart, Lesquier 1928, pp. 1–2; Chaufray 2018, pp. 47–50; Jacques 2022, pp. 569–571; Uggetti 2022a, p. 326.
2. Jouguet 1901, pp. 380–381; Jouguet 1902, pp. 347–349; Chaufray 2018, p. 47.

Menander.[3] The greatest part of these *cartonnages* (of which 363 pieces were inventoried just from Ghôran)[4] and papyri are now kept in the Papyrological Institute of Sorbonne University, founded in 1920 by Jouguet himself in Paris.[5]

Nonetheless, around twenty *cartonnages* remain in good condition overall: one of the aims of GESHAEM is not only to restore them, but also to study them in their own right, analysing both their form and their painted decoration.[6] As an example, two fragments were missing from a painted breastplate:[7] one of them has been rediscovered and reattached in its former position, while a photograph of the other one has been found in a periodical of 1963.[8]

Other items rest in poor condition. Some were already dismantled and the plaster was removed from the most part of them: therefore, it is quite hard even to recognise the different elements of the original *cartonnage*. In such cases, the goal is to preserve the extant decoration as much as possible, whenever still visible and, without damaging it, to extract papyrus fragments from the inner layers. Each step of the process is documented by a condition and restoration report with photographs. After cleaning and consolidating the decoration, the latter is covered with a temporary facing, in order to protect it while extracting papyrus fragments from the back of the *cartonnage*, except for the last one directly supporting the plaster. At the end of the papyrus extraction procedure, made possible by a controlled introduction of humidity, the decoration support might be reinforced with a permanent lining on its back and the facing on the front is removed.[9]

Texts from *cartonnages* discovered by Jouguet are in both Greek and Demotic. Most of them date from the 3rd and 2nd centuries BC and consist essentially of records from administrative archives. The new papyri receive an inventory number and both colour and infrared photographs are taken for each side, as well as for other fragments extracted before the beginning of the project, but still unpublished.[10] The names of these photos, the inventory numbers and the size of the newly obtained documents are all noted in the restoration reports, thus providing the opportunity to track back the origin of each fragment as much as possible.

The project website (geshaem.huma-num.fr) will host an open-access corpus of the papyri in eXtensible Markup Language (XML).[11] The textual content is encoded following the EpiDoc guidelines, which specifies a subset of the Text Encoding Initiative's standard for the representation of texts in digital form. Special attention is given to the description of the materiality of the papyrus and of the writing, because they are crucial for another goal of GESHAEM: developing a digital

3. BLANCHARD, BATAILLE 1964, pp. 103–176.
4. CHAUFRAY 2018, p. 48; JACQUES 2022, pp. 571 and 573.
5. HUSSON 2007, p. 144; UGGETTI 2022a, p. 326.
6. In charge of this part of the project is Raphaële Meffre, research fellow in Egyptology of the CNRS in Paris.
7. JACQUES 2019, Inv. Sorb. 2769+2832.
8. JACQUES 2022, pp. 577 and 582.
9. UGGETTI 2022a, pp. 328–329. Pavlos Kapetanakis, papyrus conservator within the project GESHAEM, will publish a conservation article explaining in more detail the treatment performed.
10. The photographs are taken by Adam Bülow-Jacobsen, professor emeritus in papyrology and specialist in colour and infrared photography.
11. UGGETTI 2022a, p. 329; CHAUFRAY, UGGETTI in press. The conception and realisation of both the structure of the database and the project website are due to Nathalie Prévôt, Ingénieure d'études in digital humanities at the CNRS in Bordeaux.

instrument for automatic image processing, which will facilitate the task of joining the fragments.[12] Every papyrus will be represented by one XML file and four photographs: it is thus vital to tag the text entries for each surface (recto and verso)[13] and to recall them unambiguously in the metadata describing the pictures,[14] in order to combine consistently all visual and textual information.

In order to prevent the algorithm from suggesting incoherent joints, the surface layout description mentions the number of columns and lines,[15] as well as the presence of margins.[16] Other useful elements for ruling out false connections, pointed out before the single units of ancient text, are the distinction between Egyptian Demotic and Ancient Greek as the language employed[17] and the orientation of the writing with respect to the direction of the fibres, establishing if it goes along (perfibral) or across them (transfibral).[18] Moreover, the metadata show whether the writing instrument is a brush or pen, the changes in handwriting[19] and peculiar elements such as *kollêseis*, that is areas where two sheets were slightly superposed and glued together during the manufacturing of ancient papyrus rolls.[20] This last kind of information is useful when two different fragments, which cannot be joined together, present a *kollêsis* with the same approximate distance: this means that they might belong to the same vertical section, even if a gap remains between them.

External authority lists call attention to recurrent elements within the corpus. Other than a record of contract clauses, useful for synoptic comparisons, the ones referring to the people and to the places mentioned in the textual content of the documents.[21] Establish correspondences

12. Entrusted with this task is Antoine Pirrone, who had his PhD at Bordeaux University funded by the project. Some preliminary results have been published by Pirrone, Beurton-Aimar, Journet 2019, pp. 78–83; Pirrone, Beurton-Aimar, Journet 2021, pp. 219–234.

13. Example for the recto: / TEI / text / body / div type="edition" / div n="1" type="textpart" subtype="fragment" / div n="r" type="textpart" ana="#perfibral" xml:id="FILENAME-recto". See Chaufray, Uggetti in press.

14. Example for a colour photo of the recto: / TEI / facsimile / surface corresp="#FILENAME-recto" / graphic url="https://www.nakala.fr/iiif/PHOTONUMBER" / desc type="R_CL". See Chaufray, Uggetti in press.

15. A five-lines column would be indicated as follows: / TEI / teiHeader / fileDesc / sourceDesc / msDesc / physDesc / objectDesc / layoutDesc / layout xml:id="FILENAME-1" columns="1" writtenLines="5". See Uggetti 2022a, p. 330; Chaufray, Uggetti in press.

16. An upper margin on the recto would be marked as: / TEI / teiHeader / fileDesc / sourceDesc / msDesc / physDesc / objectDesc / layoutDesc / layout corresp="#FILENAME-recto" / dimensions type="margin" n="top". See Uggetti 2022a, p. 330; Chaufray, Uggetti in press.

17. Univocally defined after THOT - Thesauri & Ontology for Documenting Ancient Egyptian Resources. An example for Demotic: / TEI / teiHeader / profileDesc / langUsage / language ident="egy-egyd" / ref target="http://thot.philo.ulg.ac.be/concept/thot-15". See Uggetti 2022a, pp. 329–330; Chaufray, Uggetti in press.

18. For instance, if the recto is written along the fibres: see *supra*, n. 13. The attribute "perfibral" (as well as "transfibral") is defined in each XML file taxonomy: / TEI / teiHeader / encodingDesc / classDecl / taxonomy / category xml:id="perfibral". See Uggetti 2022a, pp. 330–331; Chaufray, Uggetti in press.

19. In order to pinpoint the first hand identified in a Demotic document: / TEI / text / body / div type="edition" / div n="1" type="textpart" subtype="fragment" / div n="r" type="textpart" ana="#perfibral" xml:id="FILENAME-recto" / div type="textpart" subtype="column" corresp="#FILENAME-1" xml:lang="egy-egyd" / ab / handShift new="m1". See Chaufray, Uggetti in press.

20. Usually its distance from the right edge of the fragment is indicated: / TEI / teiHeader / fileDesc / sourceDesc / msDesc / msPart / physDesc / objectDesc / supportDesc / support / rs type="kollesis" n="1" / measure unit="cm". See Uggetti 2022a, p. 331; Chaufray, Uggetti in press.

21. Chaufray, Uggetti in press.

between spellings in ancient and modern languages and supply links to the Trismegistos database (www.trismegistos.org). Whenever possible, family relationships and functions are indicated for each person, in particular for scribes and witnesses.

Scholars shall be able to search for papyri by inventory or publication number and to interrogate the database in XML format via a user-friendly interface on the GESHAEM website. First, the description of the support will be shown, then the prosopographical and the geographical lists of the elements named in each document. Transliteration and translation of the text will follow on two columns, side by side: by clicking on two buttons, it will be possible to highlight either the persons (PER) or the places mentioned (GEO), then by hovering over these names their transcription in Latin characters, their link to Trismegistos and, for individuals, eventually their role, will appear. Both the infrared and the colour photos will be available and might be enlarged. A button will make the XML source file directly accessible.

Concerning the scientific outcomes of GESHAEM, what was supposed to be a breastplate has provided one of the first Greek texts.[22] The restoration images indicate the precise position of the six fragments forming the document now inventoried as Inv. Sorb. 2855 and show that, in order to be reused in the funerary workshop, it was cut into pieces, which were then put in separate layers of the *cartonnage*, turned following different orientations or flipped. After extraction, they have been stretched out, flattened and repaired with small strips of Japanese paper[23] covered on one side with methylcellulose.[24] Once reassembled, the papyrus has been stored in a non-acidic blotting paper folder.

The infrared photographs allow the recognition of the main elements of a petition to an official. A fragment preserves its original upper right corner, where *par' Apollôniou* can be read, which is the name of the petitioner. At the top of another fragment, the remaining letters invite the restoration *adikoumai hypo*, used to present the circumstances which prompted the plea. In the middle of a third fragment, the verb usually employed to introduce the request, *axiô oun*, is clearly readable. Finally, the last line contains the faint but still recognisable traces of the farewell, *eutuchei*.

The official at issue is Philonautês, as could be seen from the address on the verso. The beginning of his name is partially readable also on the recto and is followed by his title: *toparchês*. So, up to now, Inv. Sorb. 2855 is the only attestation of this toparch, otherwise completely unknown. Hopefully, Jouguet collection's papyri will unveil many other interesting elements about the administration of Ptolemaic Fayyum: all the results will be published on the website geshaem.huma-num.fr.

22. Uggetti 2022a, pp. 331–332; Uggetti 2022b, pp. 991–993 and 995–1000.
23. Gampi, 12 g/m², pH 7.3.
24. Tylose MH 300 P.

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