

# Revealing Scribal Practices

## Inks and Support of Documents from Oxyrhynchus

**Tea Ghigo** and **Alberto Nodar** consider the use of ink in administrative documents within the Oxyrhynchus papyri collection, and how this can contribute to the understanding of writing practices in antiquity.

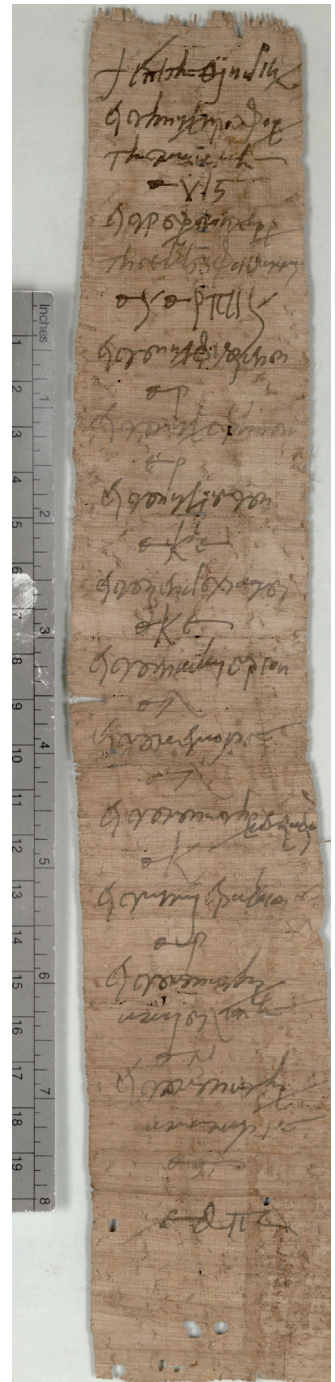
Interest in ink characterisation in the study of ancient documents has been progressively increasing over the last two decades. Knowing the composition of the inks used in the production of medieval codices, which have for the most part preserved their integrity due to their uninterrupted care in libraries, public and private, from the moment of their creation till the present, had already proved a very valuable instrument for research on the material culture that surrounded literacy and writing in the Middle Ages. Still, the possibilities it offers when applied to the study of the ancient written culture are doubled when we consider not only the severely fragmented state in which so often ancient documents have reached us, but also the lack of chronological, geographical and sociocultural context seen in most cases when undertaking the task of editing and interpreting an ancient papyrus fragment.

In recent years, great progress has been made in this area; research projects such as those led by the Federal Institute for Material Research (BAM, Berlin), together with the Centre for the Study of Manuscript Cultures (CSMC, University of Hamburg), in cooperation with the PATHs Project, based at La Sapienza University of Rome ("Tracking Papyrus and Parchment Paths: An Archaeological Atlas of Coptic Literature. Literary Texts in their Geographical Context: Production, Copying, Usage, Dissemination and Storage"), or the project "Reading Matter: Chartae, Inks and the Texts. Studies in Spanish Papyrus Collections", based at the Universitat Pompeu

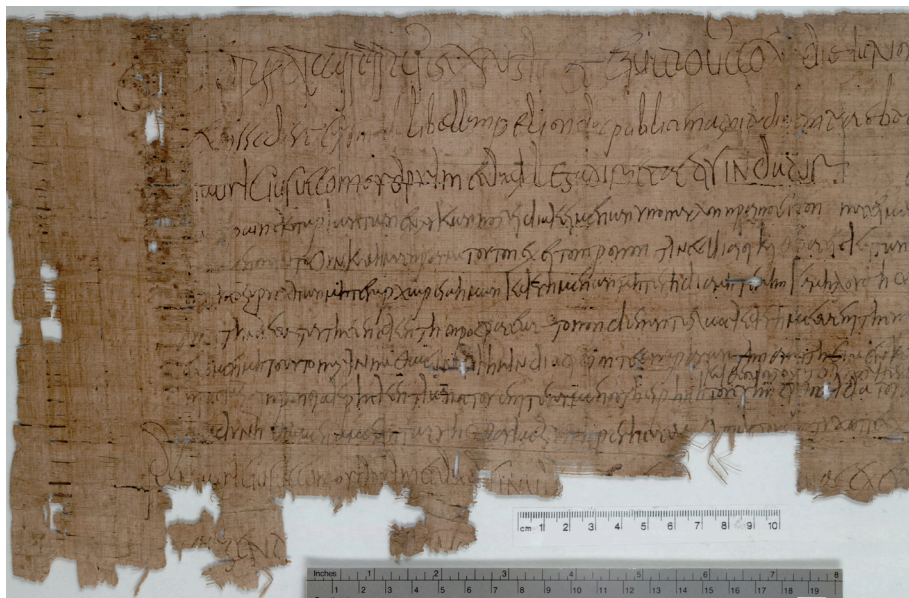
Fabra in Barcelona, have been able to determine that the appearance of iron-gall inks at the beginning of the Byzantine Period (284–641 CE) took place in the production of literary books on parchment and papyrus. Whereas it seems to be absent from contemporary documentary papyri, that continue to be written with carbon inks.

These preliminary findings encourage further investigation both quantitatively, in terms of the number of literary fragments examined, but also qualitatively, taking into account other bibliological parameters characterising the literary book, such as the use of space and distribution of the writing on it, the degree of formality of the writing, or the presence of lectional signs, just to cite some. By observing these in conjunction with the distribution of iron-gall inks it is possible to further refine the understanding of book production in antiquity.

The results obtained so far also pose the question of whether the innovation represented by the use of iron-gall ink in the early Byzantine Period was restricted to literary texts, and if so, why and for how long. The research conducted thanks to the collaboration of the Egypt Exploration Society on the 23 Oxyrhynchus papyri listed below partially tackles this last question. Assuming that iron-gall inks were chosen for the production of noteworthy literary books by reason of the dignity of the texts copied, is it possible that documents produced by and for the highest instances of the administration were given a similar treatment, given the dignity with which the corresponding authority was invested?



P. Oxy. LXVII 4620: list of offerings to religious institutions. No special care has been taken as regards the formal appearance of the document.



The collection of the Oxyrhynchus papyri is unique in many respects. To start with, it represents an exception in that the provenance of its items is entirely known. For this kind of research, this fact is of invaluable importance, for it in principle eliminates a variant likely to introduce a high factor of heterogeneity in the results, namely the geographical one. At the same time, however, we know that although all the documents forming the collection were excavated in Oxyrhynchus some of them might not have originated from there, which gives us a reasonable space for variation.

P. Oxy. LXIII 4381 r (left-hand section): copy of court proceedings before a *comes Aegypti* (military officer in Egypt) in Alexandria, featuring a very formal hand.

On the other hand, the documentation coming from the site of Oxyrhynchus covers all the periods of Graeco-Roman Egypt, thus providing material from eventual data contrasting that might be of great value to assess the impact of the introduction of iron-gall inks.

The papyri have been chosen by reason of the different degrees of formality they represent both in terms of their material execution (style of writing, use of the space, aesthetic care, etc.) and of the status of the sender and the recipient of the document. The most formal category is that of the documents produced by the administration for its own records, mostly copies of court proceedings (P. Oxy. XVI 1876, 1878, 1879, 1880 and LXVIII 4381), but also an official letter written by a *praeses* (P. Oxy. XVI 1942), a report on property registration (P. Oxy. XXXIII 2665), and an official communication to a *scholasticus* in receipt of a large sum of gold in relation to the first instalment of taxes (P. Oxy. LI 3637). Next, documents produced by the administration

Table of papyri selected for this research.

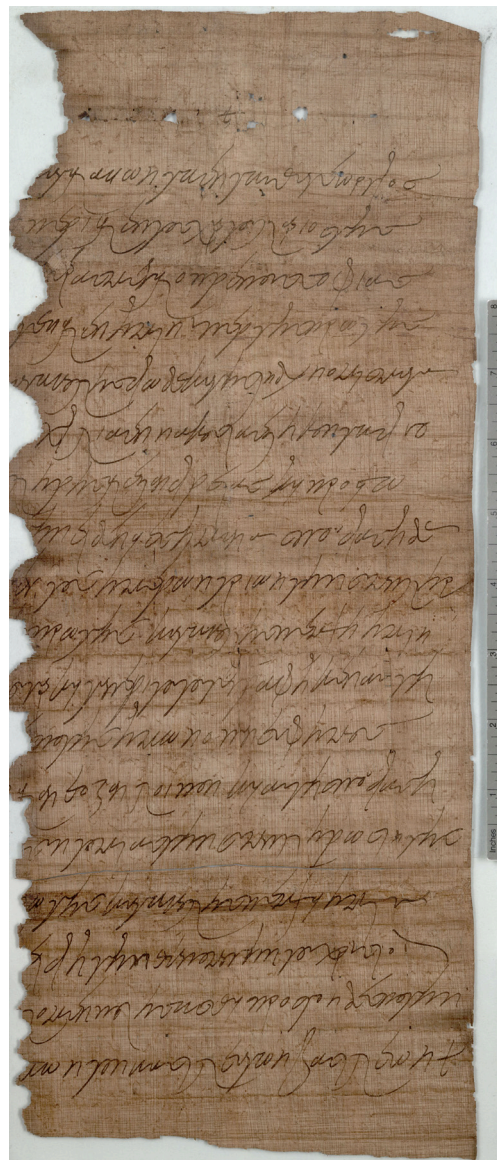
P. Oxy. Number	Date of Document	Type of Document
P. Oxy. XVI 1830	500–599 CE	Letter by a public officer (written in Takona)
P. Oxy. XVI 1831	455–499 CE	Letter by a local authority (written in Tholthis)
P. Oxy. XVI 1840	500–599 CE	Letter by a public officer
P. Oxy. XVI 1842	500–599 CE	Letter by a private citizen
P. Oxy. XVI 1869	500–699 CE	Letter by a public officer
P. Oxy. XVI 1876	480 CE	Court proceedings
P. Oxy. XVI 1878	461 CE	Court proceedings
P. Oxy. XVI 1879	434 CE	Court proceedings
P. Oxy. XVI 1880	427 CE	Abandonment of legal proceedings
P. Oxy. XVI 1886	472? CE	Petition to a defensor
P. Oxy. XVI 1942	500–599 CE	Letter by a public officer ( <i>praeses</i> )
P. Oxy. XX 2268	475–499 CE	Petition to a defensor (written in the Herakleopolites)
P. Oxy. XXXIII 2665	305–306 CE	report of property registration
P. Oxy. L 3584	400–499 CE	Petition (from the village of Tampemu) (Apions archive)
P. Oxy. L 3585	425–475 CE	Petition to Flavius Strategius (Apions archive)
P. Oxy. L 3586	400–499 CE	Petition to Flavius Strategius (Apions archive)
P. Oxy. LI 3637	623 CE	Letter by a public officer
P. Oxy. LIX 3985	473 CE	Appointment
P. Oxy. LIX 3987	532 CE	Appointment
P. Oxy. LXIII 4381 (top)	375 CE	Court proceedings (trial in Alexandria)
P. Oxy. LXIII 4381 (bottom)	375 CE	Court proceedings (trial in Alexandria)
P. Oxy. LXVII 4614	475–499 CE	Petitions to the riparius (Apions archive)
P. Oxy. LXVII 4620	475–550 CE	List of offers
P. Oxy. LXVII 4629	500–699 CE	Letter by private citizen

but primarily directed to citizens have been selected, such as official nominations (P. Oxy. LIX 3985 and LIX 3987). Inversely, documents produced by the citizens and directed to the administration constitute a third group, which include a number of petitions, a documentary genre where some care and formality are expected, on account of the nature of the document itself, written to obtain a favour from the official to whom it is directed. Most of them belong to the Apiones family archive, a most influential family in late antique Oxyrhynchus, whose members occupied different posts in the administration of the nome and the province (P. Oxy. XVI 1886, P. Oxy. L 3584, 3585, 3586 and P. Oxy. LXVII 4614). P. Oxy. XX 2268 is also a petition. P. Oxy. XVI 1842 and 1869 are also addressed to the administration by citizens in a more or less private manner, but they do not belong to the formalised genre of the petition. Finally, papyri where no special care seems to have been taken in the production of the document have been chosen: P. Oxy. XVI 1830 is a letter concerning the rise of the Nile written by a minor officer (and it may also have belonged to the Apiones archive), XVI 1831 is a letter of complaint written by a local authority to his counterpart in another village, and XVI 1840 is a letter probably written by a taxation official. P. Oxy. LXVII 4620 is a list of offerings to religious institutions. P. Oxy. LXVII 4629, although showing some care in its writing, is a private letter.

We conducted the analysis using two non-invasive methods: Infrared reflectography (IRR) and X-Ray Fluorescence (XRF). IRR produces an image of the infrared radiation reflected from the object. When applied on inks, this technique can discriminate between iron-gall ink and carbon ink, the first appearing transparent in the infrared region above 1500 nm and the second remaining opaque. XRF shines a beam of X-rays on the object. After interacting with the surface investigated, the X-rays are reflected back to the detector, which determines the chemical elements contained in the support and ink. The XRF measurement performed on the blank papyrus were further processed using a statistical method known as Principal Component Analysis to highlight any material discrepancy across the collection. It was observed that the papyrus used for four of the letters investigated

(P. Oxy. XVI 1831, XVI 1869, LI 3637 and LXVII 4629) has a slightly different composition than the papyrus used for other documents. This difference is likely due to the provenance of the papyrus paper used.

Characterisation of the inks showed no significant compositional differences across the collection. In most cases, the writing media used were carbon-based inks both for formal and less formal documents. However, P. Oxy. LXIII 4381 was rather exceptional. The text of this Court Proceedings is divided in three parts with an initial presentation of the matter in Latin, followed by the body of the report in Greek and the final verdict in Latin. Interestingly, the document was penned with three different inks, which correlate almost perfectly with the change in language. We believe that this peculiar material change across the same document might have resulted from specific writing practices that characterised the court of Alexandria and perhaps reflected specific administrative or bureaucratic conditions. Further investigation on a larger corpus of Proceedings from the Court of Alexandria, and its comparison with equivalents from Oxyrhynchus, might cast further light on such writing practices.



P. Oxy. LI 3637 r: official communication to a scholasticus in receipt of a large sum of gold in relation to the first instalment of taxes, showing a very formal hand.

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