

# information BULLETIN

Volume 30 Number 1

November 1998



Western Association of Map Libraries

*"... to encourage high standards in every phase of organization  
and administration of map libraries..."*

The **Western Association of Map Libraries** is an independent association of persons. The Membership has defined its Principal Region for meeting locations as: the Provinces of Alberta and British Columbia, and the States of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Membership in WAML is open to any individual interested in furthering the purpose of the Association, which is "to encourage high standards in every phase of the organization and administration of map libraries." Membership includes receipt of all issues of the *Information Bulletin* and Electronic News & Notes (if an email address is provided), mail announcements of WAML meetings, voting privileges and receipt of WAML ballots.

Dues are US\$20 per year and all memberships begin July 1. You may join any time of the year, by sending your name, address, phone, fax, email address and US\$20 to the WAML Treasurer at the address below. Make checks payable to "WAML" or the "Western Association of Map Libraries." Lifetime membership is open to any individual for a one-time payment of US\$500. In addition to all membership privileges listed above, Lifetime Members also receive a copy of each volume published in the WAML Occasional Paper series. For more information about WAML, its purpose, meetings and membership, see the WAML Website at <<http://gort.ucsd.edu/mw/waml/waml.html>> or contact an officer listed below.

WAML and its *Information Bulletin* operate on a membership/volume-year basis. Subscriptions begin July 1 and end on June 30 the following year. Mid-year joiners/subscribers will receive back issues for that year. Back issues of the *Information Bulletin* are available for US\$10/volume, or portion thereof, from the Subscription Manager at the address shown below.

Subscriptions to the *Information Bulletin* are US\$25 per volume year. The *Information Bulletin* is issued three times each year: Issue #1 in November, Issue #2 in March, and Issue #3 in July. Subscriptions to addresses outside of the United States are charged US\$3 for postage in addition to the US\$25 subscription cost.

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***Hispania***

**Available at**

**[http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/historical/Ancient\\_hispania\\_1849.jpg](http://www.lib.utexas.edu/Libs/PCL/Map_collection/historical/Ancient_hispania_1849.jpg)**

This page accompanies "The Microreproduction and Digitization of Maps: A Comparative Analysis" by Thomas Corsemeier  
*Information Bulletin*, November 1998, Vol. 30, No. 1, Western Association of Map Libraries



# Western Association of Map Libraries

Volume 30 No. 1

INFORMATION BULLETIN

November 1998

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## *President's Message*

Greetings to WAML Members and IB Subscribers. Many of us were able to take advantage of a very informative program at the Library of Congress in Washington, D.C., our first meeting outside of the WAML Principal Region. I would like to thank Gary Fitzpatrick for organizing the meeting, Richard Spohn for working on the details, such as the banquet and registration, and everyone at the Library of Congress who led discussion sessions, gave presentations and tours.

Many of us felt comforted by the fact that the Library of Congress is also trying to figure out how to fit electronic resources and GIS into their activities, something that I was facing when I returned to Tempe. I have a feeling that we will all continue to deal with this for some time to come. We will continue our discussion of GIS in Libraries at the Spring Meeting in Long Beach, which will be hosted by Greg Armento. This will also be the topic of a presentation session at the Spring, 2000 meeting in Edmonton, Alberta. If you already have or are bringing GIS online shortly, keep this in mind. We want to hear about your problems and triumphs.

Because of time constraints at the Fall meeting, there was no organized Executive Board meeting, although we did eat lunch together to discuss meeting details. So I have very little to report on concerning the Board's activities. We did approve donating \$500 to the Philip Lee Phillips Society in honor of Ralph Ehrenberg, former Chief of the Division, who retired earlier this year.

I would also like to thank Bob Richardson (former head of the Cartographic and Architectural Records Branch who is now Head of Special Media Archives Services Division) for his evening tour of the Cartographic and Architectural facilities at Archives II. This tour started in the back area, where we saw the compact shelving and storage solutions that have been designed and built for the National Archives. It continued in the Reading Room with an interesting assortment of western U.S. cartographic materials that had been pulled and set out for display. This display was clearly the highlight of the tour.

Kathryn Womble has agreed to take on the job of editing the *Information Bulletin*. We look forward to seeing the reports of the presentations from past meetings that were taped and transcribed. I would like to thank Larry Cruse for stepping in and editing the *IB* after Mary Larsgaard. I would also like to thank Dale Steele for his continuing service as Production Editor and Lucinda Hall for her work on Electronic News and Notes. I have assumed responsibility for the WAML Web site. One of my goals is to compile a list of resources (called the Map Librarian's Toolbox) that can be used by Map Librarians. Keep checking for new information.

*Linda Zellmer*

## *Letter from the Editor*

Hello Readers —

I have taken a leap and volunteered to edit the *Information Bulletin*. As you are probably aware, the production schedule is behind at present and I'll try my best to catch it up. I'd like to thank Larry Cruse, Dale Steele, Lucinda Hall, Ken Rockwell, Kathy Rankin and Ross Togashi who have each kept the ideas and content coming while the *IB* was without an editor.

Some items in this issue and the next have dates and deadlines that have passed by the time you receive this issue (e.g., meeting announcements, job announcements). I felt that these were important items to have in the written *IB* record. As soon as we catch up, the timeliness of content will return.

I can use your help. If you have ideas for contributions or people that I should contact for contributions, please let me know. I also need state editors for California, Idaho, Montana, New Mexico and Wyoming. Also, please keep sending news items to Lucinda Hall at hallx030@tc.umn.edu or your State/Province Editor for the Electronic News & Notes. See guidelines and contact information in the front pages of this issue.

Help keep WAML strong!!

Thanks,

*Kathryn Womble*

May, 1999

The *Information Bulletin* and WAML Electronic News & Notes are published by the Western Association of Map Libraries as tools for communicating with its Membership and Subscribers; however, opinions expressed in these publications do not necessarily reflect an official Association position.

#### **Contribution Guidelines for the *Information Bulletin***

Please submit material in electronic form. You may send material via email as an attachment or regular mail (3.5" diskette, PC, Word or WordPerfect preferred). A file may also be posted on a server where the Feature Editor may download it. Photographs should be black & white glossy prints or digital image files. Please contact the Feature Editor if you have any questions.

*IB* copy deadlines are: September 1 for Issue #1, January 1 for Issue #2, May 1 for Issue #3

#### **Feature Articles**

Submit contributions and ideas for articles to the *IB* Feature Editor, Kathryn Womble. These may include but are not limited to: feature articles about maps and map librarianship, GIS and geospatial data use and services in libraries, mapping agencies, conference reports, historic mapping and future mapping trends, information about a specific map library or collection, map use or user studies, map librarianship training and cartobibliographies. "Something to Make Your Life Easier" features a procedure, handout, Webpage or brochure to share that may help other map librarians in their work.

#### **Photo Essays**

Contributions and ideas for photo essays are accepted by Ross Togashi, Photo Essay Editor.

#### **Reviews**

Atlas and book reviews and reviews of digital cartographic products, software and data are welcome. Contact the Atlas & Book Review Editor, Kathy Rankin or the Digital Data Editor, Linda Zellmer. Hardware and Reproduction Technology reviews may be sent to the Micrographics/Technology Editor, Larry Cruse.

#### **Contribution Guidelines for WAML Electronic News & Notes**

Submit items to Lucinda Hall or the appropriate State or Province Editor (see below) at any time for inclusion in the WAML Electronic News & Notes. E-N&N is an irregular email publication that is compiled and sent only to WAML members via email. The E-N&N Editor appreciates receiving contributions via email, but accepts regular mail as well. Please flag time-sensitive items in the subject line.

Back issues of WAML E-N&N are available for viewing at the WAML Website. WAML E-N&N items will also appear in the *Information Bulletin*.

E-N&N includes the regular feature "New Mapping of Western North America." Submit citations for new maps of the western United States and Canadian Provinces to Ken Rockwell, New Mapping Editor and include ordering information if possible.

Contributions to E-N&N may include news about people, such as promotions, job changes, retirements and obituaries. Also, cartographic cataloging news, conference/convention announcements, job announcements, industry/map dealer news, announcements of new cartographic materials (maps, atlases, data and software, CDs, URLs), citations for articles/special journal issues, preservation news, remote sensing news and agency news are welcomed.

Potential sources for news items include: communications with colleagues, listservs (please acknowledge original author and listserv), Websites (use search engines to search for maps, atlases, cartography, geospatial data, GIS

and your state, county or city), automated notification services such as those offered by amazon.com or CARL Uncover, journals and newspapers, vendor, publisher and agency catalogs and newsletters and conference announcements.

#### State and Province Editors

State and Province Editors will accept contributions at any time for their state or province and will forward them for publication. State and Province Editors have volunteered to be especially vigilant for news, notes, ideas for feature articles, reviews or photo essays about cartographic developments affecting their state or province.

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Vacant

## WAML Committees and Representatives for 1998/99 Membership Year

## Election Results for July 1998 — June 1999 WAML Year

### Executive Board

President: Linda Zellmer  
 Vice President/President Elect: Greg Armento  
 Secretary: Sue Haffner  
 Treasurer: Muriel Strickland  
 Past President: Bob Sathrum

President: Linda Zellmer  
 Vice President/  
 President Elect: Greg Armento  
 Secretary: Sue Haffner  
 Treasurer: Muriel Strickland  
 Past President: Bob Sathrum

### Appointees

Archivist - Phil Hoehn, 1980-  
 Book and Sales Manager - Richard Soares  
 Subscriptions Manager - Jim O'Donnell, 1997 -

### Membership/Hospitality Committee

Inlie Hoff (1998 - )  
 Cynthia Jahns (1998 - )  
 Wendie Helms (1998 - )

### Nominating Committee

Bob Sathrum (1998-1999)  
 Vacancies

### Publications Advisory Committee (PAC)

Vacancies  
 Ex Officio:  
 Kathryn Womble (1998-2000)  
 Dale Steele, IB Production Editor (1992- )  
 Richard Soares (1998 - )

### PAC Microforms Subcommittee

Larry Cruse (1993- )  
 David Deckelbaum (1996-1998)

### PAC Geoscience Subcommittee

Vacancies

### Representatives/Liaisons

To AACCCM - Mary Larsgaard, 1992-  
 To ACMLA - Tim Ross, 1991-  
 To ALA/MAGERT ñ Christopher J.J. Thiry 1996-8  
 To CCISA - Muriel Strickland 1996-  
 To CUAC - Janet Collins (1996- ); Christopher J.J. Thiry (1998- )  
 To GIS - Richard Spohn (1996- )  
 To IFLA - Barbara Haner (1989- )  
 To SLA/G&M - Muriel Strickland (1985- )

**Minutes**  
**WAML Fall Meeting**  
**September 16-18, 1998,**  
**Washington, D.C.**  
*by*  
**Sue Haffner**  
**WAML Secretary**

**Business meeting**

September 16, 1998

President Linda Zellmer called the combined business meeting and Sounding Board to order at 10:00 a.m. in the Geography and Map Division of the Library of Congress.

Gary Fitzpatrick, of the Geography and Map Division, welcomed the attendees.

Greg Armento outlined the schedule of upcoming meetings: Spring 1999, Long Beach, California; Fall 1999, Golden, Colorado; Spring 2000, Edmonton, Alberta; Fall 2000, Provo, Utah; Spring 2001, Portland, Oregon; Fall 2001, Reno, Nevada; Spring 2002, Santa Barbara, California; Fall 2002, Honolulu, Hawaii.

Treasurer Muriel Strickland reported that she has \$7,786.91 on hand in the checking account, \$14,442.60 in the savings account. Membership currently stands at 166 (95 principal region members, 36 associate members, 26 institutional members, 9 life members).

Business Manager Rich Soares reported that he had handled \$4,749.00 worth of orders since his last report. The Occasional Papers are

still selling well, especially no. 10. He has \$862.00 in his checking account.

Subscriptions Manager Jim O'Donnell announced that vol. 29, no. 2 of the *IB* was in the mail, and that vol. 29, no. 3 would be issued soon. We have 148 subscriptions for vol. 29, and 150 for vol. 30. He has \$1780.00 in his account.

**Committee reports:**

**Membership:** Kathryn Womble has sent out 18 letters to former members to encourage them to renew.

**Nominations:** Bob Sathrum said this committee needs some additional members.

**Publications Advisory Committee:** Kathryn is looking for state editors and ideas on what sorts of items should be reported to the News and Notes editor.

**Bylaws:** The spring 1998 election was held under the old by-laws. Now, out-of-region members can vote and run for office.

**WAML web page:** Linda is compiling a feature called "Map Collections in WAML Principal Region", so she needs the url of each institution's web page. She has added a list of other map library organizations, and would like to do a toolbox page (vendors, etc.), and

one on preservation materials.

**Liaison reports:**

**AACCCM:** Mary Larsgaard reported that the group is working on cataloguing revisions for cartographic materials. They met September 8-14, 1998. Velma Parker (National Archives of Canada) is responsible for editorial work in support of the Library of Congress Secretariat.

**ACMLA:** no report.

**ALA-MAGERT:** no report.

**CCISA:** Muriel Strickland reported that they would meet in Ottawa in summer, 1999, at the International Cartographic Association meeting, and would discuss the status of map libraries and librarianship. (Linda would like to discuss this at the spring 1999 WAML meeting.)

**CUAC:** Peter Stark reported that they had a good meeting at USGS in May 1998 and the minutes should be available soon. Chris Thiry will replace Peter as our liaison; Janet Collins will continue. Chris and Donna Koepp will serve as program chairmen.

**ESRI Users' Conference:** Jean Kan reported an improved meeting, with 70-plus attendees. Linda reported that

institutions with ESRI site licenses will receive a set of 4 CDs that contain a variety of data. Those institutions with multiple licenses need to determine access to the set.

GIS: Jim O'Donnell reported the International Geoscience Conference offered an interesting variety of programs.

IFLA: no report.

NACIS: Dan Seldin announced that the next meeting would be November 7-10 in Milwaukee.

SLA G&M: Dorothy McGarry reported that the division was getting back on track, with new chairmen and programs.

WAML Awards: recognized for service were Greg Armento, book review editor of *IB*, 1991-1997; Dorothy McGarry and Kathryn Womble for their work on the bylaws revision; and Peter Stark for his 6 years as CUAC liaison.

Other business: Jim O'Donnell reported that the surplus of funds from the fall 1997 Pasadena meeting was sufficient to purchase and frame the Stanley D. Stevens Honorary Map

from the Dibblee Foundation in honor of Stan and his contributions to WAML. Cynthia Jahns said that the map had been presented to Stan at a party at the UC Santa Cruz library.

Linda and Kathryn are still working on the design for a WAML pin.

Greg announced a preliminary agenda for the spring 1999 meeting in Long Beach. He needs a few more speakers.

Michael Noga reported seeing a lot of cartographic items at the Frankfurt Book Fair.

Business meeting adjourned at 10:50.

### **Executive Board Meeting**

16 September 1998

*The Executive Committee met during lunch at the Library of Congress cafeteria.*

WAML committees: Linda wondered how many are still useful. Can committees not established by the bylaws be abolished?

Membership brochure: this needs some revisions.

WAML url: can Larry shorten our url?

WAML letterhead: Linda brought the letterhead on floppy disks for members to photocopy.

Publications Advisory Committee: this committee needs additional members.

Washington D.C. meeting: Linda did most of the incidental work (name tags, labels, etc.) It was moved, seconded, and carried to donate \$500 to the Philip Lee Phillips Society in honor of Ralph Ehrenberg.

It was moved, seconded, and carried to appropriate \$100 for an honorarium for the archivist at Archives II, our host at the Thursday evening field trip.

Rich Soares needs a computer to replace his 10-year-old Mac. He will *hunt for one*. (He needs one especially in order to communicate with Jim O'Donnell.)

Rich wondered what it would cost for WAML to get an 800 number. He thinks he could do WAML business cheaper if people could click on that number from our web page.

Respectfully submitted,

Sue Haffner,

WAML Secretary

**Spring 1999 Meeting Announcement**  
**Western Association of Map Libraries**  
**April 28-May 1, 1999**  
**California State University, Long Beach**  
**University Library**  
**Greg Armento, Host**

**Meeting Site**

The Spring 1999 WAML meeting is being held 3 miles from the Pacific Ocean at California State University, Long Beach, where our unofficial collegiate motto is "75 degrees year round." The meetings will be held in University Library in the 5th floor reception hall of the Center for Faculty Development. The Library is located at the southern end of CSULB campus, West Campus Drive near 7th Street. View a Campus Map.

**Speakers**

The Meeting will include the following speakers. Specific time slots will be announced at the meeting.

Judith Tyner, Professor of Geography at CSULB will present the findings of her research on Silk Embroidered Globes. Eugene Turner and James P. Allen, Professors of Geography at California State University, Northridge will discuss the creation of their atlas, *The Ethnic Quilt: Population Diversity in Southern California*.

Marie Thibeault, Associate Professor of Art at CSULB will be speaking on the Cartographic Inspirations and Artistic Expression

Donald J. Waldie, a writer and Information Officer for the City of Lakewood will read to us from his critically acclaimed book, *Holy Land: A Suburban Memoir*.

Leta Hunt, Project Librarian for the University of Southern California will discuss current developments in USC's Project ISLA (Information System for Los Angeles).

**Discussion Sessions**

Janet Collins, Librarian at Western Washington University will lead a discussion on GIS in Libraries.

General Discussion on the State of Cartographic Collections and Librarianship

WAML Sounding Board and Membership Meeting

WAML Business Meeting

Stanford/UC Map Librarians Meeting

**Tentative Schedule**

Thursday, April 29, 1999

9-12 A.M. WAML Executive Board Meeting, 5th Floor, University Library.

Concurrent Meeting of UC/Stanford Map Librarians in University Library

11:30-1:30 P.M. Conference Registration, 5th Floor, University Library

1:30-2:00 P.M. Opening, Announcements & Welcome

2:00-4:45 P.M. Afternoon Presentations

6:00-8:00 P.M. Banquet at Rusty Pelican Restaurant in Long Beach.

Friday, April 30, 1999

8:30-12:00 A.M. Morning Presentations

12:00-1:30 P.M. Lunch

1:30-4:45 P.M. Afternoon Presentations

Saturday, May 1, 1999 - Field Trip to Getty Center, in West Los Angeles. Leave 8:30 a.m. return @ 6 p.m.

## The Microreproduction and Digitization of Maps: A Comparative Analysis

by  
**Thomas Corsmeier**  
The University of Texas School of  
Library and Information Science

**Abstract:** The range of colors found on many maps is difficult, if not impossible, to capture using micrographic materials. Recent advances in digitization have allowed for a more accurate representation of a map's colors and, through the World Wide Web, vastly improved access to the images. As a result, the digitization of maps has been embraced in way that the microreproduction process has never been. Although digital imaging technologies do not provide the life expectancy that microforms do, the benefits of digitization negate many of the advantages microforms offer. However, a closer analysis of two map digitization projects shows that the digitization of maps is still in a pilot stage and progress needs to be made in several areas before the technology can clearly surpass microforms as an ideal medium for storage.

*Editor's Note: This article is also on WAML's Website at: <http://gort.ucsd.edu/mw/waml/waml.html>. The benefit of viewing the article online is that the 14 digitized maps discussed here are linked and available for viewing in full color. Also please see the loose color photocopy of the 1849 Hispania map inserted in this issue.*

While an innocuous piece of paper to some, throughout history maps have been utilized as powerful weapons. Maps have been used by people to support claims of autonomy, while on other occasions, nations have used maps to assert

hegemony. Yet, maps are not permanent and are continuously challenged and replaced. We live in a period where technological developments have made computer-aided map production prevalent, and, as a result, a multitude of maps is being produced from things such as the solar system to the human brain. At the same time, maps of historical value have been given greater attention. In the past decades advances in photocopying, microreproduction, and digitization have made maps of historical value accessible to a wider audience.<sup>1</sup> However, due to their size, details, and importance of scale, many maps have proven to be difficult to capture

accurately.<sup>2</sup> Digitization is attractive as it provides the full color of a map and makes it possible to put a map online where it can be accessed by anyone with a personal computer and a modem. Microfilm and microfiche on the other hand do not always present a faithful representation of a map's colors, are limited in the number of users, and can be awkward to handle. Unlike digital imaging though, microforms are a proven media that have the ability to provide access to an image for centuries and are relatively inexpensive to produce.<sup>3</sup> In comparison, the life expectancy of the hardware and software involved with digital imaging is relatively short

and system upgrades are necessary at frequent intervals to keep the images available. This paper analyzes the processes involved in the microreproduction and digitization of maps. More specifically, the paper will examine map microreproduction and imaging projects carried out over the past two decades at the University of Texas at Austin and the University of California at Berkeley. The result of the observation shows the value and pitfalls associated with the microreproduction and digitization of maps. While microreproduction offers a clear advantage in terms of life expectancy, the ability of digital imaging to provide a replication of a map's color and provide wide access to an image are advantages that have tipped the scale in favor of digitization as the medium of choice for capturing maps.<sup>4</sup>

The University of California and the University of Texas are two of the world's largest map repositories.<sup>5</sup> The maps at the University of Texas's Perry-Castañeda Library range from USGS topographical maps, to historical maps dating from the early 19th century, to facsimiles of maps from the 15th century. The University of California also possesses a wide range of maps, varying from early maps of California and Mexico, to facsimiles of maps from as early as 100 AD, to twentieth century nautical charts. Unfortunately, as is the case with many paper documents, some of the older maps have begun to show signs of deterioration, becoming brittle and covered with spots.

Various technologies have been employed over the past decades in an attempt to capture and preserve some

of the maps in both collections. With either microforms or digital imaging, maps are difficult to successfully capture.<sup>6</sup>

The problems associated with the imaging of maps are numerous, and no media exists which satisfactorily addresses all the problems. A comparison of the University of California's and University of Texas's approach to capturing maps in its collections furnishes insight into the advantages and disadvantages of both microreproduction and digital imaging and offers an understanding to what extent the two media will be used in the future.

#### **Maps and Microcartography**

As a means of preservation, the amenities microforms offer are hard to equal. To be able to take an image that is in danger of slipping out of the human consciousness and preserve it for up to five hundred years is something that cannot be readily matched. However, maps are one of the most difficult items to capture with microforms. Some of the complications maps present are: the large size of some maps, which requires that they be filmed at very high reduction ratios or in sections; inclusion of small lines; and, complicated patterns of color where each variation of color provides specific information and a loss or change in color alters a map's accuracy. Given these difficulties, the use of microforms to capture maps has been embraced only moderately over the past decades.

#### **Maps and Microcartography: Different Approaches by Two Map Libraries**

Although microfilming has been carried out for over a century, the microfilming of maps was only started

on a large scale during the 1970s.

The idea for microfilming maps was advanced as early as 1943, but was not more widely explored until the 1960s and 1970s.<sup>7</sup> The Cartographic Archives Division of the United States National Archives and the National Map Collection at the Public Archives of Canada were two pioneering institutions in the establishment of large-scale map filming projects.<sup>8</sup> Also at this time, the term "microcartography" was given to the microfilming of maps by Larry Cruse, head of the Map Section at the University of California, San Diego.<sup>9</sup>

Microforms offer a number of features that work well with maps. In addition to their durability, microforms can capture the fine detail of an item and are a relatively inexpensive media. Although their collections share similarities in size and breadth, the map libraries at the University of California and the University of Texas took different approaches to capturing their maps with microforms. While the University of California's Bancroft Library modestly embraced the microfilming of maps, the Perry-Castañeda Library did not microfilm any of its collection. The person who oversaw the Bancroft Library's microfilming was Phil Hoehn, the library's map librarian from 1969-1994. According to Mr. Hoehn, the impetus to embark on a microfilming project came in the fall of 1977 when the Bancroft Library received a donation of a reel of 35mm microfilm with roughly 150 18th and 19th century maps from the Spanish archives pertaining to Mexico. The filmed maps lacked any clear identification or targets and

were eventually cut into individual frames and placed into film jackets. With this, the Bancroft Library slowly began the process of filming maps in its collections.<sup>10</sup>

During the next several years Bancroft Library captured an estimated 250 maps on microfilm. The maps to be microfilmed were chosen by Mr. Hoehn and consisted mainly of nautical charts, Van Dyke negatives, and blueprints. The majority of the maps were filmed by the University of California at Berkeley's Library Photographic Services, Conservation Department. The only exception to this was a collection of nautical charts filmed by an outside vendor (Oakland Blue Print Company) to be used as part of a Western Association of Map Libraries project. Mr. Hoehn was involved in the selection and preparation of the maps. The maps selected were in fair to good condition, with some being torn or having deteriorated color. Maps such as blueprints, blue line prints, and Van Dyke negatives were selected for microfilming partially because they were on deteriorating or poor quality paper. Mr. Hoehn did basic pre-filming preparations, including applying mending tape and flattening maps, but did not have any role in the development of instructions and targets used during the filming. This responsibility was left with the Conservation Department. During the filming, to avoid having to use high reduction ratios, several of the maps were spread out over more than one frame.<sup>11</sup>

After the filming of the maps and the processing of the film, one copy of 35mm silver-gelatin film was given to the Bancroft Library and

subsequently sectioned and inserted it into roughly 200 microfilm jackets.

The microfilming of maps allowed for a greater access of maps in two ways.

First, it made it possible for the Bancroft Library to send some of the original maps to libraries at the University of Alaska and University of Oregon where they would receive greater use. Secondly, copies of the microfilm were made available to other libraries in the University of California system. The microfilming of maps at the Bancroft Library was a relatively short lived process, as added job responsibilities decreased the amount of time Mr. Hoehn had available to select and prepare maps for filming.<sup>12</sup> In the early 1980s the Bancroft Library stopped microfilming maps in its collection.

In contrast with the University of California's efforts, the University of Texas's Perry Castañeda Library made no attempt to film the maps in its collections. The map librarian at the Perry-Castañeda Library, James Weiferman, claims that microreproduction of maps was not pursued due to lack of financial resources and the cumbersome nature of microforms, especially when the media is applied to cartographic materials.<sup>13</sup> As noted above, maps are one of the most difficult documents to accurately capture with microforms. Charles Stewart, head of photography at the University of California at Berkeley's Library Photographic Services, Conservation Department identifies several reasons why maps are difficult to capture with microfiche and microfilm. For more than twenty years, Mr. Stewart has filmed a number of maps to be put onto microfiche or microfilm.

The maps he has filmed were never part of a large map filming project, but rather, tended to be portions of collections the photolab was filming. He believes microforms are good for capturing the fine detail of a map and offering a means of preservation. However, Mr. Stewart cites difficulties in evenly lighting a map and accurately representing a map's scale and color code as major drawbacks in capturing maps with microforms.<sup>14</sup>

In an attempt to counter the absence of color representation in microfilm, the possibility of using color microfilm has been investigated over the past two decades. Unfortunately, color microforms have been plagued with difficulties, preventing it from being as reliable as black-and-white microforms. The primary problem with color emulsions tend to be poor resolution, troubles with the dye shifting, and light acting as a catalyst for deterioration among heavily used images. Based on his experience, Mr. Stewart recalls some of the signs of deterioration with color microforms appearing as early as six months after production. As a result, it is difficult to place a life expectancy rating on color microforms. There have been various estimates ranging from one to two hundred years, but not with any degree of certainty.<sup>15</sup>

After experiencing a brief popularity in the 1970s and 1980s, the number of maps being microfilmed declined drastically. Part of the reason for the dropoff are the difficulties involved with the microreproduction of maps and the increasing popularity of digital maps. Many maps are rich, vibrant works of art that are done an injustice with black and



white microforms. Furthermore, we live in a society where the benefits of color and digitization are strongly imbued in the public consciousness, while microfilm and black-and-white representation of color images are conveyed as being boring and antiquated. Although the filming of maps for preservation purposes is still carried out on a small scale, the utilization of microforms as a way to provide greater access to maps has been surpassed by the digitization of maps.

#### **Digitization of Maps**

In 1849 the map "Hispania" was published in *A Classical Atlas of Ancient Geography*. Over the years a copy of the atlas and its map have sat on the shelf at the Perry-Castañeda Library. Recently the map was scanned and made available on the Perry-Castañeda Library's Web page. The scanned image provides a good example of how maps can be scanned, edited, and made available to millions of potential users through the World Wide Web. While this process is extremely appealing, there is a downside to the scanning of maps: low levels of resolution; lack of standards; the size of memory required to store the files; and, the impermanence associated with the software and hardware used in the process. A closer examination of the process involved in the digitization of maps at the University of California at Berkeley and the University of Texas at Austin offers an insight to the promises and drawbacks digital technologies hold for the imaging of maps.<sup>16</sup>

#### **Maps and Digital Imaging**

Digital imaging technology is a relatively new process, with its

widespread use coming only in the 1990s with improvements in high resolution scanning; lower costs for the scanning and storage of images; the spread of high-speed, high-bandwidth networks; and, the emergence of the World Wide Web.<sup>17</sup> The basic tools needed to digitize a document are a computer, scanner, and software to control the scanner and manipulate the images once they are scanned. If the image is going to be put online for wider access, additional software may be required.

The importance of getting a good scan from a document on the initial scan cannot be emphasized strongly enough. In some cases, an item may only be available for one scan, or, the document may be so fragile that it cannot afford to be scanned multiple times. Additionally, a quality scan saved in an archival quality format helps justify future migration costs.<sup>18</sup> From a high-quality scanned image, information can then be transferred to other formats as desired.

In *Digital Imaging for Libraries and Archives*, Anne Kenney and Stephen Chapman identify the following as the key determinants in obtaining a high-quality scan:

- 1) Resolution
- 2) Bit Depth/Dynamic Range
- 3) Image Enhancement
- 4) Compression
- 5) Metadata<sup>19</sup>

Resolution: The number of pixels used to represent an image; often measured as dots per square inch (dpi). In grayscale and color scanning both resolution and bit depth combine to play significant roles in image quality. Resolution is a measurement of clarity, or detail, and can refer either to an

image file, or, the device, such as a monitor, used to display an image. Central to image quality is not the capturing of a document at the highest resolution possible, but rather, to scan at a level that ensures adequate capture of the information content of the original document and the creation of a moderately sized file.<sup>20</sup>

Bit Depth/Dynamic Range: Bit depth is the number of colors or shades of gray (grayscale) that can be represented in a digital image. Dynamic range is a measurement of the number of bits used to represent each pixel in an image and is used to express the full range of tonal variations between the lightest and darkest areas of a document. A scanner's capability to capture a complete range of tones is dependent upon its bit depth and dynamic range. The greater the bit depth, the greater number of grayscale or color tones that can be represented. Black and white images are usually scanned using eight or sixteen bits, while twenty-four bits and higher are used for color images.<sup>21</sup>

Image enhancement: The use of software programs to improve image capture. Standard enhancement software allows the user to rotate; crop; alter brightness or contrast; and stitch together Tagged Image File Format (TIFF) images for large documents requiring multiple scans. While the use of some of enhancement features is necessary to provide a suitable image, too much dependence on image altering software raises questions concerning the authenticity and fidelity of an image.<sup>22</sup>

**Compression:** The reduction of file size in order to save storage space.

Digital images captured at high resolutions produce large files. To counter this, several steps are commonly followed to help reduce file size. First is the scanning of an image at the highest feasible resolution and then saving the scanned image to a lossless compression mechanism file, such as TIFF, to create an archival image. Then, from the archival image, a lossy compression mechanism, such as Joint Photographic Experts Group (JPEG) can be used to reduce the size needed for a file's processing, storage, and transmission. A determining factor in defining an appropriate level of compression is the balancing of file size and resulting storage requirements with quality needs and the limits of the display hardware and network speeds. The greater the image quality, the more storage space it will occupy; the scanning process will be costlier and longer; and, more memory will be required to display the image.<sup>23</sup>

The level of compression used may affect the quality of the image. An image decompressed and viewed after lossless compression will be identical to its original compression. Lossy compression results in some loss of data, and therefore image quality is reduced. Images do not respond to compression in an identical way. As an image is compressed, particular kinds of visual characteristics, such as subtle tonal variations, or unintended visual effects may appear. In other instances, no noticeable change results from the use of lossy compression. A point to consider when

determining resolution and compression ratios is that the monitor a user views the image with will not be calibrated the same as the monitor used when the image is digitized; thus, any resolution finer than the resolution of the user's monitor is wasted.

**Metadata:** Data that describes an information resource and which assists in the locating and accessing of information about the resource. Metadata includes a number of elements, such as title, author, and date and place of creation.

#### **Problems in the Digitization of Maps**

Maps are considered one of the most difficult items to scan. In *Digital Imaging for Libraries and Archives*, Kenney and Chapman recommend that any library beginning a scanning project not "begin with oversize maps, as the combination of large dimensions and fine detail will challenge the best of scanning systems and will defy effective presentation on the highest resolution monitors available today."<sup>24</sup> Many maps are too large to capture with one scan and it is often difficult to scan a map in sections and then paste it together. Regarding the fine detail of maps, contour lines and text are sometimes as small as 1mm, meaning little contrast between the print and the background. Another major difficulty is that maps usually lose their scale when digitized and, as a result, the viewer is left without a firm understanding of the distance between points on the map.

It cannot be denied that the potential for the digital imaging of maps is great. However, the technology is still relatively new and in the experimental phase, and there exist a number of drawbacks that curb its use as a means

of preservation. Among some of the primary downsides with digital imaging are: the lack of standards, and, a quickly changing technological base that necessitates a migration policy and a financial commitment for future transfer of files.<sup>25</sup> Despite the problems, there is currently an amazing array of digital maps available via the Web and digital imaging holds great potential for capturing maps in the future. What follows is an overview of the imaging systems used to digitize maps at the University of California and the University of Texas.

#### **Imaging Maps at the University of California**

The Earth Sciences Library at the University of California has made an estimated 300 of its maps available through its home page on the Web.<sup>26</sup> Under the auspices of John Creaser, an electronic reference specialist, the scanning of maps at the Earth Sciences Library began in August of 1997. In addition to the Earth Science Library's Web page, some of the library's maps are available via the University of California's online catalog, Gladis. Mr. Creaser is responsible for all the details associated with putting the maps online, from the selection and preparation; to the scanning and editing; to writing the HTML; to cataloging the digital image.<sup>27</sup> To scan the maps he uses a 133 MHZ PC Pentium with 8 MB of RAM; a Windows 3.1 operating system; and a legal-size Hewlett Packard Scanjet 4c flatbed scanner operated with Hewlett Packard DeskScan II v2.4 software.<sup>28</sup>

During scanning, the images are captured using an eight-bit setting for

black and white maps and a twenty-four bit setting for color maps. The dpi on average ranges from 75 dpi to 300 dpi. As this project is still in its infancy, Mr. Creaser is still experimenting in accurately determining the resolution requirements for each map and often does two or more scans to get the proper setting. Mr. Creaser says that he attempts to scan a map at a resolution that will allow the user to read the fine print. A restriction on resolution is the file size, as to keep the file small Mr. Creaser at times finds it necessary to sacrifice some clarity in readability and resolution. Once the maps are scanned, Paint Shop Pro, Corel Photo Paint v.5F4 and LView Pro 1.B2 are used to edit the images. Files are saved to TIFF format and then posted on the World Wide Web using Graphic Interchange Format (GIF) or JPEG compression, whichever is smallest. Mr. Creaser prefers not to compress images too much, believing that the process distorts the texture of the map. The average file size is 150k and the TIFF images are stored on the hard drive of its UNIX server, which is backed up on a weekly basis.<sup>29</sup>

After the scanning process, some adjustment of the image is often required. In his experience, Mr. Creaser has adjusted the color only rarely. The majority of tonal adjustments, he says, occur with black and white maps. During the editing process he also makes physical adjustments such as correcting paper folds and removing spots from a map. In response to questions about any qualms he may have over using computer software to change the appearance of a scanned image, Mr.

Creaser responded that his primary goal is to produce a legible map, not preservation. Once the maps have been scanned they are returned to the collection, with a few being sent to off-site storage. Mr. Creaser does not yet have a firm migration plan for his files.<sup>30</sup>

In his selection of maps for digitization, Mr. Creaser faces several barriers. The size of the scanner's platform limits the size of maps that can be scanned. With larger maps it is sometimes possible to scan the map in sections and then piece it together. With some large maps Mr. Creaser has been unable to piece the map together and has ended up posting the map in sections. An example of this can be found with the oldest map Mr. Creaser has put online, "Plano de la Notable Ciudad de Sevilla, 1848."<sup>31</sup> The map was too large to capture with one scan and Mr. Creaser had difficulty in piecing it together, so he put it online in eight sections and provided a thumbnail of the eight sections put together. Another restraint cited by Mr. Creaser in his selection of maps is copyright. Due to copyright restrictions, only maps before 1922 can be scanned and made accessible on the Web. An exception to this are maps produced by the United States government, which do not fall under copyright restriction.<sup>32</sup>

In a relatively short period of time Mr. Creaser has made a number of impressive maps available to millions of potential users. His project is still in the experimental phase, but it has already shown the enormous potential, as well as problems, that exist in the digitizing of maps. The Perry-Castañeda Library has shared many of the same experiences and an analysis of

its program provides further insight into the processes involved in the digitizing of maps.

#### **Imaging maps at the University of Texas**

In contrast to the University of California's nascent digital map effort, the Perry-Castañeda Library has been scanning maps for the past four years and currently has over 2,500 maps available online.<sup>33</sup> The site is one of the most popular map sites on the Web, receiving over 50,000 hits a day. A comparison of the scanning process at the Perry-Castañeda Library with the Earth Science Library's reveals both similarities and differences between the two programs; provides a clearer understanding into the difficulty involved in scanning maps; and, gives further indication in which direction the map digitization is heading.

Paul Rascoe, a documents librarian at the library, initiated the map digitization program at the Perry-Castañeda Library four years ago. Beginning with Central Intelligence Agency (CIA) maps, the Perry-Castañeda Library site now offers a wide variety of maps, ranging from 19th century maps to USGS maps. Currently, Mr. Rascoe and three part-time employees are responsible for the preparation, scanning, editing, and HTML write-up of the maps. Similar to John Creaser's setup, the scanning arrangement for maps at the Perry-Castañeda Library is relatively simple. Maps are scanned using a Power Macintosh 7100 and an Apple Color One Macintosh Scanner. The resolution of the scanned maps vary, usually falling between 150-250 dpi. A newer USGS or CIA map is usually

scanned at 150 dpi, while an older historical map is ordinarily scanned between 200 to 250 dpi. Images are modified for size and resolution, and edited and compressed using Adobe Photoshop 3.0 or 4.0. The maps are saved as TIFF files and posted online in JPEG or GIF, with the average online file size ranging between 200k to 400k. After the JPEG images are uploaded to the server, they are visually checked using a Power Macintosh running Netscape 3.0. According to Mr. Rascoe, the TIFF formats will soon be available to online users in addition to the JPEG and GIF images.<sup>34</sup>

One of the part time employees responsible for the scanning, editing, and posting of the maps is Joe Arnone. Many of the maps in the Perry-Castañeda Library's collection are too large to capture in one scan, necessitating several scans of the map and then piecing it together. Once an oversize map is scanned, Photoshop is used to piece a map together and to clean up any blemishes on the map. Mr. Arnone cites the capturing of a map's text and countering the deterioration of the paper and ink as areas of difficulty he often encounters when editing a scanned image. A section of the Perry-Castañeda Library maps are from the 19th and early 20th centuries. With maps more than fifty years old, deterioration of the paper and fading of the ink, in addition to the treatment of a map over the years, can present problems in capturing a quality image. Paper may become brittle or start to yellow; the color may begin to fade; or, in some cases, folds and wrinkles are present. With Photoshop, a filter can be used to render text more compact and legible. Additionally, the yellowing of paper can be countered,

and a color code can possibly be restored. In cases where maps have been folded, the folded area often appears to be darker on the scanned image. This problem can sometimes be corrected by placing a piece of paper behind the map. When problems such as the ones listed above are too much to correct with Photoshop, the map is not put online. Although he alters the scanned image to a certain degree, Mr. Arnone holds reservations about altering too much of the original content, as his main focus is providing an accurate image of the map.<sup>35</sup>

While the array of images available on Perry-Castañeda Library's site is impressive, there are several problems that need to be addressed for online maps to be highly effective. One problem is that many of the maps are not shown to scale, making it difficult to ascertain true representation between points on the map. Mr. Rascoe states that the main objective of the map digitization project is to make an image available, not to provide a one hundred percent faithful representation of a map. He offers the example of a grade school student looking for a USGS topographic map of a particular area. The Perry-Castañeda Library's site provides the student with an easy way to acquire information on what that particular map would look like. Then, if an accurate reading of the scale is desired, a student could go to a library or the USGS and obtain a copy of the map. Mr. Rascoe states that in the near future the USGS maps on the Perry-Castañeda Library site will have some indication of scale.<sup>36</sup>

One area of difficulty Mr. Rascoe cites as providing problems for his digital map site, is the issue of bibliographic control. According to Mr. Rascoe, the problem is currently being addressed, and as a partial solution to

the problem, the Perry-Castañeda Library site will soon have a searchable database. Further problems exist with the place names on some of the maps, particularly the CIA maps. On occasion people wrote in mentioning that a geographic name on one of the CIA maps is inaccurate and demanding that the library insert the correct name. Understandably, Mr. Rascoe and his staff do not comply with such a request.<sup>37</sup>

When choosing maps to scan, the Perry-Castañeda Library tries to present government maps of areas of current international political interest, ones of historical value, and maps requested by the public. Both Mr. Rascoe and his staff make the selection of which maps will be put online. Some of the maps selected by Mr. Arnone are from pre-1920 books and atlases sitting on the Perry-Castañeda Library's shelves. A large number of these maps are in books and atlases that are slowly deteriorating, and it is unlikely that efforts will be made to preserve the information they contain. According to Mr. Rascoe, in order to free up shelf space many of the older books and atlases on the Perry-Castañeda Library's shelves are being relocated to offsite storage. On the average, the offsite storage does not have strict environmental controls, and the books and its contents will continue to deteriorate. While scanning may be an imperfect technology in terms of permanence, it provides a temporary way to save a map's image and at the same time offer widespread access to that image.

Although the files that contain a map's image may one day be unreadable, it is apparent that the maps in the 19th century atlases will likely be lost one day as well. Technological obsolescence is a problem Mr. Rascoe

realizes he will have to address in the future, and he is prepared to rescan some of the maps if it is not possible to transfer the files. At the present time, to save room on the server, some of the TIFF files have already been transferred to CD-ROMs.<sup>38</sup>

Although the digitizing of maps may be an imperfect preservation tool, it does offer several preservation advantages.

#### **Digital Maps: An Upclose Analysis**

In the Appendix are black and white prints of several maps that provide a better understanding of: how digitized maps compare to microforms; problems associated with the scanning of deteriorating maps; how the compression ratio and level of resolution affect digitized maps; and, finally, the remarkable potential digitization offers. The originals that the maps in the Appendix were drawn from vary in color, size, and purpose. (See WAML Website at: <http://gort.ucsd.edu/mw/waml/waml.html> to view online color images of these maps.) As mentioned above, many of the older maps cannot be completely restored to their original state. A good example of this condition is found with the 1849 "Hispania" map (see the loose color photocopy insert in this issue of the 1849 Hispania map reduced). The original 10" x 12" map in the atlas is in poor shape. The paper is deteriorating and losing color; the color code of the map has begun to fade; and someone has written extensively on the edge of the map. With the digitized image, the paper deterioration is less noticeable; the color has been slightly restored; and, the handwriting has been erased. One area where the scanning failed to correct a problem is in the center of the map, where a dark streak appears where the map was in the binding.

The same problem is evident with the map of the "British Isles," where a dark streak appears down the center where the map was in a binding. When considering a problem of this nature, it is necessary to look at the end result: an aged map that is slowly deteriorating was scanned, cleaned up to the fullest extent possible, and its image made available to millions of users. Although both scanned images are not perfect, having them available online is preferable to having them sit, neglected, on a shelf in the library.

An examination of several additional digital maps provides further insight into the problems involved with digitizing maps. The "Map of the Battlefield of Gettysburg" shows a noticeable contrast in the tone of the surface. An analysis of prints of the "Estonia," and "Conflagration in San Francisco" maps show the difficulties involved in picking up small characters of text and thin lines.

In contrast to the "Estonia" and "Conflagration in San Francisco" maps, the prints of topographic maps for "Crater Lake" and "Aspen" perform well in capturing the small text and thin, closely associated, contour lines. The same characteristics are evident in the "Stalinabad, USSR" map, which in addition to providing fine detail, presents a wide range of colors. The map "Japan: The Chinese Factory Street of Teng-chan at Nagasaki" provides fine detail of a wide range of colors and small characters. An even more impressive display of colors is found on the "Portion of Northern California Map." While the array of colors is visually appealing, they have nothing but artistic value if some sort of color code is not included with the map.

As discussed above, the impact of lossy compression may or may not be

noticeable when viewing an image.

To allow for a better appreciation of the subtle changes involved with compression, the appendix has two versions of the same map, "Principato citra olim Picentia," set apart by the different compression methods used to store the file. An example of differences in resolution levels can be found in a comparison of the two copies of "Plan et attaque d L'Isle Ste. Lucie."

While it cannot be denied that digitized maps have their problems, a comparison with photocopies gleaned from microfilmed maps provide insight into the way digitized maps offer more attractive benefits than microfilm. In the appendix are two photocopies of maps found on an uncataloged roll of microfilm in Perry-Castañeda's map library. Although the quality of the photocopies does not provide a completely faithful reproduction of the microfilmed image, it does allow for a cursory understanding of how maps look on microfilm. Both photocopies give examples of how microforms can pick up fine detail such as contour lines and small fonts. Obviously, the lack of color is one of the first things noticeable about the photocopies and microfilm in general. Although problems with the durability of color microforms may be improved upon in the future, trends seem to indicate that digitization will be the media of choice for capturing maps in the years to come.

#### **Conclusion: The Future of Map Reproduction**

What does the future hold for the imaging of maps? Is it too early to proclaim "microcartography" dead? As evident by the 50,000 hits a day the Perry-Castañeda's map library site receives, it is apparent that digitiza-

tion offers amenities that microforms cannot. Digitization offers color and an improved range of access options. Images of maps captured at high resolution with 24-bit color or 8-bit black and white provide a detailed copy of the map, which can be saved in lossless TIFF format as an archival record. A wide variety of uses can then be derived using JPEG compression or other space saving compression methods. Once a file is placed on a server, anyone with a computer and a modem can have access to a map.

Despite their impressive traits, digital images cannot yet be considered the clear choice for digitizing maps. Shortcomings still exist with cost, resolution, and the always troubling question of permanence. However, headway is being made with the above problems. The cost of memory is decreasing; methods of compression are improving; and advances are continuously being made with scanning and resolution. In the future it could very well be possible to use digital cameras to image maps. Recently the Lawrence Livermore National Laboratory modified its digital camera to photograph large maps. Their results were mixed, as the file sizes were all over 100MB each. Mr. Rascoe has also experimented in using digital cameras for imaging maps, but encountered difficulty in capturing smaller fonts.<sup>39</sup>

With the increase in the digital imaging of library and archival collections has come the lament that money is being diverted from a proven preservation media (microforms) and rerouted to less-stable digital technologies. While the microfilming of maps offers considerable advantages as a means of preservation, is it that much of an

advantage when it is an image that is missing essential detail such as color? Digital imaging captures color and via the Web raises awareness of the existence of older maps, which, as a result, could increase the chances that heightened efforts will be made to preserve the original map. Also, as evident in the University of Texas's map imaging project, maps that would never be microfilmed, or, made the focus of preservation efforts, are being digitized and, at least for the present, their images are being saved. Despite shortcomings with digitization, the technology will continue to be the choice for capturing the intricate detail found on maps.

#### Endnotes

1 The term microreproduction will be used to describe the process of making microcopies of documents on either opaque or transparent materials. Digitization refers to the converting of an image into binary code.

2 Capture: to preserve in permanent form.

3 The term microforms is a broad term used in reference to either microfilm or microfiche.

4 Life expectancy: length of time that information is retrievable.

5 The University of Texas's Perry-Castañeda Library holds over 225,000 maps. The University of California's Earth Sciences and Map Library houses over 340,000 maps. The above numbers are conservative estimates, as there are maps in atlases and books that are not counted towards each library's holdings.

6 Gilles Langelier, "Microfilming of Cartographic Documents." *ACML Bulletin* 30 (1979): 1-8.

7 Early map photo reproduction projects were carried out by the United States Army Map Service and the

Office of Strategic Services during World War II. Michael Bruno, "Maps on Microfilm; Some Factors Affecting Resolution," *Journal of the Society of Motion Picture Engineers* 41 (1943): 412-425. Bruno's article details results of the reproduction of maps in 35mm color and 35mm black and white film; Gerrit E. Relstra. "Photoreproduction of Maps: Practical?" *Library Journal* 76:6 (15 March 1950): 464-465.

8 R.E. Ehrenberg, "Conserving a cartographic heritage: microfilming at the National Archives of the US" *International Council on Archives. Microfilm Committee. Bulletin* 6 (1977): 21-27; Langelier, 1-8.

9 Larry Cruse and Sylvia B. Warren ed. *Microcartography: Applications for Archives and Libraries* (Santa Cruz, California: Western Association of Map Libraries, 1981), 2. Mr Cruse defines microcartography as "cartographic related materials registered on film in such a way as to require magnification or enhancement for their full utilization."

10 Philip Hoehn, "A Simple Map Microfilm Program," in *Microcartography: Applications for Archives and Libraries*, ed. Larry Cruse with Sylvia B. Warren, (Santa Cruz, CA.: Western Association of Map Libraries, 1981), 47-52.

11 Hoehn, Phil. phoehn@sulmail.stanford.edu 27 March 1998, 2 April 1998, re: microfilming of maps, (email to Tom Corsmeier); Stewart, Charles cstewart@library.berkeley.edu 22 April 1998, re: microfilming of maps (email to Tom Corsmeier).

12 Hoehn, Phil. phoehn@sulmail.stanford.edu 24 April 1998, re: University of California/imaging of maps, (email to Tom Corsmeier); Stewart, Charles, 22 April 1998.

13 James Weiferman, Map Librarian, Perry-Castañeda Library, interview by author, 5 April 1998.

14 Charles Stewart, interview by author, 13 April 1998, via telephone.

15 Charles Stewart, 13 April 1998; Ted Hodur, "Color-Color-Color: The Micrographic Potential," *Special Libraries Association, Geography and Map Bulletin* 142 (December 1985): 48-55. Mr. Hodur places the dye stability of color microforms between eight and thirty years.

16 Imaging: the process in which a document is electronically captured or created as an electronic picture without the interpretation of the actual content, and stored as a sequence of 1s and 0s. Definition taken from *Preservation Microfilming: A Guide for Librarians and Archivists*, 2nd ed. Lisa L. Fox, ed. (Chicago and London: American Library Association, 1996), 364.

17 Anne Kenney and Stephen Chapman, *Digital Imaging for Libraries and Archives*. (Ithaca, New York: Cornell University Library, 1996), 2, 8.

18 Kenney and Chapman, 8. Archival quality: an image meant to have lasting utility. An "archival" digital image is commonly an image kept off-line in a safe place. An archival quality digital image is often of higher quality than the digital image delivered to the user.

19 Kenney and Chapman, 5-8, 111-112.

20 Kenney and Chapman, 5-6, 9. For example, 100dpi = 100 dots per inch, or, 10,000 dots per inch. Howard Besser and Jennifer Trent. "Introduction to Imaging: Glossary," available at [http://www.ahip.getty.edu/intro\\_imaging/Gloss.html](http://www.ahip.getty.edu/intro_imaging/Gloss.html), accessed 11 April 1998.

21 8 bit image: a digital image where 8 bits are allocated for the storage of each pixel. An 8 bit image can include up to 256 possible colors. With a 24 bit image, 24 bits are set aside for the storage of each pixel and the image can include up to 16 million possible colors. Definition found in Besser and Trent's "Introduction to Imaging: Glossary," accessed 11 April 1998; Kenney and Chapman, 5-6.

22 Kenney and Chapman 7-8.

23 Kenney and Chapman, 8.; Besser and Trent. "Introduction to Imaging;" accessed 13 April 1998. Jennifer Durran, "Developments in Electronic Image Databases for Art History," available at <http://palimpsest.stanford.edu/bytopic.imaging/durran1.html>, accessed 12 April 1998. The JPEG compression algorithm regularly attains compression ratio of between 10:1 and 20:1. The compression process reduces the size needed for a file's processing, storage and transmission by methods such as abbreviating repeated information, or eliminating information that is difficult for the human eye to see.

24 Kenney and Chapman, v.

25 Joint Task Force on Text and Image Management. *Preserving the Illustrated Text* (Washington, D.C., 1992).

26 The University of California's Earth Science Library Web site is available at <http://www.lib.berkeley.edu/EART>.

27 John Creaser, <jcreaser@library.berkeley.edu> 6 April 1998, re: Map Scanning at the University of California, (email to Tom Corsmeier). Mr. Creaser places the amount of time required to select, scan, and write the HTML for a map at between fifteen minutes and one hour.

He estimates that on the average another twenty minutes is required to catalog a relatively easy map.

28 John Creaser, 6 April 1998, (email to Tom Corsmeier)

29 John Creaser, 6 April 1998, (email to Tom Corsmeier); 23 April 1998, re: Map Scanning at the University of California, (email to Tom Corsmeier)

30 John Creaser, 6 April 1998, (email to Tom Corsmeier).

31 The map is available at <http://library.berkeley.edu/EART/maps/svilla.html>.

32 John Creaser, 6 April 1998 (email to Tom Corsmeier), 23 April 1998, (email to Tom Corsmeier).

33 The Perry-Castañeda map site is available at: [http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/Map\\_collection.html](http://www.lib.utexas.edu/Libs/PCL/Map_collection/Map_collection.html)

34 Paul Rascoe, interview by author, 23 April 1998; Joe Arnone, interview by author, 8 April 1998 and 22 April 1998.

35 Joe Arnone, 8 April 1998

36 Paul Rascoe, 23 April 1998.

37 Paul Rascoe, 23 April 1998.

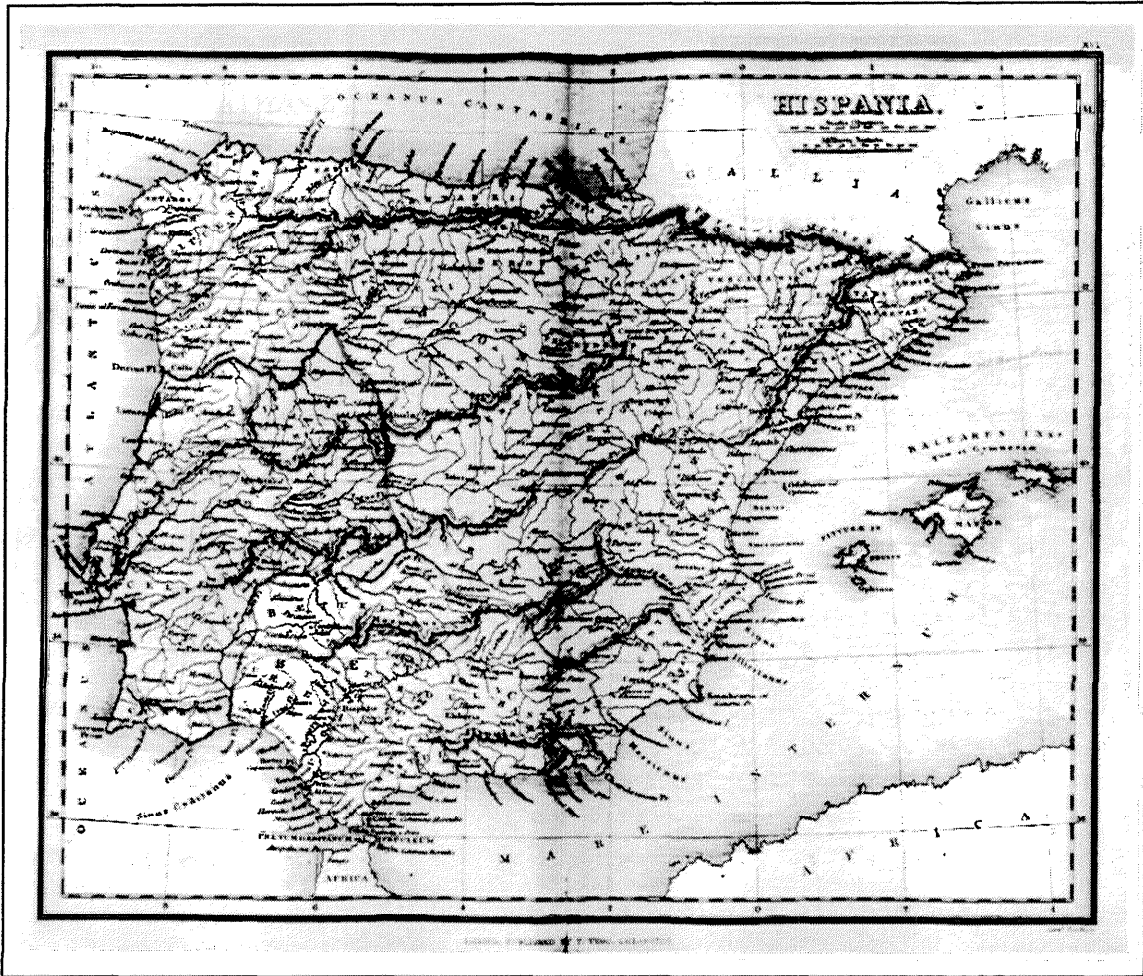
Mr. Rascoe cites the most common complaint coming with the CIA maps identifying the body of water off the Korean Coast as the Sea of Japan. This designation has drawn the ire of many, who resent the name and believe the body of water should be referred to as the East Sea. An example can be found with the "Korean Peninsula" map, available at: [http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/middle\\_east\\_and\\_asia/Korean\\_Peninsula.gif](http://www.lib.utexas.edu/Libs/PCL/Map_collection/middle_east_and_asia/Korean_Peninsula.gif).

38 Paul Rascoe, 22 April 1998

39 Paul Rascoe, 22 April 1998.

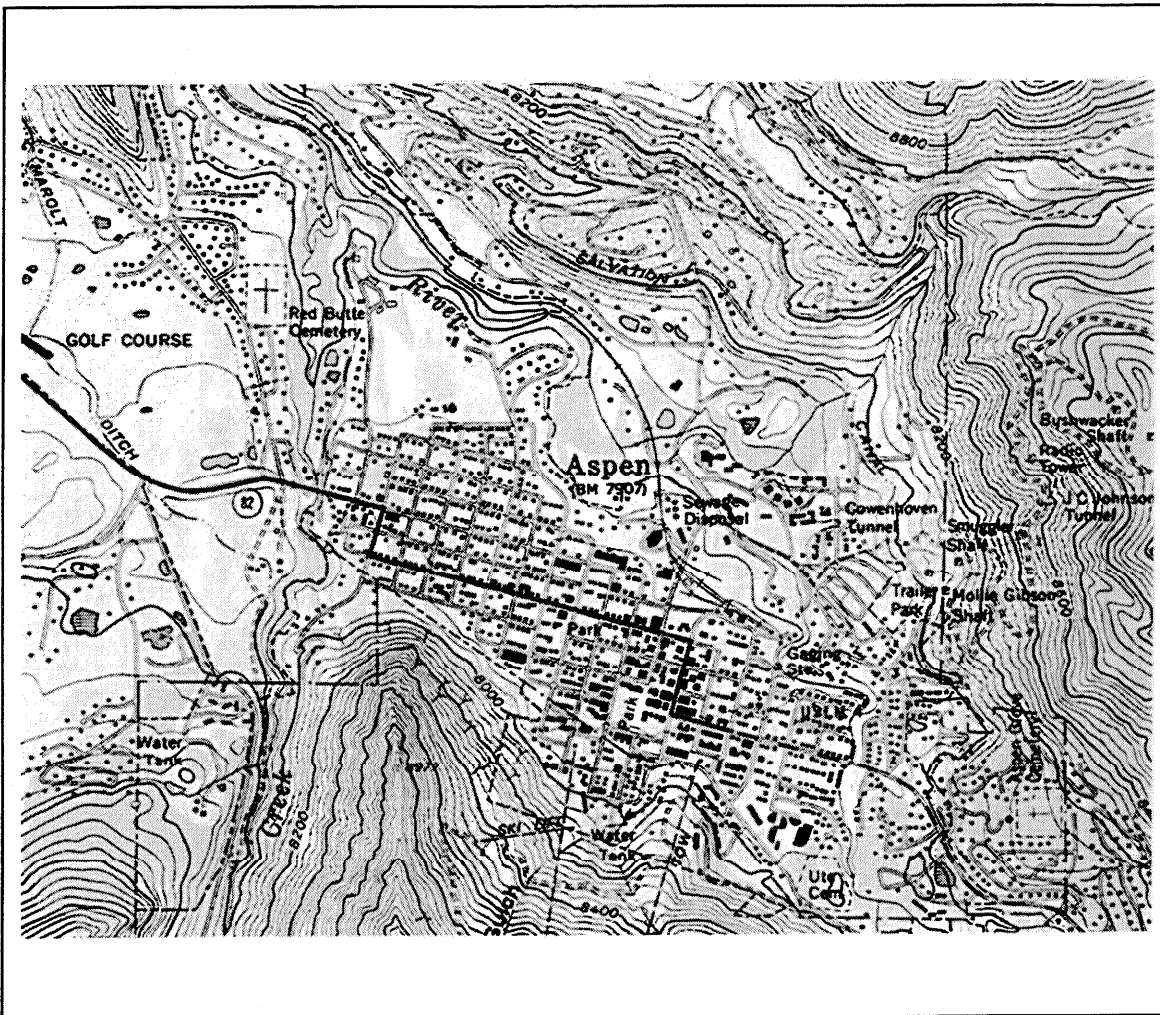
## Appendix

A sample of maps from the Perry-Castañeda Library's Web site and University of California's Web site, reproduced here in black & white)

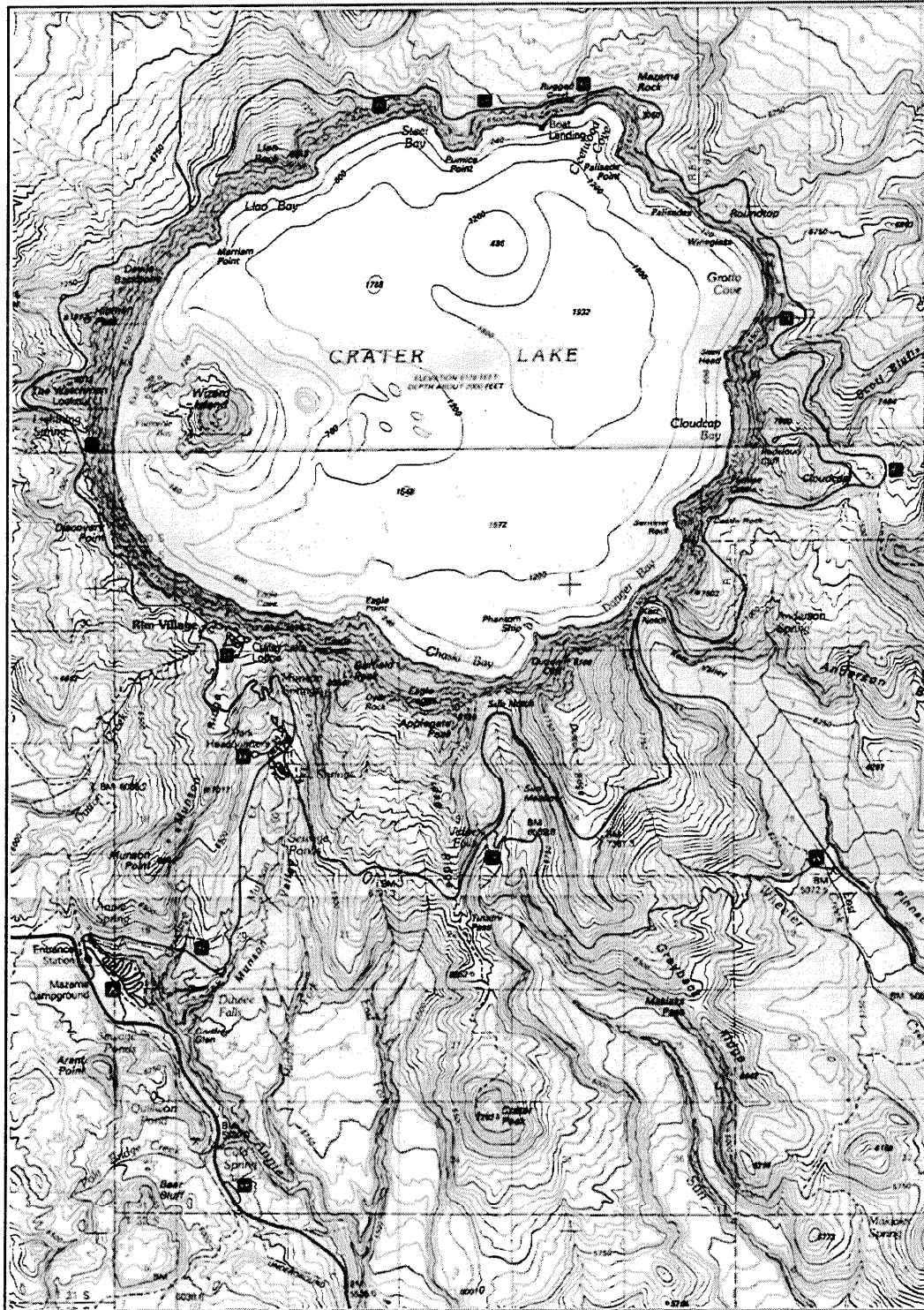


*Hispania* (also in this issue on a loose color photocopy insert) Available at:  
[http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/historical/Ancient\\_hispania\\_1849.jpg](http://www.lib.utexas.edu/Libs/PCL/Map_collection/historical/Ancient_hispania_1849.jpg)

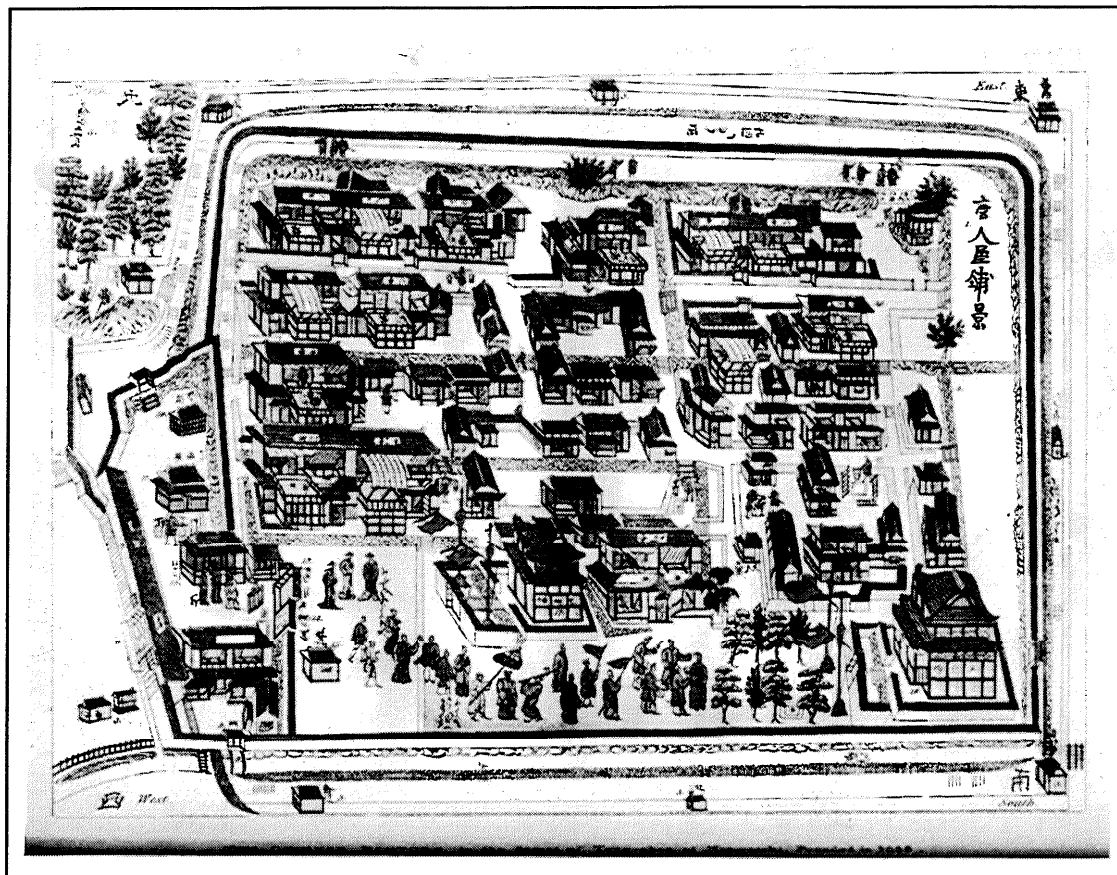




Aspen. Available at: [http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/united\\_states/Aspen\\_Co\\_1987.jpg](http://www.lib.utexas.edu/Libs/PCL/Map_collection/united_states/Aspen_Co_1987.jpg)

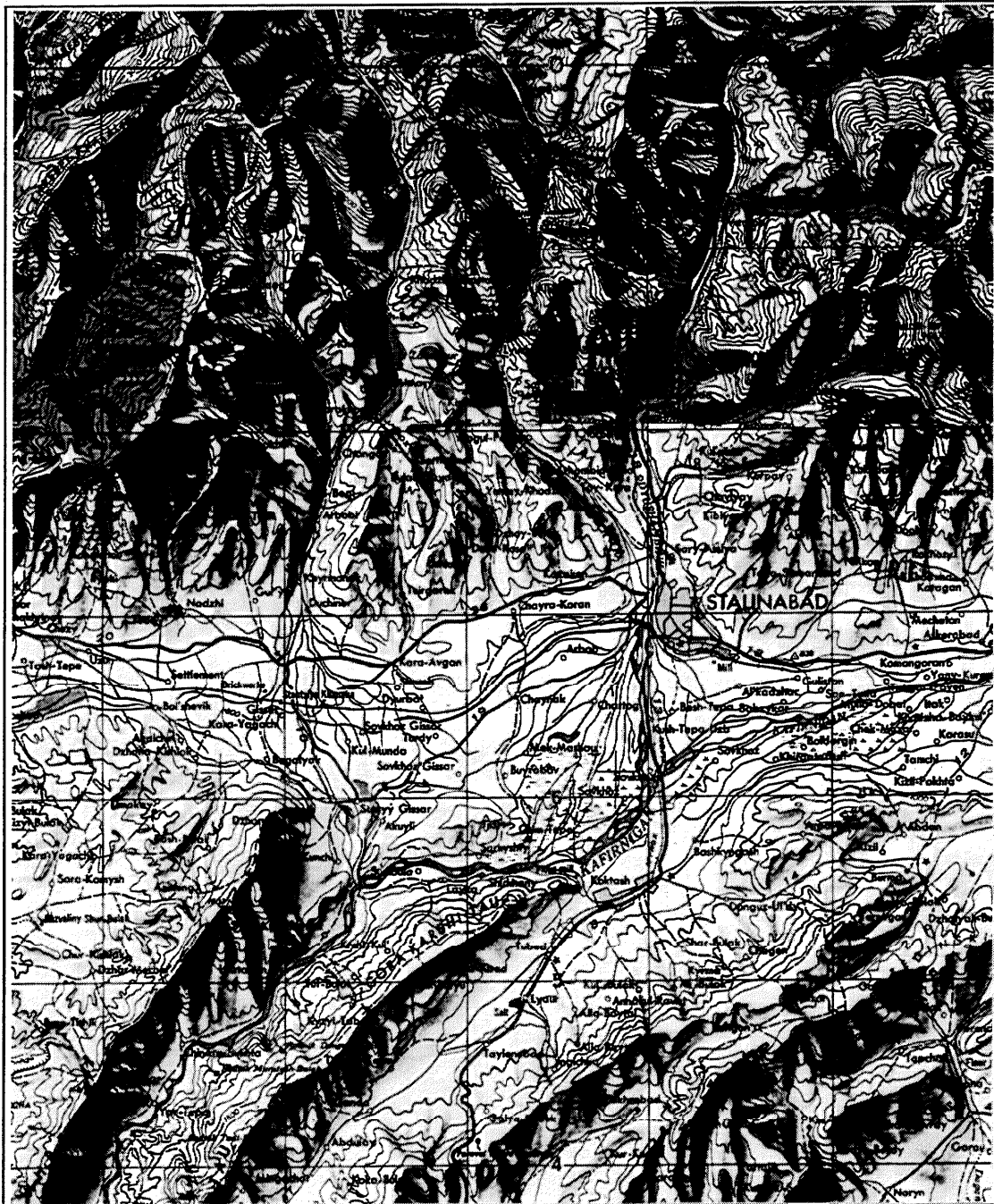


Crater Lake. Available at: [http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/National\\_parks/Crater\\_Lake\\_88.jpg](http://www.lib.utexas.edu/Libs/PCL/Map_collection/National_parks/Crater_Lake_88.jpg)

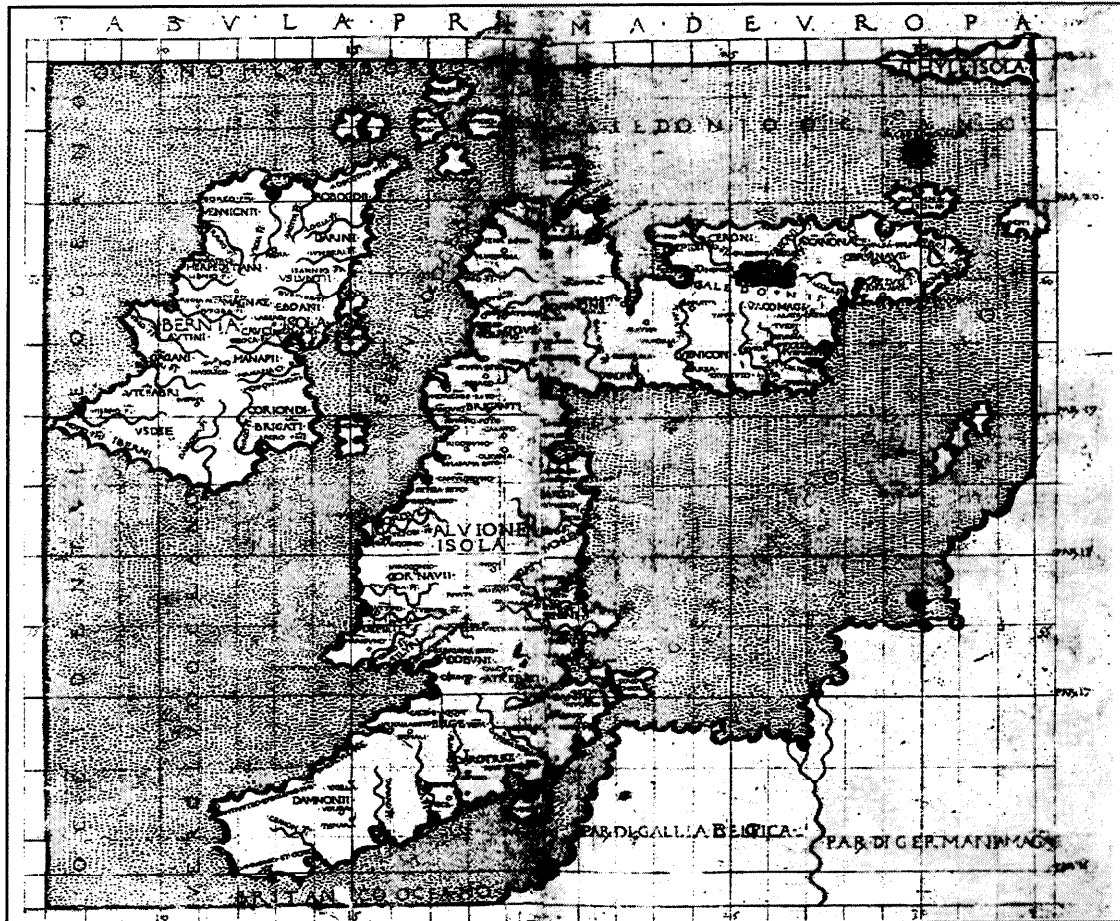


*Japan: The Chinese Factory Street of Teng-chan at Nagasaki, founded in 1868.*

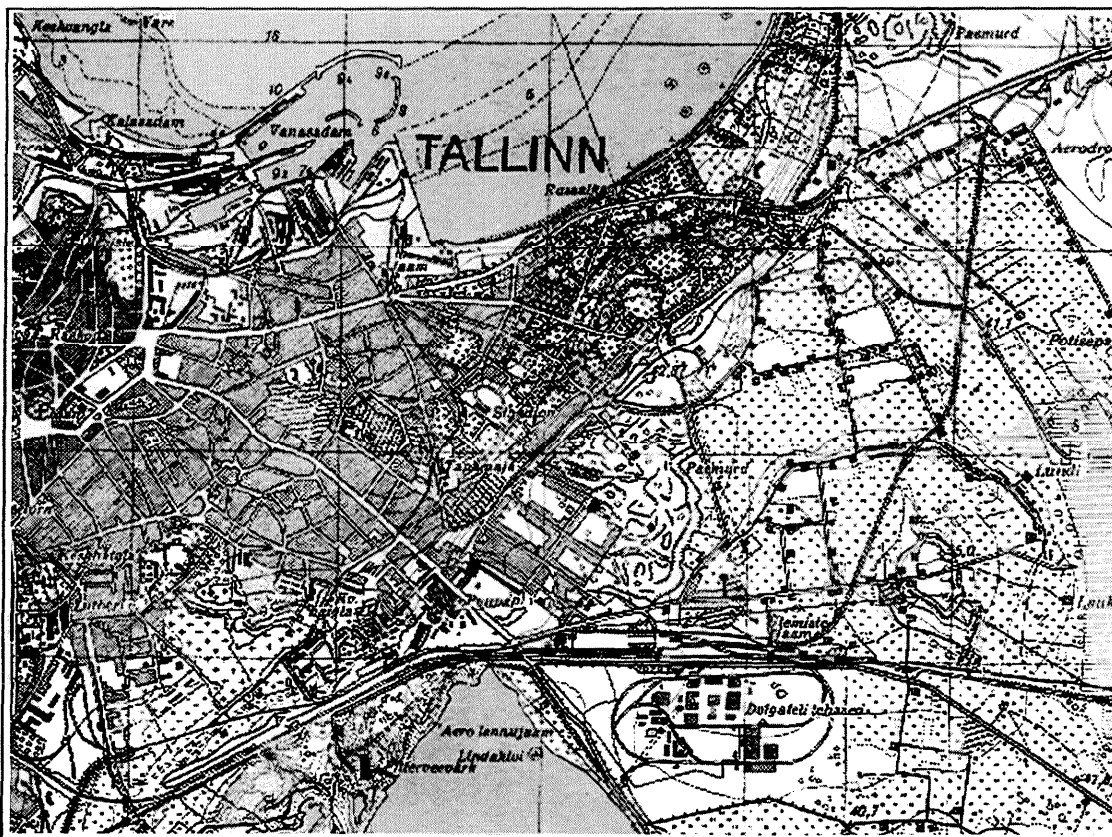
Available at: [http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/historical/Titsingh\\_Chinese.jpg](http://www.lib.utexas.edu/Libs/PCL/Map_collection/historical/Titsingh_Chinese.jpg)



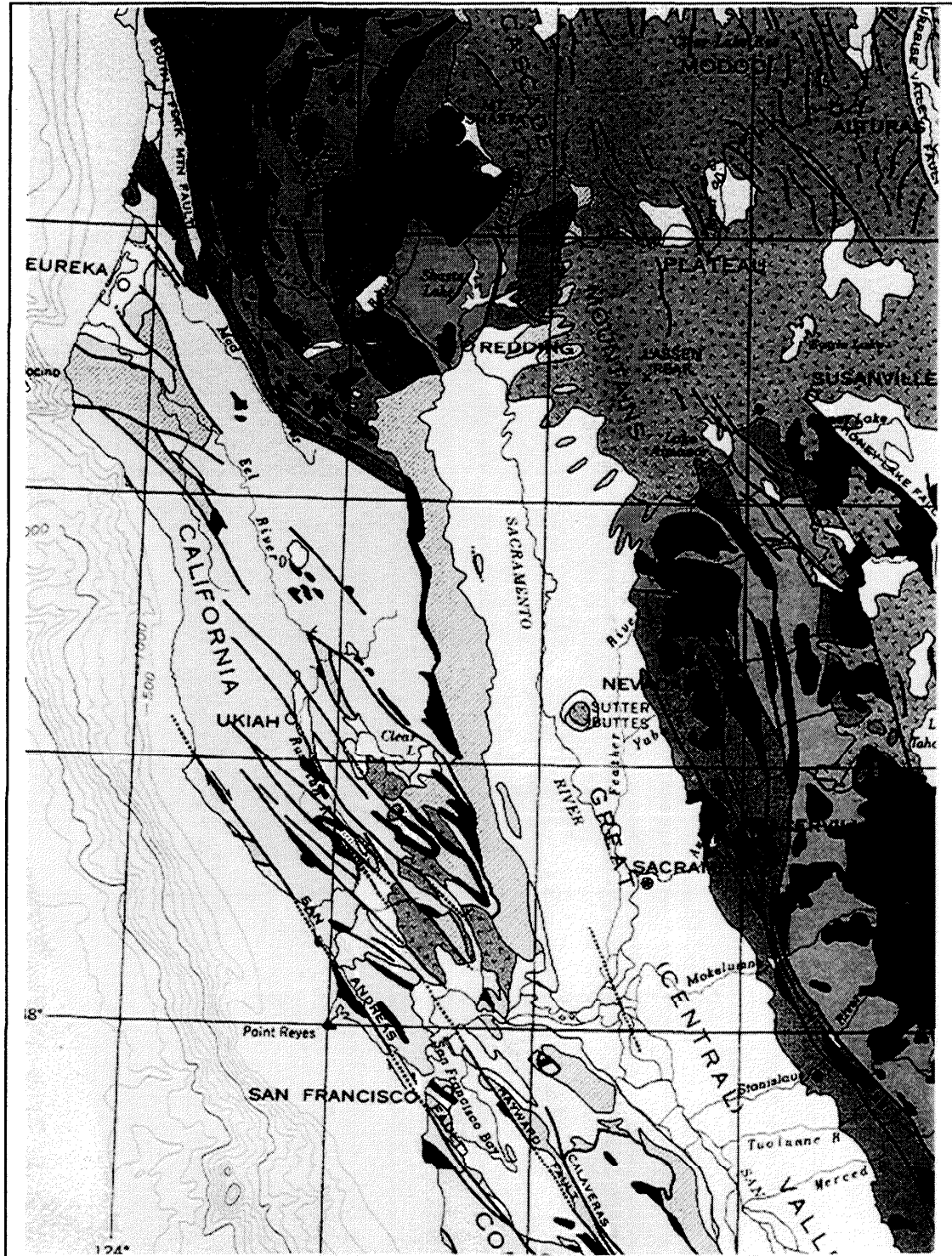
Stalinabad, USSR. Available at: [http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/historical/Stalinabad\\_56.jpg](http://www.lib.utexas.edu/Libs/PCL/Map_collection/historical/Stalinabad_56.jpg)



*British Isles.* Available at: <http://library.berkeley.edu/EART/maps/gbrit.gif>



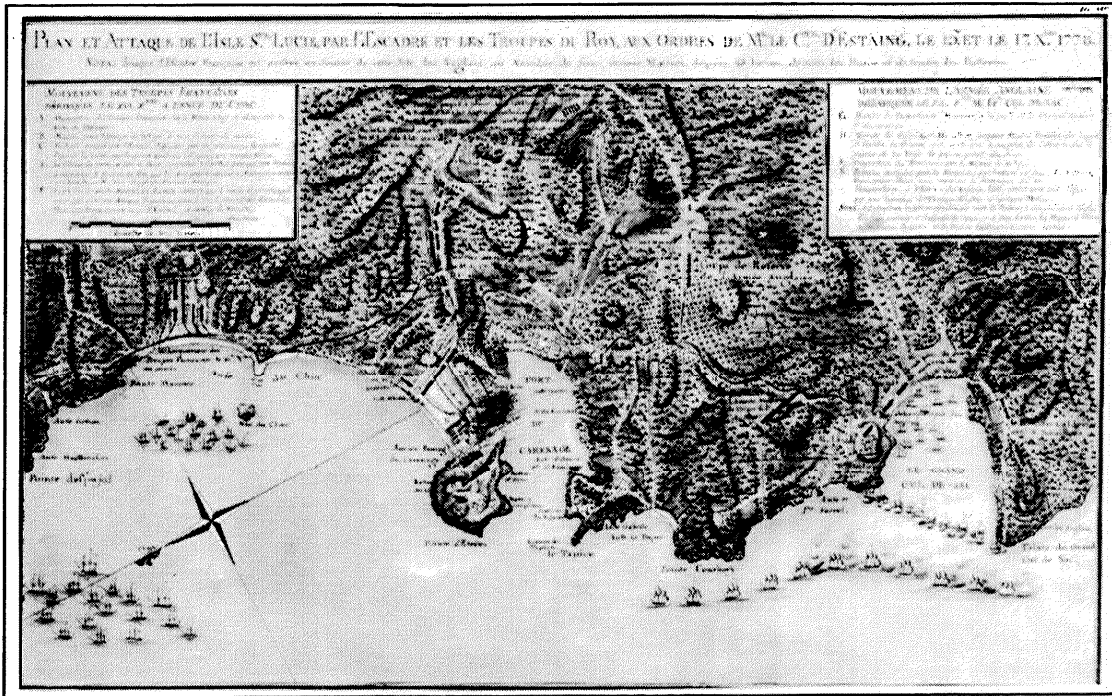
*Tallinn, Estonia.* Available at: <http://library.berkeley.edu/EART/digital/tallin.gif>



Portion of Northern California. Available at: <http://library.berkeley.edu/EART/digital/CalifGeol.gif>



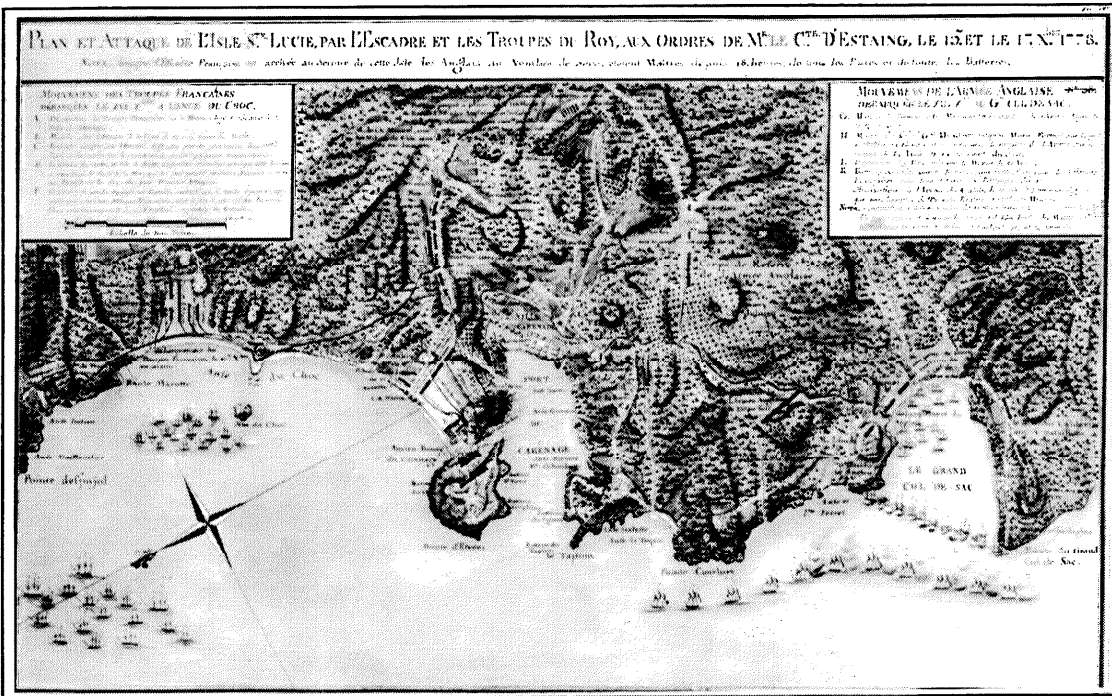




*Plan et attaque de L'Isle Ste. Lucie*

Low resolution available at: <http://library.berkeley.edu/EART/maps/lucia-lo.jpg> (upper image)

High resolution available at: <http://library.berkeley.edu/EART/maps/lucia.jpg> (lower image)





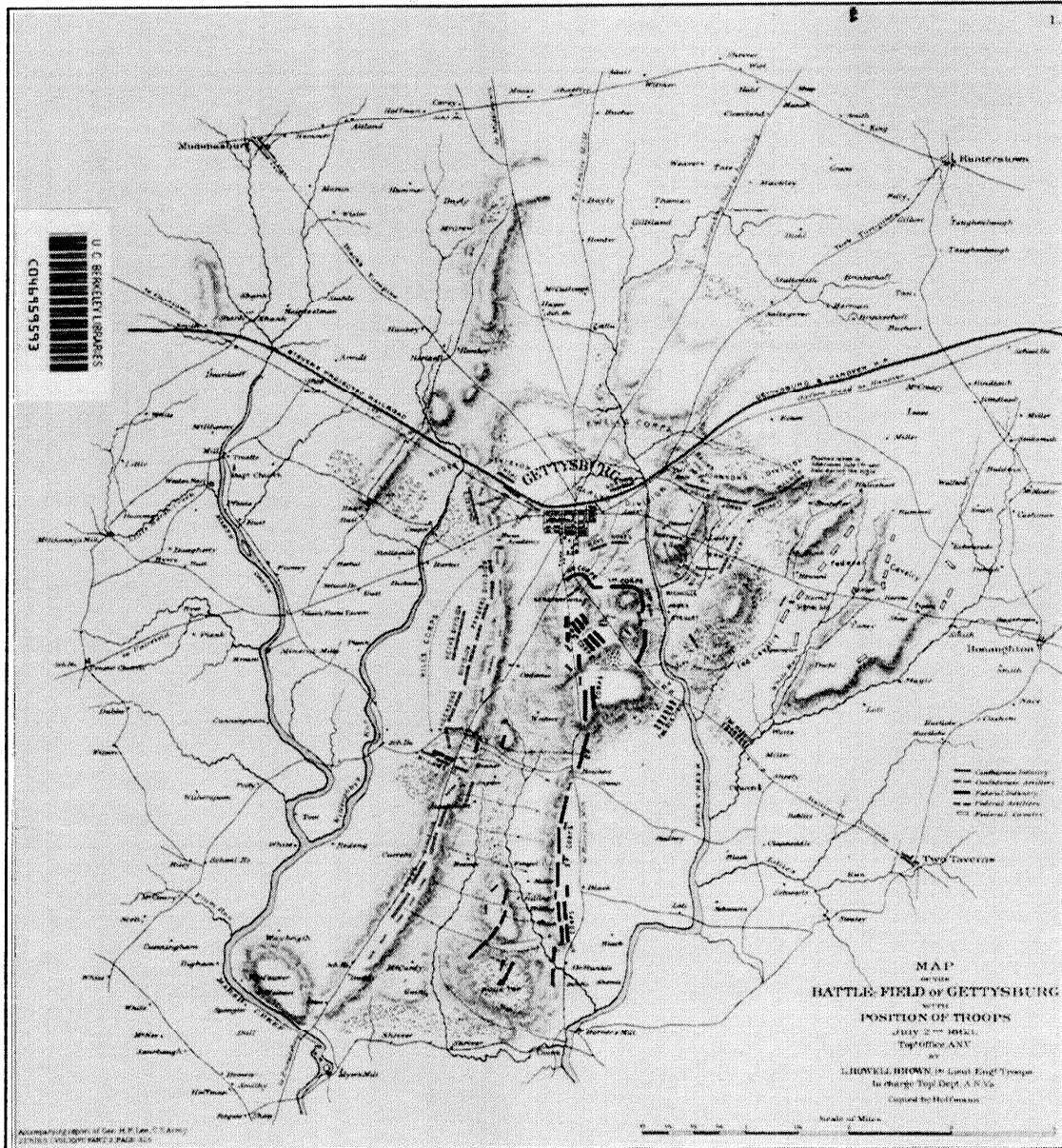
*Principato citra olim Picentia (1640)*

Low resolution, available at: <http://library.berkeley.edu/EART/maps/campania2.jpg>

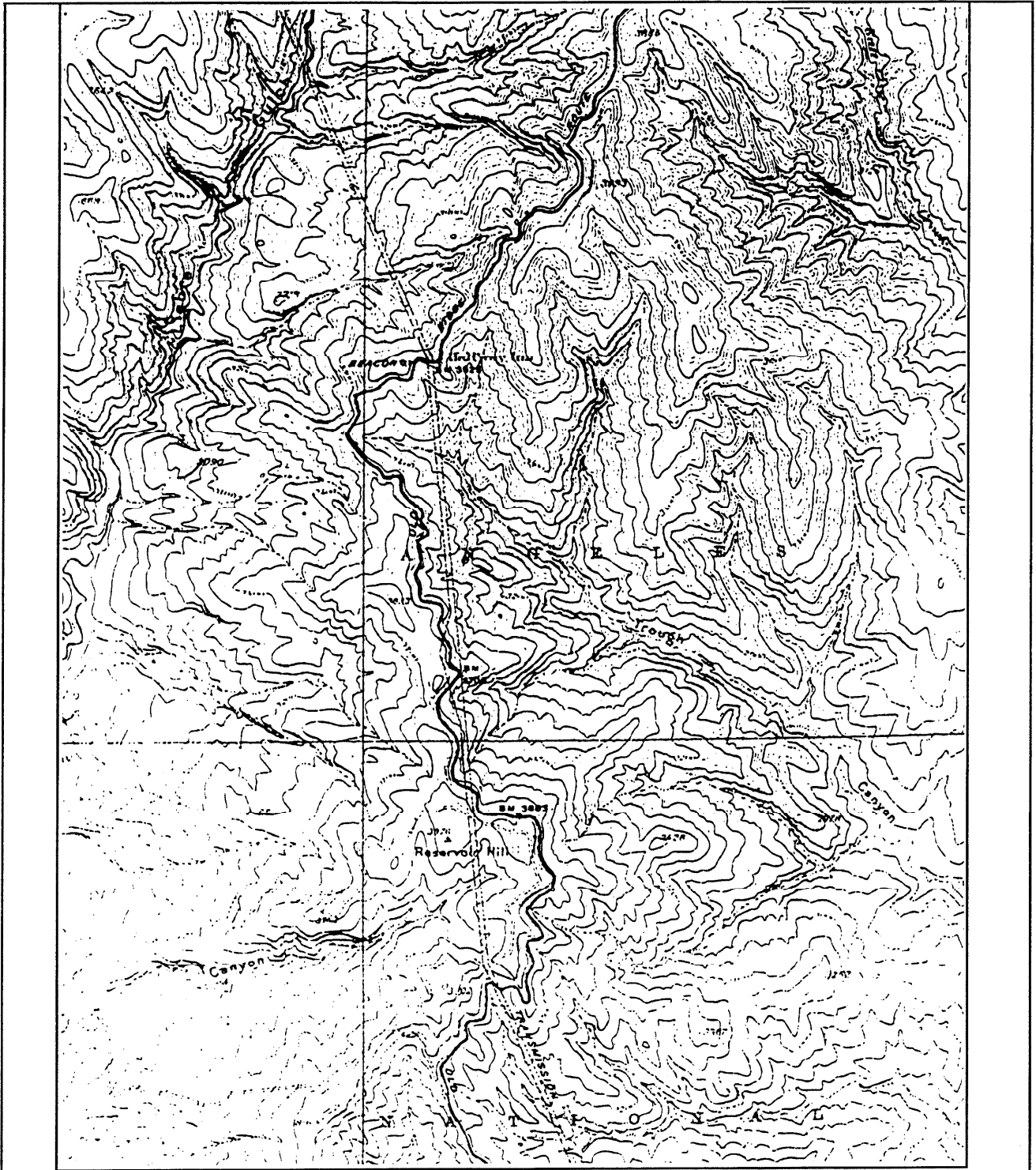


*Principato citra olim Picentia (1640)*

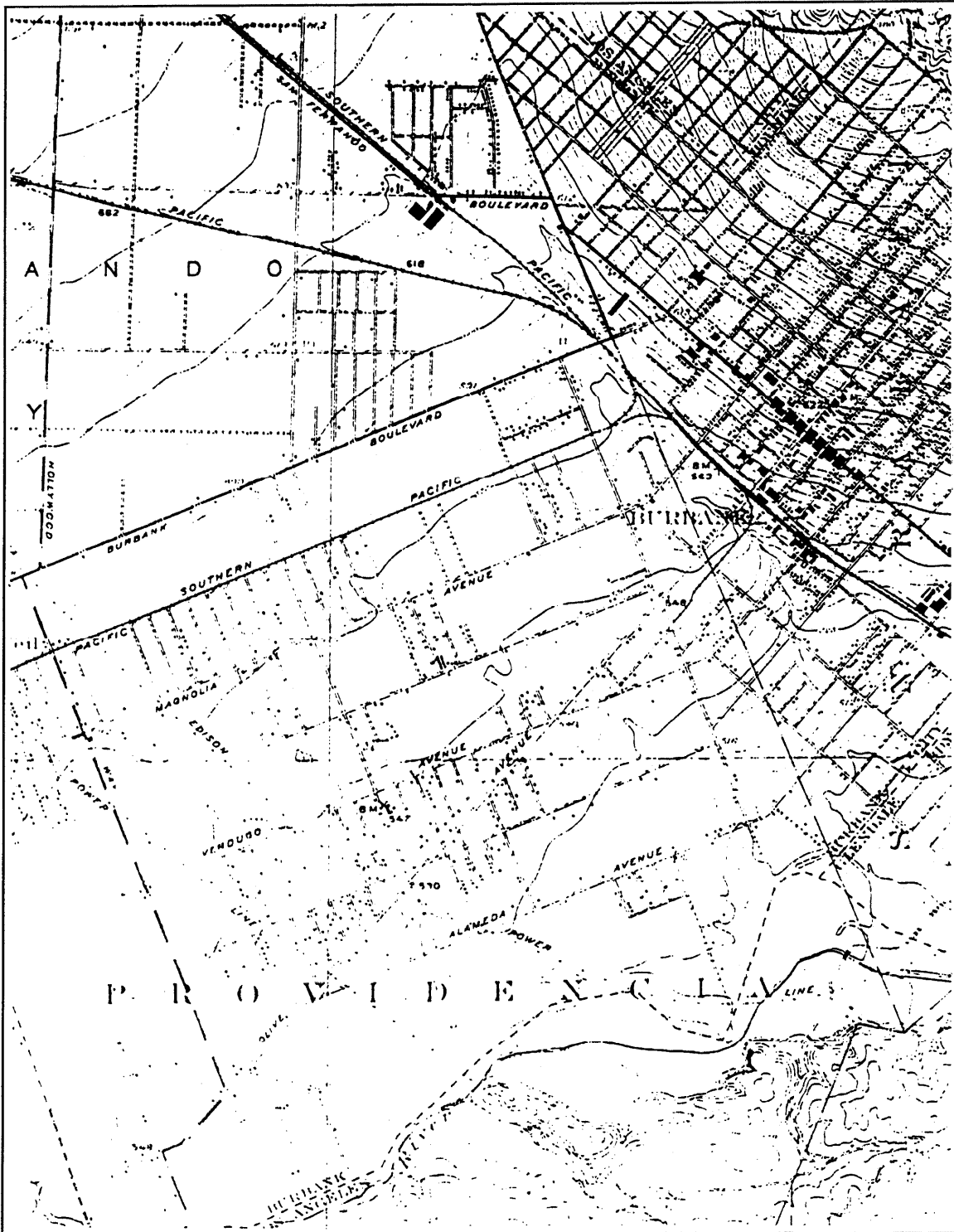
High resolution available at: <http://library.berkeley.edu/EART/maps/campania.jpg>



Map of battlefield of Gettysburg with position of troops  
Available at: <http://library.berkeley.edu/EART/maps/getty2.jpg>



Photocopy of a Map from Microfilm  
*California, Los Angeles County, Beartrap Canyon Quadrangle*



Photocopy of a Map from Microfilm  
*California, Los Angeles County, Burbank Quadrangle*

## The Map Collection at the Colorado School of Mines: Its Evolution, Status and Future

Presented by  
**Christopher J. J. Thiry**  
at  
WAML's Spring 1998 Meeting  
at  
Stanford University

### Introduction

The Colorado School of Mines is one of the premier natural resource management universities in the world. Through careful purchases, depository programs and luck, the Arthur Lakes Library has been able to assemble an excellent collection of maps. The jewels of the collection are the geologic and mining maps of the Rocky Mountain Region produced by individuals and companies. Most of these items are unique—the Arthur Lakes Library is the only owner. The storage and preservation of these maps remain an important issue for the Library.

This is a "working" collection—almost all of the 181,000 maps may

be checked out. Because of this, the collection continues to play a vital role in teaching new geologists and aiding local mineral extraction companies. Non-geologic maps, such as topographic maps, aid extensively in field research. In addition, the Library has numerous indexes and lists to maps that reside in other libraries. The Map Room has mounted information about maps on its World Wide Web site ([www.mines.edu/library/maproom/](http://www.mines.edu/library/maproom/)). The Website includes lists of Colorado topographic and geologic maps and guides to finding geologic maps. The Library is also currently examining the role that Geographic Information Systems (GIS) will play in the future use of mapping.

The Map Room at the Arthur Lakes Library serves the needs of the campus by not only aiding research, but also instructing students. Also, the map

collection is used heavily by geologic research and mineral prospecting companies. We answer more than 600 reference questions a year. More than double that uses the collection. Nearly 70% of our reference questions deal with geology or mining.

Ninety-five percent of our maps are cataloged and available through our online system, CARL. Included in this are some unique items, such as blue-line copies of original mining claims maps.

The Map Room is a working collection—our maps are checked out, and used in the field. They don't just sit in locked map cases, never seeing the light of day. Our cases are never locked. Our maps may be retrieved through interlibrary loan. Our maps show signs of wear and tear. Our maps are used and loved to death and I like it that way. Our patrons come

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*Chris Thiry is the Map Librarian at the Arthur Lakes Library, Colorado School of Mines, Golden, CO 80401-0029, [cthiry@mines.edu](mailto:cthiry@mines.edu)*

back again and again to use our collection. It is a fantastic place to work.

How did this great collection of 181,000 maps and 6,300 books and atlases come about? How did one of the smallest public universities in the Rocky Mountains come to have one of the better map collections in the region?

#### Early Years

The Colorado School of Mines was founded in 1874 to meet the territory's growing demand for mining engineers. The Library was founded shortly thereafter. In the early 1900s the Library moved to a permanent location with the new Guggenheim Building on campus. It remained there until 1955.

The collection within the Library was and still is small and very specialized. Geology and mining materials form the core of the collection. Maps play an important role in these two subject areas. In the early part of this century, few non-topographic maps were available. Most geologic and mineral maps were included in other publications, such as bulletins, reports and papers. The state geological surveys and the United States Geological Survey produced few items that were strictly geologic maps. The most noteworthy exception was the *Geological Atlas of the United States* (or Folios). These items began to be produced in 1894 and ceased in 1945. The Library at the Colorado School of Mines collected these folios. Some were purchased (between \$.25 and \$1.00) and many were received as gifts—some from Simon Guggenheim.

It is a curious note that upon examining the accession books from the early part of the century, I find no indication of the Library acquiring topographic maps. These maps are very important for fieldwork and often used as the base for geologic maps. I assume that one of two things was going on regarding topographic maps: 1) the Library did not collect them (which I doubt) or 2) they were considered insignificant—not worthy of noting in the accession books. The latter may be possible. John Shaw Billings who at the turn of the century invented the classification schedule for New York Public Library felt maps that were so insignificant that he gave them no call number. This despite the fact that New York Public had close to 10,000 maps at the time. The maps were (and to this day are) merely labeled "Map Division."

The records before the mid-1950s about the Library are sketchy. It is known, however, that in 1939 we began to participate in the Federal Depository Library Program. This is a marvelous system by which the federal government sends copies of publicly funded government information to libraries free of charge. In return, libraries must keep the information organized and available to all citizens. We continue to receive thousands of maps a year, not just from USGS, but also from the CIA, NOAA, NIMA, etc.

#### 1955-1978

By the early 1950s, the Library began to outgrow its space in the Guggenheim Building. Consequently, in 1955, the current Library was built. It was dedicated the "Arthur Lakes Library" in 1959, after the first geology professor at the School of Mines, and

discoverer of dinosaur remains in Colorado.

In the new building, maps were placed in their own room and placed under the purview of the Government Documents Librarian, Joy Sutherland. The new Map Room was placed under lock and key, and people needed permission to look at the maps. As one might have expected, the maps did not circulate. By 1958, the Library had 45,687 maps, of which 4,921 were geologic in nature. In 1962, the collection was heavily weeded, mostly of superseded topos, resulting in the new total of 39,741.

Around the same time, the thematic map series by USGS began to be produced. The Oil and Gas Investigation Maps (OMs) first began to appear in 1943, while the Miscellaneous Investigation Series (Is) did not begin until 1955. As of today, these 9 different series have over 9,000 different maps, most being of a geologic nature.

Concurrently, the Army Mapping Service, the forerunner to the Defense Mapping Agency, began to issue in earnest topographic maps of the world. Coupled with USGS's 7.5-minute topographic maps and geologic maps, the basic building blocks of a sizable map collection were in place. New topographic maps from USGS were flowing in at a rate of 150 per month. By the late 60s, this figure had jumped to 250 per month. Today, we receive 70 topos a month. The Federal Depository Program would help double the size of the Map Room collection from 1962 to 1977.

In 1963, Joy Sutherland left the



Library, and shortly thereafter, Margaret Smart became the Government Documents Librarian, and thus in charge of the maps.

The Colorado School of Mines saw massive changes in the 1960s. By the late 1960s the campus had a permanent presence of women students. The enrollment, which had been steady since shortly after World War II shot up from 1,048 in 1962 to 1,652 in 1966. The demand of a 60% increase in student population began to show on the Library. Repeatedly, the Director of the Library asked for more staffing and more funds for acquisitions. From 1958 to 1963, journal inflation ran at 8.3% a year. Incrementally changes were made. The Director's goal was to have 5% of the total budget of Mines go to the Library. The closest ever achieved was 4.51% in 1967. Today, the Library composes only 2% of the total expenditures of CSM. Several new staff members were added, but only at the level of "clerk."

Even though between 2,000 and 3,000 maps were being added every year (mostly topographic), the Map Room remained a neglected part of the Library. Margaret Smart's duties ranged beyond government documents and maps, to general reference and various campus committees. Other than statistics, the only note I found in any annual report or Newsletter regarding the Map Room simply mentions "The Library's invaluable maps."

Graduate students did the majority of processing and filing in the Map Room. Volunteers (faculty member's wives) did a lot of bibliographic

research. Lois Hahn, wife of a professor at Mines, worked off and on over 20 years in the Map Room "preparing the cards and maintaining a card index of the Library's collection of geologic maps."

By the mid-70s the student population, fueled by the baby boomers, exploded once again at Mines. Enrollment had been holding steady. In 1973, it was 1,687, but by 1981, it had reached 2,918. Since that time, the cyclical nature of the natural resource market has predicted CSM's enrollment. Today, over 2,900 students (728 grads, 2,175 undergrads) are enrolled. Most do not want the numbers to go higher.

After much debate and planning, the Legislature and Board of Trustees approved the addition to the Library in 1976. It was completed in 1978. At about the same time, the Library received a \$1,000,000 gift from the Boettcher Foundation. This money was used to buy books about energy, the environment, and public policy. These would be Virginia Wilcox Herald's, the Library Director's, last hurrah. Her remarkable 37-year career at Mines would come to end in August of 1977 when she retired. Mrs. Herald currently lives in Oregon.

#### **Then Came Mary**

Shortly after Mrs. Herald's retirement, Hart Phiney was hired as the new Library Director. Mr. Phiney had a very successful honeymoon period. He was able to increase the amount the school spent of books and serials from \$70,000 to \$131,000. He also (more importantly to our plot) was able to persuade the administration to create a Map Librarian position. Strong

statements from the staff and the Director can be found: "The Map Room needs to have a permanent staff assigned next year."

On October 1, 1978, Mary Larsgaard became the Map Librarian at the Arthur Lakes Library. As stated in the 78/79 Annual Report, "This was a truly momentous occasion— [until now] justice had not been done the map collection due to increased use of documents and lack of help for that collection."

Mary Larsgaard was and still very much is an incredibly hard worker, a prolific cataloger, writer and researcher, an expert at acquiring items for a collection and a character. Reading through all of her annual reports and memos, I have come to the conclusion that she does not sleep. She, more than any other person, made the Map Room at the Arthur Lakes Library a great collection. In her ten years, Mary increased the size of the collection from 76,667 to 157,000 maps.

To quote her 1982 Annual report: "The Map Room has gone from an irritating appendage of the Government Documents Department (whose staff was already severely taxed simply trying to keep up with their primary charge), in a room tucked away out of sight, to a heavily used and very valuable part of the Arthur Lakes Library ... This is a logical outgrowth of the School of Mines' commitment of building space and staff time, and of the fact that it is extremely difficult to find mineral resources without a map."

In 1978, the Map Room moved to its present location in the new

addition, nearly quadrupling in size from 986 square feet to 3,828 square feet. A few years later a 440 square foot office was added.

1978-79 marked the first year that an annual report and detailed statistics were made about the Map Room.

Mary received a grant to catalog Colorado maps. Within 5 years, 95% of the collection was cataloged. This is an amazing accomplishment. To this day, few libraries can boast such a high percentage. And the fact that Mary did most of the cataloging herself is even more incredible. Having the vast majority of the maps available through our on-line catalog dramatically increases the accessibility and decreases the amount of frustration in finding maps.

In the summer of 1979, Mary participated in the Library of Congress' Summer Internship Program, through which she acquired over 10,000 maps. In the later part of that year, the Map Room received a gift of over 3,000 maps from the "State Capital Attic."

Three major concerns dominated Mary's reports—the lack of map cases, the need for an assistant, and the concern about items being stolen. Slowly map cases were acquired. Some were purchased, others came as gifts. A halftime assistant arrived in 1984. Finally, maps were not being stolen at as high a rate as was feared. This concern had run so high it was suggested that the Map Room be walled off.

Mary wrote a number of books while at Mines, including *Map Librarianship: An Introduction* and its second edition. Other works

include *Topographic Mapping of the Americas, Australia and New Zealand*, and *Alphabetical Index to Geologic Maps of Colorado*.

In 1984, Mary was made Assistant Director for Special Collections. The duties of this job included not only responsibility over the Map Room, but also government documents, the vault and the Colorado Room.

The mid-80s were crisis years in Colorado. The petroleum and mineral industry crash sent the state into a tailspin. Unemployment was high. Enrollment was down. State revenue was down. There was both a hiring and salary freeze. In 1984-85, the Arthur Lakes Library spent \$64 on maps. The book collection suffered worse. One year, the Library bought exactly 2 books. Because of retirements, increasing stress was put on the Library staff. The Library lost most of its credibility on campus. A combination of these and other factors, lead to forced resignation of the Director in 1988. Shortly after this incident, Mary left CSM for sunny Santa Barbara.

#### To the Present

Buddy Rooney began as the Map Librarian in 1988. Buddy continued to expand the size of and access to the collection. During her 6 years, Buddy acquired 2 major gifts: one from the Anaconda Mining Company and the other from Cyprus Amax Minerals. Both of these companies shut down libraries in the Denver area, and the Colorado School of Mines acquired them. Included in the gifts were many, hitherto unaffordable, geologic maps of foreign countries.

Buddy also published *Mining in Colorado: A Selected Bibliography*.

She retired in October 1994.

I began my reign as the Map Librarian in July 1995. Some of my noteworthy achievements have included weeding the collection of all its nautical charts (not really needed in Colorado), acquiring new map cases, shifting the entire collection and using the internet for acquisitions. I consider myself very lucky to follow in such footprints as Mary and Buddy. In continuing with their tradition, I am prolific cataloger, very knowledgeable about how the electronic age can enhance the Map Room, and I have become very good at acquiring items for our collection. The best example of the last is our interaction with USGS during their Inventory Reduction. In the past couple of years, USGS has been dramatically reducing their inventory from 50 million to about 27 million items. Most of the reduction went straight into the recycle bin. However, through a lot of phone calls and smooth talking, we were able to acquire over 8,000 thematic maps—most geology.

The Map Room has had a presence on the World Wide Web for about 2 years (see <http://www.mines.edu/library/maproom>). Currently, I have mounted 113 pages. This review by Chris Hodge from *Mercator's World*, 1996 says it all: "The ... Map Room of the Colorado School of Mines is a great example of an on-line academic map library. The introductory pages have minimal graphics, which means you can get in and find what you are looking for without delays. A guide to finding materials at the site has been included. A FAQ (Frequently

Asked Questions) is included. And the library has also posted its collection development policy, which, as almost any map librarian will tell you, can be an invaluable resource. The ... Map Room focuses on topographic, mining, and geological maps, and the ratio of original materials to linked resources is extremely high. In other words, this is meant to be a resource, not simply a link to other links that may take you to the information you are looking for.”

#### **Future**

What does the future hold for the maps at the Arthur Lakes Library? My goal is perfection. I want to have every map cataloged. I want a graphical index to every set and those indexes mounted on the web. I want the collection in perfect condition so that a patron walking in can easily find what they are looking for. I

intend to keep the Map Room a working collection.

To accomplish these goals, we need more map cases. Plain and simple. Overcrowding not only destroys the maps, but also discourages patrons.

Access is far more important than preservation; however, it is hoped that we can better preserve our collection. Currently we deacidify and encapsulate our maps in mylar. In the future, we hope to scan or digitize some of our unique mining and geological maps.

While paper maps are not going to go away any time soon, we are being asked more and more about digital map information. GIS and GIS formatted data are becoming more and more prevalent in Libraries. Consequently, ArcView 3.0a has been mounted on two computers in the Library. We need this program in order to give access to

certain data—particularly government data that deals mostly with transportation rather than topography or geology. In the future, I expect to see a rise in demand for digital geologic information and a corresponding rise in the production of that data.

#### **Conclusion**

The Map Room at the Colorado School of Mines is an important collection. It is used constantly for geologic and mineral research. We play a vital role in teaching new generations of geology students.

Through careful purchases, the depository program, great personnel and luck, the Arthur Lakes Library has been able to assemble an excellent collection with emphasis on geologic and mining maps. I plan to continue this tradition by building and maintaining our collection for future users.

## Book and Atlas Reviews

*edited by*

**Kathy Rankin**

University of Nevada – Las Vegas

**Stone, Jeffrey C., ed. *Maps and Africa*.** Aberdeen: Aberdeen University Africa Studies Group, 1994. 259 p. (pbk.) ISBN 0-9509989-6-6. £10.

There is nothing localized about Africa; it occupies a deceptively large part of the earth's surface. Nevertheless it responds to unit focus and treatment. *Maps and Africa* is such a treatment, being the proceedings of a colloquium of the same name held at the University of Aberdeen, Scotland, in 1993. Generated by the unusual focus of maps, the sixteen papers provide a fascinating compendium of two centuries of African change and the result is a whole far greater than the sum of its parts, something to be read in its entirety.

Papers were prepared and circulated to participants (almost fifty) in advance. In consequence, presentations were limited to ten minutes so that much of the two days could be spent on discussion, which is also summarized at the end. Post-colloquium author-edited versions are those published and the editor is to be congratulated on achieving publication only a year after the colloquium.

The continuum is historical in a very broad sense with certain themes distinguishing the five sessions that followed the keynote speaker. However, by choosing to regard maps as artifacts rather than cartographic products, a meld of cultural aspects becomes possible. Thus the individual authors in addressing their particular topics touch on a wide range of cartographic concerns be they practical, resultant or philosophic. Though most authors provide a substantial background, there is surprisingly little overlap, and the one or two more expansive treatments remain relevant in the overall context.

Indigenous mapping is the topic of the first paper, but thus far there is little evidence of any such and possible reasons are discussed. Therefore the mapping of Africa has been from an 'external' viewpoint and a European one at that. As is to be expected, areas with a British colonial past predominate to a certain extent but one of the more unexpected papers is that which describes the aggressive propaganda maps published in the Italian political journal *Geopolitica* during the years when Mussolini was justifying a

greater Italian presence in Africa. (It may be noted here that the illustrations used are reproduced in the book at an acceptable size and include some in color.)

However, to attempt an assessment of the papers individually or to compare them is not the best approach, given the integrated nature of the colloquium. But it is appropriate to list the five themes and mention the topics. The discussions that took place were also divided in this manner.

1. Maps and their Cultural Context  
Investigations of indigenous mapping  
Well-illustrated review of maps resulting from sponsored 19th century exploration
2. Maps in the Exercise of Imperial Authority  
The Barrow survey of Cape Colony during the first British occupation 1795-1803  
The Mussolini-era maps filled with bold arrows pointing from Europe to Africa  
The ongoing case of The Gambia  
The influential non-military French surveys in North Africa in the

1830s and 1840s following the ousting of the Ottomans

### 3. The Role of Maps in Policy Formulation

Strong questioning of the local outcome of international agency-funded pilot landholdings project  
Population mapping pre- and post-independence of Zambia and Zimbabwe, personal involvement, methodology, producing usable maps, political results — well-illustrated

The atypical progress of mapping of Botswana

### 4. Perceptions and Pre-conceptions in Resource Mapping

Description of remarkably detailed land-use mapping done in Uganda in the early 1900s

Evaluation of usability of international small-scale mapping, e.g. soils for policy-making

Satellite imagery used to assess land degradation

### 5. Current Utilisation of Satellite Imagery

Prefaced by overview of satellite technology and potential

Uses of imagery locally, equipment necessary

Throughout the proceedings the 'external' nature of African maps emerges clearly and there is a strong recurrent note of the boundaries that have manifested themselves over the past two centuries. Obviously there are the surveyed territorial boundaries impressed on a continent by colonial powers but the remnants of indigenous mental - often circular - boundaries can still be apparent.

Natural boundaries, in particular those resulting from variable climatic conditions appear on satellite imag-

ery. Related are land-use boundaries with planned use of resources affected by administrative or statistical boundaries. Population mapping structured by various kinds of boundaries can influence political decisions.

The map/man interface, one of the stated aspects of the colloquium, is very apparent. Where, I ask, do map librarians work but at the user interface?

Whether *Maps and Africa* would make a good reference book is perhaps debatable. There are some instances of cartographic history included that might not be available elsewhere; certainly if anyone is interested in the background of the shape and unique boundaries of The Gambia from 1891-1991, here is your source.

But notwithstanding, as said earlier, the whole is great.

*Muriel Strickland  
San Diego*

### **Black, Jeremy. *Maps and History: Constructing Images of the Past*.**

New Haven: Yale University Press, 1997. 267 p. LC: 96-41293. ISBN: 0-300-06976-6. \$35.00.

Many historical atlases exist and they are generally very useful. Until now we probably accepted them at face value. However, just like any other form of communication, historical atlases do not exist in a vacuum but are a social construct with their own values, bias, message, and history. Jeremy Black, a prodigious writer of history, has delved into the soul of the historical atlas and laid it bare for us to understand.

Historical atlases and historical mapping bring together the fields of history, geography, and cartography, each one with its own way of express-

ing itself. Historical atlases and maps recreate past landscapes, showing distributions of peoples, entities, ideas, migrations, events, diffusions, and now just about anything else. Black analyzes historical atlases from the earliest times, evaluating their strengths, weaknesses, and biases, to see how the past was mapped. Black's knowledge of history is encyclopedic. I was astounded by the numbers of atlases he reviewed and compared; even highlighting the peculiarities of individual plates in atlases produced in a dozen languages from all over the world. The reader is bombarded by a plethora of historical facts that influenced the creation and intent of each atlas. Black is like a cartographic genealogist as he describes who influenced who and why as the historical atlas developed over time.

Black's study is universal, though we normally tend to see historical atlases as being Eurocentric because of how they developed in our experience. Black reviews the ancient and medieval antecedents of historical maps and atlases, particularly from China, before introducing the first true historical atlas: Abraham Ortelius' *Parergon* of 1570. These early historical atlases usually focused on classical or biblical themes and tended to show flat, political geography. Around 1900 as our understanding of geography evolved, historical atlases began adding the effects of landforms and environment. Up until World War II the Eurocentric tradition highlighted colonial growth and control. It was evident who made them and the impression they were trying to give. Historical atlases from Communist countries were very obvious in their

portrayal of the past as they focused on class struggle and economic development. Since World War II, especially as the colonial empires devolved, new national atlases have recreated new pasts on paper reflecting local sensitivities and traditions, casting the history of each nation in a favorable light. Now with electronic compilation and publication techniques, historical atlases can move beyond static graphic depictions of historical change to begin showing the historical landscape as a continuum. The model of the modern historical atlas, the *Times Atlas of World History* (Fourth edition. London: Times Books, 1993), with some faults according to Black, demonstrates where we've come to with a more universal and less Eurocentric bias and with more imaginative displays of cartographic information.

*Maps and History* succeeds admirably in studying the development of the historical atlas. It delves deep into the whys and wherefores of historical map-making that have heretofore not been plumbed. There are 90 illustrations, 30 in color, that illustrate plates from the atlases being analyzed. Black quotes liberally from the introductions to various atlases to let the authors speak for themselves about why they made their atlases the way they did. It helps us understand where they were coming from. For a book so filled with facts and historic references the index is rather spare. There is no bibliography and the notes don't include what I would consider a full bibliographic citation, especially not listing publishers. Black obviously knows his historical

atlases but he needs to be more considerate of librarians and researchers who want to follow up on his work. I can't imagine *Maps and History* not being the definitive work on historical atlases for a long time to come. I know I will never look at another historical atlas the same way again. *Maps and History* belongs in all academic libraries and larger public libraries.

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Brigham Young University -  
Hawaii Campus

**Allen, John L. *Student Atlas of Environmental Issues.***

[Guilford, CT?]: Dushkin/McGraw-Hill, 1997. 120 p. LC: 97-65767. ISBN: 0-697-35620-4. \$16.15.

The *Student Atlas of Environmental Issues* is just that, an inexpensive atlas intended for use by students in general environmental studies and geography classes. The author, John L. Allen, presents a collection of maps that students can use in conjunction with other class materials to develop a better understanding of the world and its environment.

The atlas is divided into six chapters dealing with physical and human geography and human impacts on the environment, including the air, water, biosphere and land. It contains 34 small-scale (1:125,000,000 or 1:180,000,000) world maps with explanatory text on various themes, such as climate, transportation, natural hazards, population, urbanization and biodiversity, to name just a few.

It also contains 14 maps on local environmental problems, such as pollution in the Chesapeake Bay and Great Lakes, spread of fallout from the

Chernobyl disaster and the Antarctic ozone hole. In addition, 14 tables of statistical data related to human geography and humanity's use and abuse of natural resources are also included. In many cases, the source of the data used to compile the maps and tables is not attributed.

According to the preface, this atlas is designed to help students "understand the dimensions of the World's environmental problems and the geographical basis of these problems." Because it is designed to be used in conjunction with a general environmental science textbook and other class materials, it is difficult to judge whether it fulfills its goal. It is first and foremost a general atlas designed to supplement class materials in lower-level undergraduate courses. It is not intended for use by researchers or as a library reference book. It is comparable to other atlases, such as the *State of the World Atlas* (Viking-Penguin, 1995, \$16.95), the *World Bank Atlas* (World Bank, 1997, \$15.00) and the *Atlas of the Environment* (ABC-CLIO, 1996, \$39.95), many of which cover more topics for about the same price. For the most part, the information contained in the *Student Atlas* could be disseminated to students in a given class using Web technology or a Web-based GIS. This would allow a professor to introduce information on local and regional environmental concerns.

A decision on whether to place this atlas in a library or map collection should be based on several factors. Many libraries and map collections already have similar information in other atlases, including the *State of*

*the World Atlas, Atlas of the Environment, or World Bank Atlas*, so this volume would duplicate information in those atlases. While some of the maps in this volume might be of interest to general users, the volume is a preservation nightmare. It has a soft cover, which will not hold up to repeated use. All of the 1:125,000,000-scale maps are spread across the gutter of the volume, occupying two pages. The volume could never be hard bound, much less rebound, without permanently damaging the maps. Even the tables can be found in other resources, such as the World Resources Institute's *World Resources* reports. Because the volume duplicates information available in other sources and cannot be bound without damaging the maps, I do not recommend this volume for libraries.

Linda Zellmer  
Map Librarian  
Arizona State University  
Libraries

***Environmental Data Resource Disc. Vol. 1.0.*** Boulder, Colo.: Hydrosphere Data Products, c1997. 1 CD-ROM. LC: sn97-33943. (Volume 1.0 contains data through 1994; the data will be updated on an annual basis.) \$20.00.

Hydrosphere's *Environmental Data Resource Disc* primarily contains information about environmental data-collection stations throughout the United States. The information consists of station information (e.g., name, location, type), measurement summaries (e.g., parameter type, years of available data, average, maximum, minimum), data measure-

ments and statistical summaries, and Geographic Information System (GIS) coverages. There are three data sets available on the disc. The "NCDC Station Finder" data set contains all of the weather stations in the U.S. that report "Summary of the Day" data (precipitation, maximum and minimum temperature, evaporation, and snowfall) to the National Climatic Data Center (NCDC); the "USGS Station Finder" data set contains all of the stream-gauging stations in the U.S. that report "Daily Values" or "Peak Values" (streamflow, stream stage, water temperature, lake level, reservoir storage, etc.) to the U.S. Geological Survey; and, the "Watershed" data set contains USGS streamflow, NCDC weather, and EPA water quality data for two distinct watersheds.

The inclusion of GIS coverages to assist in locating station sites within the database is a significant step toward incorporating digital mapping technology in this type of product. The user must have access to ArcView (PC ARC/INFO), or MapInfo (GIS software), however, to make use of this feature. For those who have this software, the "Station Finder GIS Coverages" feature of the Resource Disc provides a readily accessible means of locating stations recording environmental data. The compatibility of the nation-wide coverages with GIS charting features allows the users quickly to produce maps of station locations. This feature would be greatly enhanced from a water resources perspective by the inclusion of major watershed boundaries within the coverages.

The "Watershed" data set is a promising example of the type of

environmental data products that can be expected in the future because it integrates USGS, NCDC, and EPA data in one source. The information presented here is very limited, however, in that it is specific to the Guadalupe River Basin in Texas and the Iowa-Cedar River Basin in Iowa and Minnesota. Unless the user can foresee a need for the level of data provided for these two basins, this data set does not have a great practical significance. For these specific watersheds even more complete GIS coverages are included than in the Station Finder data sets (for example, river reaches are available). This coupling of numerical and digital data can prove extremely valuable as long as Hydrosphere can expand the basins covered, perhaps on a regional basis. It will be important for Hydrosphere to include metadata for all spatial data to allow the more sophisticated users to get the most out of the GIS coverages.

This disc is most useful for those users analyzing one of the two watersheds mentioned above. However, it does provide summary data for many more stations than any of Hydrosphere's other products. Since much of Hydrosphere's data is issued on a regional basis, this disc provides a comprehensive index to all environmental data stations nation-wide, including the type of data available for each station, the years covered and the name of the Hydrosphere product that contains the data. This disc would be most useful for libraries that already hold many other Hydrosphere titles.

The disc is designed to operate on PC-compatible computers running Windows 3.1 or higher. Installation is

very simple, especially if other Hydrosphere products have already been installed. The data is viewed through the Hydrodata for Windows software application that is supplied on the disc. Searching the disc is relatively easy, although not always intuitive. An extensive set of help files is available on the disc that contain detailed information on the disc and its contents, the Hydrodata for Windows application, and the various types of data provided.

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Associate Librarian  
Water Resources Center Archives  
University of California,  
Berkeley  
and  
*Ed Ballman*  
Balance Hydrologics, Inc.  
Berkeley, CA

### **Arizona Road & Recreation**

**Atlas.** 1st ed. Berkeley, CA: Benchmark Maps, 1996. 111 p. ISBN 0-929591-31-3. \$18.95.

Here is another beautiful road atlas from Benchmark. The atlas is arranged in five sections: regional maps, recreation guides, landscape maps, public land maps and metro area maps. The regional section includes a U.S. highway map at 1:9M, a gradient tint/shaded relief map of the Southwest at 1.4M, a planimetric road map of Arizona at 1:1,647K and a beautiful topographic/shaded relief map of the Grand Canyon at 1:62K.

The recreation guides are just that; listings and phone numbers for campgrounds, boating, golf courses and RV parks. There is also a Recreation Sources list which includes federal, state and county offices

which manage recreational lands and issue permits.

The real treats are the 1:400K landscape and public lands maps. The landscape maps are from the wonderful shaded relief map of Arizona, created by Allan Cartography. It uses color gradient tints combined with shaded relief to create an almost "touchable" three-dimensional display of the state's landforms. Roads, city names, land forms, hydrographic features and other points of interest, including ghost towns, are all clearly labeled. Contour lines, minor roads, county lines and township/range grids are not indicated.

The public lands maps are color coded to show the full range of state and federal land ownership in Arizona. Ten different land categories are shown. The coloring used to code these land categories constitutes the only real, albeit minor, flaw in the whole atlas. The yellow, brown and orange tints used for BLM, military and Indian lands are clearly discernible on the maps, but do not closely match the colors shown in the legend. County lines are shown on the public lands maps.

The Metro Area Maps section covers Phoenix and Tucson at 1:123K. Besides showing the standard metro area features (parks, shopping centers, hospitals, etc.), these maps contain a certain cultural feature I've yet to see on a current metropolitan street atlas - the location of the "locked gates" (quoting the map legend) to the various gated communities springing up in Phoenix and Tucson, as well as gates to other features such as resorts and military bases. Locked gates are shown on the landscape and public lands maps as well.

Only one place name error was found. San Manuel, a small copper mining town in extreme southeast Pinal County, is incorrectly labeled as "San Miguel" on the 1:1,647K Arizona map. Fortunately, both towns are correctly indexed and located in the landscape and public land sets.

This award-winning atlas (named "Best Atlas" by the American Congress of Surveying and Mapping) lives up to the statement found in the introductory material which reads "Benchmark Maps was formed to realize the dream of producing unforgettable maps of the United States." The Arizona atlas will be enjoyed by recreationalists and armchair travelers alike. It is an appropriate purchase for academic and public libraries.

*Julie Hoff*  
Arizona Dept. of Library, Archives and Public Records  
Phoenix, Arizona

**Basso, Keith H. *Wisdom Sits in Places: Landscape and Language Among the Western Apache.*** Albuquerque: University of New Mexico, 1996. 171 p. ISBN: 0-8263-1724-3 (paper). \$14.95.

Winner of the 1996 Western States Book Award for Creative Nonfiction, *Wisdom Sits in Places* is an exploration of the use of place names by the Western Apache living in and around the village of Cibecue, Arizona. Keith Basso, an anthropologist, first visited Cibecue in 1959, and has produced numerous monographs and articles on the life of the Apache people living there. In the late 1970s the chairman of the White Mountain Apache tribe suggested that Basso make a map of the Cibecue area.



"Not whitemen's maps, we've got plenty of them, but Apache maps with Apache places and names. We could use them. Find out something about how we know our country. You should have done this before." (pg. xv) *Wisdom Sits in Places* is one of the results of that project. Though the book contains none of the maps made during the project (the chairman thought it unwise to publish them), it provides many examples of the role of place and place names in Apache thought and practice. It is a series of essays on how the Apache "know" their country.

The book is divided into four chapters. Three of these chapters are modifications of previously published or presented pieces. At the core of each chapter is a conversation or narration involving place names. Through these conversations, and the accompanying descriptions of the people involved, the reader is given an opportunity to meet, however briefly, some of the Apache consultants Basso worked with on this project. These conversations also provide the impetus for the more theoretical discussions of place that proceed and follow them.

The first chapter, "Quoting the Ancestors," serves as an introduction to the different types of Apache place names and their centrality to the Apache concept of history. For the most part, Apache place names were created by the ancestors. Some names are descriptive of physical features visited by the ancestors (for example a name that translates "Water Lies with Mud in an Open Container" to designate a circular boggy swale) while others "commemorate" histori-

cal events that highlight the consequences of social misconduct (for example, a name that translates "She Carries Her Brother on Her Back" to designate a steep slope.) To speak the name of a place is to quote the ancestors and in so doing recall the events associated with that place. It is geography, not time that anchors Apache history.

Having established the powerful connection between place names and historically (and therefore socially) significant events, the next two chapters address the use of place names as "...mnemonic pegs on which to hang the moral teachings of their [Apache] history." (pg. 62) In Chapter 2, "Stalking With Stories" Basso describes the Apache practice of telling historical stories, morality tales which are intended as a comment on the behavior of the person to whom the story is told. Since these stories are always tied to a specific named place, the repetition of that place name or one's actual presence in that place serves as a reminder that the behavior that occurred there is socially unacceptable. In this way, the landscape encourages socially acceptable behavior. In Chapter 2 Basso also introduces a theme which he picks up again in Chapter 4: the need for anthropologists and others to study what people think about the land, not only from a materialistic perspective, but from a symbolic perspective as well.

In Chapter 3, "Speaking With Names," Basso takes the relationship between place and behavior one step further, recounting situations where, in the interest of tact, stories are not told, but only the place name associated with a story is mentioned in conversation. On hearing the place name, the person to whom it was addressed may recall

the associated event and reflect upon their own behavior in light of that event. By "speaking with names," people may offer solicitude and advice about another person's behavior without appearing to be arrogant, judgmental, or unsympathetic. Speaking with names is also related to the Apache courtesy of refraining from "speaking too much."

"A person who speaks too much — someone who describes too busily, who supplies too many details, who repeats and qualifies too many times — presumes without warrant on the right of hearers to build freely and creatively on the speaker's own depictions." (pg. 85) If I have one criticism of this book, it is that the author at times "speaks too much," though this is undoubtedly a consequence of the challenge of conveying to non-Apache readers the unfamiliar worldview of the Western Apache.

The final chapter, "Wisdom Sits in Places" examines sense of place, not only among the Western Apache, but also as a universal human experience with a cultural component worthy of study. As this book makes clear "sense of place is inseparable from the ideas that inform it" (pg.144), ideas derived in part from local topographies, in part from personal associations, and in part from socially given systems of thought. Anthropologists and others need to begin to pay attention to the latter, and in so doing may find that sense of place exhibits transcultural qualities as well.

The only illustrations in this book are four black-and-white photographs of places mentioned in the text and a map of the state of Arizona showing the location of Cibecue. Given the

nature of *Wisdom Sits in Places*, the lack of maps does not detract from it, though an explanation for why the chairman did not want the maps published might have shed further light on the Western Apache sense of place. The book includes a two-page guide to the pronunciation of the Western Apache language (all place names are given in Western Apache as well as English), a six-page bibliography and an index.

*Wisdom Sits in Places* furnishes valuable insights into our ties to the physical world. It makes one think about one's own sense of place. I would recommend it for academic and public libraries with geography, anthropology, or Southwest studies collections.

*Penelope Whitten*  
*Anthropology and Geo-*  
*sciences Bibliographer*  
*University of Las Vegas,*  
*Nevada*

**Allen, John L.** *Student Atlas of World Politics*. 3rd ed. Guilford, Conn.: Dushkin/McGraw-Hill, 1998. 119 p. ISBN: 0-07-292906-5. OCLC: 38191633. \$16.15.

This inexpensive yet appealing atlas, intended for use by undergraduate-level college students, is a superb compilation of 47 small-scale maps illustrating important factors and relationships among the countries of the world. The maps show how nations compare to one another with regard to economics, demography, agriculture and the environment. The maps are designed "to introduce you [the student] to the importance of the connections between geography and world

politics. The maps are not perfect representations of reality—no maps ever are—but they do represent 'models', or approximations of the real world, that should aid in your understanding of the world." Most of the maps are world maps with scales of either 1:125,000,000 or 1:180,000,000. Accompanying the maps are extensive tables providing relevant statistical data for the nations of the world. Earlier editions of the atlas were published in 1991 and 1996. The atlas was compiled by John L. Allen, professor of geography at the University of Connecticut. Professor Allen's other publications include *The Student Atlas of Economic Development* (Dushkin/McGraw-Hill, 1997), *The Student Atlas of Environmental Issues* (Dushkin/McGraw-Hill, 1997) and *Passage through the Garden: Lewis and Clark and the Image of the American Northwest* (University of Illinois Press, 1975).

The atlas is divided into six general sections: "The Contemporary World," "States: Alliances and Conflicts," "The Global Economy," "Population and Human Development," "Food, Energy and Materials" and "Environmental Conditions." Within each section are 7 to 9 thematic world maps illustrating specific topics. For example, in the section "Population and Human Development," there are 8 world maps showing for each country population growth rates, infant mortality rates, average life expectancy, population by age group, total labor force, urban population, inequalities in education and employment, and quality of life based on the United Nations' "Human Development Index." Accompanying each map is a

thorough but concise overview of the topic, providing the student with additional valuable documentation with which to evaluate the information presented graphically by each map.

The maps themselves are models of clarity. Bright, contrasting colors/patterns and the simple but clear presentations enable the student to quickly comprehend the information being presented for each topic. For example, it takes only a quick look at the map of political systems to readily see where the world's one-party and military states are. Similarly, just a glance at the air and water quality map vividly shows the regions of the world with significant acid precipitation.

I strongly recommend this affordable and very useful atlas of international politics for all academic and public libraries. The maps are well-designed and the statistical tables contain a great deal of current and valuable economic, social and demographic data for the countries of the world. I would expect this atlas to get quite a bit of use at either a general reference desk or in a separate map and atlas collection. The author has done a fine job in creating this attractive and serviceable student atlas. And since it costs about the same price as a ticket to a college football game, it's a bargain as well.

*Stephen W. Rogers*  
*Reference and Map Room*  
*The Ohio State University*  
*Libraries*

**Publications Received**

**Jouris, David.** *All Over the Map*. Berkeley, Calif.: Ten Speed Press. 1994. 96 p. ISBN: 0-89815-649-1. \$11.95.

**Jouris, David.** *All Over the Map Again*. Berkeley, Calif.: Ten Speed Press. 1996. 96 p. ISBN: 0-89815-835-4. \$11.95.

The author has collected unusual names of cities and towns in the United States and arranged them by themes such as food, drinks, cheese, short names, names with the word new in them, animals, professions, etc. The names that fit each theme are shown in their locations on U.S. maps. The author has also included information on how some of these towns and cities were named and trivia such as terms used by short-order cooks. These books are fun to read and may be a way of interesting people in geography and maps.

**Other New Publications**

**Feranec, Jan.** *Slovakia - CORINE - Land Cover Tourist Map. = Slowakei - CORINE - Bodenbedeckung-Touristshce = Slovensko - CORINE - Krajinnno-turistica Mapa*.

1:500,000. Bratislava: Institute of Geodesy and Cartography, c1996.

For information on how to acquire a copy of this map, get in touch with Jan Feranec (geogfera@savba.sk), Head, Dept. of Cartography and Geoinformatics, Institute of Geography, Slovak Academy of Sciences, Stefanikova 49, 814 73 Bratislava, Slovak Republic.

This map is published separately and as accompanying material in *Geographia Slovaca* (ISSN 1210-3519).

**Larsgaard, May Lynette.** *Map Librarianship: An Introduction*. 3rd ed. Englewood, CO: Libraries Unlimited, 1998. ISBN 1-56308-474-0. \$68.50 (\$82.00 outside North America). Website for the publisher: [www.lu.com](http://www.lu.com).

**Van Dam, Stephan.** *NY@tlas*. ISBN 0-931141-90-4. \$10.95. (News item on MAPS-L from Alice Hudson).

**Brooklyn Chamber of Commerce and Van Dam, Stephan.** *Brooklyn@tlas*. ISBN 0-931141-89-3 (or maybe the last number is an 8 — listed 2 ways on bookcover). (News item from Alice Hudson on MAPS-L).

## New Mapping of Western North America

compiled by

**Ken Rockwell**

University of Utah Library Catalog Department

### Alaska

H.M. Gousha. *Alaska roadmap*. Scale ca. 1:4,700,000. Comfort, Texas : H.M. Gousha, 1996 ed. OCLC #36482702

Hilson, Stephen E. *Exploring Alaska & British Columbia*. 1 atlas (103 p.) Seattle, WA : Evergreen Pacific Pub., 1997. OCLC #40234273

Richter, Donald H. *Geologic map of the Nabesna A-6 quadrangle, Alaska*. Scale 1:63,360. USGS Open-file report 97-475, pub. 1998. OCLC #39454058

U.S. Forest Service, Alaska Region. *The Copper River Delta, Alaska: the Chugach National Forest*. Scale ca. 1:228,000. [Juneau, Alaska?]: Forest Service, 1998. OCLC #40188819

### Alberta

Schwerdt Graphic Arts Ltd. *Alberta & British Columbia: detailed full color road map plus metropolitan maps of the major urban centres*. Scale 1:2,000,000. Toronto, Ont.: Peter Heiler Ltd., 1997. OCLC #40231421

### Arizona

Arizona Game and Fish Dept.

*Arizona wildlife water developments statewide field guide to Arizona Game & Fish Department game water catchments, springs, seeps, potholes and habitat enclosures*. 1 atlas (282 p.) Not to scale. Mesa, Ariz.: Point Two Publications, 1998. OCLC #40324632

Arizona Off Road Adventures. *Mountain bike rides of the Tucson area*. 3 maps, scales ca. 1:72,400 and ca. 1:42,240. Tucson, AZ : Arizona Off Road Adventures, 1997. OCLC #39414283

Barlow & Haun, Inc. *Structure contour map of NE Arizona*. Scale 1:126,720. Casper, Wyo. : Rocky Mountain Map Co., 1998. OCLC #40220722

Beartooth Maps. *Superstition Wilderness, Arizona, topographic map*. Scale ca. 1:40,000. Big Sky, MT : Beartooth Maps, 1997. OCLC #39401338

Benchmark Maps. *Arizona road & recreation atlas*. 1 atlas (111 p.), scale 1:400,000. Berkeley, Calif. : Benchmark Maps, 1996. OCLC #36337303

Earthwalk Press. *Hiking map & guide, Grand Canyon National Park*. 7th ed. Scale 1:48,000. Eureka, CA : Earthwalk Press, 1997. OCLC #40048682

Frankel, Arthur D. *Seismic-hazard maps for California, Nevada, and western Arizona/Utah*. 12 maps, scale 1:2,000,000. USGS Open-file report 97-130, pub. 1997. OCLC #40052764

H.M. Gousha. *Arizona roadmap*. Scale 1:1,330,560. Comfort, Tex. : H.M. Gousha Co., 1995. OCLC #36472909

Jones, Stan. *Stan Jones' Lake Powell country and Glen Canyon National Recreation Area in Arizona and Utah*. Scale 1:168,960. Page, Ariz. : Sun Country Publications, 1997. OCLC #39449920

North Star Mapping. *Road map of Arizona and the Four Corners area : including recreation areas, national parks & monuments, famous ghost towns...* 2 maps, scales ca. 1:1,050,000 and ca. 1:1,100,000.

Flagstaff, AZ : North Star Mapping, 1997. OCLC #40097342

Phoenix Mapping Service. *Central Arizona*. Scale ca. 1:194,000. Phoenix, Ariz. : Phoenix Mapping Service, 1997. OCLC #39671881

Phoenix Mapping Service. *State of Arizona*. Scale ca. 1:700,000. Phoenix, Ariz. : Phoenix Mapping Service, 1997. OCLC #39671895

Phoenix Mapping Service. *Yavapai*

**County street atlas.** 1 atlas (various pagings), scale ca. 1:36,000. Phoenix, Ariz. : Phoenix Mapping Service, 1998 ed. OCLC #39904231

**Power maps school series test-results.** 3 maps, scale 1:225,280. Phoenix, AZ : Maps & Facts Unlimited, 1995. OCLC #36460289

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King of the Road Map Service. *Washington : including Puget Sound, Spokane, Tri Cities, downtown Seattle*. Scale ca. 1:760,320. Mill Creek, WA : King of the Road Map Service, 1998. OCLC #40189067

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scale 1:2,400. Seattle, Wash. : Kroll, 1997. OCLC #39853135

Kroll Map Company. *Atlas of Seattle, south end*. 1 atlas (ca. 150 p.), scale 1:2,400. Seattle, Wash. : Kroll, 1997. OCLC #39853143

Lindquist, Robert B., and Peckarsky, David J. R. *Mount Baker*. Scale 1:100,000. 2nd ed. Vancouver, B.C. : International Travel Maps, 1998. OCLC #39454269

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Barlow & Haun, Inc. *Structure contour map of the Hanna Basin, Wyoming*. Scale 1:126,720. Casper, Wyo. : Rocky Mountain Map Co., 1998. OCLC #40233935

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Barlow & Haun, Inc. *Structure contour map of ... Wind River Basin, Wyoming*. 1 map on 2 sheets, scale 1:126,720. Casper, Wyo.: Rocky Mountain Map Co., 1998. OCLC #40225661

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Schwartz, Russ. *Yellowstone & Grand Teton, Wyoming city maps : including Jackson, West Yellowstone Recreation Area, Island Park Recreation Area*. 2 maps on 1 sheet, scales ca. 1:275,000 and 1:130,000. Racine, WI : Seeger Map Company, 1995. OCLC #36480484

Snyder, George L. *Geologic map, petrochemistry, and geochronology of the Precambrian rocks of the Bull Camp Peak quadrangle, Albany County, Wyoming*. USGS Miscellaneous investigations series I-2236, pub. 1998. OCLC #40411304

Ver Ploeg, Alan J. *Preliminary geologic map of the Howell quadrangle, Albany County, Wyoming*. Scale 1:24,000. Laramie, Wyo. : Geological Survey of Wyoming, Preliminary geologic map 96-1, pub.1996. OCLC #39466025

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Wyoming Geological Survey. *Geologic map of the Laramie quadrangle, Laramie County, Wyoming*. Scale 1:24,000. Laramie, Wyo. : Wyoming State Geological Survey, Map Series no. 50, pub. 1998. OCLC #40197296

## Cataloging News

OCLC Record Numbers of the USGS Topographic Maps Cataloged by State and Scale compiled and most of the recent cataloging done by Christopher J.J. Thiry

STATE	1:24,000 Final	1:24,000 Photorevised	1:24,000 Provisional	1:31,680	1:62,500	1:125,000	1:250,000
AL	21435926	11363324	11363525	39028776	38991112	39040073	
AK 1:25,000	11858722		12013409				
AK 1:63,360	10560437		10467692				
AZ	11432487	11422768	11420436		38991189	39040091	39065316
AR	10569119	11456369	10025916	39028846	38991220	39040123	
CA	18453101	11456418	11456824	10551542	38991455	39040165	39065403
CO	10562344	11520845		39027056	6874500	39040008	
CT	11363431	10599192		39028940	38991255	39040203	
DE	5856914	10588637			38991475		
FL	10578609	11763203	11856678	39029002	38991494		
GA	10220100	10588606			38991519	39040232	
HI	10560606		11764334		38991538		
ID	10578727	11571604	10467680		38991553	39040270	39065423
IL	19533989	18487477	11396367		18054172		
IN	14222933	10906635			38991649		
IA	11432437	11432460			38991658	39040574	
KS	10578703	11422747		39029048	38991668	39040605	
KY	19028039	11420060			38991675	39040634	
LA	10527278	18732353	11448194	39029084	15500718		
ME	19027379	19027856	10534778		38991684	39062191	
MD	5244728	12307192		39029106	5862420	39040654	
MA	16847210			39029423	38991690	39040685	
MA 1:25,000	18699575	18699575					
MI	10571290	11394468	11394481		10822051	39062152	
MN	6584666	11427950			38983851		

STATE	1:24,000 Final	1:24,000 Photorevised	1:24,000 Provisional	1:31,680	1:62,500	1:125,000	1:250,000
MS	17103772	12743124	11420132	39029455	38991699		
MO	10578658	11483713	11501458	39029502	38991704	39040707	
MT	11456434	11456407	11419877		12850731	39040735	39065439
NE		11546753	11535148		38994077	39040761	
NV	10560515	11456582			12850772	39040793	11279409
NH	15581464	10601985	12010145	39029535	38994106		
NJ	20115130	10593237		39029564	38994130	9533779	
NM	11577587	10560569	10467659		35739855	39040838	39065467
NY	5244776	11427982		39029850	38983839	39040953	
NC	10588653	11619901		39062028	38994155	39041078	
ND	10578677	11456889			38994178	39040982	
OH	11446137	11427924		39029618	38994195	39040875	
OK	10909387	11456792			38994219	39040920	
OR	10578747	11448247	11448265	38994241	39041726	39065480	
PA	18699675	11396366		39030408	5200190		
RI	18131420	10602001		39030417	38994270		
SC	18699730	10588621	11379242		38994301	39041761	
SD	19915669	10578685	11420034		38994325	39041798	
TN	18549099	11400879			38991710	39041850	
TX	11055483	11456392	11379229	39030434	38994351	39040296	
UT	11577614	11546724	11379416		12850749	39040336	39065502
VT	12010284	18443948	11829228	39030427	38994372		
VA	5844117	11394495		13030512	5857053	39041900	
WA	23737579	11456372	11420184		38994406	39041969	
WV	5857008	11416477			38994433	39042050	
WI	11619929	12037904			38994452	39062095	
WY	11817091	11422799	11448228		35739550	39042081	

Compiled by Christopher J.J. Thiry, Map Librarian, Colorado School of Mines, 1400 Illinois, PO Box 4029, Golden, CO 80401-0029, (303) 273-3697, Fax (303) 273-3199, cthiry@mincs.edu, <http://www.mincs.edu/library/maproom> Summer, 1998

## Periodical Articles and Special Periodical Issues

- American City & County*  
v. 113(12); November 1, 1998  
"GIS data gathering takes grassroots course," p. 12
- Arizona Republic*  
November 8, 1998  
Robbins, Gary, "New Technology Being Used to Study Island's Mysteries, (Orange County Register)," p. A26  
November 9, 1998  
"Indians Helping with Census: Will Map the Way to Remote Houses," p. B1,3
- Backpacker*  
v. 26(3); April 1998  
Gorman, Jim. "I'm Mary and I'm a Topoholic," p. 76 (Mary Larsgaard is featured in a section of the article, but the entire article is about topographic maps)
- Biblion*  
v. 3(2); Spring 1998  
Hudson, Alice C. "The Library's Map Division Goes to War, 1941-45," p. 126
- Bulletin of the Genealogical Forum of Oregon*  
v. 47(4); June 1, 1998  
"Oregon Maps in the National Archives," p. 170
- California Geology*  
v. 51(2); March 1, 1998  
"New Geologic Maps Lend Support To Better Building Design In California Earthquake Country," p.3  
"Release Of New Official Seismic Hazard Zone Maps," p.23

- The Cartographic Journal*  
v. 35(1); June 1, 1998  
Fisher, Peter F. "Is GIS Hidebound by the Legacy of Cartography," p. 5  
Herbert, Francis, "Recent Maps and Atlases," p. 107  
Green, David R. and Lars Calvert, "The Cartographic Potential of Graphics Design Software for Education," p. 61  
Green, David R. and Stephen D. King, "WebMap - Mapping and the Internet," p. 87  
Matthews, Fiona, "The Website of The British Cartographic Society," p. 89
- Cartography and Geographic Information Systems*  
James Boxall was guest editor of the July 1998 issue of *Cartography and Geographic Information Systems*. It is titled, "Spatial Data Infrastructures in the 1990s" and includes articles not only from James, but also Mary Larsgaard, Melissa Lamont, Carol Marley, noted cartographer Barbara Battenfield, David J. Coleman, Douglas Nebert and Xavier R. Lopez.
- Cartography*  
v. 27(1); June 1, 1998  
"The Scientific Committee on Antarctica Research (SCAR) collections in the national Library of Australia," p. 67  
Ikhuoria, I.A. and Irabor, O.M. "Environmental Knowing with Tactile Maps," p. 27  
Pullar, D., Sharma, P. and McDonald, G. "A Model for Education in Spatial Information Technologies," p. 41  
"First detailed National Topographic Database Initiative between the Public and Private Sector Announced," p. 67

"The Scientific Committee on Antarctica Research (SCAR) collections in the national Library of Australia," p.67

### •*Current Geographical Publications*

September, October and November 1998 issues of *Current Geographical Publications* are now available at <http://leardo.lib.uwm.edu/cgp>

### •*Colorado Libraries*

v. 24(2); Summer 1998

Panum, Philip J. and Rose Ann Taht. "Finding Your Roots Using Maps," p. 22 Taylor, Maureen K. "Net Line," p. 41

### •*EOM*

v. 6(12); December 1, 1997

Corbley, Kevin P. "Maryland Creates Electronic Atlas to Make GIS Data Available," p. 14

### •*Geo Info Systems*

v. 8(9); September 1, 1998

Thrall, Grant Ian, "First Impressions—Microsoft Does GIS," p. 50  
Thrall, Susan Elshaw, "First Impressions—Encarta Virtual Globe 98, TripPlanner 98, and Expedia Streets 98 Deluxe Version 6.0," p. 51

### •*Geographical: the monthly magazine of the Royal Geographical Society*

v. 70(3); March 1, 1998

"Photo Essay: Earth from Above," p. 46

### •*GIS World*

v. 11(10); October 1, 1998

Berry, Joseph K. "Beyond Mapping: GIS Data Are Rarely Normal," p.24

Levinsohn, Allan. "GIS Canada: British Columbia Offers Soils Data Via the Internet," p.38

•**Idaho Genealogical Society**

**Quarterly**

v. 40(3); Fall 1997

"Shoshone County Map," p. 71

v. 40(4); Winter 1997

"Clearwater County Map," p. 91

v. 41(1); Spring 1998

"Latah County Map," p.3

v. 41(2); Summer 1998

"Nez Perce County Map," p. 31

•**International Journal of Remote Sensing**

v. 19(11); July 20, 1998

Arino, O. and Melinotte, J.M.

"Cover: The 1993 Africa Fire Map," p. 2019

v. 19(12); August 1, 1998

Baratan, K. K. and Anderson, R.

"The use of Landsat Thematic Mapper data for mapping and correlation of Quaternary geomorphic surfaces in the southern Whipple Mountains, California," p. 2345

•**Issues in Science and Technology Librarianship**

ISTL is an electronic publication of the Science and Technology Section of the Association of College and Research Libraries. It is available on the world wide web at <http://www.library.ucsb.edu/istl/>

The next three issues focusing on geographic information systems and libraries; electronic journals in sci-tech libraries; and grants and fundraising for sci-tech libraries. Articles should be substantive and may address any aspects of these topics. Issues and topics:

Winter 1999: Geographic Information Systems

Topics might include: a GIS primer for librarians, collection development in GIS

Spring 1999: Electronic journals in sci-tech libraries

Topics might include: Licensing, organization of e-journals, ideal publishers

Summer 1999: Grants and fundraising for sci-tech libraries

Topics might include: The pleasures and pitfalls of obtaining a grant, sources for information on grants

ISTL's editorial guidelines are available at: <http://www.library.ucsb.edu/istl/guidelines.html>

Please send an abstract of your proposed article to:

[duda@library.ucsb.edu](mailto:duda@library.ucsb.edu) for consideration by the *ISTL* editorial board.

They also welcome your suggestions for themes for future issues.

•**LIBER Quarterly**

v. 8(2); 1998

Asche, Hartmut, "Mapping and Map Use in the Age of Information Technology," p. 127+

Fleet, Christopher, "The Role of Computer Technology in the Future Map Library," p. 136+

Kloeti, Thomas, "Map Librarianship and WWW: Developments in Switzerland," p. 166+

Schuler, Mechthild, "SSG-Fachinformation im Internet: dargestellt am Beispiel des SSG 28.2 Angewandte Karten," p. 146+

•**New York Times**

March 2, 1998

In the *New York Times* of Monday, March 2, 1998, there's an article on the problems of archiving East Germany's digital records. The entire piece is at URL <http://www.nytimes.com/library/tech/yr/mo/biztech/articles/02archives.html>

Arts & Ideas Section Saturday, March 21, 1998

Cohen, Patricia. "Geography Redux: Where you live is what you are. Why do some peoples surpass others? Scholars find new insights in a discipline long discarded."

•**PE&RS : Photogrammetric Engineering & Remote Sensing**

v. 64(11); November 1, 1998

Osborn, Kenneth J. "United States-Mexico Transboundary Aerial Photography and Mapping Initiative," p. 1085

•**Reviews in Engineering Geology**

v. 12; 1998

Burns, Scott F., Ashbaugh, Stuart G. and Toombs, George "Presentation of radon potential maps to the public: A case history for Portland, Oregon," p. 43

•**Social Work: Journal of the NASW**

v. 43(5); September 1998.

Queralt, Magaly and Ann D. Witte. "A Map for You? Geographic Information Systems in the Social Services", p. 455-469

•**Water Resources Research**

v. 34(12); December 1, 1998

Konig, Max and Matthew Sturm, "Mapping snow distribution in the Alaskan Arctic using aerial photography and topographic relationships," p. 3471

## Digital News/ Websites

•**Geoscan**

This is a searchable database of all Geological Survey of Canada publications. The Geological Survey is part of



Natural Resources of Canada which publishes other maps and publications. Those publications are not in this database. The site address is: [http://www.nrcan.gc.ca/ess/esic/gescan\\_e.html](http://www.nrcan.gc.ca/ess/esic/gescan_e.html)

**•MAGERT's Electronic Publications**

MAGERT (Map and Geography Roundtable of the American Library Association) has launched a series of electronic publications. For our initial offerings, we are presenting materials of particular interest to new map librarians and to small map collections. Electronic Publication No. 1 is an updated version of Mary Larsgaard's classic "Helpful Hints for Small Map Collections."

Our second offering is Margaret Brill's introduction to "Electronic Maps and Geographic Information Systems." Both publications have numerous links to other resources. We hope they will answer many of the "frequently asked questions" that appear on Maps-L and elsewhere from librarians who want basic information on how to run a small map collection.

These publications can be found on the MAGERT Web page at: <http://www.sunysb.edu/libmap/magert1.htm>

Also as part of its electronic publications program, MAGERT is starting to put some of its old Open File Reports up on the Web. The first publication in this series to be put in HTML is R. Bruce Robertson's "California County Coordinates." Expect others in the OFR series to follow soon, and proposals for new electronic publications are welcome. Click on "MAGERT Electronic

Publications" on the MAGERT Web page to find the California Coordinates.

**•New Chapters and Presentations from Jan Smits**

Jan Smits has added to his personal homepage: <http://www.konbib.nl/persons/jan-smits/homepage.htm> some presentations in PowerPoint under the chapters:

**•Metadata for digital spatial data**

Developments in spatial data management: Dutch impressions (185Kb), click on "Klik hier om te starten" or Power Point presentation. Presentation for the 35th Annual Symposium of The British Cartographic Society and the Map Curator's Group Workshop, University of Keele, United Kingdom, September 10, 1998.

**•Transition in Mapcuratorship**

The Necessity and Nuisance of Survival or How to keep to our senses (200 Kb) Power Point presentation.

Presentation for the 11th conference of the Groupe des Cartothécaires de LIBER, Kraków, Poland, September 16, 1998.

Together with the paper under the chapter, "Metadata for digital spatial data" (the creation and integration of metadata in spatial data collections and of which an updated version will be published in the Andrew/Larsgaard issue of *Cataloguing & Classification Quarterly*), they form my current impressions concerning the transition of map librarianship.

Though some of the PowerPoint slides may need an explanation I hope that the whole is self-explanatory enough to make sense to you. Most of the slides are animated and some (as "transition in technology") do not make sense when the animation-possibilities

are not used. So, keep pressing the enter button!

**•Penn State Uses Intergraph's GeoMedia Products for GIS Certificate Program**

Pennsylvania State University and Intergraph Corporation announced that Intergraph's GeoMedia products will serve as the foundation for Penn State's World Campus GIS certificate program. According to program coordinator and director of the George F. Deasy Geographics Laboratory, David DiBiase, "We selected the GeoMedia software products because of the well-designed software engineering. The software is designed in such a way that customization can be done to enhance the learning experience and to make things easier for the distance GIS learner."

The World Campus GIS program is in response to the recent boom in the spread of GIS technology, with a distance-learning program focusing on training employees of organizations using GIS. According to Penn State research, while software and hardware are increasingly available for GIS applications, most workers are not prepared to take advantage of the technology.

For more information visit the Website at: <http://www.worldcampus.psu.edu/>

**•Washington State University's New Home Page**

Washington State University has a new documents home page at: <http://www.wsulibs.wsu.edu/govdoc/main.htm> The home page includes a site for maps and GIS Internet Resources. The direct link to this

page is: <http://www.wsulibs.wsu.edu/govdoc/tocmap.htm>

#### •MapQuest MapStore

The MapQuest MapStore has created an online search engine for topo maps (TopoFinder) that they believe surpasses even the older index books. While they built this engine to sell maps, they feel this may be a useful resource for map libraries. Available at: <http://www.mapstore.com>.

#### •Idaho Geospatial Data Center

The Idaho Geospatial Data Center is a digital library for public-domain geographic data of Idaho that is accessible free-of-charge to any group or person in or outside of the state. This central data repository is shared over the Internet to save time, money, and computer resources.

Idaho Geospatial Data Center (IGDC) was created by the collaborative research team from the University of Idaho (Department of Geography and the UI Library), the Lewis Clark State College (LCSC), and the Idaho Geological Survey. This research project was funded by a major grant from the Idaho Board of Education's Technology Incentive Program.

The infrastructure is comprised of the GeoLibrary software that allows access and retrieves all Digital Line Graphs (DLGs), Digital Raster Graphics (DRGs), Digital Elevation Models (DEMs), and Tiger boundary files for the state of Idaho, and a detailed tutorial to assist the public to access the data.

Additionally the site provides interactive links to other Idaho and national spatial data repositories. The

site is available at: <http://geolibrary.uidaho.edu/>

#### •ESRI Puts 1995 TIGER/Line Files on the Web

ESRI announced that TIGER/Line '95 data for the entire United States now is available to download at NO COST from ESRI's ArcData Online web site: <http://www.esri.com/data/online/tiger> The data is available in ESRI's Shapefile format and can be used with ArcView GIS, ArcExplorer, ARC/INFO or any other GIS package that reads the Shapefile format.

The TIGER/Line '95 data set includes a variety of data layers for virtually every county in the US. These include local government and statistical boundaries, demographic statistics, congressional and school districts, roads and railroads, water bodies and rivers, local landmarks and more. Data can be downloaded by state or by county. The U.S. Census Bureau produced the TIGER/Line '95 data.

For those using MapInfo, you can use the Universal Translator in MapInfo 4.5 or later to convert the shape files into .TAB files.

For more information, please see the press release on ESRI's website: [http://www.esri.com/news/releases/98\\_4qtr/tiger.html](http://www.esri.com/news/releases/98_4qtr/tiger.html) or visit ArcData Online: <http://data.esri.com>

#### •Animated Map of the U. S.

Here is an animated map of the United States: <http://www.ac.wvu.edu/~stephan/Animation/us.gif>

#### •Data/Boundary files for Chicago Area

If you have an interest in the Chicago area, the University of Chicago Map Collection has added a few home-made ArcView shapefiles for local political

boundaries to its Website. You'll find ward and community-area boundary files, a corrected city-limits boundary file, and also a file with 1980 tract boundaries for Northeastern Illinois and Northwestern Indiana. The URL is: <http://www.lib.uchicago.edu/LibInfo/Libraries/Maps/chigis.html>

#### •New listserv for Portuguese-speaking Geographers and Cartographers

To subscribe, send a message to: [majordomo@listas.cnet.com.br](mailto:majordomo@listas.cnet.com.br) subscribe geografia

#### •Pennsylvania's 'Technology Atlas'

Gov. Tom Ridge announced development of the nation's first Technology Atlas - an extensive computer database that allows the creation of customized maps showing the availability of Pennsylvania's technology resources.

Originally developed as part of Gov. Ridge's Link-to-Learn educational technology initiative, the Technology Atlas reveals the locations of high-tech infrastructure like fiber-optic lines and microwave towers, much as traditional atlases detail the location of highways, airports and rail lines.

The University of Pittsburgh oversaw the development of the Technology Atlas under a contract with the Governor's Office for Information Technology.

The atlas contains more than 400 million bytes of information — equivalent to more than 10,000 printed pages — collected from telecommunications companies; schools and universities; utilities; local governments; state agencies; and other public

and private sector organizations across the state.

This new digital atlas shows the availability of such information-technology resources as video-conferencing sites; Internet service providers; educational technology resources; and other high-tech communications and information services.

The Technology Atlas database is available to the public on the Pennsylvania homepage at:

[www.state.pa.us](http://www.state.pa.us), or directly at: [www.technology.state.pa.us/atlas](http://www.technology.state.pa.us/atlas)  
Maps created using the database can be downloaded and printed.

CD-ROMs containing the Technology Atlas database are being published for people who do not have Internet access.

## Vendor/Dealer News

### •Rand McNally Purchases

#### Thomas Brothers

The *Orange County Register* reports that Rand McNally will purchase Thomas Brothers Maps of Irvine, CA. They will keep the Thomas Brothers quality brand name for a new and expanded series of similarly Thomas Brothers-type map books for around the country. (From the *Orange County Register*, November 16, 1998)

## U.S. Government News

### Environmental Protection Agency

#### •Environmental Protection Agency (EPA) Mapping Site

The EPA has a mapping site. It is available at: <http://www.epa.gov/enviro/html/mod/index.html>

### U.S. Geological Survey

#### •Benchmark Locator

Looking for a Benchmark locator from USGS. Look at this site: <http://www.ngs.noaa.gov/datasheet.html>

#### •Geologic Map Indexes and the National Geologic Map Database

The "Geologic Map Index of..." all States have been declared out-of-print and no longer available. These indexes contained geographic maps showing areas of geologic mapping and a bibliography of both USGS and State geologic publications. Many of the indexes are out-of-stock and all have been discontinued.

The Geologic Division of the USGS is currently building a National Geologic Map database that is available on the Web: <http://ngmdb.usgs.gov>. This is a searchable catalog of paper and digital geologic maps. It can be searched by geologic theme, geographic area, author, title, and map number. When complete, the database will contain information about geologic maps produced by the USGS as well as by other Federal agencies, tribal governments, state geological surveys, local governments, academic institutions, and the private sector.

### Federal Geographic Data Committee

#### •FGDC Seeking Ideas for GeoData Forum

The 1999 National GeoData Forum will be held June 7 - 9, 1999 in Washington, D.C.

The FGDC seeks your ideas and suggestions for this event, the third in a series including forums in 1993 and 1995. It is five years since the Executive Order that formally launched extensive development of the National Spatial Data Infrastructure. Now is the time to bring together users, creators and commercial players in the various realms of geographic information, to listen to one another and to frame the future geospatial data activities.

What do you think are the critical issues that a national forum on geodata policy and application should address?

A Forum Steering Committee has generated a list of issues that could be themes for the 1999 Forum (see below.) They suggest the objective of the Forum is to: expand the audience for GIS; deepen understanding of geospatial data users' needs; and showcase real examples of partnerships for sharing geospatial data. The Forum will be designed to be highly interactive and will balance presentations with group discussion and activity.

This is the first draft of possible themes. It will be narrowed down in January to a shorter list of priority items.

- Financing (including data economics)
  - Incentives
  - Commerce / Business models
  - Organization and leadership
  - Marketing / Communicating
  - Education & training
  - Technology development (& the rate of change & the impact thereof)
  - Y2K legacy
  - Data exchange policy (legal issues, including intellectual property, copyrighting)
  - International component
  - Census
- (National initiatives (Digital Earth, Community/Federal Information Partnerships, etc.)

Please tell us:

- What topics do you most want the Forum to address?
- Why are these your priorities?
- Suggestions for presenters OR for interactive methods.

Thank you for your input. We can consider all comments received by January 8, 1999.

## Canadian Government News

•New Head of Canada Map Office  
Pierre Rochon is the new head of Canada Map Office. He can be reached at (613) 952-7000 ext. 249. His e-mail is: pirochon@nrcan.gc.ca. M. Rochon replaces Donn Mann who was an interim replacement after Earl Price left in the spring.

## Employment

### •University of Oregon, Map/GIS

The University of Oregon is seeking a creative, enthusiastic librarian who will help to shape the Library's new GIS program and participate in a wide range of services and professional responsibilities in a dynamic environment. The UO Map and Aerial Photography (MAP) Library has one of the largest collections of geographic resources in the country and is used heavily by researchers on campus and within the Pacific Northwest. Special areas of strength include maps of the western U.S. (both current and historical), urban plans, forestry maps, topographic maps of the Americas and Europe, aerial photography of Oregon from 1929 to the present, and 4,000 atlases and reference books.

**Responsibilities:** This position has primary responsibility for the implementation of the Library's GIS program. The program consists of data collection and dissemination, maintenance of the Library's GIS website, operation and maintenance of the Library's GIS hardware, and relevant user education services. Additional responsibilities include collaboration with teaching departments in identifying campus-wide needs for GIS and digital geospatial data.

This position reports to the Head of the Map & Aerial Photography Library and participates in implementing the MAP Library's digital initiatives (e.g. scanning cartographic materials, archiving digital cartographic data, etc.) As a service professional, this individual performs public services for campus and community patrons using the full collection of cartographic

materials (maps, aerial photography, and atlases) held by the MAP Library.

This position also shares responsibility for collection maintenance and supervising student workers. Opportunities exist for general library instruction (credit and non-credit workshops).

**Qualifications:** Priority consideration will be given to candidates with an ALA-accredited MLS degree. Consideration may also be given to those with a strong academic GIS background and experience in a library setting.

**Required:** knowledge of GIS services and experience with ArcView®; high degree of computer literacy and interest in new technologies and their applications in academic libraries; excellent communication skills and potential to excel as an instructor. Professional growth and service in keeping with university and library standards for promotion and retention is expected.

**Salary:** Commensurate with credentials and prior experience. Successful candidates with the MLS degree or equivalent relevant Master's degree will be appointed as faculty with academic rank. Library faculty at the University of Oregon have faculty status and privileges with fixed-term, renewable contracts.

**Benefits:** Oregon offers one of the best benefit packages in the country, with a wide range of excellent health, retirement, and professional development opportunities. Retirement contributions are picked up by the UO (both employee and employer contributions), so there is no employee deduction. Retirement plans include a

choice of either: TIAA/CREF, PERS, or optional retirement plans. Generous family and domestic partners medical/dental plans (Blue Cross/Blue Shield or HMO options). Vacation is accrued at the rate of 15 hours per month, sick leave at 8 hours per month. Low staff tuition rates are available for employees for continuing education. Staff members are encouraged to become active in state, regional and national associations. Funding and release time may be provided for participation in conferences and other professional development opportunities.

**Deadline for Applications:** Applications received by 5:00 p.m., May 28, 1999 will receive priority consideration.

**To Apply:** Send cover letter, résumé, and names, addresses, phone numbers, and e-mail addresses of four references (one of whom must be a current supervisor) to:

Ms. Laine Stambaugh, Head  
Library Personnel Services  
1299 University of Oregon Library  
Eugene, OR 97403-1299.  
Telephone: (541) 346-1895  
FAX (541) 346-3485

**University Libraries:** The University of Oregon is an ARL library with current holdings of 2.2 million volumes and 15,000 serial titles. The UO MAP Library is a full depository for U.S. Geological Survey maps (since 1895) and automatically receives maps from a wide array of federal and state governmental sources through various depository agreements. Recognizing its importance to the state and region, the U.S. Geological Survey named the UO

MAP Library an official USGS Earth Science Information Center (ESIC) state affiliate for the state of Oregon.

The University of Oregon is an AAU institution with 780 full-time and 390 part-time faculty members and 17,200 undergraduate and graduate students.

**•University of Colorado, Boulder, Map Librarian**

There is an opening at the University of Colorado, Boulder for a Map Librarian. Below is the job description and instructions.

The deadline for applications is October 30, 1998. The search will remain open until the position is filled.

**Map Librarian**

University Libraries

University of Colorado, Boulder

**Map Librarian:** This is a tenure-track faculty position reporting to the Head of the Earth Sciences Library. The map library is located in the Jerry Crail Johnson Earth Sciences Library in the Benson Earth Sciences Building. Duties include providing reference service for the map collection and, to a lesser extent, the Earth Sciences Library; collection development for map and cartographic material in all formats; assistance in the use of geographic information systems; and bibliographic instruction. Developing and managing a plan to provide bibliographic access through the Libraries' online catalog to a collection that is currently largely uncataloged will be a primary focus of this position. This position supervises one classified staff member. A significant part of this position involves research and creative work, and a commitment to service, in keeping with the tenure

standards of the University of Colorado at Boulder.

**Requirements:** Master's degree from an ALA-accredited library school, education or experience at the college or university level with a map collection, demonstrated experience with computers and electronic information resources, excellent oral and written communications skills, potential for research, and a strong commitment to public service.

**Preferences:** Some of the following desirable qualifications can also be satisfied by class work, as well as experience, where appropriate: work experience in a research-oriented library; experience with a map library; supervisory experience; cataloging experience; knowledge of map cataloging practices; experience with geographic information systems (GIS); working knowledge of government publications; expertise in using Inter-net resources, especially for digital spatial data; and collection development experience. A graduate or undergraduate degree in geography, cartography or geology is preferred.

**Appointment and Salary:** The successful candidate with demonstrated accomplishments in research and creative work will be appointed as a full-time (12 month) Assistant Professor on the tenure track. The

Department anticipates hiring at the assistant professor level. Applications at all levels may also be considered from those who would strengthen the Department's diversity. A successful candidate with promise in research but lacking an established scholarly record will be appointed as an

Instructor (non-tenure track) for two years, with promotion to the tenure track and the rank of Assistant Professor upon a successful review. Starting salary range will be \$31,500 - 34,750. Benefits include 22 working days vacation; 10 paid holidays; liberal sick leave; University group health care plans; group life insurance; TIAA/CREF retirement/annuity; and support for scholarly/professional activities. Tenured librarians are eligible for sabbatical leaves.

Application Deadline: To ensure full consideration, applications should be received by October 30, 1998. The search will remain open until the position is filled.

Send letter of application specifically addressing qualifications for the position; resume; and names, addresses and telephone numbers of three references to:

Scott Seaman

Associate Director for Administrative Services

University Libraries

University of Colorado at Boulder  
Boulder, CO 80309-0184.

The University of Colorado at Boulder is committed to diversity and equality in education and employment.

**•University of Toronto, GIS and Map Librarian**

There is an opening at the University of Toronto for a GIS and Map Librarian. Below is the job description and instructions.

This is a reposted position. The deadline for applications is October 30, 1998. The search continues for this position until it is filled.

GIS and Map Librarian  
Data, Map and Government Information Services (DMGIS)

University of Toronto

Responsible for the management and operation of Geographic Information Systems (GIS) and print cartographic information services within DMGIS. Includes selection, technical services, and public services. Plans hardware and software environments for both geospatial map files and print map formats in support of teaching and research. Plans and implements new directions for services in GIS in collaboration with other groups within the library, on the campus, and provincially and nationally. Develops training and documentation for GIS and traditional map formats. Further develops the Map Library web-site to deliver information, software, metadata and geospatial files to users. Hires, trains and supervises full-time and part-time staff to assist with GIS and print map formats. Provides reference service for government publications and data in addition to GIS and maps. Participates in the DMGIS management team.

Qualifications: ALA accredited MLS degree or equivalent. Academic background in or work experience with maps, GIS software such as ARC/INFO, ArcView, or MapInfo, and geospatial map files, preferably in an academic/research library. Reference experience and a high degree of computer literacy are required. Ability to take on a leadership role in a challenging and rapidly changing environment. Strong commitment to delivering user-oriented service and

training in all formats. Strong interpersonal and communications skills (oral and written) and ability to work as part of a team. Good organizational skills and flexibility.

Knowledge of cataloguing and metadata creation an asset.

Salary: Librarian II \$36,700 - \$44,600 per annum; Librarian III \$42,300 -

This is a permanent status stream position

Please Note: The search continues for this position until filled

Librarians interested in applying for this position should submit their letters of application, curriculum vitae and the names of 3 referees in writing to:

Personnel Services

Robarts Library

130 St. George Street

Toronto, Ontario, M5S 1A5

Canada

Fax (416) 978-7653.

## Conferences/ Classes

•WAML Spring 1999, Long Beach, CA April 28 - May 1, 1999. See meeting announcement in this issue.

•3rd IEEE Meta-Data Conference, National Institutes of Health, Bethesda, Maryland, US, 6 - 7 April 1999. For more information, see: [http://www.llnl.gov/liv\\_comp/metadata/md99/md99.html](http://www.llnl.gov/liv_comp/metadata/md99/md99.html)

**•The Oxford Seminars in Cartography**

Programme for 1998-99

1998

Thursday 12 November

The mapping of Sherwood Forest in the Early seventeenth century: recording boundaries and assets by Steph Mastoris (Leicestershire Museums, Arts & Records Service)

1999

Thursday 18 February

Mapping with feeling: the human cartography of peoples' lives by Daniel Dorling (University of Bristol)

Thursday 6 May

Contention the Mother of Invention: early maps of England in the Public Record Office by Rose Mitchell (Public Record Office)

\*\*\*NOTE THE NEW VENUE\*\*\*

All seminars commence at 5pm in the School of Geography, Mansfield Road, Oxford

Sponsored by Sanders of Oxford (Prints and Maps), Lovell Johns Ltd, and The Friends of The Oxford Seminars in Cartography

For further information, please contact: Nick Millea, Map Curator, Bodleian Library, Broad Street, Oxford, OX1 3BG, Telephone : 01865 277013 Fax : 01865 277139 email : nam@bodley.ox.ac.uk or check the site homepage: <http://www.bodley.ox.ac.uk/guides/maps/>

**•MAGERT — ALA Midwinter Conference**

The schedule of MAGERT meetings for the ALA Midwinter Conference is on the MAGERT website. The URL is: <http://www.sunysb.edu/libmap/magert1.htm>

**•Possible Course in the History of Cartography at the Map Library in the British Library**

The British Library Map Library is considering offering a course in the history of cartography in its Reading Room in the new building at St Pancras, in Spring or Summer 1999. It is planned to combine academic talks of a general nature with more narrowly focused workshops.

The intention is to invite leading experts to assist the Map Library in putting on this course. The aim would be to extend participants' familiarity with different types of maps; to deepen their understanding of the form and content of early maps; and to provide an interpretative framework for map history.

The proposed scenario would be to spread the course over four full-day Saturdays, each comprising two morning talks and an afternoon workshop. There would be a charge to cover costs. An alternative, probably additional, option would be to run a series of introductory talks, aiming to provide a firm grounding for those with an interest in early maps but little existing knowledge.

At this early stage of planning we need to gauge the amount of interest there might be in such an initiative. We also wish to give potential attendees the opportunity of participating in the shaping of such a course.

If you feel that there is any possibility that you might be interested in attending, please reply - being sure to include your mailing address - and we will send you a questionnaire. Among other things, this asks which topics

would particularly interest you. Send comments, requests for information to Tony Campbell at: [tony.campbell@bl.uk](mailto:tony.campbell@bl.uk)

## Other News

**•To My Fellow WAMLites on Our 30th Anniversary**

I think that I shall never know  
A group as great as WAML Folk;  
We meet and share and learn and joke  
And hope with maps and charts to  
sow

Some knowledge of our world's  
design.

While GIS we seek to learn  
As it nips us from behind.

I wish you all the very best  
As you lead the cartographic rest  
Following our legend into the West!

With love from the Galapagos!

Linda Newman Sept 1997

(Linda was not able to attend the 30th Anniversary meeting since she was traveling in the Galapagos Islands. She sent this poem to the meeting)

**•Aiding a Masters of Geography Student in New Zealand**

A Master of Arts Student studying Geography at the University of Auckland, New Zealand is nearing the completion of his thesis tentatively called "Cartographic Visualisation for Epidemiology."

The thesis assesses different visualisation methods that have potential to communicate spatial processes underlying the spread of disease. The final objective of the thesis is to develop a framework that

assists the medical community in the selection of effective visualisation tools to communicate particular spatial patterns underlying disease.

This is a general request that anyone interested spend 20 to 30 minutes, depending on your GIS/health/cartography experience to go through the his survey. Any data supplied will be analysed as part of the thesis.

The survey consists of six pages: 5 visualisation methods, an introduction and a conclusion. There are between 3 and 5 questions per page, and space to add comments, suggestions, etc at the bottom of the pages. Spatial processes are linked to a table of definitions.

If you are interested, please visit the site at: <http://www.geog.auckland.ac.nz/cgi-bin/dan>

For those of you that are interested in the results of this survey, there is a space provided in the survey to enter your email and you will receive results upon completion of the thesis.

**•Public Participation GIS Meeting**

This is to remind you that participants are being sought for a specialist meeting of public participation GIS researchers to be held in Santa Barbara, California October 14th-17th 1998. "Empowerment, Marginali-zation, and Public Participation GIS," sponsored by the National Center for Geographic Information and Analysis' Varenus

Project will be a forum for sharing experiences about alternative GIS designs and applications which better reflect community interests and involve and empower its members. The meeting will also be concerned with ways in which Public Participation GIS (PPGIS) can have unintended consequences by marginalizing people and communities. If you are interested in participating, the call for papers can be accessed at: <http://www.ncgia.ucsb.edu/varenus/ppgis/call.html>

The deadline is July 17, 1998.



# Western Association of Map Libraries

## Microform Publications

### Occasional Papers

- 1976 *Union List of Sanborn Fire Insurance Maps Held by Institutions in the United States and Canada, vol. 1, Alabama to Missouri* by R. Philip Hoehn. OP2 LC #76-6129 ISBN 0-939112-16-7 \$4.00
- 1983 *Index to the Information Bulletin (Volumes 1-10, 1969-1979) of the Western Association of Map Libraries* by Frances M. Woodward. OP9. LC #834880 ISBN 0-939112-10-8 \$5.00

### Information Bulletin

- Western Association of Map Libraries *Information Bulletin* v.1-20. 99 fiche. ISBN 0-939112-20-5 \$40.00

### Microform Sets

- Spezialkarte der Osterreichisch-Ungarischen Monarchie* [Austro-Hungarian Empire], 1873-1889. 1:75,000.  
Complete set of all editions. ISBN 0-939112-25-6. 3665 fiche. \$1,200.00  
First editions only. 1037 fiche. \$300.00
- Maps and Charts of North America and the Caribbean, 1750-1789.* Phase I, Titles 3-1551. 335 fiche \$110.00  
*Maps and Charts of North America and the Caribbean 1750-1789.* Phase II, Titles 156-271. 380 fiche \$125.00  
[Poland] Wojskowy Instytut Geograficzny. 1:100,000. 193-. 53 fiche \$500.00  
Reichsamt fur Landesaufnahme. *Karte des Deutschen Reiches.* [Germany]. 1:100,000. Berlin, 186?-194?  
4,100 fiche. \$1,500.00
- Cassini & Carte de France, French Revolutionary Era Surveys.* 214 fiche \$85.00  
*US. Navy Nautical Charts of Melanesia.* 1917-1975. 251 fiche \$100.00  
*Pacific Basin Map Exhibit of the Library of Congress.* 83 fiche \$30.00  
*Bernice Bishop Museum Air Photos of Melanesia.* ca. 64,000 photos on 70 reels of 35mm film \$35/roll  
*Gazetteer of the World, or Dictionary of Geographical Knowledge.* 7 vols. London: Fullarton, 1859.  
1990 fiche edition. 79 fiche ISBN 0-939112-19-1 \$30.00  
*Gazetteer to AMS 1:25,000-Maps of West Germany.* 3 vol. 1959, 1990 ed. 36 fiche. ISBN 0-939112-23-X \$15.00
- USGS GNIS Gazetteers:**
- California* (17 fiche) ISBN 0-939112-21-3 \$10.00  
*Nevada* (5 fiche). ISBN 0-939112-22-1 \$5.00  
*Ward Maps of United States Cities* (Pre-1900). LC 1975. WAML 1990 ed. 321 fiche ISBN 0-939112-24-8 \$100.00

Send Check (payable to WAML) or Purchase Order to:

**Western Association of Map Libraries**

c/o Richard E. Soares

WAML Book and Sales Manager

P.O. Box 1667

Provo, UT 84603-1667

**Western Association of Map Libraries**  
**Paper publications**  
**Occasional Papers**

- 1973 *Catalogue of Sanborn Atlases at California State University, Northridge* by Gary W. Rees and Mary Hoerber. OP1. LC #73-5773 ISBN 0-939112-01-9 \$4.00
- 1977 *Union List of Sanborn Fire Insurance Maps held by Institutions in the United States and Canada, vol. 2, Montana to Wyoming; Canada and Mexico* by William S. Peterson-Hunt and Evelyn L. Woodruff; *with a Supplement and Corrigenda to Volume 1*, by R. Philip Hoehn. OP3. LC#76-2129 Rev. ISBN 0-939112-03-5 \$6.00
- 1978 *Index to Early Twentieth-Century City Plans Appearing in Guidebooks: Baedeker, Muirhead-Blue Guides, Murray, I.J.G.R., etc., Plus Selected Other Works to Provide Worldwide Coverage of over 2,000 Plans to over 1,200 Communities, Found in 74 Guidebooks* by Harold M. Otness. OP4. LC #78-15094 ISBN ISBN 0-939112-05-1 \$6.00
- 1978 *The Maps of Fiji: A Selective and Annotated Cartobibliography* by Mason S. Green. OP5. LC #78-24066 ISBN 0-939112-06-X \$4.00
- 1980 *Index to Nineteenth-Century City Plans Appearing in Guidebooks: Baedeker, Murray, Joanne, Black, Appleton, Meyer, Plus Selected Other Works to Provide Coverage of over 1,800 Plans to Nearly 600 Communities, Found in 164 Guidebooks* by Harold M. Otness. OP7. LC # 80-24483 ISBN 0-939112-08-6 \$6.00
- 1981 *Microcartography: Applications for Archives and Libraries* edited by Larry Cruse, with the assistance of Sylvia B. Warren. OP6. LC #81-19718 ISBN 0-939112-07-8 \$20.00
- 1981 *Printed Maps of Utah to 1900; An Annotated Cartobibliography* by Riley Moore Moffat. OP8. LC #81459 ISBN 0-939112-09-4 \$10.00
- 1984 *Nevada Directory of Maps and Aerial Photo Resources* by Mary B. Ansari and Linda P. Newman. OP11. LC #83-26068 ISBN 0-939112-13-2 \$15.00
- 1986 *Map Index to Topographic Quadrangles of the United States, 1882-1940* by Riley Moore Moffat. OP10. LC #84-21984 ISBN 0-939112-12-4 \$32.50
- 1990 *Cartobibliography of Separately Published U.S. Geological Survey Special Maps and River Surveys.* by Peter L. Stark. OP12 LC #89-14684 ISBN 0-939112-15-9 (hard cover) \$40.00
- 1993 *Topographic Mapping of Africa, Antarctica and Eurasia* by Mary L. Larsgaard. OP14. LC #92-39327 ISBN 0-939112-29-9 \$45.00

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