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MORPHOLOGY OF THE BOOK : EVOLUTION OF THE CODEX IN THE INFORMATION SOCIETY

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Abstract. *The purpose of the article* is to trace the evolution of the book-codex from antiquity to the present and to determine how the transformation of libraries in the digital age influences the preservation, study, and accessibility of this type of book form. The object of the study is the historical stages of the development of the codex and its role in the formation of library institutions, as well as contemporary digitization practices that provide new approaches to the preservation and representation of cultural heritage. To create a comprehensive picture of the development of the book-codex from antiquity to the digital age, analytical-synthetic, system-structural, comparative, and historical research methods were applied. *The results of the study* demonstrate a consistent pattern in the evolution of libraries: from the accumulation and preservation of knowledge to contemporary digital practices of access and information resource management. They show that the transformation of libraries – both as institutions and as part of the culture of reading – reflects broader cultural and technological shifts in society. Libraries have always been, and continue to be, key institutions for the preservation and transmission of knowledge, adapting to the challenges of their time. The analysis carried out makes it possible to outline the transition from traditional book forms to digital ones and confirms their ongoing ability to integrate innovations and ensure the continuity of cultural memory.

Keywords: *codex; scroll; library; transformation; history of the book*

МОРФОЛОГІЯ КНИГИ : ЕВОЛЮЦІЯ КОДЕКСУ В ІНФОРМАЦІЙНОМУ СУСПІЛЬСТВІ

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Анотація. *Мета статті* полягає у простеженні еволюції книги-кодексу від античності до сучасності та визначенні того, яким чином трансформація бібліотек у цифрову добу впливає на збереження, дослідження та доступність цього виду книжкової форми. Об'єктом дослідження є історичні етапи розвитку кодексу та його роль у становленні бібліотечних інституцій, а також сучасні практики цифровізації, які забезпечують нові підходи до збереження та репрезентації культурної спадщини. Для створення цілісної картини розвитку книги-кодексу від античності до цифрової доби використано аналітико-синтетичний, системно-структурний, порівняльний та історичний методи наукових досліджень. *Результати дослідження* свідчать про закономірність в еволюції бібліотек від накопичення та збереження знань до сучасних цифрових практик доступу та управління інформаційними ресурсами. Вони дають розуміння того, що трансформація бібліотек – як самих інституцій, так і культури читання загалом – є відображенням найбільш широких культурних і технологічних змін суспільства. Бібліотеки завжди були і залишаються ключовими інституціями збереження та передачі знань, адаптуючись до існуючих викликів часу. Проведений аналіз дозволив уявити картину переходу від традиційних книжкових форм до цифрових і засвідчив їхню перманентну здатність інтегрувати інновації та забезпечувати безперервність культурної пам'яті.

Ключові слова: кодекс; сувій; бібліотека; трансформація; історія книги

Introduction. In contemporary studies on the digital transformation of libraries, increasing attention is being paid to the change of physical information carriers. The evolution from scroll to codex, and later to the digital book, not only transformed the external form of the text but also prompted new approaches to the storage, organization, access, and dissemination of knowledge. Understanding the origins of the book form is key to a deeper comprehension of past and present library processes. It was, however, the emergence of the codex that became a fundamental milestone, enabling the formation of early libraries of a new type, including monastic and academic ones, as well as the creation of catalogs, bibliographic indexes, and other elements of library systematization. The development of the book-codex and the transformation of libraries over recent decades are considered in the context of digitization, new preservation technologies, and the rethinking of cultural heritage. Recent studies make it possible to observe not only the historical dimension of the codex as a book form but also the contemporary challenges faced by libraries.

The article “Multisensory Museums, Hybrid Realities, Narration and Technological Innovation” [2] describes the Codex4D project, aimed at the multidimensional digital reproduction of codices. The use of 3D and 4D technologies in museums and libraries demonstrates a new level of interactivity and authenticity, where the codex becomes not merely a text but an object of multisensory experience. This illustrates that modern libraries and heritage institutions are seeking new ways to make ancient books accessible to a broad audience while preserving their material value.

The work “Criteria for selecting documents for digitizing the historical and cultural heritage of Ukraine” [9] focuses on the digitization processes of documentary heritage in Ukrainian libraries. Although the emphasis is primarily on scientific literature and archival materials, the article addresses issues of access to early printed books and manuscripts, thereby encompassing the codex as a historical form. This study is important for understanding the regional

context: Eastern European libraries are actively participating in digital practices, integrating them into global research networks.

The study “Analysis of digital transformation of services in a research library” [1] published in *Digital Library Perspectives* outlines how libraries are restructuring their activities according to the digital needs of users. The authors examine the transformation of services, the shift from traditional service models to interactive and remote formats. While the study does not focus directly on codices, it demonstrates the general trend: the library ceases to be merely a repository and becomes a platform for accessing multi-format resources, including digital copies of codices.

The article “Digital Culture in Scientific Libraries” [4] emphasizes the cultural dimension of the digital library. It highlights that digitization not only changes the form of access to sources but also shapes new value orientations for librarians and users. Issues of preservation, long-term archiving, and reproduction of manuscripts are directly linked to the codex as a knowledge carrier, requiring specialized approaches to restoration and digital duplication.

A systematic review “Transformation of libraries during Covid-19 pandemic” [10] shows how the pandemic acted as a catalyst for accelerated digitization. The transition to remote access formats proved critical for maintaining library functions. In this context, codices and old books became a focal point: limited access to physical collections prompted more active digital scanning programs.

The article “Roles of Digital Technologies in Improving Library and Information Communication” [7] examines trends and challenges in the use of digital technologies in the library sector. The authors analyze not only infrastructure but also communication: how the nature of information interaction has changed. This is important for understanding that digitization is not merely a technical process but also a cultural transformation of libraries that work with materials from various historical periods, including codices.

The development of the book-codex is traced across different cultural and scientific

contexts, as reflected in contemporary research. The project “The Early History of the Codex: A New Methodology and Ethics for Manuscript Studies (EthiCodex)” [5] demonstrates that modern methodologies and digital tools allow not only the systematization of data on thousands of early codices but also the development of ethical approaches to their study, preservation, and promotion. This highlights the relevance of integrating historical and technological perspectives in the study of early manuscripts.

Gert Schubring’s article “Mathematics Textbooks: Transitions from Manuscript to Print” [8] illustrates the gradual nature of the transition from manuscript codices to printed books, especially in educational traditions. The analysis of mathematics textbooks shows that printed editions often reproduced elements of manuscripts, preserving their external appearance and structure. This emphasizes the continuity of cultural practices and the slow transformation of the codex under new conditions.

David S. Parker’s research on “History of Research on Codex Zacynthius” [6] reveals the material and textual features of this manuscript, including palimpsest characteristics and its use in liturgical practice. The study of the codex’s structure, content, and multi-layered functionality demonstrates its multifunctionality in religious and educational contexts, as well as its role in shaping monastic library collections.

Finally, the chapter “Libraries after 2020. An Introduction to Planning, Designing and Developing Library Buildings” in the collection *Better by Design* [3] examines the architectural and spatial dimension of libraries in the post-pandemic era. The authors note that modern libraries must consider the preservation needs of historical collections while simultaneously creating space for digital innovations. Codices, early printed books, and other unique editions appear not only as cultural artifacts but also as elements of an integrated information environment.

The analysis of literature on this topic allows the identification of the article’s aim: to trace the evolution of the book-codex from antiquity to the present and to determine how the

transformation of libraries in the digital age affects the preservation, study, and accessibility of this form of the book.

Methods. In accordance with the research objectives, the study employed analytical-synthetic, system-structural, comparative, and historical methods of scientific inquiry. Using this methodology, a systematic study was conducted, analyzing and highlighting the main processes in the development of the book-codex from antiquity to the digital age.

Results and Discussion. Thus, all analyzed and other sources focus on forming a comprehensive understanding of the transformation of libraries in the digital age. However, in this context, the codex appears primarily as a historical form of the book, as a symbol of the longevity of written culture, which requires new methods of preservation and presentation in the twenty-first century. Such an understanding does not fully reflect the entirety and significance of the codex as a form of information storage, which is one of the greatest cultural phenomena in human history.

The development of the book as a material carrier of knowledge has undergone a complex and lengthy path, from clay tablets and papyrus scrolls to modern digital formats (Fig. 1). One of the most significant stages of this evolution was the formation of the book-codex, which, in the first centuries CE, gradually replaced the scroll – the primary form of text recording up to that time – and became the main form of information fixation and preservation. This process was lengthy and consisted of several important stages, each of which played a role in establishing the codex as the dominant medium of writing.

The earliest prototypes of the codex appeared as early as the 1st century BCE within the Roman Empire. These were wooden or wax tablets connected together to form small booklets resembling the modern book form. Such tablets were mainly used for personal notes, short letters, or simple daily records. They did not yet contain literary or scientific works, but they initiated the very concept of a bound information carrier.

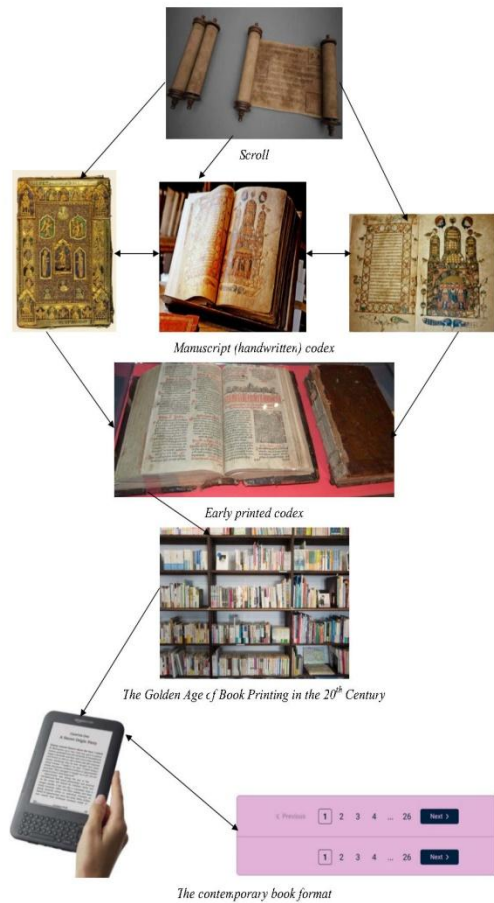


Fig. 1. The Evolution of the Book from Scroll to Digital Version

Later, in the 1st-2nd centuries CE, an important step toward improving the codex occurred with the use of parchment instead of papyrus. Parchment, made from specially treated animal skins, had several advantages: it was more durable, longer-lasting, and suitable for writing on both sides of a sheet. This allowed for more efficient use of material and the creation of more compact and voluminous books. Parchment pages were sewn into quires, and these in turn were bound into gatherings, which were increasingly resembling modern books.

Christianity played a significant role in popularizing the codex. From the 2nd century onward, Christian communities actively used codices for recording their sacred texts – Gospels, Epistles, Psalters, and other parts of the Bible. Unlike scrolls, codices were far more convenient for reading, study, and combining large volumes of text in a single volume. They offered several advantages: compactness, ease of information retrieval, and the possibility of

writing on both sides of the page. Therefore, they became the foundation for the dissemination of Christian manuscripts during late antiquity and the early medieval period. Thanks to the codex, monastic and university libraries acquired a new material basis for the preservation of knowledge, which influenced the further development of European culture. The codex enabled more compact and convenient storage of texts compared to scrolls, allowed for rapid location of required information due to its paginated structure, and created prerequisites for cataloging and systematization of knowledge. In monastic scriptoria, codices became the primary objects of copying, through which the ancient heritage was preserved and passed down to subsequent generations. University libraries, emerging in the twelfth and thirteenth centuries, were actively supplemented with codices on philosophy, law, medicine, and theology, making them accessible to students and faculty. Thus, the codex became not only the material foundation of library collections but also a tool for the intellectual integration of Europe, as knowledge spread between regions and academic centers. Its role in shaping cultural memory was so significant that the development of medieval educational and scientific traditions – which laid the groundwork for subsequent humanistic and scientific advances – cannot be imagined without the codex.

Christians sought to distinguish themselves from Jews and pagans, who traditionally used scrolls. Consequently, the codex began acquiring characteristics of religious identity. In the fourth century, when Christianity became the official religion of the Roman Empire, the codex was firmly established. A particularly important milestone was the commission by Emperor Constantine I the Great (272–337) for the production of fifty luxurious codices of the Holy Scriptures for churches in Constantinople. This was not only a stimulus for the spread of the codex in the ecclesiastical environment but also a signal for the gradual displacement of scrolls from use.

In the medieval period, the codex had already become the standard book form. Monasteries became the main centers of text copying, where codices were created manually,

adorned with miniatures, initials, and ornaments. They were carefully bound in leather or wooden covers, often inlaid with jewels, and became symbols of status and spiritual authority.

Subsequently, codices were used not only in the religious sphere but also in emerging universities and royal courts. They became important tools for systematizing knowledge and cultural heritage, extending far beyond liturgical needs. In medieval universities, codices contained educational materials, commentaries on classical texts, and treatises on philosophy and medicine, contributing to the formation of European intellectual traditions. At royal courts, they performed not only informational but also representational functions: chronicles immortalized dynastic histories, encyclopedias compiled knowledge about the world, and legal codices served as the basis for administrative and judicial governance. Thus, the codex gradually transformed into a universal knowledge carrier, combining educational, scientific, legal, and cultural functions.

During this time, additional reasons contributed to the codex's popularity. Primarily, codices were easy to carry, could be opened to any page, and allowed for annotations. Page numbering and chapter division also emerged, enabling faster access to specific information, which was important for scholars and theologians. Additionally, it became evident that the codex form allowed parchment to better withstand the test of time, being more resistant to moisture, mold, and mechanical damage than scrolls. At the same time, codices remained unique and labor-intensive to produce, limiting access to knowledge.

The invention of printing in the mid-fifteenth century, associated with the work of Johannes Gutenberg, initiated a new stage in the evolution of the codex. Previously, each codex was manually produced and existed only in limited copies; printing opened the possibility for mass dissemination of knowledge. This radically changed the social role of the book: it ceased to be an exclusive privilege of monasteries, universities, or courts and gradually became accessible to a wider readership.

Mass-produced codices facilitated not only faster dissemination of texts but also the standardization of knowledge and the unification of linguistic and orthographic norms. The role of libraries grew as repositories not of unique artifacts but of systematically organized collections of printed editions. Consequently, the codex was established as a universal book form, remaining suitable for both manuscript and printed culture, symbolizing the continuity of knowledge transmission.

Printed books inherited the external form of the manuscript codex but transformed the very nature of knowledge dissemination. Mass book production made them more accessible, accelerated the exchange of ideas, and contributed to increased literacy and the development of a new reading culture.

With the advancement of printing, the codex maintained its dominance as a form but changed its status: from a manuscript unique item to a reproduced object. At this time, libraries gradually evolved from closed repositories for the privileged to open cultural and educational institutions. The expansion of the book market, the emergence of university libraries, and the formation of national libraries marked a new stage in the social role of the book. The codex, in the form of the printed book, became not only a carrier of knowledge but also an instrument of social transformations – the Reformation, the Enlightenment, and revolutions in science and politics.

In the modern and contemporary periods, the codex retained its format but changed its material nature. From the nineteenth century, mass book production began using machine-made paper, new types of bindings, and fonts. The twentieth century brought industrialization, automation, and standardization to book production. Another transformation of libraries acquired new meaning: alongside printed codices, microfilms, electronic catalogs, and later digital copies emerged. In the twenty-first century, the codex transforms into a digital format, with digital books and online libraries appearing. Today, the codex exists not only as a physical artifact but also as a digital object. Thanks to information technologies, it can be digitized in high resolution, reproduced in 3D or

even 4D formats, allowing researchers and a wide audience to access the minutest details of its structure and material. Such digital copies not only ensure the preservation of unique artifacts from physical wear but also make them accessible to users worldwide, regardless of location.

Digitized codices are integrated into virtual libraries and museums, creating a global information space where cultural heritage becomes open and democratized. In the digital dimension, the codex transforms into a multidimensional object of study: it can be enlarged, rotated, examined for hidden layers, or reconstructed where fragments are missing. Thus, the codex acquires a new status – not merely as a historical artifact but as a dynamic information resource of the present, combining tradition and innovation.

The digital age has radically changed approaches to the preservation and popularization of codices. Previously, the primary task was the physical preservation of manuscripts and their limited use by researchers in specialized repositories. Today, digital technologies open new horizons for accessibility and study. Projects like Codex4D clearly demonstrate that modern tools of 3D visualization, scanning, and digital reconstruction allow scholars to literally “look beneath” the book cover, study internal structures, and even layers of material that have remained hidden for centuries. This creates new opportunities for all working with cultural heritage.

At the same time, the traditional paper form remains relevant. Firstly, it possesses unique cultural and historical value as the original information carrier. Secondly, the tactile interaction with authentic material provides a special emotional and intellectual experience that no digital copy can fully reproduce.

Such resilience of the codex demonstrates its uniqueness as a form of information organization, capable of adapting to changes in the technological environment. Over the centuries, the codex has remained the primary means of preserving and transmitting knowledge, withstanding the test of time and cultural transformations. Its structure,

combining user convenience, logical organization of material, and durability, has made the codex a universal information carrier, functioning effectively in manuscript, printed, and even digital cultures.

Modern innovations do not replace the book-codex but rather complement it, creating a new synergy between the traditional and the digital. Digitization, 3D and 4D visualizations, and interactive platforms open new opportunities for the study, preservation, and popularization of codices, providing wide access to previously restricted materials. Meanwhile, the authentic paper form retains its cultural, historical, and emotional value, as it serves as a tangible witness of the era and a carrier of unique authenticity.

This confirms that the codex has not only survived numerous cultural transformations but also has every chance to remain a significant element of the information space in the future. It becomes a symbol of cultural continuity, connecting the past, present, and future, while simultaneously serving as an object of interdisciplinary research, attracting the interest of philologists, historians, archivists, librarians, and information technology specialists. In this lies its exceptional role as a universal carrier of knowledge and cultural memory, capable of harmoniously integrating into the digital age.

Moreover, it should be emphasized that the electronic book, despite its digital nature, must retain the key features of the traditional book-codex, as these ensure the structured and recognizable nature of the edition. Primarily, this refers to pagination, which in the electronic format can be implemented not only as pages but also through navigation systems that simulate movement through a physical codex. Such pagination plays an important role in text orientation, making the electronic book convenient for learning, citation, and scholarly use.

Equally important is the preservation of the title page and the verso of the title, which serve as the electronic book’s “business card,” just as in the paper version. In digital form, the title page should include the work’s title, the author’s name, the publisher, and other elements identifying the edition and ensuring its

recognition among other electronic resources. The verso of the title traditionally contains information on copyright, year, and place of publication, which in the digital environment is necessary for legitimacy and correct bibliographic description.

Particular attention should be given to publication data, which, as in the printed codex, serve as the edition's "passport". For electronic publications, this may include ISBN/DOI, publisher details, year of creation or reissue, and distribution conditions (e.g., Creative Commons licenses). The presence of these features demonstrates the continuity of the electronic book with respect to the traditional codex while simultaneously integrating it into the modern library and information space.

Alongside the change in the primary information carrier, libraries are transforming into hybrid spaces: they simultaneously preserve authentic codices and provide access to their digital copies, which become objects of scholarly research and educational practices. Importantly, digitization has opened new horizons for accessibility. What was previously a privilege of a narrow circle of researchers is now available to a wide audience through online libraries and databases. At the same time, libraries face new challenges – long-term preservation of digital copies, ensuring authenticity, copyright protection, and balancing

physical and digital access. These new challenges also open up new development opportunities.

Conclusion

The trajectory of the codex from antiquity to the digital age simultaneously represents the history of libraries: from closed repositories and sacred centers to open cultural spaces and digital hubs. Thus, the codex not only established a new level of preservation and processing of textual information but also became the foundation for the entire subsequent evolution of libraries. Its emergence marks the first major stage in the transformation of libraries as institutions – from temple – and scroll-based collections of antiquity to the systematized repositories of knowledge in the Christian world. Today, when analyzing the digital transformation of libraries, we can observe analogous processes: changes in format, content, speed of access, and modes of interaction with texts, which again fundamentally influence the functions, role, and architecture of modern libraries. The codex as a form of the book has not disappeared; on the contrary, it has transformed, retaining its significance within new technological and cultural conditions. Today, it stands as a symbol of the continuity of knowledge and, at the same time, as a platform for innovation in librarianship.

REFERENCES

1. *Analysis of digital transformation of services in a research library* [Analiz tsyfrovoy transformatsii servisiv u naukovii bibliotetsi]. *Digital Library Perspectives* [Perspektyvy tsyfrovoy biblioteky]. 2024, vol. 40 (3), pp. 357–360. URL: <https://doi.org/10.1108/DLP-08-2024-149> (in Ukrainian).
2. Eva Pietroni. *Multisensory Museums, Hybrid Realities, Narration and Technological Innovation : A Discussion Around New Perspectives in Experience Design and Sense of Authenticity*. *Heritage*. 2025, vol. 8 (4). URL: <https://doi.org/10.3390/heritage8040130>
3. Khan A. and Thebridge S. *Libraries after 2020. An Introduction to Planning, Designing and Developing Library Buildings*. Cambridge University Press, 2022, pp. 3–12. URL: <https://doi.org/10.29085/9781783305728.004>
4. Lomachinska I., Lomachynskyi B. and Rykhlitska O. *Digital culture in scientific libraries* [Digital culture in scientific libraries]. *East* [East]. 2024, vol. 6 (1), pp. 43–49. URL: <https://doi.org/10.1108/DLP-09-2023-0045> (in Ukrainian).
5. Nongbri Brent (2021, project curator). *The Early History of the Codex : A New Methodology and Ethics for Manuscript Studies (EthiCodex)*. Project funded Research Council of Norway. URL: <https://mf.no/en/research/research-projects/early-history-codex>
6. Parker D. *History of Research on Codex Zacynthius. Codex Zacynthius: Catena, Palimpsest, Lectionary*. Gorgias Press, 2021. URL: <https://doi.org/10.31826/9781463241087-005>
7. Pluzhnyk O., Berezanska O. and Drok P. *Roles of digital technologies in improving library and information communication: Trends and challenges* [Rol tsyfrovoykh tekhnolohii u vdoskonalenni bibliotekho-informatsiinoi komunikatsii: tendentsii ta vyklyky]. *Society. Document. Communication* [Sotsium. Dokument. Komunikatsiia]. 2023, vol. 3, pp. 55–65. URL: <https://doi.org/10.69587/sdc/3.2023.55> (in Ukrainian).

8. Schubring Gert. Mathematics Textbooks: Transitions from Manuscript to Print. *ZDM – Mathematics Education*. 2025. URL: <https://doi.org/10.1007/s11858-025-01709-9>
9. Shevchenko M. *Criteria for selecting documents for digitizing the historical and cultural heritage of Ukraine* [Критерії відбору документів для оцифрування історико-культурної спадщини України]. *Bulletin of the Kharkiv State Academy of Culture* [Вісник Харківської державної академії культури]. 2019, vol. 54, pp. 73–81. URL: <https://doi.org/10.31516/2410-5333.054.07> (in Ukrainian).
10. Transformation of libraries during Covid-19 pandemic : A systematic review. *Journal of Academic Librarianship*. 2022, vol. 48 (4), art. 102534. URL: <https://doi.org/10.1016/j.acalib.2022.102534>

СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

1. Аналіз цифрової трансформації сервісів у науковій бібліотеці. *Перспективи цифрової бібліотеки*. 2024. Вип. 40 (3). С. 357–360. URL: <https://doi.org/10.1108/DLP-08-2024-149>
2. Eva Pietroni. Multisensory Museums, Hybrid Realities, Narration and Technological Innovation : A Discussion Around New Perspectives in Experience Design and Sense of Authenticity. *Heritage*. 2025. Vol. 8 (4). URL: <https://doi.org/10.3390/heritage8040130>
3. Khan A., Thebridge S. Libraries after 2020. An Introduction to Planning, Designing and Developing Library Buildings. *Cambridge University Press*. 2022. Pp. 3–12. URL: <https://doi.org/10.29085/9781783305728.004>
4. Ломачинська І., Ломачинський Б., Рихліцька О. Цифрова культура у наукових бібліотеках. *Схід*. 2024. Вип. 6 (1). С. 43–49. URL: <https://doi.org/10.28925/2411-3093.2024.615>
5. Nongbri Brent. (2021, project curator). The Early History of the Codex : A New Methodology and Ethics for Manuscript Studies (EthiCodex). Project funded Research Council of Norway. URL: <https://mf.no/en/research/research-projects/early-history-codex>
6. Parker D. History of Research on Codex Zacynthius. *Codex Zacynthius : Catena, Palimpsest, Lectionary*. Gorgias Press. 2021. URL: <https://doi.org/10.31826/9781463241087-005>
7. Плужник О., Березанська О., Дрок П. Роль цифрових технологій у вдосконаленні бібліотечно-інформаційної комунікації : тенденції та виклики. *Соціум. Документ. Комунікація*. 2023. Вип. 3. С. 55–65. URL: <https://doi.org/10.69587/sdc/3.2023.55>
8. Schubring Gert. Mathematics Textbooks: Transitions from Manuscript to Print. *ZDM – Mathematics Education*. 2025. URL: <https://doi.org/10.1007/s11858-025-01709-9>
9. Шевченко М. Критерії відбору документів для оцифрування історико-культурної спадщини України. *Вісник Харківської державної академії культури*. 2019. Вип. 54. С. 73–81. URL: <https://doi.org/10.31516/2410-5333.054.07>
10. Transformation of libraries during Covid-19 pandemic : A systematic review. *Journal of Academic Librarianship*. 2022. Vol. 48 (4). Art. 102534. URL: <https://doi.org/10.1016/j.acalib.2022.102534>

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