

The Potential of Digital Paleography for the Medinet Madi Coptic Manichaean Corpus  
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The Medinet Madi Corpus consists of seven Coptic manuscripts which were discovered in 1929 in Medinet Madi in the Fayum and reached the Cairo Antiquities market in 1930. Three of them were purchased by Carl Schmidt for the Staatliche Museen Preussischer Kulturbesitz, and four by the Irish-American philanthropist, Chester Beatty; they are currently preserved in the Berlin Papyrussammlung and the Chester Beatty Library in Dublin. The manuscripts had been dampened, and presented a difficult challenge for the famous conservator Hugo Ibscher, and later, his son Rolf. While they were largely successful in separating the individual papyrus leaves and putting them under glass (or, later, Perspex), chemical treatments were applied which have led to a marked decrease in legibility, especially in the case of those conserved by Rolf Ibscher. The general difficulty of editing these leaves, combined with the catastrophic effects of World War II, which put an end to the initial editing process, means that approximately half the corpus has still not received a critical edition, despite being of comparable importance to the Nag Hammadi Library, which was discovered in 1945 and fully edited by the end of the 1980s. In March 2019, a number of pages from four of the Medinet Madi manuscripts in the Chester Beatty Library underwent multispectral imaging by the mobile manuscript lab of the University of Hamburg's Centre for the Study of Manuscript Cultures. After processing by Ivan Shevchuk and colleagues, the images have revealed between roughly 100% to 400% more text, depending on the page. These form the basis not only for a far more complete edition than was previously possible, but also for subsequent digital approaches to the study of the texts.

Despite these challenges, the Medinet Madi Coptic Manichaean Corpus is of great potential utility for the digital paleography of Late Antique Egypt. The more than 1,000 conserved leaves, even if some are fragmentary or otherwise difficult to read, are written in the same dialect of Coptic, "Lycopolitan," and appear to have been produced within the same working group of scribes, although multiple hands are evident. Despite this, beyond a few stray remarks, there is no discussion of paleography by the editors of Medinet Madi codices; conversely, there is no discussion of the Medinet Madi codices in general treatments of paleography in Late Antique Egypt (e.g. Orsini 2018). Along with Isabelle Marthot-Santienello and colleagues, I have begun working with READ developer Stephen White to adapt its textual editing and paleographic annotation capabilities to both Greek and Coptic; I will use the MSI images within READ, which will require finding a way to reduce their size significantly while maintaining their legibility. In addition, I hope that automated handwriting recognition can also be applied to these texts, which will require binarization of the MSI images. There are large sections which are clearly written by the same hand, enough to provide training data for handwriting recognition, which will in turn be useful in distinguishing between several hands within the same codex, as well as recognizing the same hand across two or more codices.

Bibliography:

Jason BeDuhn, Paul Dilley, Iain Gardner, eds., *Manichaeism in Egypt: The Medinet Madi Library after 90 Years*, Nag Hammadi and Manichaean Studies (Leiden: Brill, Forthcoming)  
Pasquale Orsini, *Studies on Greek and Coptic Majuscule Scripts and Books* (Berlin: DeGruyter, 2018)  
James Robinson, *The Manichaean Codices of Medinet Madi* (Eugene: Cascade Books, 2010).