



# Cultural Heritage without Boundaries: On the International Digital Cooperation of the National Central Library

Bau-Mei Cheng, Hsiao-Ming Yu,  
.Mei-Chen Sung, Wei-Tung Chang

National Central Library

Taipei, Taiwan

PNC 2005, Hawaii

3 November 2005

# Outline



- Overview
- Digitization of Chinese Rare Books at the NCL
- Digital Contents about Taiwan at the NCL
- NCL and LC digital project
- NCL and GSU digital project

# Overview

---

- Digital Services of the National Central Library
  - Bibliographic Services
  - Indexing & Abstracting Services
  - Specific Subject Services
  - Document Delivery Services
  - Digital Content Services
  - Portal Services

# Overview of the NCL International Cooperation

- To send delegations to attend the annual meetings of library organizations to exchange knowledge and learn about the latest international library developments, such as ALA, IFLA, AAS, PNC
- To engage in publication exchange programs with over 1200 organizations around the world
- To receive many international visitors to enhance exchange relations
- To held a cross-strait seminar with mainland China's universities since April 1996
- To initiate the international digital cooperative projects with the U.S. Library of Congress (LC) and Genealogical Society of Utah (GSU) in 2004

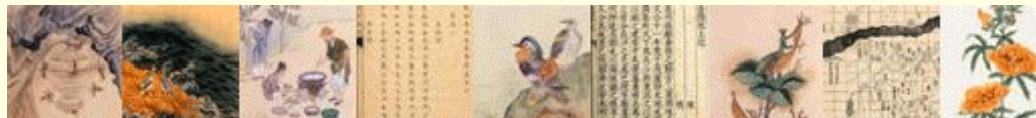
# Cultural Heritage Treasures at the National Central Library

- The treasures of past generations of Chinese civilization comprise the most precious jewels of the NCL's collection.
- Over 12,000 sets of rare editions (some 130,000 volumes)
- 153 rolls of the Dun-huang Manuscripts
- 175 sets of manuscript from the Sung dynasty (960-1279 A.D.)
- 272 sets from the Yuan dynasty (1271-1368 A.D.)
- Over 6,000 sets from the Ming dynasty (1368-1644 A.D.)



# Digitization of Chinese Rare Books at the National Central Library

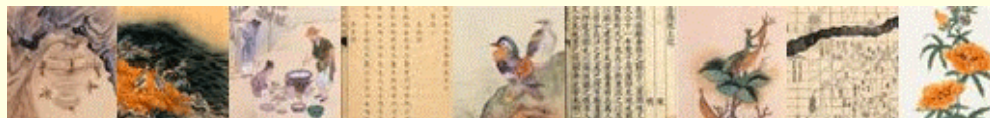
- The Special Collections Division at the NCL has converted the library's rare books and bronze/stone inscription rubbings into high quality digital image files.
- The Division is also responsible for creating rare book annotation files and compressed image files for Internet and CD-ROM use, making these precious documents widely available and ensuring their preservation for future generations.
- Until Sept 2005, an amount of the NCL 6,265 rare books (over 2.8 million images) 、 2,116 bronze/stone inscription rubbings ( over 16,001 images) 、 1,538 images of Dun-huang Manuscripts were successfully digitized.
- These digital images are all keyed to the database in the form of “metadata” for readers’ inquiries .



# Chinese Rare Book Information Net 古籍文獻資訊網

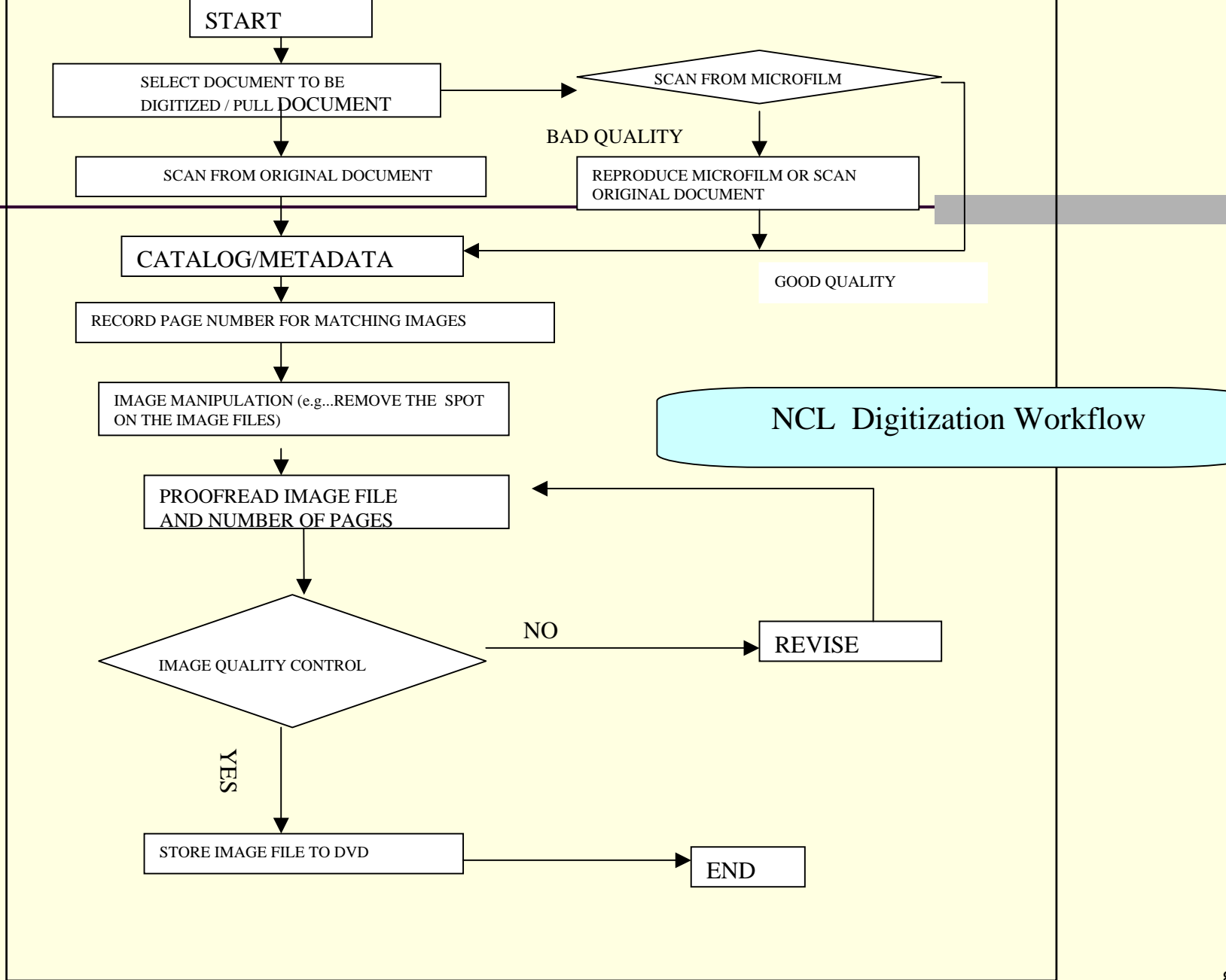
<http://rarebook.ncl.edu.tw/rbookod/index.htm>

- Special Collection Online Exhibit 特藏線上展覽館
- Ming Literature Database 明人文集資料庫
- Rare Books Full-Text Search System 古籍全文檢索系統
- Chinese Rare Books Bibliographic Database 中文古籍書目資料庫
- Taiwan Area Genealogy Union Catalog 臺灣地區家譜聯合目錄
- Rare Books Image Search System 古籍影像檢索系統



- 
- The NCL Digital Archives Plan and the Three-year Library Development Plan are the cornerstone of digital archiving work at the National Central Library.
  - The two plans are making library resources readily available not only to researchers but also the general public both in Taiwan and abroad.
  - The library continues to expand the scope of its digital collection and create new value-added applications to provide an even better digital archive for future generations.







國家圖書館  
National Central Library

# Rare Books Image Search System

## 古籍影像檢索系統



特藏珍品選介

特藏 線上展覽館

◀ ▶ 🔍 🏠 🔄 📄 📖 📑 📂 📁 📅 📆 📇 📈 📉 📊 📋 📌 📍 📎 📏 📐 📑 📒 📓 📔 📕 📖 📗 📘 📙 📚 📛 📜 📝 📞 📟 📠 📡 📢 📣 📤 📥 📦 📧 📨 📩 📪 📫 📬 📭 📮 📯 📰 📱 📲 📳 📴 📵 📶 📷 📸 📹 📺 📻 📼 📽 📾 📿

◀ 特展館 ▶ 電子書 ▶ 歷年展覽 ▶ 出版品 ▶ 認識中國古書 ▶ 網站地圖 ▶ 國古籍文獻資訊網

登入人數: 0123456789

### 特展館 Special Exhibition 典 / 藏 / 精 / 選

### Special Collections On-line Exhibition



#### 走讀寰宇·書中山川 「中國圖籍的旅人與遊蹤」特展

中國的山川百景、人文聚落、經濟資源皆可由舊時圖籍中顯現，本次展覽選擇歷代著名圖籍及古代旅人著作，按時代先後述說萬里江山…… [線上參觀](#)

◎展出時間：2004年2月25日起  
◎展出地點：國家圖書館善本書室

### 電子書 e-Book

點閱人數統計: 005662



#### 世紀容顏-百年前的台灣原住民圖像

本書彙錄 400 多張明信片，明信片的攝製年代約在西元 1900 至西元 1940 年日本佔領台灣期間，這些資料忠實記錄了當時台灣的發展狀況…… [詳細說明](#)

- 試閱內容
- 訂購
- 其它電子書

### 出版品 Publication



世紀容顏  
百年前的台灣原住民圖像：日常生活、服飾、家族人物…… [詳細](#)



臺灣歷史  
介紹明清台灣歷史…… [詳細](#)



諸目琳琅：國立中央圖書館基本特藏精選善本特藏六十種，引導讀者認識中國古書…… [詳細](#)



國家圖書館小說版畫  
全書分兩種、季義、季義以及民俗別…… [詳細](#)

大唐西域記序

唐尚書

若夫玉毫流照甘露灑於大千金鏡  
示現三界粵稱天下之尊无宅曰表  
淪影像化之跡東臨帝嶽宏闡大章  
藏法眼諱玄奘俗姓陳氏其先穎川  
開源大舜賓門基歷山而登構三恪  
書秦而承明月運道而聚德星繼聖  
鬱為崇尊法師精虔誕聖舍和降德  
靈長奇聞之歲實軒日昇發沙之年

也瑛球鳳皇不睨而拭之不必寶也  
而十指懸蓋將以寶之故如此其至  
即信者誠人之未必見重乎天猶是  
其矣甚且重於人亦猶是也某等於  
面終得釋去暴類此故謁之於祠也  
以未其祀者圖之不敢以不虔先生  
樂聞予之言抑

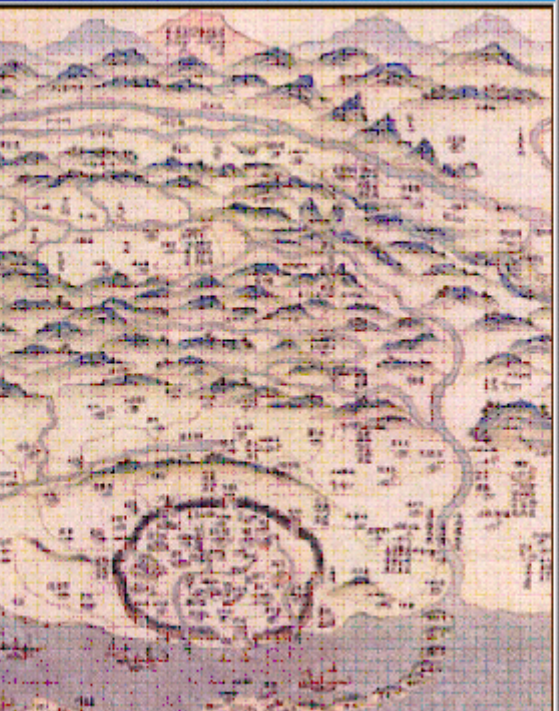
入鄉賢祠府縣祭文

惟公一代經師千古道宗聞之者幾

所為猶龍十年未祀而今始祀於此  
祠之慎鄉社既祀而今復祀于此也  
之公

告丁母

其結髮同母叔母並為學至于四十五  
與某母同舍者三年而情益親親如  
事不相周旋也况病危喪葬乎當某



牒

突將都散員兵馬使牒知  
者故

天祐元年八月五日

使檢校太尉陶行





# Digitization at the NCL

## Technical Standards

- Technical Standards: Various types of Metadata formats and digital file standards are used by the library in digitization work:
  - Digital Library Distributed Protocols (OAI, Open URL)
  - Information Retrieval Application Service Definition and protocol Specifications(CNS-13416, Z39.50)
  - CMARC
  - Chinese MARC Format for Document Analysis
- Metadata specifications
  - Material Digitization and Denomination Principles
  - NCL Rare Book and CMARC Field Comparison Chart
  - NCL Periodical Image Coding Principles
  - NCL Newspaper Image Coding Principles
  - NCL Local Documents Image Coding Principles
  - Standards and Coding Principles for Conversion of Rare Book Microfiche Data to Image Files



# Digital Content about Taiwan at the National Central Library

- Three major database systems developed for collecting and digitizing Taiwan area historical documents .
- **Taiwan Memory**: Subject-related modules on the historical figures, events, periods, places and things of Taiwan, drawing on the rich collection of historic photos, books, news clips, and other multimedia materials at the NCL.
- **Taiwan Info**: Information on Taiwan today presented in subject-specific modules.
- **Window on Taiwan**: An introduction to the culture, geography, tourism resources, and other facts on the 369 townships of Taiwan's 21 counties.





# Digital Content about Taiwan

## Current Progress

- The Reader Services Division at the NCL has gained the extensive experience in digitization along with the implementation of the three about Taiwan systems and further expanding their digital content coverage.
- **Taiwan Memory**: Over 350,000 metadata materials, 700,000 digital images and video archives , esp. 40 years of TTV night time news broadcast
- **Taiwan Info**: over 560,000 items of metadata and 16,000 digital objects (including pictures, tables, charts, music, and visual materials)
- **Window on Taiwan**: over 20,000 items of metadata , containing townships and villages information, contents fully translated in English
- Funding support :Ministry of Education (MOE), Council for Cultural Affairs (CCA)







# 都市容顏

臺灣記憶

【台北市建築老照片系列】



- 導讀
- 學校
- 民俗產業

- 宗教
- 政治
- 相關連結

國家圖書館 版權所有 © 本網

## 北帝國大學



## 民國19年艦舢飲食攤

飲食文  
種類  
逸生  
便仔  
玉  
湯、  
潤  
日營  
時日  
艙  
艙圖  
出當  
擔挑  
到小



## 民國20年仁濟院食堂



有財產、日皇太后大喪賑款，以及總督兒玉元太郎捐款，成立了台北  
範，而此仁濟院即是今天台北市萬華區仁濟醫院的前身。從此張圖片  
年的孩童，也有高齡老婦；再者，從民眾的服飾觀之，有著傳統中國

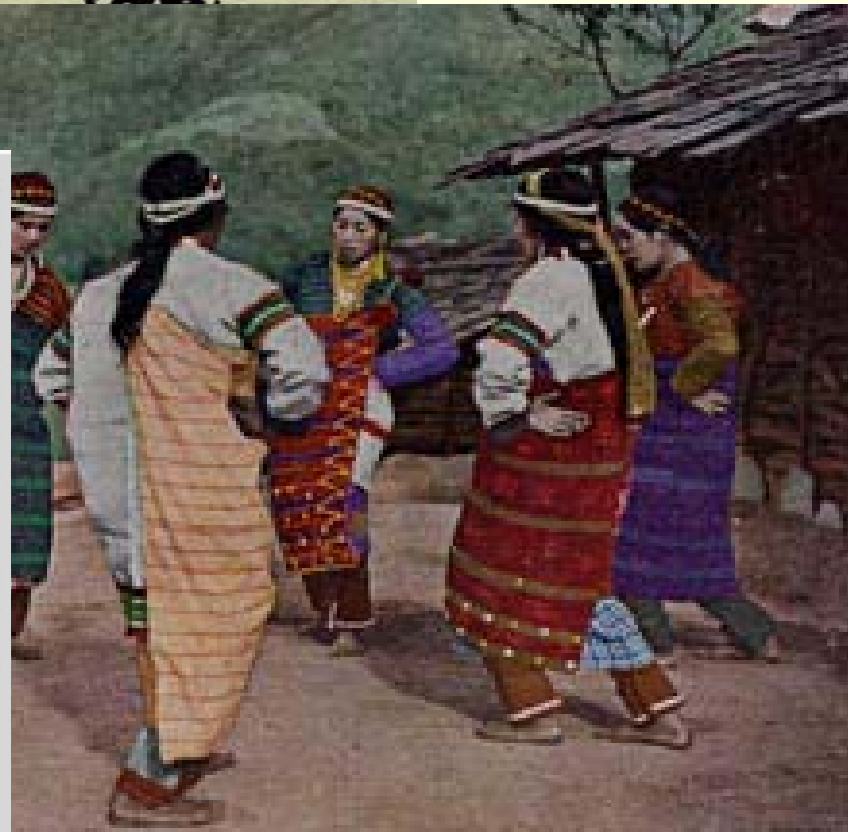


# 世紀客

百年前的原



導  
生活  
統治





Stelae Taiwan 孝後 石卑 厝

# 留長蔭絲

中國  
 森林組  
 華民國  
 臨台灣  
 和之態度  
 改進工作  
 增進則  
 航測使  
 後林業政  
 良多功績  
 奉英國政  
 新職他  
 勤此日遠  
 勤貞珉  
 林產  
 中華民國



此碑之建立，其目的在紀念林蔭長君之遺德，並昭示後人，以資勸懲。林君之生平事蹟，詳見於碑文。其為人正直，辦事認真，深受各界之愛戴。其在台灣期間，曾擔任森林組長，為台灣之林業發展，貢獻良多。其逝世後，各界人士，感念其德，特發起建立此碑，以表哀思。此碑之建立，不僅是林君之榮光，亦是台灣之榮光。

樂山園ハ人類ニ奉仕スルコ  
 トニ依リ神ノ榮光ヲ顯ハ  
 ス為メニ建設セラレタモノ  
 デアリマス  
 本園ノ設立ニ當リ臺灣總督  
 府臺灣及外國ニ在ル諸教會  
 臺灣ニ在ル總エル階級ノ個  
 人及ビ團體ヨリ又内地ハワ  
 イ米國カナダニエウフアウ  
 ンドラント英國スコツトラ  
 ンド印度香港中華民國等ニ  
 在ル幾多ノ人々ヨリ熱誠十  
 ル激勵ト援助トヲ給リタル  
 コトヲ感謝致シマス  
 本園ハ昭和九年三月三十日  
 主後一九三四年臺灣總督  
 中川健藏閣下御臨場ノ上開  
 園シタコトヲ幸紫ノ紀念ト  
 存ジマス



# Digitization of U.S. Library Collections: Rare Books and Genealogical Resources

- **Digitization of rare books at the U.S. Library of Congress**

The NCL and LC have signed an agreement to jointly convert rare Chinese materials to digital form.

- **Digitization of Taiwan genealogical materials on microfiche**

The NCL has signed an agreement with the Genealogical Society of Utah (GSU) to obtain genealogical microfilm materials collected by the Society in Taiwan between 1970 and 1980



# NCL and LC Digital Project Background (1)

- The National Central Library has extensive experience in digital resource creation and operations, especially in the area of metadata creation and digitization of rare books.
- By bringing together the experience of NCL and the valuable collection resources of LC, this collaboration will contribute to the preservation of Chinese rare books and make them widely available to the public, realizing the ideal of resource sharing to benefit researchers and scholars worldwide.



## NCL and LC Digital Project Background (2)

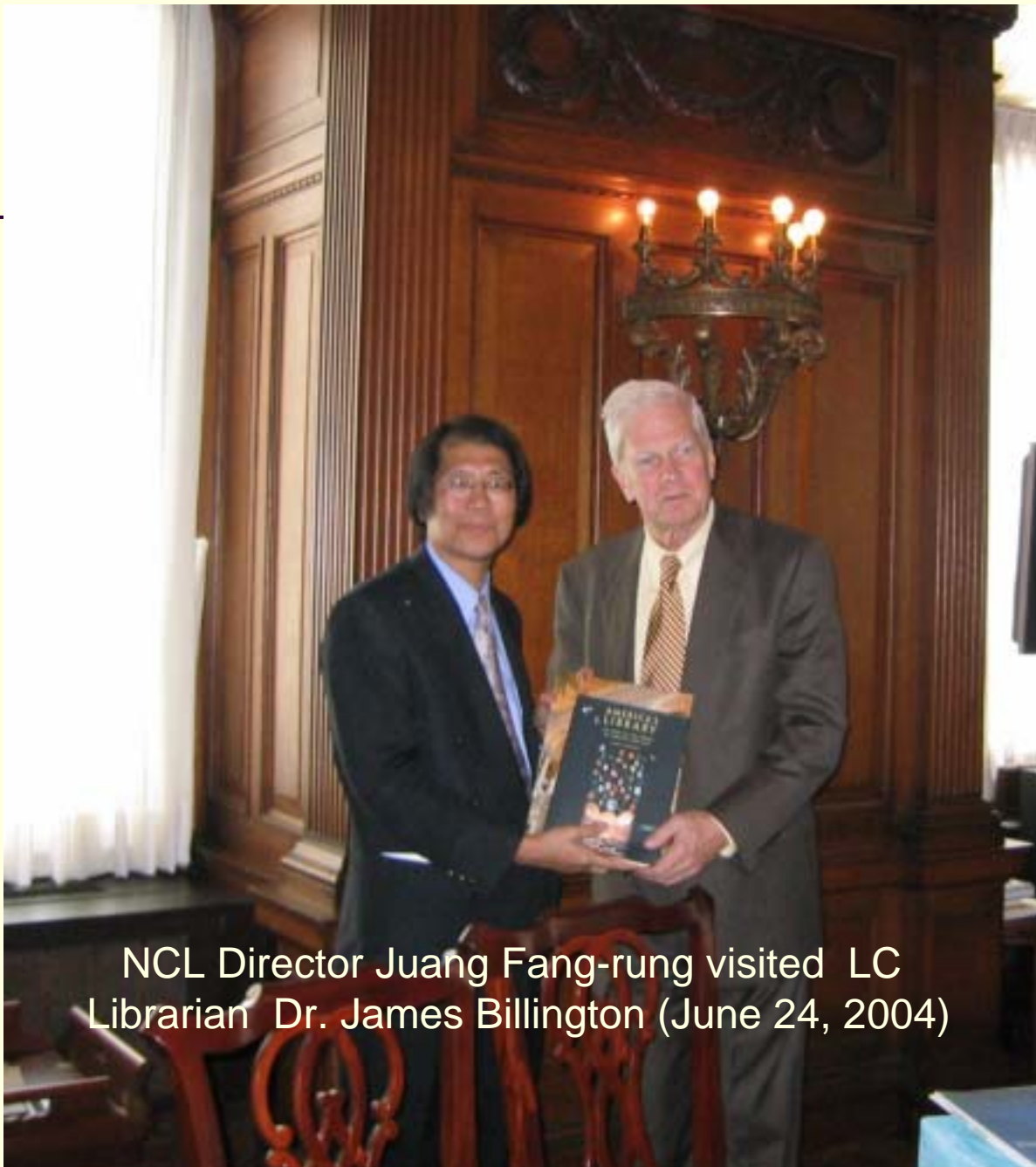
- The LC collection contains nearly 3,000 rare Chinese books (according to Wang Chung-min's *Catalog of Rare Chinese Books in the U.S. Library of Congress Collection*).
- Editions coverage: from the Song to early Ching Dynasty, including valuable Ming imperial petitions and anthologies, one of the most important collections of such works outside of Asia.
- Collection feature: Ming and Ching local histories and Ching editions together form an important resource for the study of Chinese politics, society, economy, literature and local history



## NCL and LC Digital Project Cooperative Process (1)

- In February 2004, LC Asian Divisions specialists visited the NCL to learn about the NCL rare book digitization operations. During the visit, they proposed a cooperative project between the two libraries to digitize the Chinese rare books in the LC collection.
- In June 2004, NCL Director Juang Fang-rung visited Dr. James Billington, the Librarian of Congress, and reached a verbal agreement to carry out the cooperative scanning project.





NCL Director Juang Fang-rung visited LC Librarian Dr. James Billington (June 24, 2004)





## NCL and LC Digital Project Cooperative Process (2)

- In March 2005, the two sides signed a formal cooperative agreement and digitization work was commenced.
- **A three years' project** from March 2005 to December 2007 is underway after the signing of this Agreement.



# NCL and LC Digital Project Cooperative Goal

- To facilitate the digitization and computer-readable description of selected rare book materials from the collections of the LC Asian Division.
- To make the digital production available to users on the NCL web site and LC web site.
- To concentrate the digitization of selected Asian Division rare books that NCL does not have, both by title and by edition, including some 80,000 images (about 300 titles) of Chinese rare books, which were brought from China to the U. S. since 1869, will be digitized.

# NCL and LC Digital Project Role and Responsibility

## ■ NCL

- To make human resources and equipment available to the LC to facilitate scanning operations
- To begin providing image files and bibliographic resources for the scanned materials before the end of 2008

## ■ LC

- To select rare Chinese books available for scanning
- To provide the necessary space and equipment for scanning work
- To provide bibliographic descriptive data for the scanned books in order to produce online bibliographical resources

# Asian Division, Library of Congress

Optical Workstations in jobsite



RAID Server



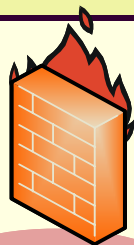
Domain Control



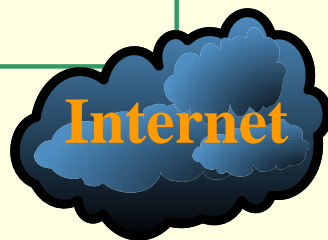
PKI



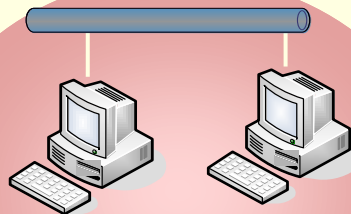
Firewall



Internet

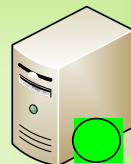


Database Replication  
Knowledge Repository



NCL、eHanism

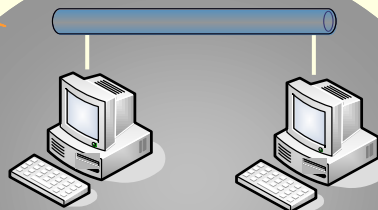
Image Database



Internet Data Center

LC、eHanism (USA)

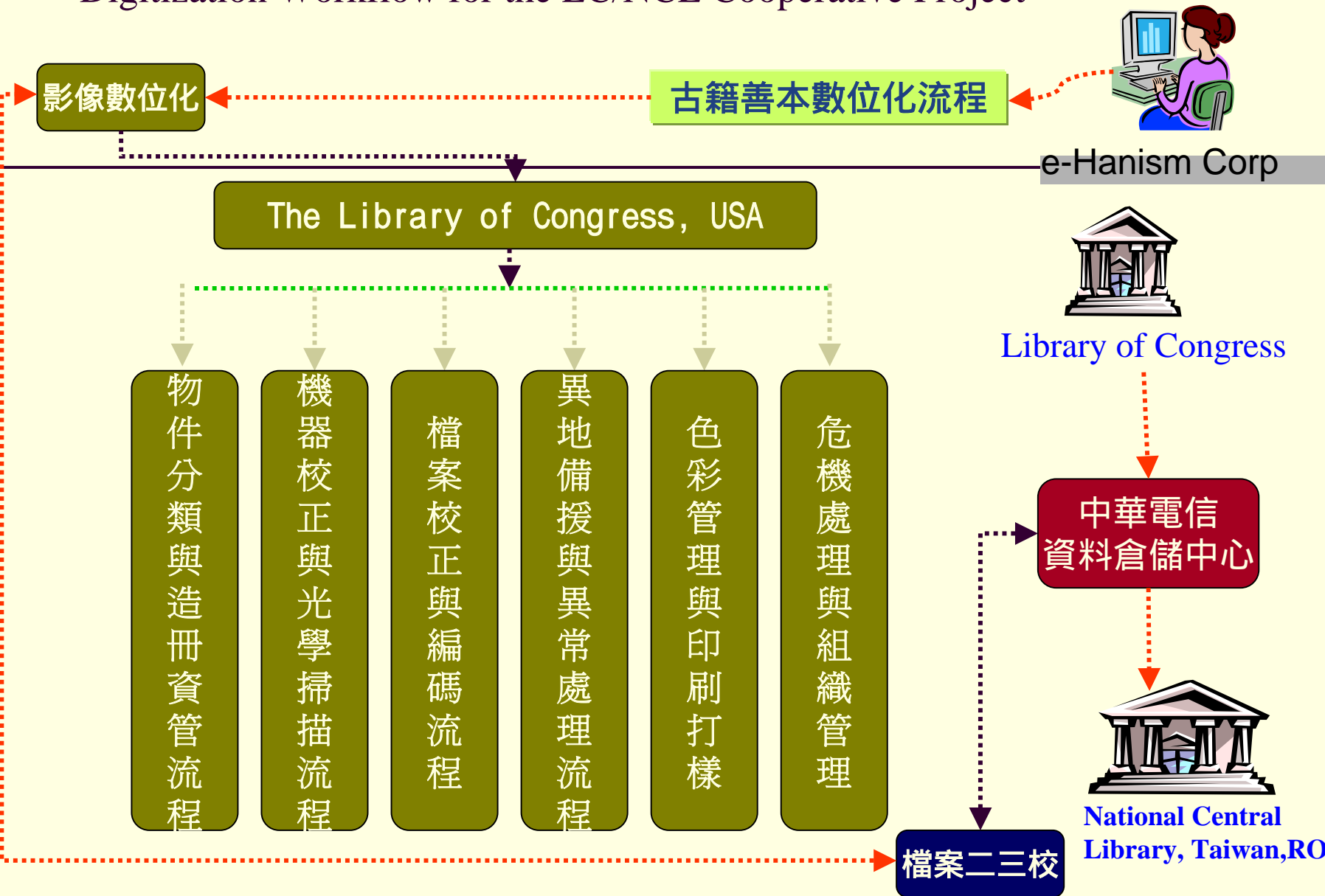
Scholars and Professors  
Online Metadata Editing



China and Worldwide



# Digitization Workflow for the LC/NCL Cooperative Project





Example 1.2  
Proof.

2005.5.19

## 94年(2005)美國國會圖書館古籍善本轉製影像工作日誌

驗收人員：劉玩伶

日誌頁次：94年-09月-12日~09月-16日 - 1(頁)

紀錄人員：林克遠

簽收日期：民 94 年 月 日

序號	書號	書名	冊數	總頁數	備註
1	(V)F201 K15	欽定天文正義	11~32	1287	
2	(V)C397.6 T78	鄒德泳雜著	6	361	金鑲玉本，書品甚佳。此書是天壤間孤本。
					冊二(1C001)多一頁 P又十一
					冊三(1D001)缺頁碼 P9
					冊三(1D001)08b10a又一插頁 冊六(1L001)多兩頁 P又三
3	(V)J161.1 C47	管晏春秋百家評林	4	279	金鑲玉本。中縫頗窄，掃描作業較為費工。
					冊二(1A002) P49-50編在同一頁，故檔案編碼為 49b51a
					冊四(1A004) P43-44編在同一頁，故檔案編碼為 43b45a
4	(V)J933 K95	管公明十三篇	2	68	墨色濃淡不一。版心處多斷裂，注意葉數連貫，掃描作業較為費工。
5	(V)K102.52 C42	文章正宗	4	229	以七、八百年古籍而言，保存上佳矣。雖然只殘存卷4、10、13、15，但以其為宋本，亦宜列入掃描。
					冊一(1A004)原件P43與44裝訂順序前後顛倒，採取影像剪輯方式，還原正確之頁數順序。
					冊四(1A015)缺P18，故編碼為17b19a 冊四(1A015)缺P58-59，故編碼為57b60a → 60b000
6	(V)C227.6 C43	聯志	1~2	113	紙張稍黃。第一冊第一葉有六藏印，宜側重表現之。
					冊二(1A002) 缺P5，故檔案編碼為 04b06a
TTT				9997	

11.69 x 8.26 英吋



館藏古籍善本轉製影像作業案例行週報 940916

- ◇ 本週目標：完成 2000 頁光學影像掃描與編目校正(每日 400 頁)。
- ◇ 達成進度：已完成頁數 2337 頁，達成率 116.85%，累計 39239 頁。
- ◇ 下週目標：
  1. 完成光學影像掃描與編目校正 2000 頁，累計目標 41239 頁。
  2. 完成美國、台北資料庫異地備援啟用程序與檔案傳輸作業。





## NCL and LC Digital Project Current Progress

- About 80,000 images (300 titles) to be digitized till the March 2006 , with the special funding from the Ministry of Education , ROC.
- About 46,000 images (200 titles) scanned , cataloged and proofread till the end of September of this year
- Images scanned at actual size in 300 dpi/24 bit resolution, TIFF files with a flatbed scanner (Indus Book Scanner 5002) at an A2 / 300 dpi setting

性理大全(萬曆刻本)

御製性理大全書序

朕惟昔者聖王繼天立極以道治天下自伏羲神農黃帝堯舜禹湯文武相傳授受上以是命之下以是承之率能致雍熙悠久之盛者不越乎道以為治也下及秦漢以來或治或否或久或近率不能如

J269  
H91.2  
B  
4

PRESENTED  
TO THE  
Government of the United States of America,  
BY  
HIS MAJESTY THE EMPEROR OF CHINA,  
June, 1869.

COLLECTED ESSAYS  
ON  
MENTAL PHILOSOPHY,  
BY THE SCHOOL OF CHE-HI.  
By Imperial Authority.

EDITION OF 1868.

10 Vols.  
Vol.

性理大全書

同治皇帝贈書(1869年)

# 臺灣番社風俗

All about the aborigines in Taiwan (Formosa)







# NCL and GSU Digital Project Background (1)

- Genealogical materials are very important resource for the local history research.
- To facilitate the Taiwan area study research, the Taiwan Area Genealogy Union Catalog system was developed by the NCL with other 7 participating libraries and organizations.
- To further increase the genealogical collections at the NCL and make them available in digital form on the website for researchers, the NCL decided to get in touch with the GSU for digital project cooperation.

# Taiwan Area Genealogy Union Catalog system

網址(D) <http://rarebook.ncl.edu.tw/rbook.cgi/frameset5.htm> 移至 Favorites

古籍影像檢索系統 | 認識中國古書 | 明人文集資料庫 | 古籍全文檢索系統 | 中文古籍書目資料庫 | 台灣地區家譜聯合目錄資料庫 | 相關網站 | 回首頁

國家圖書館  
National Central Library

## 台灣地區 家譜聯合目錄資料庫

繁體 簡體

Family History

資料庫簡介

參與單位一覽表

國家圖書館相關網站

Enter

Family History



## NCL and GSU Digital Project Background (2)

- The Genealogical Society of Utah has acquired important family history sources in over 100 countries including Taiwan around 1970-1980.
- The Society invites archival or scholarly institutions to work together to preserve and share the genealogical and family history heritage of people worldwide.
- Historical documents captured digitally can be used repeatedly and reproduced often, leaving the original documents untouched, undamaged, and preserved for future generation.



# NCL and GSU Digital Project Cooperative Process (1)

- At the beginning of 2004, the NCL started to contact the Family History Center of the Genealogical Society of Utah in Taipei.
- After one-year intensive e-mail communication and onsite visits between two parties, the NCL and GSU have signed a formal cooperative agreement on Nov. 22, 2004.
- A five years' project is underway after the signing of this Agreement.
- In Aug. 2005, the project received the financial support from the Ministry of Education. The NCL started to arrange the digitization work and had it contracted out by local digital vendor.





## NCL and GSU Digital Project Cooperative Process(2)

- Ms. Yu Hsiao-ming , Chief of the Reader Services Division at NCL, visited the GSU headquarter in Salt Lake City, UTAH, USA and met GSU librarians to discuss about the technical specifications needed for the digital cooperative project.





# NCL and GSU Digital Project Cooperative Goal

- NCL will create and complete the Digital Images and Indexes within five years from receipt of the 880 rolls (about 9,000 titles) of Taiwan genealogies microfilm from GSU , and send progress reports to GSU regularly.
- NCL delivers to GSU a free copy of the Digital Images and Indexes at the completion of the project.
- NCL makes the digital production available to users on the Taiwan Memory web site.



# NCL and GSU Digital Project Current Progress

- About 100 rolls (over 1,000 titles) of Taiwan genealogies microfilm from GSU to be digitized before the end of this year , with the special funding from the Ministry of Education , ROC.
- 14 rolls of the microfilm (202 titles) genealogies with 16,000 images completed monthly



# NCL and GSU Digital Project Digitizing Specification

- Bilingual metadata formats
- More metadata elements for GSU later use
- Digital images for the archival and print format have to meet two parties' different requirements.
  - Archival format :
    - TIFF files of 300 dpi, grayscale and actual size for NCL
    - JPEG files of 200 dpi, grayscale and actual size for GSU
  - Print format :
    - TIFF files of 300 dpi, grayscale, at ratio of 90% size for NCL
    - JPEG files of 200 dpi, grayscale, at ratio of 40% size for GSU

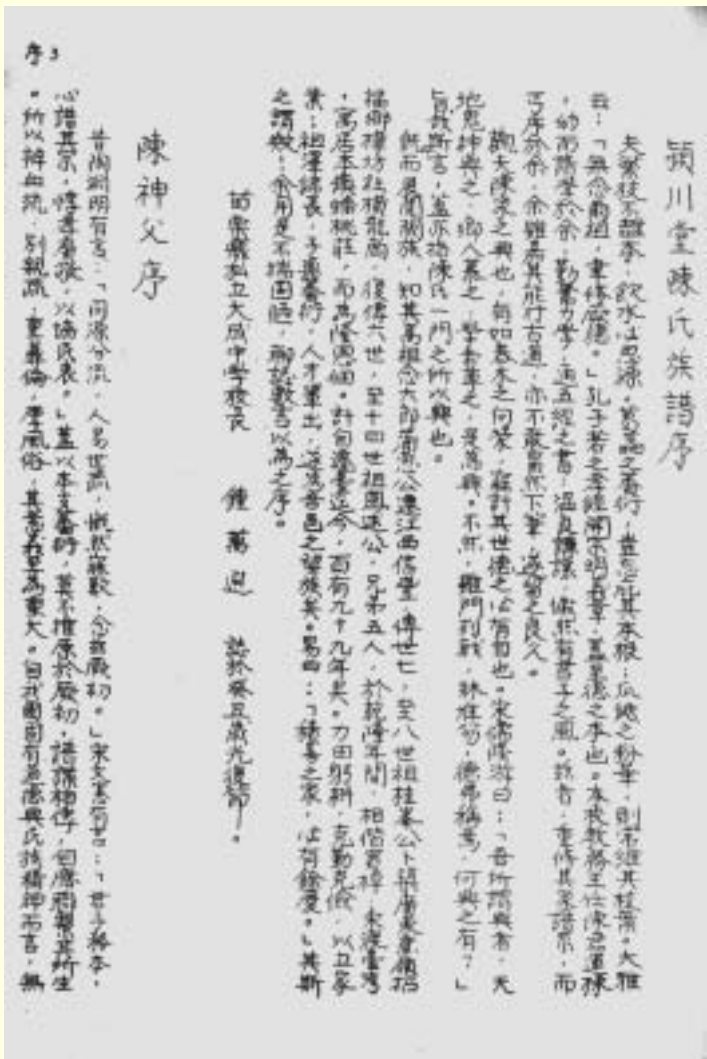




猶他家譜學會族譜微捲原件  
(e.g.[臺灣新竹]羅氏宗親家譜資料)

\* 族譜影像實例：

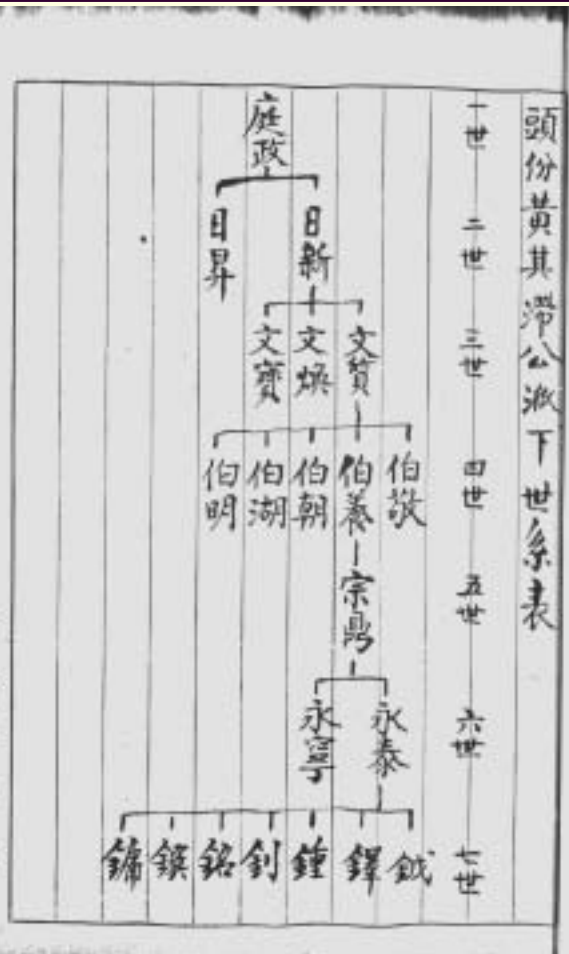
《穎川堂陳氏族譜》



# 《頭份黃其滯公派下世系表》

祖籍：廣東省嘉應州鎮平縣廣福鄉大黃屋

## 頭份黃其滯公派下世系



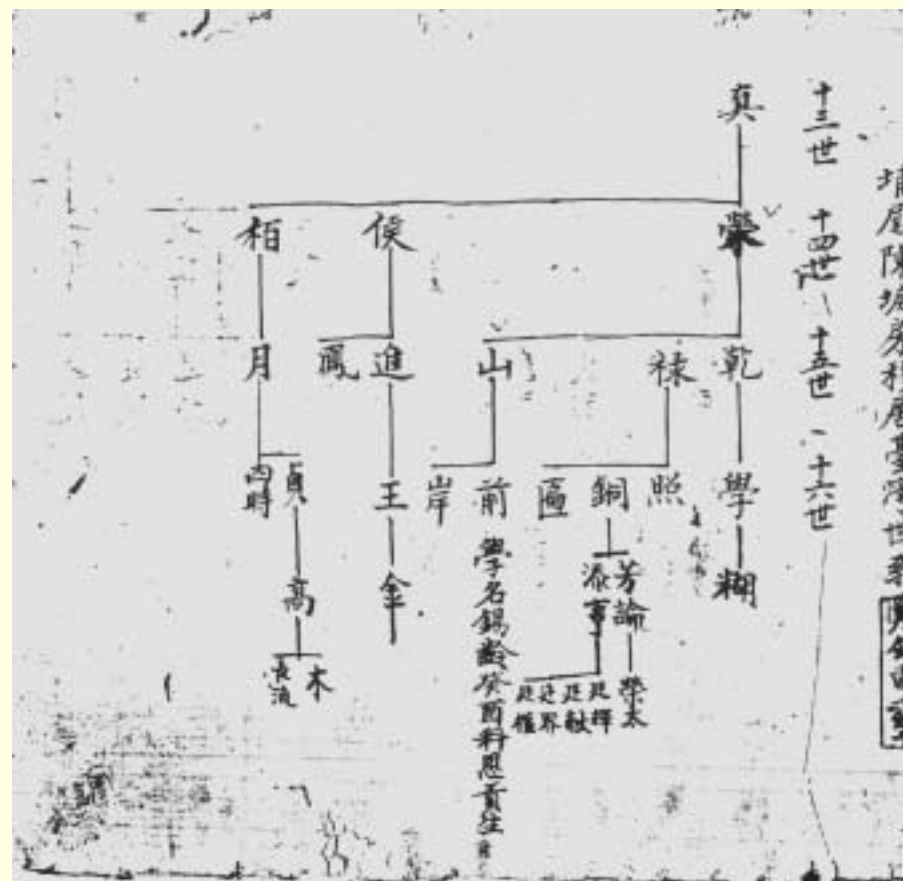
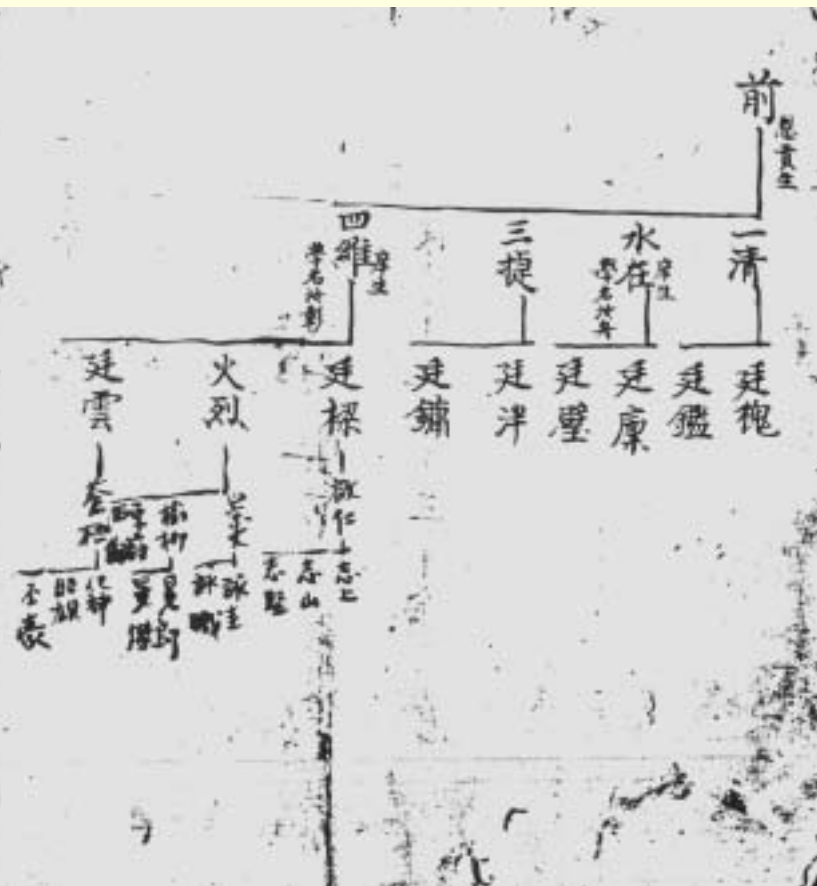
會心室用爰



會心室用爰



# 《埔尾陳塘芳移居臺灣世系圖》



# Future Prospect

---

- To promote the collaborative efforts on international projects in innovatively merging historic heritage with modern technology
- To strive for the continuous funding for the completion of the two international cooperative projects
- To enhance the historical digital collections developments worldwide
- To preserve local and national historical documents with the joint efforts of domestic or international communities

# Chinese Knowledge Portal

- Enables integrated browsing and searching of Chinese-language resources in Taiwan and around the world.
- Includes resources from Taiwan, Hong Kong, Macao, Singapore, mainland China, and other places of the world with Chinese communities.



# Welcome to the National Central Library



# Thank You



## Further Information:

- Reader Services Division
  - Ms Hsiao-Ming Yu, Chief  
hmyu@msg.ncl.edu.tw
  - Ms. Mei-Chen Sung  
jenny@msg.ncl.edu.tw
  
- Special Collections Division
  - Ms. Wei Peng, Chief  
pengwei@msg.ncl.edu.tw
  - Mr. Wei-Tung Chang  
wdc@msg.ncl.edu.tw

