

Post-print: Progress in Open Access Practices for Ancient Books at Home and Abroad

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Abstract

[Purpose/Significance] The open access movement has brought new opportunities for the development and utilization of ancient books, and open access to digital resources of ancient books will become the future direction of ancient books collation.

[Method/Process] Based on an overview of the general background of open access, this study conducts a comprehensive review of research and work progress on open access to ancient books both domestically and internationally through case investigations, summarizes the respective characteristics of open access to ancient books at home and abroad, and introduces the current status of international collaborative construction of open resources for ancient books. A comparative review is conducted from three perspectives: content construction, standards and specifications, and degree and mode of openness.

[Results/Conclusion] The domestic library community is rapidly adapting to the global development model of open collaboration, but the degree of open access remains relatively low. With the continuous advancement of digitization efforts and the deepening of open access concepts, research related to open access to digital resources of ancient books in China will achieve substantial progress.

Full Text

Research Progress in Open Access of Ancient Books in China and Abroad

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Abstract

[Purpose/Significance] The Open Access movement has brought new opportunities for the development and utilization of ancient books, and the Open Access of digital resources of ancient books will become the future direction of ancient book collection work. **[Method/Process]** Based on an overview of the Open Access context, this paper comprehensively reviews research and practical progress in Open Access of ancient books both domestically and internationally through case studies, summarizing the distinctive features of each. It also introduces the current status of international cooperative construction of open ancient book resources, offering a comparative analysis from three perspectives: content construction, standards and specifications, and the degree and mode of openness. **[Result/Conclusion]** While domestic libraries are rapidly adapting to the global model of open collaboration, the degree of Open Access remains relatively low. However, with continuous advancement in digitization work and deepening understanding of Open Access concepts, research on Open Access of ancient book digital resources in China will achieve substantial progress.

Keywords: Open Access; ancient books; digital resources; research progress

China's millennia-old civilization has produced a vast sea of literary classics. Having endured warfare, natural decay, and pest damage, approximately 100,000 editions survive today, most of which are housed in libraries. To effectively preserve these precious ancient books from further deterioration, libraries both at home and abroad have undertaken extensive digitization efforts. However, digitization alone only changes the carrier of preservation without truly solving the problem of utilization. The rise of the Open Access movement presents new opportunities for the development and exploitation of ancient books, making Open Access of digital ancient book resources the future direction of ancient book collection work.

1.1 Transformation of Library Roles in the Open Access Context

Since the 1990s, the development of internet technology has dramatically transformed academic communication, prompting the large-scale Open Access (OA) movement across international academia, publishing, information media, and library and information science communities. This movement has made vast amounts of scholarly information freely available to the public, breaking down price barriers and usage restrictions while promoting the dissemination and utilization of scientific and humanities information. Governments, research institutions, and universities worldwide have formulated corresponding OA policies and issued a series of related initiatives and declarations. China's scientific community and funding agencies have also expressed support for Open Access.

Open Access content and forms are not limited to newly published academic papers. The Berlin Declaration [1] explicitly encourages cultural heritage man-

agers to promote Open Access by providing their resources via the internet. In 2011, China's Ministry of Culture and Ministry of Finance jointly issued the "Opinions on Promoting Free Access to National Art Museums, Public Libraries, and Cultural Stations (Centers)," which stipulated the significance, principles, content, and guarantee mechanisms of free access [2]. In the OA environment, libraries serve not only as managers of paper literature resources and users of traditional databases but also undertake the new task of constructing and providing online resources. Ancient book librarians must not only preserve and manage these collections but also consider how to provide readers with convenient, safe, and efficient access, enabling the dissemination and perpetual transmission of ancient books [3].

1.2 Open Access as a Solution to Ancient Book Utilization Problems

Ancient books are non-renewable cultural resources whose physical carriers possess "historical artifact value" while their contents hold "academic research value." After centuries or even millennia of natural aging and human-induced damage, the paper-based originals have become extremely fragile. Repeated borrowing causes secondary damage, yet locking them away for fear of deterioration defeats their original purpose [4]. Even with strict library regulations on ancient book lending services [5], this contradiction remains unresolved. Therefore, finding a permanent solution for regenerative protection of ancient books constitutes a crucial research topic for libraries. With advancing technology, book digitization has matured, making ancient book digitization a key method for collection development and providing an effective solution to the conflict between preservation and use.

When ancient book digitization reaches a substantial scale, through intensive processing, multimedia treatment, and network transmission, the storage and dissemination of ancient book knowledge can be optimized to achieve instant searchability and true open sharing. Open Access to digitized ancient book resources breaks the limitations of circulation while significantly expanding readership [6]. Scholars worldwide increasingly recognize that ancient book digitization represents the continuation and development of traditional ancient book research in the digital age, and OA-based ancient book access will gradually become the future development direction of ancient book collection work.

2.1 Ancient Books and Classical Literature

"Literature" refers to any material carrier containing knowledge information with certain historical or scientific value. "Ancient books" constitute a major component of literature, referring to books printed before modern printing technology. The concept of "ancient" is relative to "modern." Since different countries entered modern history at different times, their definitions of ancient literature vary. For instance, China uses the May Fourth Movement as the marker for classical literature, while defining ancient books as those written or printed before 1911 in classical Chinese binding formats. English ancient liter-

ature generally uses WWI (1914) as the lower boundary, though some scholars propose 1900 or 1870. Japan entered modern history during the Meiji Restoration; considering the uniqueness of Japanese ancient documents, 1890 serves as a more appropriate dividing line. For Russian ancient documents, 1917 is uniformly used as the boundary [7]. Foreign institutions typically categorize Chinese ancient books and their own ancient documents as “special collections” since both are non-renewable cultural resources with similar management and utilization methods. This paper uniformly uses “ancient books” to refer to them.

2.2 Open Access

Open Access advocates making literature freely available on the public internet for any user to read, download, copy, distribute, or use for any other lawful purpose, requiring only that users maintain document integrity and properly acknowledge authors. This concept applies to all types of knowledge and cultural heritage resources, including ancient books.

3.1.1 Open Access of Chinese Ancient Books in Foreign Collections

Foreign ancient book collections began digitization research earlier. Facing the impact of digital publishing, they have actively built digital libraries and joined the Open Access movement to meet changing user demands. In addition to digitizing their own ancient books, some institutions renowned for collecting Chinese rare books have also made their digital resources available online. The Electronic Beowulf project [8][9], initiated in 1993, has produced a highly professional electronic edition through years of collection, organization, and research. The team published numerous papers on digital image processing, digital restoration, thesauri, and digital library construction, with 986 references listed on its website from 1990-2012. The electronic edition not only meets general readers’ line-by-line translation needs but also analyzes poetic grammar and meter, serving as a research tool for scholars to identify nearly 2,000 18th-century restoration, abridged, and supplementary versions. The first free-download version was released in 1999, followed by second and third CD-ROM editions from the British Library, and an online 4.0 version in 2015, making valuable Old English study materials accessible anywhere with internet.

In 1994, the U.S. Library of Congress received \$13 million in private donations to establish the National Digital Library Program, known as “American Memory” [10]. From 1994 to 2000, the project received bipartisan congressional support of \$15 million and over \$45 million in private sponsorship from corporations and philanthropists. It compiles documents, recordings, photographs, maps, musical scores, and other archival materials documenting 240 years of American history from the Library of Congress and other institutions, organizing these files and providing them free to the public via the internet as educational and lifelong learning resources.

The European Commission’s “Europeana Regia” project [11], funded by the

EU and involving five libraries from four countries, digitized over 1,000 precious medieval and Renaissance manuscripts from January 2010 to June 2012. The project covers three major royal collections from different cultural periods: 425 Carolingian manuscripts (8th-9th centuries), 167 manuscripts from the Royal Library during the reigns of Charles V and VI (14th century), and 285 manuscripts from the Aragonese Kings' Library in Naples (15th-16th centuries). Librarians and researchers study these manuscripts as witnesses to European art, culture, and political history, excavating their knowledge content and historical evidence. These manuscripts are now accessible through partner libraries and the EU digital library website, allowing us to consult these precious scattered ancient books without leaving home.

Harvard University's Yenching Library holds a rich collection of 150,000 Chinese ancient books, including over 3,400 printed editions, more than 1,000 manuscripts and copies, and approximately 5,600 local gazetteers, all searchable in Harvard's union catalog. Full-text digitization has been completed for 224 rare manuscripts, copies, and unique editions, as well as over 3,400 types of ancient books. Through links on Harvard Library's Chinese Studies research guide (<http://guides.library.harvard.edu/Chinese>), users can access thematic collections including precious scrolls, rare old Chinese local gazetteers, rubbings, and Ming-Qing women's writings. All users can browse ancient book images online without login, with support for zooming, downloading, and printing.

The British Library holds 20,000 Chinese books, over 400 oracle bone pieces, and more than 40,000 Dunhuang manuscripts, hosting the secretariat of the International Dunhuang Project (IDP). Over 30,000 Dunhuang manuscripts have been digitized, including the Sloane, Stein, Gordon, and Morrison collections. All users can browse images online without login, though registration is required to view some reading room catalogs. The French National Library's website provides access to 526 Chinese ancient book catalog entries, with 216 viewable on its digital library Gallica.

Japan's Toyo Bunko holds 635 oracle bone pieces, 3,000 Chinese local gazetteers, 860 Chinese genealogies, and over 500 dialect dictionaries, with 80,449 Chinese book catalog entries on its website and 54 rare books from the Iwasaki collection digitized. Featured databases include Qing Manchu-Mongolian books, Chinese expedition reports, Chinese archaeological materials, and newspapers like *Shuntian Shibao* and *Huabei Zhengbao*. Japan's National Diet Library holds 280,000 ancient materials, including about 70,000 Chinese ancient books, with 94,104 catalog entries available online, 2,825 of which are full-text digital versions, and 1,547 featuring complete digitized texts. The library also maintains specialized collections including a color ukiyo-e database, drawing database, and nine types of important cultural properties.

3.1.2 Open Access of Ancient Book Research Achievements

Foreign libraries have conducted extensive research on their digitized ancient book collections. Professor K. Kiernan, an Old English expert, collaborated with the British Library on the electronic edition of the 11th-century Saxon epic manuscript. Technical specifications and research achievements, including manuscript processing standards, image processing protocols, and metadata formatting modules, are published on project websites for free access.

3.1.3 Characteristics of Foreign Ancient Book Open Access

Foreign institutions differ in their selection priorities for digitized ancient books. With millennia of civilization, European ancient documents record political, cultural, and religious content, reflecting the development history of European nations. Renaissance literary, painting, and musical works constitute invaluable cultural heritage, leading European ancient book research to focus on archaeological identification, art appreciation, and the organization of painting drafts and musical manuscripts.

With only 240 years of history, the United States has limited ancient documents, primarily early historical materials from its founding period, so research focuses on archival organization. For foreign libraries, Chinese ancient books are foreign language materials requiring specialized expertise, and many non-rare Chinese books may never be digitized due to low local demand. Content focuses on calligraphy, painting, and image databases with minimal textual content mining. Japan and Korea, deeply influenced by ancient Chinese culture before adopting their own simplified scripts, have long histories of collecting and organizing Chinese ancient books and have established national union catalog systems [12] to facilitate collection queries, focusing research on Song-Yuan rare books, cultural folklore, and historical materials.

Foreign libraries maintain extremely high openness for digitized ancient books. All users can freely access catalog information and browse full-text high-resolution color images on library websites without login, with support for zooming, downloading, and printing. Some libraries also offer multi-page downloads within limits and full-text document delivery services. For project-related ancient books, libraries establish project-specific websites providing OA while adding project tags to their catalog databases for filtering and linking to project sites, achieving tight integration between research projects and ancient book resources.

3.2.1 Open Access of Domestic Collection Ancient Books

In China, ancient book databases are primarily self-built by public and university libraries based on their collections or inter-institutional cooperation projects. Some libraries have undertaken digitization according to their collection characteristics. However, due to copyright protection concerns and difficulties controlling online dissemination, most self-built special databases

are limited to intranet use, completely inaccessible to external users. Only a few university websites provide catalog information [13][14]. shows the collection, digitization, and OA status of major domestic libraries.

**** Collection, Digitization, and Open Access Status of Major Domestic Libraries

Library	Collection	Database Name	Access Status
National Library	Over 2.8 million items including Dunhuang documents, rare books, rubbings, maps, minority ancient books, manuscripts	32 ancient book databases including Rare Books, Oracle Bones, Rubbings, Dunhuang Treasures, Western Xia Fragments, Local Gazetteers, New Year Paintings, Song Dynasty Collected Works, Chinese Rare Books Union Catalog System, Tokyo University Oriental Culture Research Institute Chinese Books Full-text Image Database, Harvard Yenching Library Rare Books Special Collection Resources, Huizhou Rare Books Genealogy, etc.	Online databases in the National Digital Library ancient books section require registration and login. Most support searching, querying, and browsing but not copying or downloading.

Library	Collection	Database Name	Access Status
Zhejiang Library	835,000 thread-bound ancient books including 141,000 rare books	Hantang Classics Database, Shutongwen Classics Database, Late Qing Periodical Full-text Database, Chinese Jinshi General Records (trial version), Chinese Digital Local Gazetteers, Chinese Basic Ancient Books Database	Databases require login, inaccessible to external users. Chinese Digital Local Gazetteers and Chinese Basic Ancient Books Database only support in-library access.
Shanghai Library	About 200,000 ancient books, 3,650 rare and precious books	Shutongwen Ancient Books Database, Chinese Basic Ancient Books Database, Diaolong Ancient Books Database, Chinese Classic Ancient Books Database, CNKI	Listed under electronic resources, only supports institutional access
Chinese Academy of Social Sciences	Over 1.3 million compiled books (including about 180,000 rare books)	Shanghai Library Collection Standard Catalog, Shanghai Library Collection Genealogy Catalog	Catalog accessible remotely, full-text only in-library
Peking University	1.5 million volumes	Miji Linlang—Peking University Digital Library Ancient Literature Resources Database	All users can view catalogs; general users can view thumbnails; reading room users can view medium-resolution images; librarians can view high-resolution images and perform printing and downloading functions

Library	Collection	Database Name	Access Status
Fudan University	400,000 volumes	Classical Literature Database	Bibliographic information viewable

While the national attitude and requirements toward Open Access are open, specific and practical standards remain lacking. Unlike the international situation, China's ancient book digitization resource construction focuses more on preservation than actively promoting OA and utilization, with many resources restricted to intranet use or simply left untouched. Scholars often face considerable difficulties accessing a single rare ancient book.

3.2.2 Commercial Professional Ancient Book Database Construction

In this relatively conservative OA environment, to meet readers' demands for ancient book access, academic institutions and digital enterprises have developed various commercially operated ancient book digital resources, such as the "Chinese Basic Ancient Books Database" by Beijing Airusheng Digital Technology Research Center, "Shutongwen Ancient Books Database" by Beijing Shutongwen Digital Technology Co., Ltd., and "Hantang Classics" by Beijing Times Hantang Technology Co., Ltd. These databases offer large data volumes, mature technology, and strong scalability. The competitive market enables them to quickly adapt to multi-platform mobile applications and respond sensitively to user needs, achieving knowledge mining and integration for research purposes. However, high usage costs deter individual users. Surveys show most libraries subscribe to commercial databases like "Chinese Basic Ancient Books Database" and "Shutongwen Ancient Books Database" with strict access management, allowing only institutional IP-range users to log in and access [15].

3.2.3 Public Welfare Platforms as OA Pioneers

To break price and permission barriers and provide free literature access and retrieval services for academic research, domestic platforms like "Shuge" [16] have emerged as typical representatives of integrated ancient book OA resource networks. The creator's original intention was to share, introduce, and recommend valuable ancient books under OA principles and encourage the digital archiving of cultural and artistic works. Content is limited to public domain books, aggregating open ancient book resources from renowned overseas libraries including Harvard Library, Japanese National Diet Library, Japanese Cabinet Library, Waseda University Library, Berlin State Library, French National Library, Yonezawa Library, Japanese Prints, Bavarian State Digital Library, U.S. Library of Congress Digital Collections, Fujii Nagami Library, Yale University Library Rare Books Department, World Digital Library, and Weimar Bauhaus Digital Library.

3.2.4 Characteristics of Domestic Ancient Book Open Access

China attaches great importance to the protection and utilization of ancient Chinese medical books. With advancing census and digitization work, the compilation of various standards and specifications has deepened [17]. Although the national management and use of ancient book digital resources is generally open, specific practical standards are lacking. Many libraries only provide electronic catalogs without building digital libraries, and even self-built digital resource databases impose barriers. For example, databases cooperatively built by the National Library with Harvard Yen-ching Library and Tokyo University Library are accessible from the National Library website as local server resources requiring registration and login for browsing, while the same data is freely accessible without login on Harvard Yen-ching Library and Tokyo University Library websites. Strict permission management aims to protect local resources and monitor users. This difference in models reflects conservative concepts—domestic OA still “lacks the final push.” Whether China can implement the same free and open access as foreign digital libraries warrants in-depth exploration by the library community.

3.3 International Cooperation in Ancient Book Open Resource Construction

Due to cultural exchange and war, many precious Chinese ancient books are scattered in institutions worldwide. These books are crucial for cultural and historical research, and rigorous ancient book research requires consulting various versions globally. Many research projects are conducted through international cooperation.

For example, Dunhuang documents were scattered worldwide in the early 20th century, making access and research difficult. In 1994, the International Dunhuang Project (IDP) [18] was established with external funding to promote comprehensive utilization, with its secretariat at the British Library and centers in China, Russia, Japan, and Germany. IDP began digitizing Dunhuang documents in 1997, aiming to digitize all collections and achieve OA. The IDP website officially launched in October 1998, allowing users to freely search the database for digital resources from member institutions worldwide. IDP members are both users and builders of the database, collaborating to reunite these artworks through high-quality digital images, with professional managers, catalogers, and researchers coordinating standardized preservation and cataloging, achieving OA through network technology.

China’s National Center for Ancient Books Protection provides access to the “Chinese Ancient Books Bibliography Database” and “Chinese Ancient Books Digital Resource Database” through its “China Ancient Books Protection Network.” The “Chinese Ancient Books Union Catalog System” evolved from the Chinese Rare Books Union Catalog project, initially established by the Research Libraries Group (RLG) in 1991 with about 30 participating libraries from China

and the U.S., cataloging nearly all North American collections and some Chinese collections with over 20,000 entries. Since 2009, the project center has transferred from Princeton University to the National Library of China. The “Chinese Ancient Books Digital Resource Database” includes the “Harvard Yenching Library Rare Books Special Collection Resources” and “Tokyo University Oriental Culture Research Institute Chinese Books Full-text Image Database,” both outcomes of National Library cooperation with other institutions.

The World Digital Library (WDL) project was proposed by the U.S. Library of Congress to UNESCO in 2005. UNESCO and the Library of Congress organized experts worldwide to establish working groups to develop standards and content selection criteria. Launched internationally in 2009, WDL includes 14,320 culturally significant original materials from 193 countries dating from 8000 BCE to 2000 CE. The “Chinese Books, Manuscripts, Maps, and Prints” timeline includes digital resources from the National Library of China, U.S. Library of Congress, and Taiwan Library, covering religion, history, geography, literature, medicine, and more. WDL represents a shift in digital library projects from quantity to quality [19].

The “Chinese Document Resources Co-construction and Sharing Cooperation Conference” [20] focuses on Chinese documents, with participation from China (including Hong Kong, Macau, and Taiwan) and the U.S., aiming to promote step-by-step implementation of Chinese document resource co-construction and sharing through concrete cooperative projects, and to facilitate exchange and cooperation among Chinese libraries and resource collection units worldwide. Seven conferences have been successfully held, with completed or ongoing ancient book digitization cooperation projects including the Chinese Ancient Edition Illustrated Catalog Project, Chinese Stone Rubbings Resource Database Project, Chinese Science and Technology History Digital Library Project, Ancient Books Union Catalog Database Project, and Chinese Genealogy General Catalog Project. Most projects are led by domestic libraries, with some 阶段性成果已在网上发布。

4.1 Complete Catalog Openness, Limited but High-Quality Full-Text Access

In content construction, foreign digital libraries started earlier, but most European and American libraries focus on digitizing their own ancient books, with a low proportion of Chinese ancient book digitization. Institutions like Harvard Yenching Library that can comprehensively digitize and provide OA to their rare Chinese book collections are currently unique globally, thanks to strong research teams and high-level administrative support. WDL demonstrates a new concept for ancient book digital library construction that emphasizes quality over quantity, focusing on content selection and arrangement to present multi-dimensional perspectives that clarify the development 脉络 of a culture or discipline. Although domestic libraries hold large ancient book collections, digital resource construction started later with severe fragmentation, uneven progress

across regions, and technical capabilities far inferior to enterprises, still requiring purchase of commercial databases to provide reading services.

4.2 Unified Metadata and Standardized Digitization

Regarding standards and specifications, ancient book digitization in developed countries has entered a standardized phase. In 2014, the International Federation of Library Associations and Institutions (IFLA) released the “Guidelines for Planning the Digitization of Rare Book and Manuscript Collections” [21][22], covering project management, process management, and technical management. Additionally, foreign ancient book digital libraries and research project websites publish related standards and specifications, including metadata structure, image processing protocols, and project management guidelines. Detailed interpretation of these guidelines and study of their contents and characteristics can provide references for China’s ancient book digitization standard construction [6].

4.3 Unrestricted Access Abroad, Login Required Domestically

In terms of openness degree and mode, foreign library digital resources are almost entirely OA. Users need to log in only for personalized functions like favorites and subscriptions, with no restrictions on non-login access. Foreign institutions actively cooperate and exchange with external partners while providing links to both local and external resources. In contrast, domestic library ancient book digitization primarily aims at preservation, with many libraries only providing electronic catalogs without building digital libraries. Even self-built digital resource databases impose barriers. For example, databases cooperatively built by the National Library with Harvard Yenching Library and Tokyo University Library are accessible from the National Library website as local server resources requiring registration and login for browsing, while the same data is freely accessible without login on Harvard Yenching Library and Tokyo University Library websites. Strict permission management aims to protect local resources and monitor users. This difference in models reflects conservative concepts—domestic OA still “lacks the final push.” Whether China can implement the same free and open access as foreign digital libraries warrants in-depth exploration by the library community.

5 Summary and Discussion

As one of the world’s four ancient civilizations, China possesses a vast collection of Chinese ancient books bearing millennia of Chinese civilization—precious cultural heritage for all humanity. Due to historical reasons, large quantities of Chinese ancient books are scattered worldwide. Digitization facilitates long-term preservation, while Open Access transforms dissemination pathways, enabling users worldwide to conveniently access these precious cultural classics. OA of ancient book digital resources is an undertaking that benefits contemporary so-

ciety and future generations, greatly promoting human cultural inheritance and development.

Ancient book digitization and OA require global coordination and inter-institutional collaboration. The current status of international cooperative ancient book open resource construction shows that domestic libraries are rapidly adapting to global open collaboration models. However, extensive research reveals that compared to foreign institutions, domestic ancient book collections have only achieved catalog openness, with low full-text digital resource OA levels, lack unified technical and management standards, and maintain relatively conservative openness concepts. National and relevant government departments should pay greater attention to ancient book digitization OA, increase investment, coordinate planning and deployment nationwide, and engage in deep exchange and broad cooperation globally. Simultaneously, through education and publicity, copyright protection awareness should be strengthened to gradually transform the current widespread commercial operation model of large ancient book databases into OA public services.

Authoritative institutions should learn from foreign comprehensive digitization standard systems to establish applicable standards and management systems for China's ancient book digitization OA environment, leveraging native language advantages for deep mining to improve ancient book digital resource quality. Collection institutions should use limited resources and time to select quality content, process and arrange it according to standards, and present it to readers via networks.

With continuous advancement in digitization work and deepening OA concepts, research on ancient book digital resource OA in China will undoubtedly achieve substantial progress.

References

- [1] Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities [EB/OL]. [2016-08-22]. https://openaccess.mpg.de/67660/BerlinDeclaration_{{{chin}}}{{{trad}}}.pdf.
- [2] Ministry of Culture and Ministry of Finance Opinions on Promoting Free Access to National Art Museums, Public Libraries, and Cultural Stations (Centers) [EB/OL]. [2016-08-26]. <http://zwgk.mcprc.gov.cn/auto255/201102/t20110210{20743}.html>.
- [3] Zhang Xiaohong. Library Ancient Book Work and Philology Research [J]. *Journal of Shanxi Library*, 2015(5): 60-63.
- [4] Jia Yuan. Existing Problems in Ancient Book Protection in Small and Medium Libraries [J]. *Sci-Tech Information Development & Economy*, 2014(13): 84-86.
- [5] Lou Minghui. Ancient Book Reader Services from the Perspective of Free Access in Public Libraries [J]. *Library Science Research*, 2012(12): 66-68.
- [6] Sun Qiaoyun. On the Digitization Construction and Significance of Ancient Book Resources in Zhejiang University Libraries [J]. *Zhejiang Academic Library*

- Information Work*, 2012(4): 28-32, 54.
- [7] Dong Shaojie, Lu Gang, Bi Guojun. Preliminary Study on the Concept and Definition of Foreign Ancient Books [J]. *Library Science Research*, 2010(14): 96-98.
- [8] PRUDERY J. The British Library's Initiatives for Access Projects [J]. *Communications of the ACM*, 1995, 38(4): 65-66.
- [9] Studying Beowulf [EB/OL]. [2016-02-23]. <http://ebeowulf.uky.edu/studyingbeowulfs/overview>.
- [10] About American Memory [EB/OL]. [2016-06-16]. <http://memory.loc.gov/ammem/about/index.html>.
- [11] Europeana Regia Project Documentation [EB/OL]. [2016-02-23]. <http://www.europeana-regia.eu/en/project-europeana-regia/project-documentation>.
- [12] Mao Jianjun. Construction and Enlightenment of Korean Ancient Book Digital Resources [J]. *Library Development*, 2012(4): 40-42.
- [13] Zhang Min. Review of Ancient Book Bibliography Database Construction in Domestic University Libraries [J]. *Journal of Sichuan Library Science*, 2011(6): 82-84.
- [14] Hu Liang, Lin Shan. Investigation and Analysis of Ancient Book Digitization in Key Domestic Universities [J]. *Modern Information*, 2012(10): 53-55, 116.
- [15] Zhang Huayan. Exploration of Open Access Work for Library Ancient Book Digital Resources in the OA Environment [J]. *Library Theory and Practice*, 2011(9): 18-20.
- [16] Li Xiaoyuan. A Paradise for Ancient Book Open Access—Shuge [J]. *Shandong Library Journal*, 2015(1): 50-52.
- [17] Wang Wei. Research on Ancient Book Protection and Utilization in Traditional Chinese Medicine University Libraries [J]. *Science and Technology & Innovation*, 2015(22): 36-37.
- [18] About IDP [EB/OL]. [2016-08-18]. <http://idp.nlc.cn/pages/about.a4d>.
- [19] About the World Digital Library: Background [EB/OL]. [2016-04-18]. <https://www.wdl.org/zh/background/>.
- [20] Mao Jianjun. Research on Cooperative Collection Maintenance Issues in Chinese Ancient Book Digitization [J]. *Library Theory and Practice*, 2011(8): 4-7.
- [21] Du Jie, Zhang Wenliang. Interpretation of IFLA's "Guidelines for Planning the Digitization of Rare Book and Manuscript Collections" [J]. *Library Development*, 2015(10): 51-54.
- [22] Guidelines for planning the digitization of rare book and manuscript collections [EB/OL]. [2016-08-22]. <http://www.ifla.org/publications/node/8968>.

Author Contributions

Yao Yuan: Conducted research and collected materials; wrote and revised the paper.

Li Sha: Conducted research and collected materials.

Shen Dongjing: Developed the article framework; revised the paper.

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