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Introduction

More than two centuries have passed since palimpsested manuscripts first attracted the attention of scholars in search of the written heritage of Greco-Roman antiquity and the foundational texts of Christianity. In 1819, a complete copy of Cicero's *De re publica* (*The Republic*) was discovered in the Vatican Library by Angelo Mai, who may be considered the founder of palimpsest studies. The Old Syriac Gospels, preserving an earlier text than the oldest Greek witness of the text in manuscript form, was discovered by Agnes Smith Lewis at St. Catherine's Monastery in 1892. Nearer to our own times, a new text of the 3rd-century BC mathematician Archimedes has been made legible by a team of imaging scientists and scholars, in a project which started in 1998 in the US.[1] In 2003, passages from a comedy of the ancient Greek author Menander in the Vatican Library were discovered and later captured through multispectral imaging.[2] In 2008/2009, new passages of the 3rd-century CE historian Dexippus were found in the Austrian National Library in Vienna. These passages offer one of the earliest witnesses of the movement of the Goths across the Danube to the Roman Empire.[3] As these examples indicate, individual texts that had once been erased have been coming to light, one by one.

Palimpsested manuscripts also facilitate the recovery of languages that have fallen into obsolescence. One of the milestones in palimpsest studies is associated with Zaza Aleksidze's discovery, in the Library of the Monastery of St. Catherine, of 250 pages of the Gospel of John and a Bible Lectionary, both in Caucasian Albanian.[4] That the Albanians of the Caucasus had their own writing was well established, but the written form of Caucasian Albanian had until then only been known from a few words in inscriptions on stone and clay, and a glossary of the 15th century. Gothic, Glagolitic, and Christian Palestinian Aramaic are other 'lost' or poorly-attested languages for which erased layers offer substantial evidence.[5]

The scope of the study of palimpsests was taken to a new level through a Europe-wide collaboration. In 2001, at the initiative of Dieter Harlfinger, scholars and librarians from 50 institutions in 26 countries joined tougher in the Rinascimento virtuale project. Financed by the European Research Council, the aim of the project was the first systematic and comparative study of palimpsests in the major libraries of Europe.[6]

The technologies for the study of palimpsests have evolved in step with this scholarly work, with increasing speed. Only a century ago, Agnes Smith Lewis gleefully reported on her use of a foul-smelling liquid to render the erased text of the Old Syriac Gospels legible, if only for a brief moment.[7] Today, ever more refined methods of multi-spectral imaging in conjunction with ever more sophisticated procedures for computer-based image processing allow the study of the minutest details of erased ink and its traces on the parchment surface. Palimpsest studies have become the business of teams of scholars and technicians who assemble for a specific project, while major libraries increasingly invest in setting up permanent equipment of their own. With these advances in technologies and scholarship, the dialogue between scholars knowledgeable in texts and scripts on the one

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1 Netz *et al.* (eds.), *The Archimedes Palimpsest*.

2 The imaging of this manuscript, which is of Sinaitic provenance, was undertaken by the Early Manuscripts Electronic Library in 2014: http://emel-library.org/projects-3/ (accessed 01.07.2023).

3 See most recently Mitthof *et al.* (eds.), *Empire in Crisis: Gothic Invasions and Roman Historiography.*

4 The most recent edition is Gippert *et al.*, (eds.), *The Caucasian Albanian Palimpsests of Mount Sinai*.

5 For further references see the contributions by Jost Gippert (Caucasian Albanian), Carla Falluomini (Gothic), Heinz Miklas (Glagolitic) and Christa Müller-Kessler (Christian Palestinian Aramaic) in this volume.

6 http://www.rinascimentovirtuale.eu (accessed 01.07.2023).

7 See most recently Rossetto, *Greek Palimpsests at Saint Catherine's Monastery*.

hand, and experts in image capture and image processing on the other, becomes ever more lively to the extent that they become increasingly knowledgeable of each others' methods.[8]

The largest single collection of palimpsests that we know of is in the library of the Holy Monastery of St. Catherine in the Sinai. The Old Collection, together with the New Finds, holds at least 170 items with erased writing, in ten different languages. That many of these items, often just fragments or loose quires, have survived at all is due to their preservation in a depository that was only made accessible in 1975. These fragments are known as the 'New Finds'. When Paul Géhin and Stig Frøyshov took stock of this discovery, they also laid out the research agenda for the future: 'Cela rend nécessaire une bonne collaboration entre spécialistes des différentes langues et disciplines et la communication des documents aux chercheurs sous forme de microfilms … C'est alors qu'apparaîtra encore avec plus d'éclat la valeur inestimable de la bibliothèque sinaïtique, véritable "conservatoire de l'Orient chrétien".'[9] These words were written in 2000. Today, scholars may no longer be working with microfilms, but what remains urgent is their call for a collaboration of experts from different disciplines to take the full measure of the Sinai library as a treasure trove of the Christian Orient.

THE GENESIS OF THIS VOLUME

This volume represents the next chapter in the collaboration of specialists in different languages and disciplines envisioned by Géhin and Frøyshov only two decades ago. At its core lies the work of the Sinai Palimpsests Project, which resulted in the imaging, image processing, and text identification of about half of the known palimpsested items in the Holy Monastery of St. Catherine in the Sinai. This was the first time that a large deposit of palimpsests had been made accessible for further study. We are thus particularly grateful that Father Justin Sinaites, the Librarian of the Monastery, not only graced the conference with his presence, but also offered his insights into the long tradition of people who prayed and studied at the Monastery in the form of an introductory essay.

From 2011–2016, at the invitation of the Holy Monastery of St. Catherine in the Sinai, the Early Manuscripts Electronic Library, under its director Michael Phelps, conducted the Sinai Palimpsests Project, financially supported by the Arcadia Fund. 74 items of the currently known 172 palimpsested objects were first given a short codicological description by Claudia Rapp, Scholarly Director of the Sinai Palimpsests Project, with the valuable assistance, since 2014, of Giulia Rossetto. The items were then imaged with multi-spectral photography and processed using different computer-based methods. Based on the images, the texts and scripts were then identified by an international team of experts, and the results published online (www.sinaipalimpsests.org, accessible after registration).

Many of the contributions in this volume are based on Sinai material, written by scholars who participated in the Sinai Palimpsests Project. The wider context for these findings is provided by further contributions that offer insights into palimpsested manuscripts from different language traditions and other locations. Indeed, it has now become possible to study medieval manuscript depositories with palimpsested material across Jewish, Christian, and Muslim traditions.

The intensified dialogue between experts in image capture and image processing and textual scholars, with rising levels of mutual knowledge, is reflected in several contributions. The result is an ever-increasing amount of data and metadata in digital format, which needs to be archived, managed, and made accessible. Several articles also speak to this topic.

Most of the papers assembled in this volume were first presented at the conference 'New Light on Old Manuscripts. Recent Advances in Palimpsest Studies', held at the University of Vienna and the Austrian Academy of Sciences, 25 to 27 April 2018. The organizing committee for the conference also became its editors: Claudia Rapp, Giulia Rossetto, Jana Grusková, and Grigory Kessel. The international character of the conference is also reflected in the languages represented in this volume, which includes contributions in Italian, French, and German, each with an abstract in English.

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[8] For an overview of palimpsest studies in recent decades, see the contributions in Somers (ed.), *Palimpsestes et éditions de textes: les textes littéraires*.

[9] Géhin and Frøyshov, Nouvelles découvertes sinaïtiques, 182.

The volume is intended to provide a comprehensive overview of the current state of research on palimpsests, covering the entire process of research: from manuscript analysis, through image capture and image processing, to textual studies, and, finally, issues of digital display. The study of palimpsests, perhaps more so than other research fields, requires a constant dialogue between experts in all these fields, and a mutual understanding of their aims and working methods.

This is reflected in the structure of the volume, whose 30 contributions are divided into five parts.

The first part, 'Saint Catherine's Monastery and its Palimpsests', highlights the pioneering enterprise of the Sinai Palimpsests Project (SPP), which focuses on the largest collection of palimpsests in multiple language traditions to exist in a single location. This collection, at the Monastery of St. Catherine in the Sinai, includes manuscripts in languages ranging from Latin to Caucasian Albanian, with a heavy presence of Greek, but also of Syriac and Christian Palestinian Aramaic. Sinai Palimpsests Project represents the first time that such a large group of palimpsests has been studied as a whole. It has been exploring new frontiers in palimpsest studies in several ways. As a reflection of the constantly-evolving fields of image capture and image processing, it has emphasized and implemented close collaboration and interaction between textual scholars and image scientists in the process of rendering the erased texts legible. And, as a reflection of the multi-lingual collection in the Sinai, it has resulted in a number of initial comparative studies that cut across linguistic boundaries.

The study of the Sinai palimpsests is set in a broader context in the second part of the volume, 'Palimpsests and their Contexts', which presents the results of the study of important palimpsests in other locations, and indeed other religious traditions, including Judaism and Islam. What emerges here may, it is hoped, constitute the beginning of comparative studies in the creation, use, and circulation of palimpsested writing material in cross-cultural perspectives.

Individual manuscripts are the focus of the third part, 'Palimpsests and their Contents'. This part of the volume showcases erased layers that preserve precious evidence of previously-unknown texts and rarely-attested languages.

Part four, 'Imaging and Processing Methods', and part five, 'Management and Display', present the imaging and image processing techniques, as well as the digital database tools developed by the Sinai Palimpsests Project and by other palimpsest projects.

The methods applied to the study of individual palimpsests partially overlap or intersect, resulting in some repetitions in the basic explanations of the foundations of this work, which are, however, essential for the understanding of each contribution as a free-standing unit. Since the volume will be published open access and each contribution may be accessed and read independently of the others, this is not only inevitable, but indeed essential. The contributions in this volume have been generated to be read as individual pieces. The volume is most definitely not intended as a handbook to palimpsest studies, nor does it aspire to present a complete picture of the Sinai collection of palimpsests. That will have to wait until the other half of the palimpsested collection has been imaged. Instead, it is our hope that it will offer a state-of-the art point of reference for the study of palimpsests in the regions of the former Roman Empire, from Britain to the Caucasus, and including the Near East.

A PREVIEW OF THE CONTRIBUTIONS

Michael B. Phelps, Director of the Sinai Palimpsests Project (SPP), begins the section 'Saint Catherine's Monastery and its Palimpsests' by explaining the history of the Sinai Palimpsests Project and its working methods. He lays out how even in the five years of its duration the methods of image capture and image processing were adapted and refined. Looking ahead, he also points out what would be needed to tackle the more than 50% of Sinai palimpsests that have not yet been imaged and studied.

Claudia Rapp, Scholarly Director of the Sinai Palimpsests Project, pursues a different approach. Taking the entire palimpsest collection that has been imaged so far as a departure point, she offers a first overview over the patterns of the creation, dissemination, and subsequent use of erased parchment in the Levant. Comparisons with the palimpsests found in the Cairo Genizah and the Qubbat al-Khazna in Damascus, material also discussed by Ronny Vollandt and Alba Fedeli, suggest that it was primarily Christians who engaged in the erasure of texts and the regional trade in reusable, second grade writing material.

Giulia Rossetto presents a comprehensive study of the 11 texts from classical antiquity that are preserved in Greek, Syriac, and Latin in the erased layers of a total of six manuscripts in the Sinai. Eight of these classical texts have either not been known in their entirety, or preserve the earliest witness of a known text. It is strik-

ing that a large number of the erased texts are of medical nature, not only the *corpus Hippocraticum*, but also perhaps from the authors Crateuas and Antyllus, about whom very little is known. The most spectacular find is surely a previously-unknown Greek mythological text in hexameters whose surviving passages relate to the youth of the god Dionysus. A meticulous study of the regional and chronological origins of the erased scripts and the overtexts suggests a wide range of patterns for the reuse of parchment materials: time-spans between 100 and 400 years, and geographical movement either on a large or on a medium scale.

Pasquale Orsini analyses in detail the new material that Sinai Palimpsests Project has added for the study of the development of the different script styles in Greek majuscule from the middle of the 6th to the 9th centuries. The minuscule scripts of the 9th to the 11th centuries that Orsini studied can be assigned to different regional origins: Sinai-Palestine on the one hand, and Southern Italy on the other. He also draws attention to the fact that four, perhaps five of the parchment sheets whose 9th-century Greek text script was later erased were originally not part of a codex, but of a scroll, a book format that has traditionally been thought to have disappeared after the 4th century.

Some manuscripts present such rich material in their erased layers that they become the focus of individual studies. Sin. ar. NF 8 is a case in point. In addition to the medical texts mentioned above, it also contains another spectacular find, the Latin *History of Apollonius of Tyre*, accompanied by a line drawing. Contextualizing this find within the other Latin manuscript evidence at St. Catherine's, and offering further historical details from written sources and comparative manuscript material elsewhere, Michelle P. Brown argues for a strong connection between the British Isles and the Sinai in the 6th to 10th centuries, manifested not only in the travel of Latin manuscripts of Insular origin to the Sinai, but perhaps also in the presence of a Latin scriptorium at the monastery.

Sin. ar. 514, copied by Thomas of Fustat, possibly in the Sinai, around the year 900, is another manuscript that deserves a study all of its own. Grigory Kessel is able to identify in the erased layers 29 different texts in Syriac, one in Greek, and one in Arabic. These came from 19 original manuscripts, 18 in Syriac and one in Arabic, seven of them double palimpsest, with the erased texts being copied either in the 5th to 6th century or the 9th century. Buried in this manuscript, as in a catacomb, are previously unknown texts: Ephrem the Syrian, *Against the Jews*, previously considered lost, as well as a very early herbal in Syriac, in addition to earlier versions of texts only attested in later stages of their development. The manuscript is also important in that the erased text of the Epistle to the Hebrews contains a colophon dated 551/2, a rare instance of a reused manuscript with a date.

Alain Desreumaux continues the exploration of a single manuscript in the context of the exceptionally rich material in Christian Palestinian Aramaic that is preserved in the manuscripts associated with St. Catherine's, mostly in palimpsests. He identifies in the erased layers of Sin. syr. NF M56N an 'Évangile christo-palestinien palimpseste du Sinaï' that was expertly produced between the 6th and the 9th century, probably in Palestine. It contains several passages from Matthew and Mark that had not previously been attested in that language.

The Sinai Palimpsests Project has brought to light significant new material for the study of Christian Palestinian Aramaic, not only in terms of previously unknown texts or text passages, but also—by extension—by augmenting the knowledge base of the grammar, vocabulary, and morphology of that language. This is exemplified by the contribution of Christa Müller-Kessler on Sin. syr. NF M38N, which contains, *inter alia*, a quire that originally belonged to the *Codex Climaci rescriptus* now in the Green Collection in Washington, DC. As a meticulous study of the text and its language makes clear, the translation of 1 and 2 Corinthians preserved on these erased folios was made directly from the Greek, without a Syriac intermediary, perhaps even at St. Catherine's itself.

Important discoveries in the erased layers were also made in Georgian and Armenian. Bernard Outtier draws attention to the attestation of the early Georgian script typical of the 5th to 7th century (*khanmet'i*) in some Sinai palimpsests, a script that was soon superseded—which may explain its erasure, in an analogous process to the reuse of material written in Greek majuscule. Although Armenian manuscript material is quite rare at St. Catherine's, it has been possible to identify in the erased layers of Sin. syr. NF frg. 76 the earliest Armenian version of the *Life of St. Anthony*, the founder of monasticism. In general, the texts studied by Outtier reveal the liturgical needs and reading preferences typical of a monastic community.

The important discoveries in the course of Sinai Palimpsests Project in Georgian continue with the contribution by Zaza Aleksidze who did not live to see its publication and Dali Chitunashvili. They have been able to identify an early version of the Georgian collection of liturgical hymns (Ancient Iadgari), copied in the

10th century. The manuscript was commissioned by Duke Tornike Eristavi, who is also associated with three manuscripts that were donated to the newly-founded Georgian monastery on Mount Athos.

The legibility of erased text in Caucasian Albanian has been significantly enhanced by improvements in imaging techniques in the course of the Sinai Palimpsests Project, and especially the pioneering use of a transmissive light source, as Jost Gippert demonstrates in detail. Since this language is only known from erased layers in two Sinai manuscripts with overtext in Georgian, Sin. geo. NF 13 and Sin. geo. NF 55, every new piece of evidence is precious. In this instance, extensive new passages from the Gospel of John have been rendered visible, including some new words and forms previously unattested in Caucasian Albanian.

Heinz Miklas explains how images provided by Sinai Palimpsests Project enabled him to refine his long-standing research on the Glagolitic manuscripts from the Sinai and elsewhere which preserve (often in the erased layers) precious evidence for the earliest development of this script and the earliest texts of the Slavonic liturgical tradition. Of particular interest is the Latin writing found in one of three erased layers of the Medical Folia, i.e. three bifolios found inserted into the *Psalter of Demetrius* (Sin. slav. NF 3). Miklas is able to detect traces of illustrations showing the Archangel Michael and the Holy Virgin. All of this evidence points to the Sinai as a place of the convergence of languages and liturgical traditions, in this instance of Latin and Slavonic, comparable in importance only to the region of Dalmatia.

The next part, 'Palimpsests and their Contexts', offers a broader perspective and comparative materials, setting the Sinai palimpsests within a larger cultural context. The largest depositories of medieval manuscripts in the cultural region of the Mediterranean are the Cairo Genizah with its largely documentary Jewish texts, and the Qubbat al-Khazna in Damascus, a Muslim cache of manuscript material. These offer many points of comparison, especially with regard to the use of palimpsests. Ronny Vollandt traces the history of scholarship on these depositories, explains the cultural attitudes towards the reuse of erased writing in Judaism and Islam, and then concludes by presenting statistical comparisons regarding the texts, religious outlook, and date of the erased material. His findings suggest that erased texts of Christian origin were recycled to become the writing support of choice for Jewish and Muslim scribes. For reuse for Christian overtexts, it was largely writing in Christian Palestinian Aramaic that was erased after that language ceased to be in use.

The erasure and reuse of writing materials among Muslims also comes to the fore in Alba Fedeli's extensive exploration of Qur'anic palimpsests in their cultural context. Particularly striking is the application of Qur'anic text over erased Qur'anic text that had been copied only a few decades earlier. The locations where Arabic palimpsests have been found—the Qubbat al-Khazna in Damascus, the depository in the mosque in Ṣanʿāʾ in Yemen, and a further depository in the Mosque of ʿAmr in Fustat, along with the Sinai—in conjunction with the nature and languages of the other erased texts used for creating a new manuscript can offer new insights into the interaction between languages and religions as well as local archiving practices.

André Binggeli presents a meticulous investigation of the practices of palimpsestation in Constantinople in the first half of the 15th century, on the basis of manuscripts from the Patriarchal Library in Istanbul. He shows that the erasure of texts seems to follow certain patterns depending on the availability of superfluous material in conjunction with the needs of the church or monastery for which a new manuscript was produced, while the format and arrangement of the reused palimpsested folios was dictated by the state of preservation of the original writing support.

Editorial challenges of particular complexity are encountered when working on erased musical annotations, where not only letter shapes, but also small signs such as dots carry significance and meaning. Andreas Janke lays these out in a systematic fashion, and then presents a list of 54 medieval manuscripts with erased musical notation. His findings suggest that, more often than not, in the musical manuscripts the new overtext stayed within the same genre as the erased undertext, replacing older musical notation systems or recording more recent compositions.

The four contributions in the section 'Palimpsests and their Contents' focus on individual manuscripts whose erased layers have in recent years been the subject of thorough study, in order to reveal previously-unknown texts or to augment our knowledge of poorly-attested languages.

Jana Grusková and Giuseppe De Gregorio present the most recent results of research on palimpsests of the Austrian National Library that have, *inter alia*, brought to light some remarkable and previously-unknown texts whose distinct palaeographical features are analyzed: folios of an 11th-century manuscript containing historical information about the Gothic advance in the Roman provinces on the Balkans, probably from the

Scythica of the 3rd-century author Dexippus; a fragment of Eusebius' *Chronicle* that was perhaps copied in 10th-century Southern Italy; fragments of Herodian's work on Greek accentuation; and an early and independent textual witness of the *Basilica*, a 9th-century Byzantine law book.

The study of the *Basilica* continues with a contribution from the legal historian Bernard H. Stolte. He points out that the oldest textual witnesses of (parts of) this legal compilation are found in palimpsests of the 10th to the 13th centuries. The textual tradition of the *Basilica* is complex and fluid, especially with regard to its rendering of Justinianic material that was originally written in Latin. The Vienna palimpsest (Vienna, Austrian National Library, Cod. suppl. gr. 200) is particularly valuable as it preserves text passages that are close to these 6th-century origins.

In the same vein of meticulous philological analysis, Felix Albrecht and Chiara Faraggiana di Sarzana offer their observations on a palimpsest manuscript in Turin that was damaged in a fire (*Codex Taurinensis*, Biblioteca Nazionale Universitaria, C.V.25). The well-known 15th-century copyist Georgios Baiophoros used for his copy of grammatical works of Manuel Moschopoulos recycled parchment that contained Old Testament writings in a 7th-century majuscule. The comparison with other versions of the relevant passages of the *Libri sapientiales* suggests that, although Baiophoros was active in Constantinople, the erased text had its origin in the East of the Byzantine empire.

Gothic was, like Christian Palestinian Aramaic and Caucasian Albanian, a language that became obsolete and whose traces are largely found in erased layers of palimpsested folios. The article by Carla Falluomini, Simon Brenner, and Bernadette Frühmann on the Bologna Gothic palimpsest (Bologna, Archivio della Fabbriceria di San Petronio, Cart. 716/1, n° 1, *olim* 353) exemplifies the kind of collaboration that is needed for this kind of poorly-preserved material. In this case, collaboration between philologists and palaeographers on the one hand, and image scientists on the other, was further enhanced through non-invasive chemical analysis of the ink. Enhancing the legibility of what was probably a liturgical text in use by the Arian Ostrogoths of Italy in the first half of the 6th-century has resulted in new lexicographical insights that may also shed further light on the cultural and linguistic interactions between Ostrogoths and Slavs in the process of their migrations.

The second part of the volume develops further the importance of the interaction between textual scholars and image scientists already touched upon in the contributions of Miklas, Gippert and Falluomini, Brenner, and Frühmann. The digital medium provides the basis for the three steps involved in the modern study of palimpsests: image capture, computer-based image processing, and the visualization of the digital images, including their access online.

Damianos Kasotakis, Head of Imaging of the Sinai Palimpsests Project, offers insights into the camera system that was used in the project, including the transmissive light source that was developed over the course of the project. After the naked-eye examination of a manuscript by a manuscript scholar prior to imaging, it is the camera operators who are the first to see the digital images as they appear on their screens during image capture. This may lead to important discoveries, as in the case of the illustrated herbal in Sin. ar. NF 8, which laid the foundation for subsequent research.

Keith T. Knox explains the image processing techniques that were developed in the course of several projects, as each posed new and different challenges. For the Sinai Palimpsests Project, Knox developed the raking light algorithms and the transmission ratio algorithm. In this context, too, it is only the constant dialogue between the study of the physical object and the study of its scripts and texts through image capture and image processing that brings advances in technology and scholarship.

Roger L. Easton, Jr. and David Kelbe go into greater detail to explain the basis in visual perception and light emission for multispectral imaging. Taking the camera system used in the Sinai Palimpsests Project as an example, they describe statistical processing as one of the methods used in the project.

The chemical analysis of iron gall ink through non-invasive photometric methods is the topic of Leif Glaser's contribution. Here, too, an understanding of the material object, i.e. the pigments of ink, is an essential foundation for the work of textual scholars. As with all the innovative methods described in the contributions to this volume, these methods are evolving and being refined with every new historical object studied. Collecting and sharing all available data and metadata will ensure the advancement of these methods.

Irmgard Schuler's contribution deals with how digital imaging and image processing methods as well as other methods of photographic analysis can offer new insights for the purposes of conservation and restoration of ancient texts and their writing supports. Based on case studies from the Vatican Library, she demonstrates the possibilities of a holistic approach in the recovery of lost writing.

Next follows a multi-authored article by Naima Afif, Siam Bhayro, Peter E. Pormann, William I. Sellers, and Natalia Smelova that introduces GalenQT, a new software tool developed for image processing at the University of Manchester. Impressive results using this tool, in conjunction with philological methods, have been achieved in recovering lost text of the Syriac version of Galen, *On Simple Drugs*.

The management and display of digital data is the topic of the remaining contributions. Doug Emery lays out how data management systems are developed for specific projects and then adapted for each new context. In this instance, the data modelling and data management software that he developed for the *Archimedes Palimpsest* was incrementally expanded in subsequent projects, culminating in the large volume of images and metadata generated by the Sinai Palimpsests Project for which he designed the KatIkon software tool.

Taking one of the *membra disiecta* of the Sinai, the so-called *Syriac Galen Palimpsest*, as an example, Michael B. Toth lays out the many steps involved in the study of a single palimpsest manuscript, explaining the imaging and image processing methods employed in this particular project, which included the use of the synchrotron—thus complementing the presentation of the GalenQT software above.

Several contributions highlight the importance of gathering as much digital data as possible and archiving it for future developments in scholarship, as does Glaser for images and measurements. In the same spirit, Gregory Heyworth advocates, from the point of view of the scholar tasked with creating a text edition based on a lacunose manuscript, for the rigorous application and transparency of metadata standards.

The final contribution returns to the palimpsest work in the Vatican Library. While Schuler demonstrated how the process of imaging can benefit from dialogue with conservators, András Németh emphasizes the need to explore and refine digital tools for the presentation of erased layers to a large audience of experts and non-experts alike. The Mirador software developed at Stanford was further developed and adapted at the Vatican Library in response to challenges posed by individual manuscripts. Bearing in mind the didactic needs in the presentation of palimpsests, Németh advocates the adoption of unambiguous terminology and clear frames of reference for each palimpsest layer and each codex of origin.

Palimpsest studies in the 21st century are truly interdisciplinary, bringing together cutting-edge developments in digital imaging, computer-based processing, and online data management, along with the traditional skills of palaeography and expertise in the languages and written records of bygone cultures. It is our hope that this volume will demonstrate how such dialogue can stimulate further research. Moreover, the library at St. Catherine's, where manuscripts from all the corners of medieval Christendom have been preserved for centuries, offers an ideal test case for a holistic approach that goes beyond the study of a single language tradition. Only on this basis can we hope to understand the patterns of creating and using palimpsests, and gain a deeper understanding of the texts and languages that have been obscured as a result. The process of 'piercing the mists of time', to borrow the fortuitous phrase of Father Justin Sinaites, has only just begun.

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