THE MINNESOTA HISTORY
Interpreter
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INSIDE

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After the Tornado: Advocating & Enabling Restoration & Preservation

On April 2, Minnesota Historical Society director Nina Archabal submitted a report to Governor Arne Carlson summarizing the observations made by Society staff members who visited St. Peter, Lonsdale and other storm-damaged areas on April 1. She said, "encouragement and promises of help should move St. Peter's citizens to imagine restoration as a realistic alternative to demolition. Providing this encouragement and help is a crucial role for the State of Minnesota and for the Minnesota Historical Society." She stated that some buildings, though condemned, can still be restored, and that the State of Minnesota and the Society can help owners make these decisions.

These efforts began on April 4, when the Society, along with the Preservation Alliance of Minnesota, the Upper Midwest Conservation Association, and the Nicollet County Historical Society, presented a workshop on stabilizing and preserving family heirlooms and historic buildings. The group spoke to a full house at the Nicollet County Historical Society's Treaty Site History Center.

The Society's historical architect, Charles Nelson, helped recruit and organize architects from more than 25 experienced architectural firms to provide pro bono assistance to home and business owners. By mid-April, more than 125 properties were undergoing review by these architects. Nelson also has been featured on several statewide and local radio call-in programs.

SHPO files; photograph by John Callan

Charles Nelson, SHPO historical architect, is shown speaking to the April 4 workshop at the Treaty Site History Center, St. Peter. Robert Herskovitz, head of MHS conservation department, is standing to Nelson's left.

The Society revised its web site with information about historic building restoration and conservation of personal property. Conservators and historic preservation experts have been made available by toll-free phone and e-mail. (Telephone: 1-800-657-3773, or (612) 297-1867. E-mail: conservationhelp@mnhs.org; and the web address is **www.mnhs.org**. See box for a list of emergency tips.)

State Historic Preservation Office (SHPO) staff have also assisted Federal Emergency Management Agency inspectors and accompanied them on inspections of damaged properties in St. Peter to raise their awareness of some of the special needs for historic properties.

The Society will administer $1 million in state funds for historic preservation appropriated by the Minnesota Legislature and approved by Gov. Carlson. The Society's efforts in the work of recovery will continue for many months. These funds will help provide gap financing for historic properties damaged by the storm. For further information, call SHPO at (612) 296-5434.

Tips for Damaged Historic Buildings

Tip #1: Thoroughly check for damage to the foundation, structural walls and roof.
Tip #1: Make the building watertight!
Tip #3: Allow for some natural ventilation for drying out the interiors of buildings that have sustained water damage. Do not use heaters.
Tip #4: Save any architectural details or features—even if they don't belong to your building!
Tip #5: If possible, **take photographs of the building's condition** before and during the process of evaluation and rebuilding.
Tip #6: Complete a Damage Assessment. Assessment tools are available through the State Historic Preservation Office(SHPO).
Tip #7: Don't hesitate to ask for help! SHPO staff is prepared to provide assistance.

State Grants-in-Aid Awards • Winter 1998 Grants Cycle

The Minnesota Historical Society, on recommendation of the MHS Grants Review Committee on March 19, and after approval by the Society's governing board on April 16, made the awards listed below. A total of $99,528 was awarded to 38 grant recipients. Work on the projects is scheduled to begin as early as June.

For information about these grants and the MHS grants-in-aid program, call Mandy Skypala at (612) 296-5478. A listing of the grants awarded to Certified Local Governments (CLGs), funded with federal Historic Preservation Funds, will be provided in the summer 1998 issue of the *Preservation Planner.*

Note: Properties in boldface are listed on the National Register of Historic Places.

Becker County
Becker County Historical Society, $780 for microfilm purchase, Detroit Lakes.

Big Stone County
Big Stone County Historical Society, $1,000 for electrical work for security system installation, Ortonville.

Carlton County
Carlton County Historical Society, $1,575 for Thomson Township History translation and manuscript project, Cloquet.

SHPO files

The Brown Hospital in Pipestone, Pipestone County, is shown above.

Cass County
Cass County Historical Society, $2,995 for microfilm reader/printer purchase, Walker.

Leech Lake Reservation Tribal Historic Preservation Office, $500 for oral history in preparation for Wild Rice and the Leech Lake Anishinabe exhibit, Cass Lake.

Chippewa County
Chippewa County Historical Society, $1,530 for digitization of photographic collections, Montevideo.

Clay County
Clay County Historical Society, $800 for microfilm purchase, Moorhead.

Cook County
Cook County Historical Society, $5,475 for **Church of St. Francis Xavier** roof restoration, Grand Marais.

Cottonwood County
Cottonwood County Historical Society, $5,000 for climate control project, Windom.

Dakota County
Dakota City Heritage Village, Inc., $1,085 for archive and artifact room dehumidification project, Farmington.

Douglas County
Douglas County Historical Society, $3,500 for **Knute Nelson House** window replacement, phase II, Alexandria.

Fillmore County
Fillmore County Historical Society, $526 for microfilm purchase, Fountain.

Freeborn County
Freeborn County Historical Society, $1,166 for clothing preservation project, Albert Lea.

Hennepin County
Hennepin Parks, $4,000 for public archaeology at Lake Minnetonka Regional Park, Plymouth.

Richfield Area Historical Society, $2,500 for history museum HVAC installation, Richfield.

Houston County
La Crescent Area Historical Society, $800 for collections project, La Crescent.

Isanti County
City of Isanti, $1,800 for History of the City of Isanti publications project, Isanti.

Continued on page 7

TECH TALK
This issue: Photographs • Part I

MINNESOTA HISTORICAL SOCIETY

In this issue, Bonnie Wilson, curator of Sound and Visual Collections at the Minnesota Historical Society (MHS), discusses the fundamental aspects of preserving photographs and the basic issues involved in archival work with photographic negatives.

In Part II, which is planned for the Tech Talk section of the July Interpreter, *she will talk about working with photographic prints. She will be joined by Eric Mortenson, MHS staff photographer, who will discuss the fundamentals and pros and cons of preserving historically valuable photographs by the process of digitization.*

Basic Care of Photographic Materials
by Bonnie Wilson

The photograph: a multi-faceted object

From the time of its invention in 1839, the photograph has been made of a multitude of materials: silver, iron, glass, paper, plastic, salts, dyes, and gelatin, to name just a few. Since each of these materials has characteristics that must be attended to, the task of preserving photographs becomes a bit more challenging than the simplicity of the photograph implies.

The Components

Most photographic prints and negatives are made up of three parts: a primary support material, a binder, and a final image material. (see diagram below). Some primary support materials are more stable than others; you should identify them because they strongly influence the condition of the print or negative.

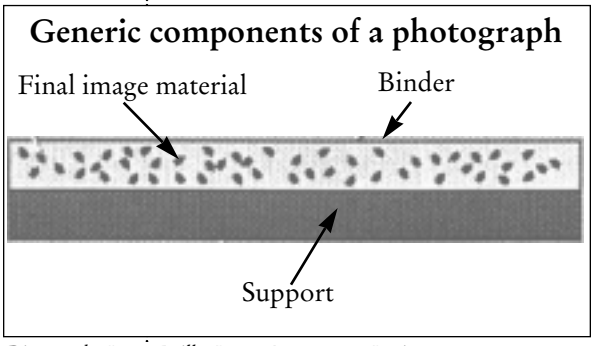


Diagram by James Reilly, Image Permanence Institute

During the early history of photography (1840-1855), the primary support materials were metal or paper, and the resulting photographs were called *daguerreotypes* and *salted paper prints.* Experimentation and discovery characterize the second half of the 19th century, and many new photographic materials were invented, but metal, glass and paper are the most typical support media prior to 1890. For example, *tintypes* are images on iron, *ambrotypes* are images on glass, and *albumen prints* are images on paper. Negatives were predominantly on glass until the *plastic* flexible film negative was introduced to facilitate rolling film.

The first flexible film support material was *nitrate* film, introduced in both the amateur and commercial markets in 1889. The plastic flexible film called *acetate* entered the market around 1920 and was the most common support material until *polyester* film was introduced in the mid-1950s.

Glass negatives are subject to cracking and breaking, but otherwise they are on a very stable support base. Plastic negatives, both nitrate and acetate, are another matter. Plastic support material buckles, shrinks, changes color, and gives off odors. Negatives must be checked periodically for physical changes—primarily appearance and smell. If the negatives do not lay perfectly flat or if they have an obnoxious odor, deterioration has begun. Upon showing signs of deterioration, any nitrate or acetate negative should be segregated from stable film.

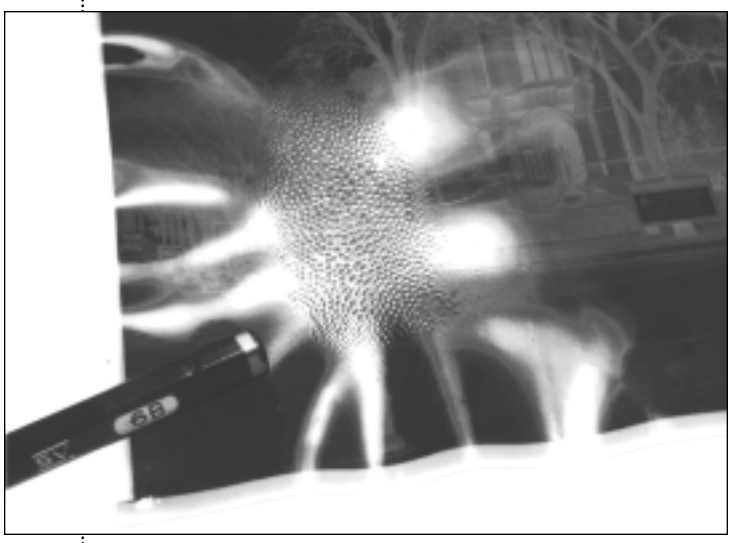
Besides the support material, photos and negatives are composed of a binder and final image material. For most of the 19th century, *collodion* was the primary binder for negatives, and *albumen* was the primary binder for prints. Beginning in the 1870s, most prints and negatives used *gelatin* as a binder. For most black and white images, throughout the 19th and 20th centuries, the final image material was *silver.* Of course, there were many variations on the contents of this open-face sandwich, but most archives staff are dealing with collodion or gelatin negatives and albumen or gelatin silver prints in their black and white collection.

Editor's note: TECH TALK is a bimonthly column offering technical assistance on management, preservation, and conservation matters that affect historical societies and museums of all sizes and interests.We welcome comments and suggestions for future topics.

Continued on p. 4

Color

Color negatives and prints introduce new elements into the preservation equation. In addition to glass, plastic, and paper supports, color images are composed of dyes, all of which fade. It is beyond the scope of this paper to describe the chemistry and process of color imaging. However, all archives staff should be aware that color fades much faster than black and white, and requires more resources to preserve.



MHS collections; photograph by Eric Mortenson

The photograph above shows a deteriorating acetate negative. See the discussion on p. 5.

Surveying the Collection

Before you spend time and money on any photo collection, you should assess what you have. Ask such questions as:

- Approximately how many negatives and prints are in the collection? How many negatives are glass, nitrate, acetate, polyester? How many black and white or color prints?
- How many photo albums?
- Which items are most in need of attention because they are deteriorating?
- Which negatives need to be printed for access?
- Which items are the most important in terms of your collecting policy?
- Which items are most likely to interest your researchers?

The answers to these questions will help you develop a work plan to begin your preservation activities.

One thought to keep in mind: An unidentified image is far less valuable than one that is fully identified. As you assess your collection, start planning how you might acquire identification for some items. The unidentified ones should be considered less worthy of your time and money. You may eventually have to let them go.

The Environment

The most influential factors in photo preservation are the storage and display environments. If these are not controlled, there is no point in spending money on storage materials, cataloging, or any other photo collection management activities.

The American National Standards Institute (ANSI) recommends 68˚ F and 30-40 percent relative humidity (RH) as base line environmental conditions. If the archive can be hold at that humidity level and go lower in storage temperature, all the better.

Though cooler storage is seldom affordable for the entire photo collection, the archive may be able to purchase refrigeration units for color materials and important nitrate and acetate negatives. Cold storage must be accompanied by special packaging. (See the "Safe Care Image Archive Freezer Kit" in the Metal Edge Catalog, in the list of catalogs on p. 6, below.)

Light

Photographs are produced as a result of the action of light on the final image material in the photograph. It should be no surprise, then, that light has a great effect on the life span of the photograph, no matter what its composition. Collection caretakers must decide how to "spend" the time a photograph can be exposed to light. Black and white photos have more to spend than color, but they, too, will fade. As a general rule, a photograph should spend no more than one year on display, even in somewhat dimmed (50 lux) light. It should never be displayed in direct sunlight which is high in the ultraviolet (UV) range. Even fluorescent lights are high in UV, requiring filters for display environments. For permanent displays, a copy photo is always preferable to the original vintage photo.

Basic care of negatives

Next to environmental control, the most important photographic preservation activity is caring for negatives and transparencies. They are the camera originals, the photographic material that came out of the camera.

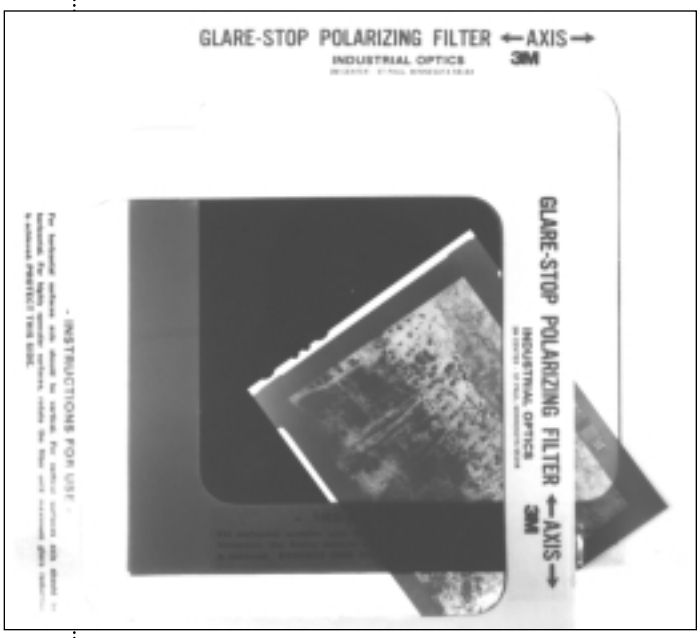
The first step in negative preservation is the determination of what kind of negatives the archive holds. The majority of negatives in historical

Continued on p. 5

collections are nitrate and acetate, which are both in danger of deterioration. A product called "A-D strips" can help in detecting the beginning stages of acetate deterioration. (See the list of readings.)

Identification of negative film support material

The support material of any negative can be determined by examination and chemical testing. Define first by examination. Polyester negatives are easy to identify with polarizing filters that can be purchased in photo supply stores. Place two filters so they are at cross axes to one another, allowing no



MHS collections; photograph by Eric Mortenson

light to pass through them. Put the negative in question between them. A polyester negative will show red and green interference colors like those seen on soap bubbles.

If your negative is not polyester, look for words printed on the edge, the approximate date of the negative, and certain types of deterioration. Some nitrate negatives have "nitrate" printed on the edge. Acetate and polyester negatives will say "safety," meaning that they are not the fire hazard that nitrate negatives can be. If your negative was made before 1920, it is nitrate, even if that word is not printed on the edge. If it was made after 1955, it is either acetate or polyester. Although polyester-based negatives were commonly used after 1955, they are manufactured for professional photographers in 4" x 5" and larger formats. Today, almost all 35mm and 120 format film is still on an acetate base.

You can tell if you have deteriorating nitrate or acetate by giving it the sniff test. If it smells obnoxious, like dirty socks, it is deteriorating nitrate. If the negative smells like vinegar or its emulsion is bubbled or wrinkled into channels, it is deteriorating acetate. (See illustration on p. 4.)

There is a chemical test for nitrate that is effective, but somewhat hazardous. You can read about it in detail in Fischer and Robb's *Guidelines for Care and Identification of Film-base Photographic Materials.* (See the full citation in the list of recommended readings on page 6, below.)

Storage

All paper and board materials for negatives and prints must pass a "Photo Activity Test," or "PAT," to be truly archival. The ANSI created this test to define good photo storage material. It is not sufficient to purchase "acid-free" materials. PAT-tested materials available through the catalogs listed on p. 6, below.

Glass Plates

Glass plate negatives should be housed in four-flap negative enclosures. The flaps fold over the negative without abrading, or rubbing against, it. The most common problem with glass plate negatives is peeling emulsions (binder and image material). Four flaps do not exacerbate this problem. The flap enclosure allows for examination and even printing without sliding the negative in and out of a sleeve. Once covered, the negatives should be stored on edge

MHS collections; photograph by Eric Mortenson

in sturdy PAT-tested boxes. Boxes full of glass plate negatives are heavy, so they should be stored on very strong shelving and have "heavy" labels on them to warn the person taking the box off the shelf. Most glass plate negative destruction occurs during a move or at the time of printing.

Above: polarizing filters with a negative in between.

Right: a four-flap negative enclosure

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Tech Talk
This issue: Photographs • Part I

Minnesota Historical Society

Nitrate, Acetate and Polyester Negatives

Nitrate negatives should be stored in PAT-tested paper sleeves, never in plastic of any kind. The plastic will hold and accelerate the action of the gasses given off as the negative decomposes. Whenever feasible, all nitrate negatives should be stored separately from acetate and polyester negatives in separate boxes or even separate rooms.

Acetate negatives produced before 1960 should be stored in PAT-tested paper sleeves, and not in plastic. Most archives staff feel comfortable with storing newer acetate negatives, which are primarily triacetate as opposed to diacetate, in polyethylene or polyester sleeves. The newer ones are especially convenient for 35mm and 120 format negatives, since they can be stored in pages divided into channels or rows for easy examination and use. When in doubt, use a PAT-tested paper enclosure and skip the plastic. Always wear white gloves for handling negatives, especially if you have decided not to store them in plastic.

Negatives showing signs of deterioration should be immediately segregated from stable negatives. They give off gases that will make the healthy negatives deteriorate sooner. Nitric acid, a product of deteriorating nitrate negatives, affects other nitrate and acetate negatives, softens the gelatin binder, and fades silver images. Put these negatives in separate boxes in a separate storage area. As soon as possible, deteriorating negatives should be copied onto new polyester film, if extremely valuable, or printed by professionals using archival print standards.

Transparencies

Transparencies, called slides in 35mm format, are also camera originals and most vulnerable to dust and fingerprints. Store them in polypropylene, polyethylene or polyester sleeves. They can also live in carousel trays stored in boxes, but that can take up precious space.

When handling negatives or slides, wear clean white cotton gloves, and work in a clean, well-ventilated area. Deteriorating negatives can be harmful to your health, so you should be especially vigilant about good air circulation, and you should limit the time you are exposed to the negatives. A respirator mask should be considered when working with badly deteriorated nitrate negatives.

Recommended reading

Fischer, Monique C., and Andrew Robb. *Guidelines for Care and Identification of Film-Base Photographic Materials.* Newark, Del.: University of Delaware/Winterthur Museum Art Conservation Program, 1993.

Image Permanence Institute. *Storage Guide for Acetate Film.* Rochester, N.Y.: Image Permanence Institute, 1993.

Image Permanence Institute. *A-D Strips*.

Keefe, Laurence E. Jr. and Dennis Inch. *The Life of a Photograph.* Boston: Focal Press, 1990.

Reilly, James M. *Care and Identification of 19th-Century Photographic Prints.* Rochester, N.Y.: Eastman Kodak Co., 1986.

Ritzenthaler, Mary Lynn, Gerald J. Munoff, and Margery S. Long. *Administration of Photographic Collections.* Chicago: Society of American Archivists, 1984.

Wilhelm, Henry and Carol Brower. *The Permanence and Care of Color Photographs.* Grinnell, Iowa: Preservation Publishing Company, 1993.

Free catalogs and brochures

"Caring for Your Photographs," The American Institute for Conservation of Historic and Artistic Works. (202) 452-9545

Gaylord Bros., Syracuse, N.Y. 1-800-448-6160

Gaylord Preservation Pathfinder No. 3, "Archival Storage of Photographic Materials." 1-800-448-6160

Light Impressions, Rochester, N.Y. 1-800-828-6216

Metal Edge, Inc., Los Angeles, Calif., 1-800-862-2228

University Products, Holyoke, Mass. 1-800-628-1912

Bonnie Wilson, curator of Sound and Visual Collections, has cared for the photography, film, videotape, and recorded sound collections at the Minnesota Historical Society since 1972. She has a degree in Library Science, and has gained further knowledge through the Society of American Archivists and the Association of Moving Image Archivists. A workshop through The Rochester Institute of Technology, "Preserving Photographs in a Digital World," aided her in writing this article. She can be reached at (612) 296-1275 or [bonnie.wilson@mnhs.org]. She gratefully acknowledges the assistance of Andrew Robb in preparing this article.

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Kandiyohi County
Kandiyohi County Historical Society, $5,000 for archives room shelving, Willmar.

Kittson County
Kittson County Historical Society, $800 for microfilm purchase, Lake Bronson.

Morrison County
Military Historical Society of Minnesota, $2,027 for Education Center exhibits at Camp Ripley, Little Falls.

Mower County
Austin Area Commission for the Arts, Inc., $2,500 for mechanical drawings for **Paramount Theater** restoration, Austin.

Nobles County
Nobles County Historical Society, $1,000 for collections preservation project, Worthington.

Olmsted County
Olmsted County Historical Society, $3,210 for **George Stoppel Farmstead** restoration project, Rochester.

Stewartville Area Historical Society, $1,769 for Richard W. Sears Birthplace security installation, Stewartville.

Pennington County
City of Thief River Falls, $4,000 for **Minneapolis St. Paul and Sault Ste. Marie Depot** (Soo Line Depot) photographic reproduction and display, Thief River Falls.

Pipestone County
Historic Pipestone, Inc., $7,500 for Brown Hospital restoration in the **Pipestone Commercial Historic District,** Pipestone.

Pope County
Pope County Historical Society, $500 for microfilm purchase, Glenwood.

Ramsey County
India Association of Minnesota, $2,000 for "India/Minnesota Melding of Cultures: Preparing for the Future" oral history project, Arden Hills.

SHPO files

Right: Nerstrand City Hall in Nerstrand, Rice County

Redwoood County
Lamberton Area Historical Society, $3,000 for **City Blacksmith Shop** restoration, Lamberton.

Rice County
City of Nerstrand, $5,000 for **Nerstrand City Hall** restoration, phase I, Nerstrand.

Saint Louis County
Virginia Area Historical Society, $5,000 for collections computerization project, Virginia.

Scott County
Scott County Historical Society, $4,000 for **Episcopal Church of the Transfiguration** roof restoration, Shakopee.

Stearns County
Stearns County Historical Society, $2,500 for granite industry exhibition project, St. Cloud.

Stevens County
Stevens County Historical Society, $2,500 for "John Stuart Ingle: Painter on the Prairie" interpretive project, Morris.

Waseca County
Waseca County Historical Society, $775 for microfilm cabinet purchase, Waseca.

Watonwan County
St. James Opera House Restoration Project Inc, $5,315 for St. James Opera House restoration, St. James.

Winona County
Winona County Historical Society, $4,100 for **Willard Bunnell House** heating/air-conditioning installation, Winona.

Wright County
Wright County Historical Society, $2,000 for microfilm purchase, Buffalo.

***Note:** Properties in boldface are listed on the National Register of Historic Places.*

Cultural Demonstrations at Pipestone National Monument

Pipestone carvers and beadworkers are giving cultural demonstrations daily at the Pipestone National Monument through October, 1998. The carvers include Ray Redwing, Santee Dakota, and Betty Tellinghuisen, Sisseton Wahpeton Dakota. Later in the summer, they will be joined by Cynthia and Tim Brady, Sisseton Wahpeton Dakota. Jodi Derby is a Sisseton Wahpeton Dakota beadworker; beadworkers from the Flandreau Indian School working on weekends in May include Wamblee Looking Horse, Oglala Lakota, and Vernalyn Bearing, Northern Arapahoe. Later, they will be joined by Denise Parsons, Sisseton Wahpeton Dakota.

The demonstrations are presented at the visitor center in the Monument, which is open from 8 a.m. to 5 p.m. daily. After Memorial Day, the center will be open from 8 a.m. to 6 p.m. Monday through Thursday, and 8 a.m. to 8 p.m. on Friday, Saturday and Sunday through Labor Day. Admission is $2/person for adults, $4/family (children 16 and under admitted free), American Indians admitted without charge. For information, call (507) 825-5464.

Research Project on Midwives in Minnesota Could Use Your Help

Do you have material in your collections about midwives in Minnesota? If so, Andrea (Ang) Johnson, a staff member at the Minnesota Historical Society and independent researcher, would love to hear from you! Johnson has recently written an overview paper about the history of Minnesota's midwives as part of her work for a Master's Degree at the University of Minnesota, and would like to continue working on this rich and fascinating topic.

If you know of researchable materials in your area, please contact Johnson by phone: (612) 296-1187; e-mail: andrea.johnson@mnhs.org; or mail: Education Department, Minnesota Historical Society, 345 Kellogg Boulevard West, St. Paul, MN 55102-1906. The project will probably take several months, but when a report is ready, it will be announced in the *Interpreter*.

Thanks!

The Minnesota History **Interpreter** is published by the Historic Preservation, Field Services and Grants Department of the Minnesota Historical Society, and distributed to Minnesota's county and local historical societies and heritage preservation commissions.

Readers are invited to submit information for publication. To be considered, items must reach the editor by the 25th of the month, two months before publication (example: the deadline for the October issue is August 25). Send to: **Interpreter** Editor, Minnesota Historical Society, 345 Kellogg Blvd. W., St. Paul, MN 55102-1906. For more information call (612) 296-5434 or (612) 296-8196.

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David Nystuen, Field Coordinator
James Smith, Editor

http://www.mnhs.org

MINNESOTA HISTORICAL SOCIETY

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