



# We Proceeded On

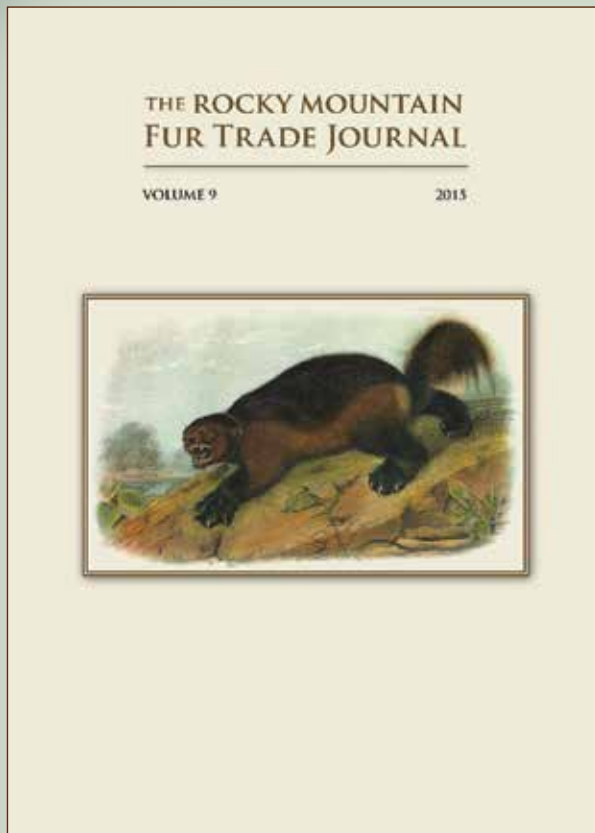
Lewis and Clark Trail Heritage Foundation

November 2015 Volume 41, No. 4

## AFTER THE DELUGE, PART II: FLOOD BASALTS, GLACIAL TORRENTS, AND LEWIS AND CLARK'S "SWELLING, BOILING & WHORLING" RIVER ROUTE TO THE PACIFIC



*Plus* FIVE MYSTERIES FROM CLARK'S  
1798 VISIT TO NEW ORLEANS



# THE ROCKY MOUNTAIN FUR TRADE JOURNAL

VOLUME 9 - 2015

## **The Mystery of Alfred Jacob Miller's Portrait of Captain Joseph Reddeford Walker**

by Vic Nathan Barkin

Questioning the identity of the person whose portrait Miller painted, the image of Joe Walker may not be him at all.

## **Wolverines in the Fur Trade**

by Fred Poyner IV

Though the beaver was the most sought after animal during the fur trade era, many other creatures were trapped.

## **The 1808 Murder Trial of George Drouillard**

by Melissa Tiffie

An in-depth look at an early St. Louis legal case, examining frontier justice using actual court documents.

## **Exploring Rocky Mountain Trapper Productivity**

by Jim Hardee

Attempts to quantify beaver trapping, searching to discover how many pelts a mountaineer might reasonably expect to harvest in a twelve month period.

## **Blackfeet Peacemaker: The Search for Nicholas Small Robe**

by George Capps

The search for the Piegan man who urged peaceful trade with neighboring tribes as well as with trappers.

## **Jim Bridger Challenges the HBC in the post-Rendezvous Era**

by Jerry Enzler

A study of fur trade competition in the 1840s, utilizing important documents recently discovered in the Hudson's Bay Company Archives.

## **Archibald Pelton, Mad Man of the Mountains**

by Larry E. Morris

The tragic tale of a young mountaineer and contemporary of Andrew Henry, Manuel Lisa, and Wilson Price Hunt.

**Informative, fun, and inspiring to read!**

A peer-reviewed scholarly publication from the  
Museum of the Mountain Man and  
Sublette County Historical Society

Full Color Paperback, 8 x 11  
ISBN: 978-0-9768113-9-1

To order visit our website at  
[www.mmmuseum.com](http://www.mmmuseum.com)  
or call 307-367-4101 or 1-877-686-6266



MUSEUM of the  
MOUNTAIN MAN

Sublette County Historical Society-A Foundation

P.O. Box 909, 700 E. Hennick St., Pinedale, Wyoming 82941

tel 307-367-4101 fax 307-367-6768

[publications@mmmuseum.com](mailto:publications@mmmuseum.com)

[www.mmmuseum.com](http://www.mmmuseum.com)

# Contents

A Message from the President 3

L & C Roundup 5

Letters 6

After the Deluge: Flood Basalts, Glacial Torrents,  
and Lewis and Clark's "Swelling, boiling & whorling" 8

River Route to the Pacific  
Part 2: The Columbia Gorge  
By John W. Jengo

Five Mysteries from William Clark's 1798  
Visit to New Orleans 24

By Jo Ann Trogdon

Reviews: *Wind hard from the west*, by Robert Heacock; 31  
*Ancient Places: People and Landscape in the*  
*Emerging Northwest*, by Jack Nisbet

**On the front cover:** The "high projecting rock" of Crown Point on the western end of the Columbia Gorge. Photo by John W. Jengo.

**On the back cover:** Latourell Falls in the Columbia Gorge. Photo by John W. Jengo.



Grande Ronde Basalt outcrop, p. 8



Spanish silver dollar, p. 28



*We Proceeded On* welcomes submissions of articles, proposals, inquiries, and letters. Writer's guidelines are available by request and can be found on our website ([www.lewisandclark.org](http://www.lewisandclark.org)). Submissions may be sent to Robert Clark, WSU Press, P.O. Box 645910, Pullman, WA 99164-5910, or by email to [robert.clark@wsu.edu](mailto:robert.clark@wsu.edu).



## The Lewis and Clark Trail Heritage Foundation, Inc.

P.O. Box 3434, Great Falls, MT 59403  
 406-454-1234 / 1-888-701-3434  
 Fax: 406-727-3158  
[www.lewisandclark.org](http://www.lewisandclark.org)

### Our mission:

As Keepers of the Story ~  
 Stewards of the Trail, the Lewis and Clark Trail Heritage Foundation, Inc. provides national leadership in maintaining the integrity of the Trail and its story through stewardship, scholarship, education, partnership and cultural inclusiveness.

### OFFICERS

*President*  
 Steve Lee  
 Clarkston, WA

*Vice-President*  
 Philippa Newfield  
 San Francisco, CA

*Immediate Past-President*  
 Margaret Gorski  
 Stevensville, MT

*Secretary*  
 Barbara Kubik  
 Vancouver, WA

*Treasurer*  
 John Toenyes  
 Great Falls, MT

### DIRECTORS AT LARGE

Lynn Davis, Spirit Lake, IA  
 Dick Fichtler, Florence, MT  
 Karen Goering, St. Louis, MO  
 Ella Mae Howard, Miles City, MT  
 Mark Nelezen, Oshkosh, WI  
 Jim Sayce, Seaview, WA  
 Clay Smith, Port Townsend, WA  
 Kris Townsend, Spokane, WA  
 Jerry Wilson, Versailles, IN  
 Mark Weekley (ex-officio-NPS), Omaha, NE

### STAFF

Lindy Hatcher, Executive Director  
 Don Peterson, Administrative Assistant  
 Shelly Kath, Library Technician  
 Lora Helman, Bookkeeper  
 Rebecca McClellan, Ad Sales Manager

*We Proceeded On* is published four times a year in February, May, August, and November by Washington State University Press in Pullman, Washington, for the Lewis and Clark Trail Heritage Foundation, 4201 Giant Springs Rd., Great Falls, Montana 59405. Current issue: November 2015, volume 41, No. 4, ISSN 02275-6706

Incorporated in 1969 under Missouri General Not-For-Profit Corporation act. IRS Exemption Certificate No. 501(c)3, Identification No. 510187715.

November 2015 • Volume 41, Number 4

*WE PROCEEDED ON* is the official publication of the Lewis and Clark Trail Heritage Foundation, Inc. Its name derives from a phrase that appears repeatedly in the collective journals of the expedition. © 2015

E. G. Chuinard, M.D.,  
*Founder, We Proceeded On*  
 ISSN 02275-6706

### Editor

Robert A. Clark  
 Washington State University Press

### Volunteer Proofreaders

H. Carl Camp and Jerry Garrett

### Publisher

Washington State University Press  
 Pullman, Washington

### EDITORIAL ADVISORY BOARD

Wendy Raney, Chair Pullman, WA	Barbara Kubik Vancouver, WA
Jay H. Buckley Provo, UT	Glen Lindeman Pullman, WA
H. Carl Camp Omaha, NE	J.I. Merritt Pennington, NJ
Robert C. Carriker Spokane, WA	Robert Moore, Jr. St. Louis, MO
Carolyn Gilman Washington, DC	Gary E. Moulton Lincoln, NE
James Holmberg Louisville, KY	Philippa Newfield San Francisco, CA

## Membership Information

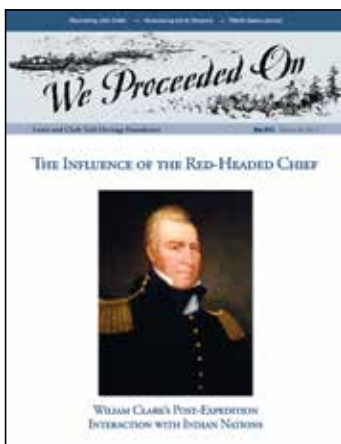
Membership in the Lewis and Clark Trail Heritage Foundation, Inc. is open to the public. Information and applications are available by writing Membership Coordinator, Lewis and Clark Trail Heritage Foundation, P.O. Box 3434, Great Falls, MT 59403 or on our website, [www.lewisandclark.org](http://www.lewisandclark.org).

*WE PROCEEDED ON*, the quarterly journal of the Foundation, is mailed to current members in February, May, August, and November. Articles appearing in this journal are abstracted and indexed in HISTORICAL ABSTRACTS and AMERICA: HISTORY AND LIFE.

### Annual Membership Categories:

Student: \$30  
 Basic: \$49  
 Basic 3-Year: \$133  
 Family: \$65  
 Heritage: \$100  
 Explorer: \$150  
 Jefferson: \$250  
 Discovery: \$500  
 Lifetime:  
 Steward: \$995  
 Captain: \$2,500  
 President: \$5,000

The Lewis and Clark Trail Heritage Foundation, Inc. is a tax-exempt nonprofit corporation. A portion of your dues may be tax deductible. Donations are fully deductible.



## WE PROCEEDED ON

(Back issues, 1974–current)

All back issues of our quarterly historical journal are available. Some of the older issues are copier reproductions. Orders for a collection of all back issues receive a 30 percent discount. Order your missing issues to complete your set. Call 1-888-701-3434, mail your request to P.O. Box 3434, Great Falls, MT 59403, or order at [york@lewisandclark.org](mailto:york@lewisandclark.org).

\$10 originals or cds  
 \$4 shipping & handling

## A Message from the President

As I begin my year as president, I would be remiss if I didn't first offer thanks and appreciation to the Kansas City 2015 Annual Meeting committee and volunteers for putting on a great meeting in August. It was fun, informative, and we experienced some great trail sites in Missouri and Kansas. We gained new friendships and connected with old friends. What a great view we experienced at Kaw Point with the Lewis and Clark Fife and Drum Corps in their red uniforms against a backdrop of the Missouri and Kansas Rivers and the modern Kansas City skyline.

I must also thank and give accolades to Margaret Gorski, who has just completed two terms as president. The foundation has moved forward during her tenure and chalked up many accomplishments during those two years. I have big "mockersins" to fill! I look forward to her service on the board of directors as past-president.

For those who don't know me, I grew up in western Montana surrounded by the Lewis and Clark trail. I learned from a young age about the explorers and remember camping with the family at the base of Lemhi Pass and hearing about the significance of that area.

I now reside along the trail in Clarkston, Washington. I have degrees in political science and accounting, and currently work at Washington State University in Pullman. I have been at WSU for fifteen years, working with research grants and contracts, and now work part-time as I head into my term as president.

I joined the Lewis and Clark Trail Heritage Foundation in 1987 and have valued my membership in this great organization since then. I attended my first annual meeting in Bozeman,

Montana, in 1989. I remember reading the exciting meeting program and feeling a bit apprehensive as I figured the other attendees would know much more about Lewis and Clark than I.

However, I had a wonderful time, met new friends, and enjoyed the field trips to Lemhi Pass and Helena (viewing Charley Russell's mural entitled "Lewis and Clark Meeting the Flatheads at Ross's Hole"). I discovered it didn't matter how much or little I knew—I was always welcome in the "Lewis and Clark family."

Living in Boise, Idaho, the next year I helped the Idaho Chapter host the 1990 annual meeting. I quickly became involved with the foundation, being appointed to the Young Adults Committee and then selected as president of the Idaho Chapter. One thing led to another, and as I look back, I can claim membership at one time on both the Idaho and Washington Governors' Lewis and Clark Trail committees, the Idaho Chapter, and Washington Chapter. I served the foundation as treasurer for three years just prior to the Lewis and Clark Bicentennial. Recently, I have been active on the Bicentennial Trail Stewardship Advisory Committee and the Financial Affairs Committee. I also served on the organizing committees that hosted the 2010 Lewiston meeting and the 2014 Richland meeting. This adds up to a very active participation in local and national Lewis and Clark activities. It all came about due to the generosity of a gift membership. A longtime member, Ruthann Caylor of Boise, upon learning of my Lewis



and Clark interest, gifted me that membership.

If I can rise to be your president thanks in part to a gift, please consider the importance of recruiting a new member or providing a gift membership to someone you know who would appreciate our foundation and all that it does. Who knows, they could end up being president, too!

Membership will be one of my initiatives during the next year. I believe we must continuously recruit more members into the foundation. As president, I will challenge the board of directors, committees, and chapters to recruit additional members. Goals have been set. I believe that those of us involved with the foundation make the best recruiters, as we can personally sell interested friends and acquaintances on the good work being accomplished by the Foundation today. Among the benefits of membership are four issues of *We Proceeded On* each year, an office and library/archives in Great Falls, interesting and informative annual meetings at sites all along the trail, an educational Lewis and Clark oriented website, and funding for trail stewardship and educational projects from coast to coast. These are all good reasons for being a member of the Lewis and Clark Trail Heritage Foundation.

Finally, I would like to mention that our August 2015 issue of *We Pro-*

*ceeded On* included a listing of memorials given to the foundation by our members. While we accepted such donations in the past, we want to further honor those folks by publishing their names as well as the customary personal communications donors and families receive. We also will pay tribute to those whose hard work and accomplishments deserve recogni-

tion. Please consider the Lewis and Clark Trail Heritage Foundation when it comes time to make such tributes. Donations help fund our ongoing operations, and the recognition makes for a nice tribute to a friend or loved one. If you wish to participate, please visit our website at [lewisandclark.org](http://lewisandclark.org), call the office at 888-701-3434, or mail to PO Box 3434, Great Falls,

MT 59403. We appreciate your continued membership in the foundation and your continued support. I hope to meet you along the trail during the next year.

Steve Lee  
President  
Lewis and Clark Trail Heritage  
Foundation

## DONOR ROLL

### *In memory of Hugh Ambrose of Helena, Montana*

Barb and Rennie Kubik, Vancouver, Washington

### *In tribute to Don Peterson and Ida Johnson of Great Falls, Montana*

Jimmy Mohler, St. Louis, Missouri

### *In tribute to Missouri-Kansas River Bend Chapter*

Jerry Garrett, St. Louis, Missouri

### *In tribute to Deb Morse of St. Louis, Missouri*

Jerry Garrett, St. Louis, Missouri

### *In tribute to Dean and Suzi Cox of Kansas City, Missouri*

Jerry Garrett, St. Louis, Missouri

### *In tribute to John and Jean Clark of Blue Springs, Missouri*

Jerry Garrett, St. Louis, Missouri

### *In tribute to Margaret Gorski of Stevensville, Missouri*

Steve Lee, Clarkston, Washington

Sue Buchel, Garden City, Idaho

Mark Nelezen, Oskosh, Wisconsin

Della Bauer, Omaha, Nebraska

John Toenyas, Great Falls, Montana

Dick Fichtler, Florence, Montana

Lynn Davis, Spirit Lake, Iowa

Kris Townsend, Spokane, Washington

Barb and Rennie Kubik, Vancouver, Washington

Philippa Newfield and Phillip Gordon,  
San Francisco, California

Jerry and Janice Wilson, Versailles, Indiana

Clay and Kim Smith, Port Townsend, Washington

Ella Mae Howard, Miles City, Montana

Lindy Hatcher, Great Falls, Montana

Jerry Garrett, St. Louis, Missouri

### Lewis and Clark Trail Heritage Foundation

Memorials and honors can be made at [www.lewisandclark.org](http://www.lewisandclark.org),  
by mail to PO Box 3434, Great Falls, MT 59403, or call 1-888-701-3434.

Photograph of Lolo Trail landscape courtesy of Steve Lee

## Save the Date

### 48th Annual Meeting

“Supplied for Survival: Meriwether Lewis at Harpers Ferry” is the theme of the 48th Annual Meeting of the Lewis and Clark Trail Heritage Foundation at Harpers Ferry, West Virginia, on July 24 to 27, 2016.

The theme will be played out through interesting lectures and field trips to Harpers Ferry National Historical Park. Programs and tours will acquaint attendees with the importance of the arsenal and armory at Harpers Ferry, and why Lewis spent valuable time at this location in March of 1803 as a prelude to the Corps of Discovery’s departure in May of 1804.

The host hotel will be the Quality Hotel and Conference Center in Harpers Ferry, WV (304-535-6302). Please go to the foundation’s website, [lewisandclark.org](http://lewisandclark.org), for more information.



HARPERS FERRY CENTER COMMISSIONED ART COLLECTION (IMS 02846)

Artist’s rendering of the Potomac ferry at Harpers Ferry that operated from 1747 to 1824, looking downstream from The Point at the confluence of the Potomac and Shenandoah rivers. Maryland Heights looms above the far (left) shoreline. The ferry connected Harpers Ferry with the wagon road to Frederick, Maryland, which terminated at the foot of Maryland Heights. Artist: Carol Stuart Watson

## Clark’s Crossing Dedication



Billings Mayor Tom Hanel (holding the plaque) and Richard Saunders (with the scissors) prepare to cut the ribbon to open the Clark’s Crossing heritage site.

On July 24, 2015, Billings, Montana Mayor Tom Hanel, Lewis and Clark Trail Heritage Foundation Board Member Ella Mae Howard, dignitaries representing the Billings Chamber of Commerce, Our Montana, and Pompeys Pillar joined more than eighty other folks to officially dedicate the name Clark’s Crossing and share the heritage of this historic site. It was at this location exactly 209 years ago, to the day, Captain Clark recorded “I had the horses drove across the river...” for a more direct route to the Mandan Villages. Research by local Lewis and Clark enthusiast Ralph Saunders located the site which is near Clark’s Black Buttes on the southeast end of Billings. John Brewer, President/CEO of the Billings Chamber of Commerce, noted how this site is “another opportunity to connect a significant part of our community’s history to the Heritage Trail.” The name

“Clark’s Crossing” has been entered into the U.S. Geographic Names Information System.

After the dedication, Saunders discussed his research to locate the site and led the attendees on a short hike to the edge of the Yellowstone River to observe the locale where Sgt. Pryor and Privates George Shannon, Richard Windsor, and Hugh Hall moved the horse herd to the south side of the Yellowstone River.

Grant money from the Montana Lewis and Clark Bicentennial Sign Maintenance Fund paid for an interpretative sign which can be seen in the Yellowstone County Museum adjacent to the airport. This historic site will be one of the tours of the 2017 Annual Meeting of the Lewis and Clark Trail Heritage Foundation.

[Special thanks to Lewis and Clark Trail Heritage Foundation board member Ella Mae Howard for this contribution.]

## Some final words on Benemann's "My Friend and Companion"

To Editor Bob Clark:

I expect better from a scholarly magazine such as WPO. The foundation's mission statement was made a shambles of (I believe the word integrity appears) by Benemann's article. I certainly believe everyone has a right to his or her option, but some discretion should be used when publishing such trash as Benemann's fantasies and wishful thinking: how disgusting and revolting!

I don't appreciate historical fiction in a publication such as WPO. So what's next? If, according to your email to me, these kinds of articles meet current submission standards, then obviously, they need to be reviewed and changed to not allow smut and slander such as Benemann's fantasy article.

I asked what's next? How about an article such as "Lewis and Clark Encounter Aliens in Montana," or "Lewis and Clark encounter mammoths and dinosaurs in the Dakotas," or "The Lost Tribe of Israel Saves the Expedition from Dying in The Great American Desert."

Benneman's revolting fantasy of reading between the lines and his obsessive innuendos are disgusting and offensive. Bob, this should have not been accepted by WPO. This is more supermarket trash magazine material!

Enough of this; you all get my point? Probably not...

I just finished another of my L/C cruises on the Columbia and Snake rivers. On board were 66 people from all over the country wanting to learn more about L/C. Not once on this cruise did I mention the LCTHF, as I usually do. I was too disgusted to

credit the foundation as the leader in all things L/C!

I will amend my/our (the protesters) to Editor R. Clark [the writer refers to a threatened protest against the foundation concerning the Benemann article at the annual meeting in Kansas City]; we will not demand his resignation, however, we will go on with our protest unless he apologizes for publishing this foul and offensive article in WPO. I don't hold this against you, but come on Bob, a little discretion and RESPECT for L/C should have been your priority.

Don Popejoy  
Spokane, Washington

Dear Mr. Clark:

Mr. Benemann's two-part article on Meriwether Lewis and his alleged homosexual leanings has met with considerable dismay and vitriol. I write to point out a statement by Justice William O. Douglas in 1949 regarding public speech.

In a case involving public speech and the resultant disorderly conduct of the public, Justice Douglas wrote that a principal "function of free speech under our system of government is to invite dispute. It may indeed best serve its high purpose when it induces a condition of unrest, creates dissatisfaction with conditions as they are, or even stirs people to anger." (*Terminiello v. City of Chicago*)

It seems in deciding to publish these articles, you have adhered to Douglas's pronouncement. Let's proceed on.

Tom Jacobs  
Flagstaff, Arizona

Dear Editor Clark:

I write this unsolicited letter-to-the-editor in response to several letters that have appeared in recent issues of WPO regarding the two-part

article, "My Friend and Companion," by William Benemann. I have read the article, as well as his book, *Men in Eden* published by University of Nebraska Press (2012), and offer these thoughts.

Fields of study within the profession of history normally benefit by controversy. Consensus history, even in standard textbooks, is now presented with alternative readings and interpretations in bibliographies and suggested readings. Since the 1960s, the New Social History has challenged us to reconsider traditional narratives with reinterpretation of race, gender, and class, among other themes. At times revisionists have stretched evidence to limits or gone beyond documentation through inferential evidence, employing what is common within the Social Sciences and especially in psychology, sociology, and anthropology, but less so among professional historians. Benemann uses both deductive and inductive reasoning as well as inference, and does not hide this approach nor his bias. I find his thesis plausible, but not convincing enough to elevate it to probable. Because it is plausible, it has opened my mind to new possibilities that are certainly not unreasonable given the human condition historically and our new understanding of alternative choices to traditional heterosexual relationships.

Debate is a healthy exercise when conducted with civility and within the ethical guidelines of a given discipline. My personal introduction to historical debate took place while an undergraduate at Colorado College under the mentorship of Harvey L. Carter. Carter and a former student, Marcia Carpenter Spencer, published "Stereotypes of the Mountain Men" in the *Western Historical Quarterly* (6, [1] Jan. 1975:17-32), challenging an earlier study by Pulitzer-Prize-winning author William H. Goetzmann. Goetzmann's "The Mountain Man as

Jacksonian Man” (*American Quarterly* 15 [Fall 1963]:402-15) had offered a view that most mountain men were hard-driving, ambitious expectant capitalists; in short, acquisitive business entrepreneurs: “...it seems clear that statistically at least the Mountain Man was hardly the simple-minded primitive that mythology has made him out to be. Indeed it appears that whenever he had the chance, he exchanged the joys of the rendezvous and the wilderness life for the more civilized excitement of ‘getting ahead’” (Ibid., 410). Goetzmann based his conclusion on a statistical study of 446 men.

Goetzmann responded to Carter and Spencer’s challenge, accusing them of misreading his data and main point—that most mountain men were not deviants but in their life histories demonstrated patterns common to other American men in the Jacksonian Era, finding that fifty-five percent “took up other occupations, suggesting that the work and success ethic (expectant capitalism) had a place in their psychological make-up” (6 [3] 1975:296, 298).

In a two-page “Reply,” Carter emphasized that his statistical sample of 300 men (drawn from LeRoy Hafen’s *Mountain Men* series [which was unavailable to Goetzmann in 1963]) represented around ten percent of the total engaged in the trade (n = 3,000 including French-Canadians, British, Spanish, and Americans). Of 300 men, 38 or 13 percent qualified as Goetzmann’s “expectant capitalists” (*WHQ* 6 [1] Jan. 1975, Table 3, p. 30; and “A Reply,” *WHQ* 6 [3] July 1975:301-02). Carter left it to readers to draw conclusions based on the statistics and case studies that he with Spencer and Goetzmann independently gathered, holding firm in the belief that the average mountain man “was not especially money-minded” (p. 302).

In 1980, I offered my own view in “Marriage and Settlement Patterns of Rocky Mountain Trappers and Traders” (*WHQ* 11 [2] April 1980:159-80) by revisiting Goetzmann and Carter-Spencer and adding to the statistical portrait with a data set of 312 men. I found historical stereotypes accurate for some men; but too general for most. I reached this conclusion:

During his lifetime, which averaged sixty-four years, the typical mountain man married in the region of his major activity and fathered an average of three children. Most never achieved financial wealth; on the contrary, the average trapper/trader was quite different from the owners and field partners who attained financial gain in that the former seldom achieved above-moderate success, while the latter failed as a group as often as they succeeded. The group as a whole did turn away from fur trade enterprises in the direction of small farms, ranches, and mercantile interests, but few mountain men accumulated enough capital in their lifetimes for large entrepreneurial businesses (160-61).

Thirty-five years later, this debate continues and is a healthy sub-field of fur trade studies within Western History. Recently, Benemann used my statistics to point out that there *were* bachelors (up to 13 percent) in the Rocky Mountain fur trade (*Men in Eden*, Introduction, note 8; 74-75). It is plausible, indeed probable, that some of these men participated in homosexual or bisexual relationships given the numbers of men relative to women in many of the fur trade communities, as well as what we now know about same-sex preference and sexual behavior of exclusively male social groups, especially military units. But I did not imply any of these conclusions in my analysis back in 1980. Since then, articles and books on same sex relationships among sailors and pirates

from the seventeenth through the nineteenth century could fill a small bookshelf (for example: Arthur Gilbert, “Buggery and the British Navy, 1700-1861,” *Journal of Social History* 10 (1976-77):77-98; B. R. Burg, *Sodomy and the Pirate Tradition: English Sea Rovers in the Seventeenth Century Caribbean* (New York: New York University Press, 1983); Graham Robb, *Strangers: Homosexual Love in the Nineteenth Century* (New York: W. W. Norton, 2005); and Charles Upchurch, *Before Wilde: Sex between Men in Britain’s Age of Reform* (Berkeley: University of California Press, 2009).

Were Lewis and Clark lovers? I doubt it, but they certainly liked each other a great deal. And if they were partners, so what? Benemann’s article has challenged us to open our minds to other ways of viewing people we thought we knew well (especially Clark) and to rethinking traditional narratives that were “comfortable” stories with not-so-comfortable alternatives, however inferential in evidence. I look forward to more articles that challenge the traditional narrative of the Lewis and Clark Expedition and hope to write one myself in the future.

W. R. Swagerty  
University of the Pacific  
Stockton, California

# AFTER THE DELUGE

## *Flood Basalts, Glacial Torrents, and Lewis and Clark's "Swelling, boiling & whorling" River Route to the Pacific*

### PART 2: THE COLUMBIA GORGE

BY JOHN W. JENGO

[October 30, 1805:] The rocks project into the river in many places and have the appearance of having fallen from the high hills. *Clark*<sup>1</sup>

The passage through the Columbia River Gorge by the Lewis and Clark expedition between October 28 and November 3, 1805, was as geologically noteworthy as any seven-day period experienced by the Corps of Volunteers for North Western Discovery. Their roughly sixty-seven-mile transit from The Dalles to the Sandy River bore fresh evidence of gigantic landslides, drowned forests, and disruptive volca-

nic eruptions. As described in Part 1 of this article,<sup>2</sup> the geological foundation of the Columbia Plateau traversed by the expedition between October 11 and 25, 1805, included hundreds of lava flows of vast extent that were subsequently sculpted by colossal Glacial Lake Missoula floods. Those processes were not only beyond the grasp of Lewis and Clark, they eluded correct interpretation by geoscientists well into the twentieth century.<sup>3</sup> Yet, some of the captains' observations through the Columbia Gorge correctly ascertained the causes or sources of several key catastrophic events, not from the distant geologic past, but recent enough to be recalled in Native American oral histories. Let us rejoin the expedition as they proceeded on through a verdant landscape of deceptive beauty, a splendor that cloaks the vast eruptive events, dynamic upheavals, and massive earth movements that were essential to its creation.

"RIVER INCLOSED ON EACH SIDE IN HIGH CLIFTS"—  
ORIGIN OF THE COLUMBIA RIVER GORGE

After a much needed respite from the arduous passage through Celilo Falls and the Long and Short Narrows of The Dalles, the expedition pushed off from Rock Fort on the morning of October 28, 1805, and began their entrance into the Columbia River Gorge.

[October 28, 1805:] we proceeded on river inclosed on each Side in high Clifts of about 90 feet of loose dark coloured rocks. *Clark*

Those familiar "dark coloured rocks" belong to the Columbia River Basalt Group (CRBG) whose overall formation and geologic history were described in Part



JOHN W. JENGO

A representative outcrop at Mitchell Point of the Grande Ronde Basalt, a silica-rich, fine-grained rock lacking large and conspicuous crystals, which composes the majority of the "dark coloured rocks" observed by the Lewis and Clark expedition in the Columbia River Gorge. Grande Ronde Basalts, depicted here with their characteristic range of black to medium gray to more weathered rusty coloration, were deposited during the peak of Columbia River flood basalt eruptions between 16 and 15.6 million years ago. The outcrop scale is indicated by the one-foot long rock hammer.



JOHN W. JENGO

View of the natural cross-section of Columbia Hills anticline comprised primarily of Grande Ronde Basalt on the north side of the Columbia River approaching Rowena Gap, the eastern gateway to the Columbia River Gorge. It was the uplift of the High Cascades that exposed these and other basalt formations to the relentless incision and entrenchment of the Columbia River, which created the magnificent Gorge that William Clark described as having mountains “high on each Side.”

1 of this article. Most of the lava flows in the Gorge are Grande Ronde Basalts deposited during the peak of Columbia River flood basalt eruptions between 16 and 15.6 million years ago. Although the Gorge presents dramatic exposures of the CRBG, it actually has fewer individual lava flows than the upriver terrain the expedition had just passed through.<sup>4</sup>

Having traveled only about five miles on October 28, it would be on October 29, 1805, that Clark took note of the dramatic topographical changes (and the increase in botanical diversity) of the Gorge as the expedition entered the present-day area of Rowena Gap:

we proceeded on, the mountains are high on each Side, containing Scattering pine white oake & under groth, hill Sides Steep and rocky.

The Columbia River Gorge was not formed by the Glacial Lake Missoula floods (as is sometimes erroneously claimed in travel guide literature<sup>5</sup>), although the superb view of the lower cliff sections of the Columbia Hills anticline at Rowena Gap were certainly accentuated and reshaped by flood scouring. The consolidated rocks that compose the Gorge were formed by a complex interplay of CRBG flood basalt deposition and basin subsidence, along with contemporaneous fold-

ing and faulting. At the same time the CRBG flows were occurring in the middle and late stages of the Miocene Epoch,<sup>6</sup> the region was experiencing intense compression stresses.<sup>7</sup> Shortly after lava flows were emplaced, this unceasing compression transformed the original, slightly uneven layer-cake arrangement of the flows into mile-scale folds akin to rucks or ripples in a carpet. This geomorphology of ridge-forming narrow anticlines separated by valley-forming broad synclines can be observed throughout the Columbia Plateau.<sup>8</sup> Later in this article, the importance of synclinal valleys in direct-

ing the flow paths of the ancestral and present-day Columbia Rivers will be revisited.

The combination of contemporaneous basalt deposition and deformation are responsible for the warped geological structure that can be observed in certain places



JOHN W. JENGO

An outcrop of smooth, grooved basalt that was vigorously scoured out and polished by episodes of Glacial Lake Missoula flood waters, located over 300 feet above sea level in the garden of the historic Columbia River Gorge Hotel. Although compelling evidence of the height and power of the raging flood waters that helped widen the Columbia River Gorge and possibly trigger landslides, the Gorge was not created by the episodic Missoula floods. The outcrop scale is indicated by the one-foot long rock hammer.

in the Gorge, such as the Columbia Hills at Rowena Gap. However, this region would have remained an expansive, nondescript plain with a handful of low-relief ridges if not for the regional-scale uplift caused by the rising High Cascades that brought the Gorge into being. Beginning some three million years ago,<sup>9</sup> the central axis of the High Cascades commenced rising over 3,000 feet upward,<sup>10</sup> exposing the CRBG to the relentless incision and entrenchment of the Columbia River, which created the magnificent Gorge that William Clark described as having mountains “high on each Side.”

#### “ROCKEY ISLAND THE SEPULCHAR”—MEMALOOSE ISLAND

Dutifully mapping the Columbia River on October 29, 1805, Clark noted:

passed three large rocks in The river the middle rock is large long and has Several Squar vaults on it. we call this rockey Island the Sepulchar.

Lewis, who apparently only kept a journal on the return journey through the Gorge, reported on their brief foray exploring the island:

[April 15, 1806:] we halted a few minutes at the sepulchre rock, and examined the deposits of the ded at that place...there were thirteen sepulchres on this rock which stands near the center of the river and has a surface of about 2 acres above high-water mark.

This nearly bare, roughly flat-topped mass of Wanapum Basalt<sup>11</sup> is known as Memaloose Island, and its stripped surface indicates it bore the full brunt of Missoula flood scouring. It became one of the many islands in the Columbia river used as a Native American burial ground, which Lewis and Clark appear to have treated with due respect (i.e., there is no indication in the journals that any “deposits of the ded” were removed by the Corps of Discovery). Unfortunately, this was not an example emulated by later settlers, who performed their own scouring of remains and artifacts until the extant native remains were removed prior to the partial inundation of the island by the Bonneville Dam impoundment.

#### “SOME HANDSOME CASCADES”—COLUMBIA RIVER GORGE WATERFALLS

Once past the White Salmon River (the expedition’s “Canoe Creek”), Clark took note of the first of many

waterfalls the expedition would encounter in the Gorge:

[October 29, 1805:] a butifull cascade falling over a rock of about 100 feet.

It seems certain this is Wah Gwin Gwin Falls, at the present-day location of the historic Columbia Gorge Hotel, just west of Hood River, Oregon. The falls were notable enough to be included on Clark’s route map (labeled as “Cascade”) and its mapped location is consistent with his Elkskin-bound journal course and distance notes where the falls were described as “a small stream of water falls over a rock of 100 feet on the Lard Side.”<sup>12</sup>

A spectacular array of falls were observed downriver by Clark on October 30, 1805:

Saw 4 Cascades caused by Small Streams falling from the mountains on the Lard. Side.

Three of Clark’s “4 Cascades,” moving from upstream to downstream, are most assuredly Starvation Creek Falls, Cabin Creek Falls, and Wonder Creek/Lancaster Falls, all strikingly visible from the river today. The fourth cascade will probably remain speculative because the most likely candidate, the falls coming off Warren Creek, were re-routed when the creek was diverted in the late 1930s and, therefore, are no longer observable in their original state.<sup>13</sup> Other possibilities for the fourth cascade include Lindsey Creek Falls and Summit Creek Falls, but these are much smaller features and are somewhat offset downriver from the tight grouping of cascades Clark depicted on his route map.<sup>14</sup>

The other major grouping of notable waterfalls observable from the river are located some twenty-one to twenty-nine miles downriver from Lancaster Falls. On the return journey between Horsetail Falls and Latourell Falls (which encompasses Oneonta, Multnomah, Wahkeena, and Bridal Veil Falls) Lewis noted that:

[April 9, 1806:] the most remarkable of these caskcades falls about 300 feet perpendicularly over a solid rock into a narrow bottom of the river on the south side.

As typified in the captains’ documentation of waterfalls in the Gorge, the majority of falls are on the south (Oregon) side of the Columbia River. Although Lewis mentioned on April 14, 1806, that “some handsome



View of Starvation Creek Falls, one of the “4 Cascades” noted by William Clark on October 30, 1805, dwarfed by massive exposures of the Grande Ronde Basalt. Because the basalt layers on the Oregon side of the Columbia River dip away from the river, precluding any large-scale slippage into the valley, more sheer cliffs and consequently more waterfalls have been formed on the Oregon side of the Columbia River Gorge.

cascades are seen on either hand tumbling from the stupendous rocks of the mountains into the river,” no waterfalls are noted on the north (Washington State) side of the river on the expedition route maps.<sup>15</sup> This phenomenon is a direct result of the unstable geological formations that underlie the CRBG. There is an overall dip or tilt of the CRBG basalt layers to the south throughout the Gorge and these layers are underlain by a thick clay saprolite.<sup>16</sup> This relatively impermeable layer traps percolating groundwater to become a slippery and unstable surface, promoting large landslides on the Washington State side to literally slip southward in the direction of the dip angle of the rocks into the valley. These massive landslides (including the Bonneville landslide complex at the Cascades discussed below) have served to cut back the cliff slopes on the north side of the river, resulting in a reduced number of sheer vertical drops that would lend themselves to the formation of waterfalls. Conversely, there have been fewer and considerably smaller mass movements on the south side (because the basalt layers dip *away* from the river, thus precluding any large-scale slippage *into* the valley). Because of this structural orientation, and aided in places by Columbia River undercutting (where the river has been pushed south by the north-

side landslides),<sup>17</sup> more sheer cliffs have formed on the Oregon side, and consequently a greater number of waterfalls have developed.

It is also thought the Missoula floods played a role in triggering large landslides because the floods repeatedly inundated and saturated the lower elevations of the Gorge while undercutting the valley walls.<sup>18</sup> Evidence of the Missoula floods is not as obvious to the casual observer as in the Channeled Scablands (see Part 1), but anyone visiting Wah

Gwin Gwin Falls at the Columbia Gorge Hotel should take a stroll in the back garden, some 313 feet above sea level, to see the outcrop of smooth, grooved basalt that was vigorously scoured out and polished by episodes of deep, raging flood waters.

#### “A REMARKABLE CIRCUMSTANCE”—THE BONNEVILLE LANDSLIDE AND THE SUBMERGED FOREST

Across the river from the “4 Cascades,” Clark noted evidence of a landslide off the southern slopes of present-day Dog Mountain:

[October 30, 1805:] passed Several places where the rocks projected into the river & have the appearance of haveing Seperated from the mountains and fallen promiscuisly into the river, Small niches are formed in the banks below those projecting rocks which is comon in this part of the river.<sup>19</sup>

Clark’s observation in his Elkskin-bound journal that these rocks had “fallen from the high hills,” may have helped set in his mind a mental image of the instability of this mountainous Gorge terrain. If so, this may have enabled him to recognize evidence of monumental mass earth movements the expedition was to encounter at the Cascades.

On October 30, 1805, Clark documented the presence of a submerged forest, which along with the



View of pyramidal Table Mountain (left center) north of the Columbia River in present Washington State, showing the scars of the cataclysmic Bonneville rock slide-debris avalanche at the Cascades. Described by Clark on November 1, 1805, as a “low mountain Slipping in on the Stard Side,” the Bonneville landslide completely crossed the Columbia River and created a temporary lake that flooded tens of miles of upstream riverside woodlands, which produced the submerged forest first documented by Lewis and Clark.

JOHN W. JENGO

burning bluffs of northeastern Nebraska, the “Burnt Hills” of North Dakota, and White Cliffs of the Missouri in central Montana, remain one of the expedition’s most famous geological observations.<sup>20</sup> Clark noted:

a remarkable circumstance in this part of the river is, the Stumps of pine trees are in many places at Some distance in the river, and gives every appearance of the rivers being dammed up below from Some cause which I am not at this time acquainted with.

This information was considered meaningful enough to be mentioned in the 1830 edition of British geologist Charles Lyell’s *Principles of Geology*, the only expedition-related observation to merit inclusion in that seminal book.<sup>21</sup> A nice descriptive detail recorded only in Clark’s Elkskin-bound journal on October 30th stated:

This part of the river resembles a pond partly dreaned leaving many Stumps bare in & out of the water.

It was late on October 30, 1805, when the expedition encountered the head of the Cascade Rapid complex, called the “Great” or “Grand Shute” by Clark at various times in his October 30 to November 1, 1805, journals and depicted as the “Great Rapid or Shute” on his route map.<sup>22</sup> Clark’s initial observation of “many large rocks also, in the head of the Shute” was con-

firmed the next day when he witnessed: “This Great Shute or falls is about ½ a mile with the water of this great river Compressed within the Space of 150 paces in which there is great numbers of both large and Small rocks, water passing with great velocity forming & boiling in a most horriable manner.” Clark then surmised a possible cause for his damming hypothesis.

[October 31, 1805:] Several rocks above in the river & 4 large rocks in the head of the Shute; those obstructions together with the high Stones which are continually brakeing loose from the mountain on the Stard Side and roleing down into the Shute aded to those which brake loose from those Islands above and lodge in the Shute, must be the Cause of the rivers daming up to Such a distance above.

On the return journey, Lewis concisely summarized the relationship that he and Clark had deduced of the damming of the river at the Cascades (what Lewis referred as the “rapids”) and the distribution of “doated” (i.e., decayed) trees in the Columbia River Gorge:

[April 14, 1806:] throughout the whole course of this river from the rapids as high as the Chilluckkittequaws, we find the trunks of many large pine trees s[t]anding erect as they grew at present in 30 feet water; they are much doated and none of them vegetating; at the lowest tide of the river many of these trees are in ten feet water.



Historical photograph of the submerged trees (with Wind Mountain visible in the background), described by William Clark on October 30, 1805, as “many Stumps bare in & out of the water.” Geologic studies, radiocarbon dating, and dendrochronology research indicate the trees died between AD 1425 and 1450, dating the Bonneville landslide that caused their inundation to roughly 350 years prior to the arrival of the Lewis and Clark expedition.

ORU\_PH037\_0264: TREE TRUNKS OF SUBMERGED FOREST IN COLUMBIA RIVER, ANGELUS STUDIO COLLECTIONS, PH037, SPECIAL COLLECTIONS & UNIVERSITY ARCHIVES, UNIVERSITY OF OREGON LIBRARIES, EUGENE, OREGON. ALTHOUGH NO DATE OR PHOTOGRAPHER INFORMATION WAS AFFILIATED WITH THIS PHOTOGRAPH IN THE ARCHIVES, THIS IMAGE RESEMBLES ANOTHER PHOTOGRAPH OF THE SUBMERGED FOREST HELD BY THE OREGON HISTORICAL SOCIETY THAT HAS BEEN ATTRIBUTED TO GEORGE WEISTER, CIRCA 1914.

certain it is that those large pine trees never grew in that position, nor can I account for this phenomenon except it be that the passage of the river through the narrow pass at the rapids has been obstructed by the rocks which have fallen from the hills into that channel within the last 20 years; the appearance of the hills at that place justify this opinion, they appear constantly to be falling in, and the apparent state of the decayed trees would seem to fix the era of their decline about the time mentioned.

These key geologic observations were of sufficient interest for Nicholas Biddle and William Clark to discuss during the time Biddle was preparing the journals for publication circa April 1810. Biddle’s notes for Clark’s October 31, 1805, journal description indicate he was clarifying the overall geomorphic setting at Upper Cascade Rapid:

river widens is gentle & becomes like a pond with trees or stumps on each side where there appear to have been flats[,] on the north Side near the Islands the mountain seems to have been undermined & fallen in upon the islands, thro’ large rocks into the current. On the South Side the mountain comes to the waters edge but has not the same appearance of having fallen in.<sup>23</sup>

There are multiple revealing discoveries in these observations that are worth some detailed analyses, including the cataclysmic event that dammed the river, the life span of the upstream impoundment that formed behind the landslide, the geographic extent where the expedition noted the submerged trees, and

the age of those inundated trees, which in turn would provide a date of when the landslide occurred.

Through their observations, Lewis and Clark correctly identified what is now technically referred to as the Bonneville rock slide-debris avalanche, a cataclysmic landslide off the slopes of Table Mountain north of the Columbia River (the north or “Stard.” side). As clarified in the Nicholas Biddle notes, Clark’s geography as recorded in his November 1, 1805, course and distance remarks was descriptively simple but correct, having the “low mountain Slipping in on the Stard Side high on the Lard Side.” Lewis, who noted on April 12, 1806, that “the mountains are high steep and rocky. the rock is principally black,” remarked in his April 14, 1806, journal entry that these hills “appear constantly to be falling in,” and he was generally correct in his assessment. Although geologists believe that the 5.4 square-mile Bonneville landslide of Grande Ronde Basalt failed catastrophically, it was discovered to be only the latest in a series of massive rock failures near the Cascades that total nearly 14 square miles; even though these earth movements are thought to have largely stabilized, the landslide complex remains active.<sup>24</sup>

As Lewis and Clark surmised, the Bonneville landslide did have a major damming effect on the river channel (in fact, it completely crossed the Columbia River). It created a temporary lake that flooded upstream riverside woodlands, and produced the submerged forest they so diligently noted. There is evidence the landslide originally flooded the Columbia River valley back to Wallula Gap; but following a partial breach of that blockage,<sup>25</sup> a longer-lived, smaller lake persistently impounded the river back to The Dalles. When Lewis mentioned the occurrence of trees “throughout the whole course of this river from the rapids as high as the Chilluckkittequaws,” he was referring to a small band of natives the captains associated with the Wishram-Wascos Indians<sup>26</sup> that were encountered just above Crates Point, about thirty-eight miles upriver of the Upper Cascade rapids.<sup>27</sup> It is not possible to verify this submerged tree distribution today given the drowning of the Gorge with the closure of the Bonneville Dam in 1938, but prior to the completion of the dam, botanist Donald Lawrence commenced his

comprehensive mapping of submerged trees.<sup>28</sup> Over the course of his decades-long research, Lawrence documented the distribution of submerged trees from the Cascades all the way back to essentially the same spot Lewis noted,<sup>29</sup> demonstrating yet again how even the most cursory mention in the Lewis and Clark journals proved to be remarkably accurate.

At a time where radiocarbon dating<sup>30</sup> was emerging as one of the most valuable tools in archaeological and geological research, Lawrence's initial attempts at dating wood samples from a few submerged stumps yielded radiocarbon dates of 670 years ( $\pm$  300) before present (BP) and 700 years ( $\pm$  200) BP essentially placing the occurrence of the landslide between AD 1250 and 1280.<sup>31</sup> To independently corroborate the dates obtained from submerged trees, efforts were also made to age-date trees that grew on the landslide debris, under the logical assumption that they had colonized the landslide deposit sometime after it occurred.<sup>32</sup> Radiocarbon dating on some Douglas firs found growing atop the Bonneville landslide suggested it occurred sometime between AD 1400 and the late 1500s.<sup>33</sup> Advances in correcting and calibrating the radiocarbon method have improved the accuracy of the technique<sup>34</sup> so re-analyses of Lawrence's surviving original submerged wood samples has been performed. The results indicate the trees died between AD 1425 and 1450,<sup>35</sup> dating the Bonneville landslide to roughly 350 years prior to the expedition's arrival.

All of the evidence gathered by Lewis and Clark, and the subsequent geologic and dendrochronologic research by scientists studying the Bonneville landslide, provides persuasive credibility to early documentation of a Native American oral history that spoke of a natural dam blocking the river. The earliest reliable account of that history was recorded by Daniel Lee, a Methodist missionary who first arrived in western Oregon in September 1834. Exactly when Lee learned of the oral tradition isn't noted in his 1844 book *Ten Years in Oregon*, but it was most likely to have been after he established a mission at The Dalles in March 1838.<sup>36</sup> Starting that year, and up until his departure from Oregon in August 1843, Lee made routine round-trip journeys to the Willamette Mission, passing through the Cascades region nearly every trip.<sup>37</sup> By

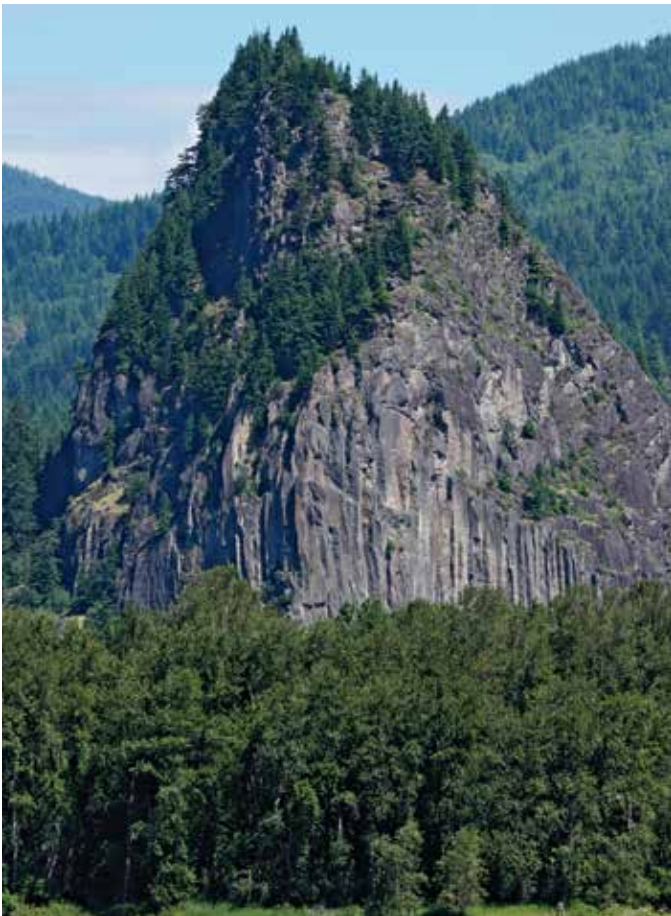
his own account, Lee traveled between The Dalles and the Willamette Mission a total of thirty-two times, giving him ample opportunity to become steeped in the Native American history of the river.<sup>38</sup> Lee related:

"The Indians say these falls are not ancient, and that their fathers voyaged without obstruction in their canoes as far as the Dalls. They also assert that the river was dammed up at this place, which caused the waters to rise to a great height far above, and that after cutting a passage through the impeding mass down to its present bed, these rapids [the Cascades] first made their appearance."<sup>39</sup>

How long it took the Columbia River to fully breach the toe of the Bonneville landslide debris and for the impoundment to completely drain is unknown. As theorized by Donald Lawrence, the impoundment endured long enough to allow tens of feet of silt to bury the lower trunks of the trees,<sup>40</sup> which only commenced slowly degrading after the Columbia River had completely breached the toe of the landslide and the river's rejuvenated flow began to wash the silt away. This sediment entombment preserved the tree stumps far longer than their exposed (and long-lost) upper sections, leading Lawrence to opine: "It is easily understood why some early observers thought the trees had been dead only a hundred years or less."<sup>41</sup> Accordingly, Lewis's 20-year estimate, although hundreds of years off in terms of dating the timing of the Bonneville landslide or fixing "the era of their decline" of the trees themselves, may be within a few decades of the final draining of the lake and exhumation of the relatively undecayed stumps noted by the captains.

"A REMARKABLE HIGH DETACHED ROCK"—BEACON ROCK  
October 31, 1805, was a busy day for William Clark, and one of his finer examples of attentively describing both geological occurrences and the complex geography of islands in the vicinity of the Cascades.<sup>42</sup> Aside from discerning the origin of the submerged forest, he sighted one of the most recognizable geomorphic landmarks of the entire expedition route while he was scouting a portage route around the Cascades. Just as he was about to backtrack, being "deturmind to return to Camp 10 miles distant," he noted:

a remarkable high detached rock Stands in a bottom on the Stard Side...about 800 feet high and 400 paces around, we call the *Beaten* [NB: *Beacon*] rock.



JOHN W. JENGO

First sighted by William Clark on October 31, 1805, the “remarkable high detached rock” named Beacon Rock by the captains is comprised of a gray andesite only 57,000 years old, distinguishing this volcanic neck from the surrounding masses of the Miocene-age blackish basalt flows.

This observation presents a pleasing image of either Clark or one of the men tromping around Beacon Rock,<sup>43</sup> counting their paces. After the expedition was back underway (they spent November 1 and the early part of November 2, 1805, portaging around the Cascades), Clark clarifies on November 2, 1805, in his Elkskin-bound journal and on his route map that these “paces” are a stand-in for yards:

a remarkable high rock on Stard. Side about 800 feet high & 400 yds round, the *Beaten* Rock.

On the return journey, it was noted by Lewis:

[April 6, 1806]: this remarkable rock which stands on the North shore of the river is unconnected with the hills and rises to the height of seven hundred feet; it has some pine or reather fir timber on it's nothern side, the southern is a precipice of it's whole hight. it rises to a very sharp point and is visible for 20 miles below on the river.

Rather than being affiliated with the surrounding masses of Miocene-age blackish basalt flows, Beacon

Rock is comprised of a mottled, very light to medium gray andesite,<sup>44</sup> which reveals its distinctive geologic history. It is an exposed volcanic neck that formed just 57,000 years ago,<sup>45</sup> and is much pared down from its original configuration after the less-resistant volcanic ejecta on its flanks was stripped away by powerful Missoula flood waters. Today, only a basaltic andesite plug remains as one of the most prominent landmarks the corps encountered along the Columbia River.<sup>46</sup>

“PASSED A ROCK NEAR THE MIDDLE OF THE RIVER”—  
PHOCA ROCK

Proceeding rapidly downriver on November 2, 1805 (Clark would estimate making “29 miles to day from the Great Shute”), only in his Elkskin-bound journal course and distance notes is there a mention of a prominent headland known today as Cape Horn on the Washington State side of the Columbia:

Stard. point of rocks of a high cliff of black rocks.

Cape Horn is comprised of several lava flows belonging to the Grande Ronde Basalt, including some of the same rock units exposed at the landslide-prone Table Mountain upriver at the Cascades. Of interest to us is one of the basalt flows composing the Ortle Member just below the Highway 14 road level on Cape Horn and how it relates to a curious occurrence of an isolated rock in the river:

[November 2, 1805:] passed a rock near the middle of the river, about 100 feet high and 80 feet Diamuter.  
*Clark*

This mid-river island was identified as “Phoca” and “Seal rock” on one of Clark’s route maps,<sup>47</sup> but apparently not referenced as such in any of the captains’ journal entries. Geologists studying this small island have determined it is compositionally identical to the aforementioned Orley Member flow on the Cape Horn headland and, thus, represents a compact landslide block that fell hundreds of feet to its present location.<sup>48</sup>

“A HIGH PROJECTING ROCK”—ANCESTRAL COLUMBIA  
RIVER CHANNEL AT CROWN POINT

Clark described the expedition’s November 2, 1805, encampment differently in his Elkskin-bound journal, and then in his notebook journal:



JOHN W. JENGO

The mid-river island (foreground) identified as “Phoca” and “Seal rock” on one of William Clark’s route maps is a compact landslide block that detached from the uppermost Grande Ronde Basalt flow just below the upper tree line in this image of the Cape Horn headland.

we Encamped behind a large rock in the Lard. Bend.  
we encamped under a high projecting rock on the Lard. Side.

It is an interesting exercise to determine whether the captains and the corps were referring to Crown Point or Rooster Rock in their November 2, 1805, journal entries. The promontory of Crown Point comes to mind when Clark mentions in his notebook journal that the expedition camped “under a high projecting rock,” along with Sgt. John Ordway having the expedition “Camped under a verry Shelving cliff on the Lard. Side.”<sup>49</sup> Precisely where they set up camp could be revealed in Clark’s Elkskin-bound journal when he noted the expedition encamped “behind a large rock,” as did Patrick Gass noting the expedition “encamped at a high peak resembling a tower of the south side.” The isolated pinnacle of Rooster Rock fits a “tower” description nicely and one can easily imagine the expedition encampment in the level glade between Rooster Rock and the vertical Crown Point cliff face; perhaps this was the encampment “green” that Whitehouse alluded to his November 2, 1805, original journal entry.

That Meriwether Lewis utilized Rooster Rock as an ad-hoc river gauge seems evident on the return journey:

[April 6, 1806:] from the appearance of a rock near which we had encamped on the 3rd of November last [in error, it was November 2, 1805] I could judge better of the rise of the water than I could at any point below.

Careful comparison of the rock lithology of Rooster Rock and Crown Point have revealed that Rooster Rock is a landslide block off the face of Crown Point,<sup>50</sup> yet another example of the inexorable process of mass earth movements in the Gorge, even though the intermediate landslide material

between Crown Point and Rooster Rock has largely been swept away. And before we exit the Gorge, just as the expedition did when Clark noted on November 2, 1805, that “here the mountains leave the river on each Side,” it’s worth a diversion to discuss how an ancestral Columbia River channel became a towering cliff at Crown Point.



JOHN W. JENGO

Among the second major grouping of waterfalls passed by the expedition (which includes Horsetail, Multnomah, and Bridal Veil Falls), Latourell Falls beautifully exposes the columnar-jointing of a Sentinel Bluffs Member flow, the youngest Grande Ronde Basalt in the Columbia River Gorge. Grande Ronde Basalts compose at least 26 of the approximate 31 basalt flows that are present in the Gorge region.

The captains would have been surprised to learn that certain stretches of the Columbia River had occupied several different channels preceding the river that ferried them westward,<sup>51</sup> and they unknowingly passed remnants of these earlier rivers. The captains had demonstrated an excellent faculty for recognizing “ancient beds of the river” along the Missouri River,<sup>52</sup> but the paleochannels of the Columbia River in the Gorge evaded recognition until the 1970s and 1980s. Only when geologists began thoroughly mapping unique types of basalt deposits that had flowed into and been cooled by water was it determined such deposits could be differentiated from the flows that had advanced over relatively dry land.

Because the ancestral Columbia River was the low point on the Columbia Plain, it was preferentially filled and erased by certain large-scale lava flows and other deposition events.<sup>53</sup> The river, always unceasingly seeking a pathway to the sea across eruptive flood basalts and through the Miocene-age Cascade Mountains, shifted northward following each river channel-filling episode into relatively low-lying troughs to exploit older and weaker rocks proximal to the northern margin of the more-resistant CRBG lava plain.<sup>54</sup> The present-day Columbia River has sliced through some of the former river channels at certain locales, most notably at Mitchell Point (comprised of a canyon-filling basalt associated with the youngest ancestral river channel called the Bridal Veil channel) and Crown Point, part of the older ancestral Priest Rapids channel. So, when the expedition “encamped under a high projecting rock” at Crown Point on November 2, 1805, they were camping near the base of an uplifted 15-million year old Columbia River channel, one of the predecessor watercourses of their route westward.<sup>55</sup>



JOHN W. JENGO

View of Rooster Rock (left) and Crown Point (right) where the expedition encamped on November 2, 1805. Described by Sgt. Patrick Gass as “a high peak resembling a tower of the south side,” Rooster Rock is compositionally identical to the Basalt of Rosalia flow of Crown Point and is interpreted to be part of a landslide block that slid down to its present position at the river’s edge.

“ROLEING ITS QUICK SANDS INTO THE BOTTOMS WITH GREAT VELOCITY”—THE SANDY RIVER

Over the course of a single day, the expedition traveled out from under an ancient river channel frozen in time to a river discharging huge volumes of sediment in real time, the “quicksand river,” now known as the Sandy River. Both captains devoted time to accurately describe the nature of the sediment, the size of the delta it formed (the “Island” that Clark referred to below), and its source:

[November 3, 1805:] I arrived at the entrance of a river which appeared to Scatter over a Sand bar, the bottom of which I could See quite across and did not appear to be 4 Inches deep in any part; I attempted to wade this Stream and to my astonishment found the bottom a quick Sand, and impassable...Capt Lewis and my Self walked up this river about 1½ miles to examine this river which we found to be a verry Considerable Stream Discharging its waters through 2 Chanels which forms an Island of about 3 miles in length on the river and 1½ miles wide, composed of Corse Sand which is thrown out of this quick Sand river Compressing the waters of the Columbia and throwing the whole Current of its waters against its Northern banks...This Stream has much the appearance of the *River Platt*: roleing its quick Sands into the bottoms with great velocity after which it is divided into 2 Chanels by a large Sand bar before mentioned. *Clark*



JOHN W. JENGO

The waning rays of sunset highlight the dense Basalt of Rosalia that composes the upper section of the “high projecting rock” of Crown Point on the western end of the Columbia Gorge, now uplifted over 700 feet higher than its original position. This fifteen-million-year-old intracanyon flow filled one of the ancestral Columbia River channels that preceded the modern river which ferried the Lewis and Clark expedition to the Pacific Ocean.

[April 1, 1806:] the Indians...informed us that the quicksand river which we have heretofore deemed so considerable, only extends through the Western mountains as far as the S. Western side of mount hood where it takes it's source...several different tribes informed us that it heads at Mount Hood. *Lewis*

Geologists have determined the expedition members were witnessing the aftermath of a circa winter 1781–1782 eruption of Mount Hood<sup>56</sup> that generated a rapidly-flowing slurry of rock and water (technically termed a “lahar”). The sizeable 1781<sup>57</sup> eruption of Mount Hood, located some thirty-five miles to the east-southeast of the Sandy River delta, triggered the latest sequence of perhaps hundreds of lahars coming off the southwest flank of the volcano,<sup>58</sup> correctly noted by Lewis as the “source” of the river. Lahars can have different consistencies, and it appears from the captains’ transcription of Sgt. Pryor’s reconnaissance up the Sandy River that they were witnessing a flow of sand and fine gravel suspended in water, the conditions that form quicksand:

[April 1, 1806:] the channel is not more than 50 yds and 6 ft deep...the bed of this stream is formed entirely of quicksand...The water is turbid and current rapid. *Lewis*

Although apparently not part of Pryor’s detachment, Joseph Whitehouse also investigated the upstream

portion of the Sandy River. Whitehouse’s next to last entry in his extant paraphrased journal provides additional detail of a river laden with a heavy sediment load:

[April 1, 1806:] I went up Quick Sand River about 4 miles...full of Islands, and Sands barrs...I found this river part of the way up it, [to be] 6 feet deep, & the remainder as far up it as I went, only 6 inches deep of water & 4 inches quick sand.

A Whitehouse original journal entry, and the only indication in the Lewis and Clark journals of this simple test, described a member of the expedition probing the depth of the quicksand, perhaps employing something akin to a setting pole:

[November 3, 1805] the mouth of which was filled with quick Sand So that we could run a pole 6 or 8 feet in it.

Whitehouse’s paraphrased journal entry from November 3, 1805, added that this probing revealed the river bed “had no solid bottom,” a practical indication of a river burdened with saturated, uncompacted sediment; the high percentage of water-filled void spaces permitted probing to depths that a more compacted deposit would not allow.

Mount Hood, which Clark described on November 3, 1805, as “of a Conical form but rugid,” was apparently very active until circa 1793<sup>59</sup> and there is some indication that its volcanic activity persisted until 1800-1801,<sup>60</sup> just four to five years prior to the expedition’s arrival. Thus, it is difficult to ascertain how much volcanoclastic sediment (Clark’s “Corse Sand which is thrown out of this quick Sand river”) originated from the initial 1781 Mount Hood eruption versus flows caused by post-1781 events. Either way, lahars that commenced with the 1781 eruption are believed to be the source of the sediment that traveled the entire fifty-four miles down the Sandy River drainage to the Columbia,<sup>61</sup> creating a 2,500-acre delta that projects nearly two miles into the river. Until the advent of

advanced age-dating techniques such as radiocarbon analyses and dendrochronology, the geological observations of the Lewis and Clark expedition at the Sandy River were the best source for deducing the timing of this volcanic event, refining the time frame expressed in Native American oral tradition.<sup>62</sup>

“STUPENDIOUS MOUNTAINS...LIE IN THE SAME CHAIN”—  
THE CASCADE RANGE VOLCANOES

When the captains summed up their observations about the Columbia River on the return journey, Lewis noted:

[April 14, 1806:] the bed [of the river] is principally rock except at the entrance of Labuish's river [Hood River] which heads in Mount hood and like the quicksand river brings down from thence vast bodies of sand.

Interestingly, Lewis had just correctly identified the other principal conduit by which Mount Hood lahars discharged into the Columbia River, including perhaps the largest single debris avalanche recorded from Mount Hood. This was an outpouring that discharged down the Hood River with enough energy to completely cross the Columbia River, and surge three miles up the White Salmon River.<sup>63</sup> But just like the absence of basalt nomenclature in the journals (despite passing hundreds of miles of volcanic rock exposures), the captains never deduced that Mount Hood or the other

Cascade peaks they directly observed (Mounts Adams, Jefferson, St. Helens, and Rainier) were volcanoes. We can now read Meriwether Lewis's April 6, 1806, summary observation that these “stupendious mountains,” some of them “conic pointed,” appeared “to lie in the same chain” and see clear evidence of the continental arc that forms above a subduction zone of a plunging oceanic tectonic plate, but we must concede in fairness that such a deduction has only become common wisdom over the last few decades. As such, we can forgive the captains that the corps twice passed “among the sleeping giants”<sup>64</sup> (borrowing historian Donald Jackson's clever turn of phrase) unaware they were the very object “worthy of notice” that would have splendidly fulfilled Thomas Jefferson's instructions to seek “volcanic appearances.”<sup>65</sup>

Upon exiting the Columbia Gorge, the last great unmapped country of their outbound journey, the expedition confronted many weeks of considerable trial, tribulation, and ultimately triumph on their path to the Pacific Ocean. Lewis and Clark's geologic observations from the confluence of the Clearwater and Snake Rivers to the mouth of the Sandy River may be less obvious at first glance than their remarks along the Missouri River, yet some of their most valuable and trenchant notations were made along this route. That many of these observations were made at times of great



JOHN W. JENGO

Mount Hood was one of the five “stupendious” Cascade Range peaks observed by Lewis and Clark, which Meriwether Lewis described as “conic pointed” and appearing “to lie in the same chain,” although neither captain recognized these mountains as volcanoes. The rapidly-flowing slurries of rock and water (called lahars) that commenced with the 1781 eruption of Mount Hood were the source of the “quick sands” noted by the expedition members at the mouth of the Sandy River.

anticipation and unremitting apprehension is remarkable enough. To have their descriptions of natural phenomena confirmed by subsequent accounts of missionaries and expanded upon by modern scholarly research justifies recognizing the journalists of the corps as first-rate geological observers befitting their command of the aptly-named Corps of Volunteers for North Western Discovery. 🌿

---

*John W. Jengo, a member of the Philadelphia Chapter, is a Professional Geologist and licensed Site Remediation Professional who works for an environmental consulting firm in Pennsylvania, specializing in hydrocarbon remediation and dam removals to restore migratory fish passage. He has published numerous articles in We Proceeded On since 2002 on the subject of Lewis and Clark's mineral collection and the significance and scientific influence of their geological discoveries. He was a presenter at the 2003 annual meeting in Philadelphia.*

## NOTES

1. Gary E. Moulton, ed., *The Journals of the Lewis & Clark Expedition*, 13 volumes (Lincoln, Nebraska: University of Nebraska Press, 1983-2001), 5:354. Lewis or Clark journal quotations for October 1805 and November 1, 1805, are from volume 5, by date. The captain's journal quotations for November 2-3, 1805, are from volume 6, by date; and their journal quotations for April 1806 are from volume 7, by date. Sgt. John Ordway journal quotations are from volume 9, by date; Sgt. Patrick Gass journal entries are from volume 10, by date; and Joseph Whitehouse journal quotations are from volume 11, by date. All *Atlas* citations in the ensuing text are from volume 1, by map number.

2. See John W. Jengo, "After the Deluge: Flood Basalts, Glacial Torrents, and Lewis and Clark's "Swelling, boiling & whorling" River Route to the Pacific, Part 1: The Snake River and Columbia Plateau," *We Proceeded On*, 40:3 (August 2014), 7-21.

3. The author has opted not to delve too deeply beyond the overall geological framework of the Columbia River Basalt Group (CRBG) in this general interest article. Anyone interested in the changing estimates of the CRBG's composition (now comprised of the Steens Basalt, Imnaha Basalt, Grande Ronde Basalt, Picture Gorge Basalt, Prineville Basalt, Wanapum Basalt, and Saddle Mountain Basalt), volume, and areal extent (now revised upward to 210,000 km<sup>2</sup> or approximately 81,100 square miles), the timing, duration, chronology, and revised ages of eruptive events (now considered to have occurred between ca. 16.7 and 5.5 million years ago), and the fascinating, but highly technical, hypotheses about mantle plume upwelling and other theories to explain the source of the lava outbursts, would be well served by reading the Geological Society of America Special Papers referenced in this article. A good start would be a summary of the latest research found in Stephen P. Reidel, Victor E. Camp, Terry L. Tolan, and Barton S. Martin, "The Columbia River Flood Basalt Province: Stratigraphy, Areal Extent, Volume, and Physical Volcanology," in Stephen P. Reidel, Victor E. Camp, Martin E. Ross, John A. Wolff, Barton S. Martin, Terry L. Tolan, and Ray E. Wells, eds., *The Columbia River Flood Basalt Province, Geological Society of America Special Paper 497* (Boulder, CO: Geological Society of America, 2013), 1-43.

4. Although the CRBG has been estimated to be greater than 13,000 feet thick in the Pasco Basin area, it is only some 4,000 feet thick in the Gorge per Jim E. O'Connor and Scott F. Burns, "Cataclysms and Controversy—Aspects of the Geomorphology of the Columbia River Gorge," in Jim E. O'Connor, Rebecca J. Dorsey, and Ian P. Madin, eds., *Volcanoes to Vineyards: Geologic Field Trips through the Dynamic Landscape of the Pacific Northwest: Geological Society of America Field Guide 15* (Boulder, CO: Geological Society of America, 2009), 237-251. This is because only a subset of about 31 out of the 350+ continental flood basalt flows discharging from linear fissures systems located in eastern Oregon, eastern Washington State, and western Idaho reached this far westward. For an accounting of which flows reached the western Columbia River Gorge, including at least 26 different Grande Ronde Basalts flows, see page 740 in Ray E. Wells, Alan R. Niem, Russell C. Evarts, and Jonathan T. Hagstrum, "The Columbia River Basalt Group—From the Gorge to the Sea," in O'Connor, et al. *Volcanoes to Vineyards*, 737-774.

5. <http://www.frommers.com/destinations/oregons-columbia-gorge/627619#sthash.G1MYQMWQ.dpbs>. Accessed Sept. 16, 2015.

6. The Miocene Epoch was 23 to 5.3 million years ago; the CRBG flows commenced about 16.7 million years ago.

7. This compression was originally thought to have been largely caused by very complex subduction-related stresses between the North American Plate and various tectonic plates off the coast of the Pacific Northwest (hence the movement of the plates has been termed "plate tectonics"). Although that is the mechanism for the continuation of folding to the present day, it has now been proposed that the spreading mantle plume that sourced the lava flows also caused the subsidence and folding of basalt deposits in those areas overlying the plume fringes, leading researchers to conclude "that deformation and volcanism of the Columbia River Basalt Group are closely linked." See Stephen P. Reidel, Victor E. Camp, Terry L. Tolan, John D. Kauffman, and Dean L. Garwood, "Tectonic Evolution of the Columbia River Flood Basalt Province," in Reidel, et al. *Columbia River Flood Basalt*, 293-324.

8. The structural subprovince exemplified by N70°E-trending anticlinal ridges and synclinal valleys is called the Yakima Fold Belt. The width of the anticlines and synclines are quite asymmetrical, with the narrow anticlinal ridges being 0.5 to 3.1 miles wide and with the broad synclinal valleys from 10 to over 30 miles wide. See page 27 in Terry L. Tolan, Marvin H. Beeson, and Kevin A. Lindsey, "The Effects of Volcanism and Tectonism on the Evolution of the Columbia River System: A Field Guide to Selected Localities in the Southwestern Columbia Plateau and Columbia River Gorge of Washington and Oregon State, September 28-29, 2002," *Northwest Geological Society—Society Field Trips in Pacific Northwest Geology*, 1-74.

9. The author has come across different age estimates for the beginning of the regional uplift so a median age was chosen for the main text of the article. Two million years is estimated on page 476 in Terry L. Tolan and Martin H. Beeson, "Intracanyon Flows of the Columbia River Basalt Group in the Lower Columbia River Gorge and their Relationship to the Troutdale Formation," *Geological Society of America Bulletin*, 95:4 (April 1984), 463-477 and on page 95 in Terry L. Tolan, Marvin H. Beeson, and Beverly F. Vogt, "Exploring the Neogene History of the Columbia River: Discussion and Geologic Field Trip Guide to the Columbia River Gorge – Part I Discussion," *Oregon Geology*, 46:8 (August 1984), 87-97. A more recent census of ancestral Columbia River Gorge research has the uplift occurring as early as 4 million years ago; see page 225 in Stephen P. Reidel and Terry L. Tolan, "The Late Cenozoic Evolution of the Columbia River System in the Columbia River Flood Basalt Province," in Reidel, et al. *Columbia River Flood Basalt*, 201-230.

10. O'Connor and Burns, "Cataclysms and Controversy," 238.
11. The bedrock geology of Memaloose Island appears not to have been officially published by either the Oregon Department of Geology and Mineral Industries (DOGAMI) or the United States Geological Survey (USGS), nor is the geology depicted on the geologic map of the Hood River Quadrangle (compiled by Michael A. Korosec, *Geologic Map of the Hood River Quadrangle, Washington and Oregon*, Washington Division of Geology and Earth Resources Open File Report 87-6, 1987, 1 plate, scale 1:100,000, 1-40). The author had surmised that the island is comprised of one or more members of the Wanapum Basalt, most probably the Frenchman Springs and/or Roza Members. James Anderson from the University of Hawaii at Hilo and Ken Lite of the Oregon Department of Water Resources have tentatively mapped the island as the Roza Member, but are endeavoring to verify that interpretation (Personal Communication, Kenneth E. Lite, December 10, 2014).
12. As depicted on Moulton, ed., *Atlas*, 1: Map 78 and consistent with John Ordway's October 29, 1805, journal entry "Saw a beautiful Spring on the Lard. Side, which run off a high cliff of rocks, and fell off[f] the cliff upwards of a hundred feet perpendicular."
13. Various waterfall surveys available online such as [www.oregonhikers.org/field\\_guide/hole\\_in\\_the\\_wall\\_falls](http://www.oregonhikers.org/field_guide/hole_in_the_wall_falls) have the Warren Falls diversion occurring in 1938, creating a new 96-foot high waterfall called Hole-in-the-Wall. Accessed September 16, 2015.
14. Moulton, ed., *Atlas*, 1: Map 78. The heights of Lindsey Creek Falls (50 feet) and Summit Creek Falls (30 feet) make it less likely that they were noted by Clark, as compared to Starvation Creek Falls (227 feet), Cabin Creek Falls (220 feet), and Lancaster Falls (303 feet).
15. Moulton, ed., *Atlas*, 1: Maps 78 and 79.
16. Saprolite is a soft, typically clay-rich, wholly decomposed rock formed in place by chemical weathering per Robert L. Bates and Julia A. Jackson, eds., *Glossary of Geology*, Second Edition (Falls Church, Virginia: American Geological Institute, 1980), 556. The poorly-consolidated Eagle Creek Formation that separates the CRBG from the underlying slippery saprolite, abets the instability. An excellent outcrop of this clayey conglomerate with notably abundant rounded porphyritic andesite clasts, debris flow breccia, pebbly volcanoclastic sandstone, siltstone, and air-fall tuff can be examined just off Exit 41 heading east-bound on I-84, about 350 feet before the end of the exit ramp.
17. O'Connor and Burns, "Cataclysms and Controversy," 240. According to O'Connor and Burns (p. 239), mapped landslides along the Columbia River between the Hood and Sandy Rivers cover about 50 square miles.
18. *Ibid.*, 240. Geologists see evidence in the Columbia Valley between Wallula Gap and Portland of at least 25 floods discharging greater than 1 million cubic meters per second, per Gerardo Benito and James (Jim) E. O'Connor, "Number and Size of Last-Glacial Missoula Floods in the Columbia River Valley between the Pasco Basin, Washington, and Portland, Oregon," *Geological Society of America Bulletin*, 115:5 (May 2003), 624-638. These flows were 185 times greater than average annual flow of the Columbia River today.
19. When Clark mentioned "Small niches are formed in the banks below those projecting rocks," one can refer back to his Elkskin-bound journal for clarification and see that he was describing the formation of "Small Bays" along the river edges. Per Moulton, *Journals*, 5:199, the Elkskin-bound journal was kept between September 11 and December 31, 1805, and contained Clark's preliminary journal and rough field notes, essentially serving as the first draft for his notebook journal.
20. Discussions of these noteworthy geological observations can be found in, respectively, John W. Jengo, "'Blue Earth,' 'Clift of White' and 'Burning Bluffs': Lewis and Clark's Extraordinary Mineral Encounters in Northeastern Nebraska," *We Proceeded On*, 37:1 (February 2011), 6-18; John W. Jengo, "'Witness the Specimens of Lava and Pummicestone': The North Dakota 'Burnt Hills' of Lewis and Clark," *We Proceeded On*, 39:3 (August 2013), 19-31; and John W. Jengo, "'high broken and rocky': Lewis and Clark as Geological Observers," *We Proceeded On*, 28:2 (May 2002), 22-27.
21. Lyell, one of the founding fathers of modern geology, used the captains' observations as an example of "the formation by natural causes of great lakes." Lyell stated that "Captains Clark and Lewis found a forest of pines standing erect under water in the body of the Columbia River in North America, which they supposed, from the appearance of the trees, to have been only submerged about twenty years." See Charles Lyell, *Principles of Geology, Being an Attempt to Explain the Former Changes of the Earth's Surface, by Reference to Causes Now in Operation*, 3 volumes (London: John Murray, Albemarle-Street, 1830-1833), 1:190.
22. Moulton, ed., *Atlas*, 1: Map 78.
23. Donald Jackson, ed., *Letters of the Lewis and Clark Expedition, with Related Documents: 1783-1854, Second Edition* (Urbana: University of Illinois Press, 1978), 2:540. Per the editorial style in the Moulton *Journals*, emendations or interlineations by Nicholas Biddle in ensuing Lewis and Clark journal quotations are designated as "NB:"
24. O'Connor and Burns, "Cataclysms and Controversy," 240, 245 and also Wells, et al., "Gorge to the Sea," 741, who reported that a nearly 40-acre landslide occurred between Table Mountain and Greenleaf Peak in midwinter 2007-2008.
25. The maximum height of the original landslide impoundment has been estimated to have been as high as 300 ft above sea level [asl] (about 225 feet higher than 10-year moving average of the Bonneville Dam impoundment elevation) and it was in existence long enough to have sediments be deposited along valley wall tributaries at 260 ft asl. This lake level would have flooded the Columbia River valley back about 165 miles to Wallula Gap, but it appears to have lasted only a few decades. Downstream geological evidence suggests a massive, catastrophic lake breach prior to AD 1479-1482, which was succeeded by a smaller impoundment that flooded the river back to The Dalles. O'Connor and Burns, "Cataclysms and Controversy," 246-247.
26. Per Gary E. Moulton, ed., *The Lewis and Clark Journals, An American Epic of Discovery* (Lincoln, Nebraska: University of Nebraska Press, 2003), 277, n. 86. The village was about four miles downstream of Rock Fort.
27. In statute miles, as measured by the author using the NOAA Office of Coast Survey chart no. 18532, Columbia River, Bonneville to The Dalles, found at [www.charts.noaa.gov/OnLineViewer/18532.shtml](http://www.charts.noaa.gov/OnLineViewer/18532.shtml). Accessed Sept. 16, 2015.
28. Lawrence's principal initial field work was conducted in 1934-1935. He noted that "about 1800 [trees] were visible during the low water of 1934." Donald B. Lawrence, "The Submerged Forest of the Columbia River Gorge," *Geographical Review*, 26:4 (October 1936), 581-592.
29. Donald B. Lawrence and Elizabeth G. Lawrence, "Bridge of the Gods Legend, Its Origin, History and Dating," *Mazama*, 40:13 (December 1958), 33-41, see Figure 4.
30. The principle of radiocarbon dating, which utilizes the remains of organic material (e.g., wood), is predicated on the systematic and predictable decay of the unstable carbon-14 isotope (<sup>14</sup>C) that has been

taken up by an organism during its lifetime. Knowing the half-life of  $^{14}\text{C}$  (i.e., the time period in which half of the  $^{14}\text{C}$  in a specimen will decay) allows an age to be calculated upon counting how much  $^{14}\text{C}$  remains in a sample.

31. Lawrence and Lawrence, "Bridge of the Gods," 41. By international convention, radiocarbon dates are normally given as years before present (years BP), with 1950 as the base year.

32. An early attempt by Donald Lawrence to date trees growing on the landslide using just dendrochronology (tree ring dating) could only indicate that the Bonneville landslide had occurred before AD 1562. See Lawrence and Lawrence, "Bridge of the Gods," 40.

33. Personal communication, Patrick T. Pringle, Washington Department of Natural Resources, Division of Geology, Olympia, Washington, January 29, 2003 (Mr. Pringle is now at Centralia College in Washington State). For a discussion of the age dating of trees recovered from excavations at Bonneville Dam, see Robert L. Schuster and Patrick T. Pringle, "Engineering History and Impacts of the Bonneville Landslide, Columbia River Gorge, Washington-Oregon, USA," in Jan Rybář, Josef Stemberk, and Peter Wagner, eds., *Landslides* (The Netherlands: A.A. Balkema Publishers/Swets & Zeitlinger Publishers, 2002), 689-699.

34. Accuracy is enhanced by applying  $^{13}\text{C}/^{12}\text{C}$  isotope ratio corrections and adjusting for "true" half-life of  $^{14}\text{C}$  (the original Libby half-life of 5,568 years was found to be underestimated by approximately 3 percent). Because years BP are not the same as calendar years, dendrochronological calibration curves are utilized to correct for the difference between the radiocarbon dates and real time, a variation that occurred because of natural fluctuations of  $^{14}\text{C}$  concentrations through time.

35. O'Connor and Burns, "Cataclysms and Controversy," 246.

36. Daniel Lee and Joseph H. Frost, *Ten Years in Oregon* (New York, New York: J. Collord, 1844), 1-344, see p. 261. There is some indication that Lee spent considerable time among the Cascade peoples in the winter of 1839-1840 when he speaks of "labouring among the Indians on the river below, down to the Cascades," (see p. 186), so his first extended exposure to this oral history may date from that time period.

37. The Willamette Mission was located about 40 miles south-southwest from the confluence of the Willamette River with the Columbia before it was moved farther south to present-day Salem in 1840. Lee made these frequent trips to pick up supplies, attend meetings, and greet the arrival of other missionaries at Astoria.

38. By deconstructing his narrative history, the author has discerned that Lee traveled past the Cascades seven times in 1840 and eight times in 1842.

39. Lee and Frost, *Ten Years in Oregon*, 200. The possibility that Native Americans could walk across the Columbia while the river was completely blocked was later interpreted and transmuted into the "Bridge of the Gods" legend, although there is no indication in Lee's account that the Native Americans he interacted with referred to it as such.

40. Lawrence, "Submerged Forest," 587-588.

41. Lawrence and Lawrence, "Bridge of the Gods," 37.

42. Clark also did well to note the presence of Bradford Island "an Island which is situated near the Lard. Side" (which Lewis dubbed "brant island" on April 9, 1806), which now anchors the north end of the first powerhouse of Bonneville Dam, and Hamilton Island "an Island of 3 miles <wide> Long & one wide."

43. That the captains settled on calling this feature Beacon Rock is evidenced by Lewis's April 6, 1806, and Clark's April 9, 1806, journal entries where they called it Beacon Rock and Nicholas Biddle's emendation in Lewis's April 6 entry that states "*beaten before—but really beacon.*"

44. Higher silica content of magma (around 60% as opposed to basalt's <50%-55%), coupled with lessening concentrations of iron and magnesium, form andesite. As observed by the author, the mottled, very light to medium gray color of the Beacon Rock andesite, along with its well-formed crystals set in a fine groundmass that are visible to the naked eye, is in marked contrast to typical CRBG basalts that range from dark gray through grayish black to black where a microscope is often needed to view the crystal structure. Excellent exposures of the andesite can be seen along many of the 50 switchbacks that ascend to the top of Beacon Rock, many of them climbing the upper section of the "precipice" on the southern side.

45. Wells, et al., "Gorge to the Sea," 743. This late Pleistocene age and the rock type would supersede the information in Moulton, ed., *Journals*, 5:363n1 that had Beacon Rock comprised of much older middle to lower Miocene [age] olivine basalt.

46. To read Henry Jonathan Biddle's (a descendant of Nicholas Biddle) recollection of building a trail to the summit (completed in 1918), see the Lewis and Clark Trail Heritage Foundation's reprint of Henry J. Biddle, "Beacon Rock on the Columbia—Legends of Traditions of a Famous Landmark," *WPO Publication No. 3* (July 1978), 1-15.

47. Moulton, ed., *Atlas*, 1: Map 79.

48. Wells, et al., "Gorge to the Sea," 746.

49. The author agrees with Moulton, *Journals*, 6:10n14 that the "high projecting rock" is Crown Point. No correlation between journal descriptions and Rooster Rock were made in the Moulton editions so the author offers his interpretation herein.

50. Wells, et al., "Gorge to the Sea," 748.

51. The earliest of the last three identified paleochannels, estimated to have formed approximately 15.6 million years ago, extended from The Dalles to under the area of present-day Mount Hood, then southwestward to Salem, Oregon. When volcanism destroyed that route, another channel (sometimes referred as the Priest Rapids channel) formed sometime between 15 and 14.5 million years ago with its head at present-day Mosier, Oregon, and ran through the Hood River Valley and Bull Run Watershed before exiting the future area of the Gorge at Crown Point. When this channel was obliterated by advancing Priest Rapids Member lava flows of the Wanapum Basalt, the third ancestral channel called the Bridal Veil channel was formed in the vicinity of Hood River past the northern fringe of Mt. Defiance and Larch Mountain to Bridal Veil. The Bridal Veil channel persisted some 10 million years up to approximately four to two million years ago primarily because there was a decrease in the frequency and volume of flood basalts, resulting in flows that either failed to reach or completely fill the channel. See Tolan, et al., "Neogene History—Part I," 46:8, 93-94; and Reidel and Tolan, "Late Cenozoic Evolution," 210-225.

52. For examples of where the captains recognized "ancient beds of the river," see pages 177-178 in John W. Jengo, "Mineral Productions of Every Kind": Geological Observations in the Lewis and Clark Journals and the Role of Thomas Jefferson and the American Philosophical Society in the Geological Mentoring of Meriwether Lewis," in Robert S. Cox, ed., "The Shortest and Most Convenient Route: Lewis and Clark in Context," *Transactions of the American Philosophical Society*, 95:5 (2004), 136-214.

53. CRBG basalt flows filled the two earlier Columbia River canyons per Tolan and Beeson, "Intracanyon," 463-477, and are called "intracanyon" flows for that reason. Cascadian volcanism triggered high-alumina basalt flows that filled and capped the youngest ancestral channel (the Bridal Veil channel) and facilitated the shifting of the Columbia River northward again to its present-day position as the Gorge region was uplifted. See Tolan and Beeson, "Intracanyon," 475-476; and also page 112 in Terry L. Tolan, Marvin H. Beeson, and Beverly F. Vogt, "Exploring the Neogene History of the Columbia River: Discussion and Geologic Field Trip Guide to the Columbia River Gorge—Part II Road Log and Comments," *Oregon Geology*, 46:9 (September 1984), 103-112.

54. Tolan and Beeson, "Intracanyon," 476. The ancestral Columbia River system could maintain a prevailing westward flow because of the continued subsidence of the Yakima Belt syncline, which essentially created a regional-scale (and down-slope) gradient pathway for the river. See page 615 in Terry L. Tolan, Barton S. Martin, Stephen P. Reidel, James L. Anderson, Kevin A. Lindsey, and Walter Burt, "An Introduction to the Stratigraphy, Structural Geology, and Hydrogeology of the Columbia River Flood-Basalt Province: A Primer for the GSA Columbia River Basalt Group Field Trips," in O'Connor, et al. *Volcanoes to Vineyards*, 599-643.

55. This is technically called the Basalt of Rosalia intracanyon flow of the Priest Rapids Member, Wanapum Basalt, part of the material that filled the Priest Rapids ancestral Columbia River channel. Up until recently, the date of this flow was consistently referenced as ca. 14.5 million years old in the technical literature, including many of the references cited in this article. However, a revised date of ca. 15 million years for this flow has been recently proposed so the author has referenced that date; see page 59 in the 2013 paper by Tiffany L. Barry, Simon P. Kelley, Stephen P. Reidel, Victor E. Camp, Stephen Self, Nicholas A. Jarboe, Robert A. Duncan, and Paul R. Renne, "Eruption Chronology of the Columbia River Basalt Group," in Reidel, et al. *Columbia River Flood Basalt*, 45-66.

56. Cross-dating of two "victim" trees indicated they perished after the A.D. 1781 growing season but before the A.D. 1782 growing season. See Patrick T. Pringle, Thomas C. Pierson, and Kenneth A. Cameron, "A Circa A.D. 1781 Eruption and Lahars at Mount Hood, Oregon—Evidence from Tree-Ring Dating and From Observations of Lewis and Clark in 1805-6 [Abstract]," *Geological Society of America Abstracts with Programs*, 34:6 (October 2002), 511.

57. Not only does the visual cross-dating of tree ring growth patterns indicate a 1781 large scale eruptive event, dendrochemical evidence, namely an increase in phosphorus in rings of trees within the ash fall area, confirm that Mount Hood erupted in 1781. See Paul R. Sheppard, Russ Weaver, Patrick T. Pringle, and Adam J.R. Kent, "Dendrochemical Evidence of the 1781 Eruption of Mount Hood, Oregon,"

in Markus Stoffel, Michelle Bollschweiler, David R. Butler, and Brian H. Luckman, eds., *Tree Rings and Natural Hazards: A State-of-the-Art, Advances in Global Change Research 41* (Heidelberg, London, New York: Springer, 2010), 465-467.

58. Thomas C. Pierson, William E. Scott, James W. Vallance, and Patrick T. Pringle, "Eruption-Related Lahars and Sedimentation Response Downstream of Mount Hood: Field Guide to Volcaniclastic Deposits along the Sandy River, Oregon," in O'Connor, et al. *Volcanoes to Vineyards*, 221-236.

59. Thomas C. Pierson, Patrick T. Pringle, and Kenneth A. Cameron, "Magnitude and Timing of Downstream Channel Aggradation and Degradation in Response to a Dome-Building Eruption at Mount Hood, Oregon," *Geological Society of America Bulletin*, 123:1-2 (January 2011), 3-20.

60. Patrick T. Pringle, Thomas C. Pierson, Kenneth A. Cameron, and Paul R. Sheppard, "Late Eighteenth Century Old Maid Eruption and Lahars at Mount Hood, Oregon (USA) Dated with Tree Rings and Historical Observations," in Stoffel, et al., *Tree Rings*, 487-491.

61. Pierson, et al., "Eruption-Related Lahars," 223.

62. Remarkably, the same Daniel Lee who documented the Native American oral history of a natural dam (the Bonneville landslide) blocking the Columbia River at the Cascades also recorded impressions about the Sandy River in September 1838. During a trip overland from The Dalles to the Willamette Mission to obtain cattle (one of the few times he made this trip circumventing the Cascades), Lee encamped along the Sandy River with his small party, which included two Chinooks and two Walla Walla Indians. Lee noted: "This rapid stream rises at the base of Mount Hood...about fifteen miles off. The fires that once raged within its bowels, and blazed at its top, seem to have been long extinguished. Native tradition says that fire was anciently seen upon it, and that sounds were heard by the hunters, who approached near it, like the report of muskets." Lee and Frost, *Ten Years in Oregon*, 157.

63. Donald A. Swanson, Kenneth A. Cameron, Russell C. Evarts, Patrick T. Pringle, and Joseph A. Vance, "Cenozoic Volcanism in the Cascade Range and Columbia Plateau, Southern Washington and Northernmost Oregon," *28th International Geological Congress (IGU) Field Trip Guidebook T106, July 3-8, 1989* (Washington, D.C.: American Geophysical Union, 1989), 1-60.

64. Donald Jackson, *Among the Sleeping Giants: Occasional Pieces on Lewis and Clark* (Urbana, Illinois: University of Illinois Press, 1987), p. 23-26.

65. Selected quotes from the Jefferson instructions from Donald Jackson, ed., *Letters of the Lewis and Clark Expedition, with Related Documents: 1783-1854, Second Edition* (Urbana, Illinois: University of Illinois Press, 1978), 1:63.

# FIVE MYSTERIES FROM WILLIAM CLARK'S 1798 VISIT TO NEW ORLEANS

BY JO ANN TROGDON

**W**illiam Clark's 1798–1801 Notebook is arguably the most significant yet least examined of Clark's logbooks. In 1923 a party whose identity is no longer known sold the 1798-1801 notebook, along with three other Clark journals and a book containing astronomical data prepared for Meriwether Lewis by mathematician Robert Patterson. William Clark Breckenridge, a St. Louisan unrelated to Clark, bought the five volumes for a dollar and fifty-five cents. Since 1928 they have been in the keeping of the State Historical Society of Missouri in Columbia.<sup>1</sup>

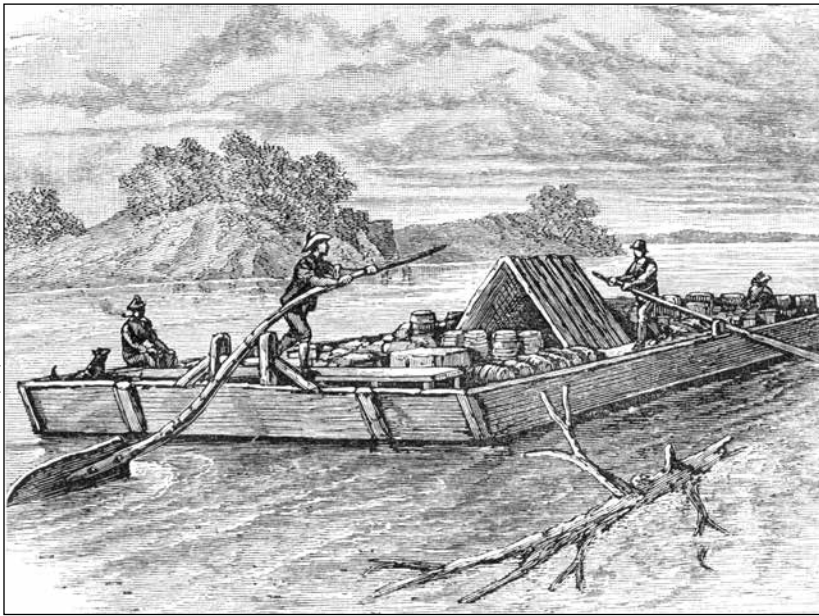
Of the quartet penned by William Clark, only the notebook predates the great westward expedition. Consisting mainly of entries describing his travels and activities in 1798 (one of his few adult years free of military or governmental duties), the log has little in common with the three other Clark volumes mentioned above or the majority of journals he wrote. For reasons to be explained, the 1798-1801 notebook is also one of the most ambiguous, circumscribed accounts of his own pursuits and connections Clark was to record.<sup>2</sup>

The two-century-old notebook has attractive if worn marbled boards holding eighty-eight pages written in remarkably unfaded iron-gall ink. Six of the first leaves apparently date from Clark's earliest stint in the Army (1792-1796); five pages in the middle of the book chronicle a trip he made in 1801 to the City of Washington, Philadelphia, and Spotsylvania County, Virginia. Scattered throughout the volume, the remaining seventy-seven pages recount his 1798 travels, including a flatboat venture to Spanish New Orleans and a return by ship from there to New Castle,

Delaware. Thirty-seven of those leaves contain diary entries, thirty others serve as a ledger, eight more hold segments of a map Clark drew—in violation of a Spanish law against espionage—while descending the Mississippi River, and two pages bear the field notes of surveys he performed on the lower Ohio River. (He would later use these notes in platting a pair of tracts claimed by William Croghan, husband of Clark's sister Lucy, thus helping Croghan perfect his title to those lands.)<sup>3</sup>

By 1798 William Clark had been waiting several years for a chance to engage in international commerce at New Orleans, the seat of authority for the Spanish provinces of Louisiana and West Florida. In 1794 he'd written in his characteristically tangled grammar and wayward spelling: "I have some intentions of resigning [his Army commission] and get into some business in Kentucky or on the Mississippi. my wish is on the Mississippi, as I think there is great oppening for an extensive & sucksessful Trade in that River could a man form Valuable Connections in New Orleans...."<sup>4</sup>

William was not alone in that ambition. By 1798 New Orleans was the marketplace of choice for thousands of people living in the Ohio River Valley, then the western frontier of the United States. Unable to afford sending their tobacco, wheat, pelts, cured meats, and other merchandise across the mountains to markets on the Eastern seaboard, Americans west of the Appalachians wanted instead to float those goods down the Ohio and Mississippi Rivers to New Orleans. The Crescent City was not just a busy port connecting the river with buyers on both sides of the Atlantic Ocean, it was also the grand emporium of Louisiana and West



Contemporary print of a Mississippi River flatboat of William Clark's era. Given the perishable nature of his cargoes, his flatboats must have been at least partially decked over.

Florida—both unable to feed their own people or supply their demands for tobacco and manufactured items.

From 1784 until 1795, however, Spain virtually closed the lower Mississippi River to non-Spanish traffic, granting commercial passports to only a tiny number of Americans, William Croghan among them. With partner Richard Clough Anderson (who also lived near Louisville, Kentucky, and who married William Clark's sister Elizabeth in 1787), Croghan occasionally sent to New Orleans boatloads of Kentucky crops for sale. His business agents there were the two Daniel Clarks. Uncle and nephew to each other but no kin to William, they were enterprising traders with important connections in the United States and Europe.<sup>5</sup>

In October 1795 Spain executed the Treaty of San Lorenzo (called Pinckney's Treaty after Thomas Pinckney, the American envoy who negotiated the pact), which reversed restrictions on American commerce. In doing so Spain abandoned her claim to lands both east of the Mississippi River and north of the thirty-first parallel, setting that line as the north-south border between the United States and Spanish Louisiana. Spain also granted Americans the right to send cargo down the Mississippi to New Orleans and to export them, duty-free, from there. Further concessions allowed Americans to store wares at New Orleans until proper shipping arrived for them, and another lowered duties on American goods sold within Spanish Louisiana.<sup>6</sup>

Such liberality drew hordes of American traders to New Orleans where they could receive cash payment—usually in Spanish silver dollars, also called pieces of eight. Those coins, bearing the likeness of King Carlos IV, were coveted in the United States (then and for years hence lacking adequate supplies of its own legal tender). There was just one drawback: Spain forbade the export of gold or silver specie from her provinces.<sup>7</sup>

That prohibition and the terms of Pinckney's Treaty were well known throughout the American West by the time William Clark bought two used flatboats. He had them patched and loaded with cargo, much of it apparently consigned to Croghan and Anderson by neighboring planters. William hired seven deckhands to work the vessels,

and on March 9, 1798, he and his little flotilla shoved off into the Ohio River a few miles from Mulberry Hill, his home in Jefferson County, Kentucky. According to the first notebook entry of the journey, they "Set out from the Rapids of Ohio at 6 o'clock, well all night."<sup>8</sup>

Further entries describe his descent of the Ohio and Mississippi Rivers, with frequent reference to the weather (especially snow, rain, and wind), river currents, and passing vessels. After nearly losing one of his boats to a snag in a hazardous stretch of the Mississippi, Clark penned a relatively lengthy account of those events, but soon resumed his customary brevity. Of two days spent at Natchez, he recorded only "At the Natchez," and "At the N." Even so, by the time he reached New Orleans on April 24, 1798, he had filled ten and a half book pages with entries—many of them lively and engaging—and written ledger notes on five pages toward the back of the volume. In addition, on a loose sheet of paper he listed the coordinates of thirteen strategic points he'd passed on the river, but arranged them in the order of one traveling in the opposite direction—from New Orleans to the mouth of the Ohio. Such a relatively wordy beginning for the often taciturn Clark gives the impression he was chronicling all facts and occurrences relevant to a business venture. But what was the exact nature of that business?<sup>9</sup>

As revealed in my new book, *The Unknown Travels and Dubious Pursuits of William Clark*, and corroborated

by a variety of documents written by men he dealt with in 1798, Clark deliberately left out key information from his notebook during the entire nine-and-a-half-month journey. So puzzling are some of these omissions, we must ask what he was really trying to accomplish. Here are five such instances, all of them taking place during his river voyage or subsequent weeks in Spanish territory.<sup>10</sup>

#### CARGOES

Before reaching New Orleans, Clark made only a handful of notebook references to an unstated quantity of tobacco and cured pork on board his craft; afterward, he added no more than a few jottings about those payloads. Given his avowed interest in becoming a trader on the Mississippi, it is indeed peculiar that neither the notebook nor anything else he is known to have written contains further information about his cargo. Such silence is even more baffling in view of the probability that Clark would have to account to Croghan and Anderson for goods they'd entrusted to him.<sup>11</sup>

Fortunately for posterity, the extensive and systematic accounting of the Spanish government fills in many gaps in the notes of the often methodical Clark. Information in a folio-size, leather-bound book preserved in Seville, Spain, when examined in light of the few notations Clark *did* keep about his cargo, enable us to construct the following: Shortly after tying up at New Orleans, he decided where to market his goods based on the sum they were likely to bring. Learning that tobacco was selling for more money abroad than it was in Louisiana, he had his hogsheads of tobacco carted into town where a Spanish inspector weighed each one, examined the contents, and recorded his findings.<sup>12</sup>

Those minutely detailed Spanish records reveal that Clark had begun the journey with fifty-seven hogsheads, at least one of which he sold going down the river. At New Orleans he disposed of three or more containers because the tobacco in them failed to meet Spanish standards due to either rotting or being "stemmed" (containing too many stems and not enough leaves). Fifty other hogsheads passed inspection, and Clark stored them in a New Orleans building. Each of those barrels, when full, weighed from a half to three-quarters of a ton. Most of the tobacco in them came from Kentuckians Alexander Scott Bullitt and

Richard Taylor (father of the future president, Zachary Taylor), both of whom lived not far from Croghan, Anderson, and the Clarks.<sup>13</sup>

What's more, a separate volume of Spanish records discloses crucial information William Clark inexplicably did not mention: On May 1, 1798, while still in New Orleans, he offered for local sale twenty-seven packs (1,479 pounds) of unshaved deerskins, fifty pounds of beaver furs, ten pounds of otter pelts, sixty-six bear skins, and seventeen doeskins. His declaration also included five hundred pounds of smoked bacon. A clerk assessed everything at a generously low rate (in accord with the Spanish policy of encouraging American trade), then computed the duty Clark would owe on them: 138½ pieces of eight, the equivalent of \$17.32.<sup>14</sup>

#### BRIBERY AND DUTIES

Clark wrote nothing specifically about the total due. Around the same time, though, he noted giving "8 Hams of bacon to the Offs. of C. H.," four dollars to "officers in the Custm. House," "wine to 8 Inspectors," and paying a total "briab to Inspect." of three dollars. What was the result of those apparent bribes? Did they reduce the duty he owed? How much of it did he pay? These questions are unanswerable, the Spanish Archives as silent as Clark on such matters.<sup>15</sup>

Although suborning Spanish officials to accept less than full payment on duty owed was as contrary to Spanish law as was exporting pieces of eight, both practices were rife in 1798 because they helped ensure a continuing supply of American food and other goods to Louisiana and West Florida. Given William Clark's circumspection, it is inexplicable that he put in writing not only bribes but also, as we will see, references to helping to smuggle Spanish money out of the province.<sup>16</sup>

#### DANIEL CLARK JR.

No one possessed more expertise in such illegal activities than did Daniel Clark Jr., at that time the wealthiest, most prominent resident of Spanish Louisiana. Born in Ireland in 1766, Daniel had moved to New Orleans in 1786 and joined his uncle in business. Given their history with Croghan and Anderson, William Clark must have inquired about the two Daniel Clarks soon after reaching the Crescent City. Learn-

ing the elder had recently retired to a plantation near the thirty-first parallel, William met Daniel Jr. At some point William surely realized that the nephew embodied the “Valuable Connections” he’d been hoping to form since at least 1794. Nevertheless, for reasons we can only conjecture, William wrote not a word about him, one of the richest, most charismatic men he was ever to meet.<sup>17</sup>

We would know nothing of their time together were it not for Daniel Jr.’s subsequent letters to William. One of those missives eloquently expresses Daniel’s esteem: “Our acquaintance tho’ but short has deservedly placed you so high in my estimation that I should not without regret give up the idea of seeing you again and cementing it more closely.” His letters also appear to indicate that, while at New Orleans, he and William discussed a wide range of topics—including the value of certain Kentucky acreage, the desire in eastern states for Kentucky goods, and the obvious inability of Spain to guard the vast, underpopulated Louisiana, a situation Daniel wanted the United States to exploit by seizing the province.<sup>18</sup>

The question arises whether Daniel also disclosed that, as a part-time clerk in the Spanish government, he enjoyed access to classified documents. Much of the information in them concerned the “Spanish Conspiracy,” a series of plots in which Spain clandestinely paid handsome sums to General James Wilkinson of the U.S. Army, to Judge Benjamin Sebastian of the Kentucky Court of Appeals, and to other western Americans, trying to undermine American interests while strengthening those of Spain. Similarly, we must ask whether Daniel ever learned that William, previously one of Wilkinson’s junior officers, had regarded him highly; further, did he know that William’s father, John Clark, considered Sebastian a trustworthy friend, or that William’s famous brother, George Rogers Clark, was trying to foment a French invasion of Louisiana?<sup>19</sup>



Daniel Clark Jr.: Painted from an engraved portrait by Charles Balthazar Fevret de Saint-Mémin. Its identifying label, “Clarke,” has been thought to refer to Daniel Clark Jr.

## EXPORTING MONEY

It seems likely, however, that Daniel impressed on William the profitability of conveying Spanish money secretly back to the United States. Daniel may also have mentioned his own, extensive experience overseeing such operations. In addition, he could have laid out the ideal *modus operandi* of running money upstream; a method developed through trial and error by his associate Thomas Power, courier of 9,640 Spanish dollars clandestinely paid Wilkinson by the Spanish government. In Power’s words:

I would wish to put a bag of one thousand dollars in a barrel of coffee or sugar, so that although the difference of the respective gravity, between silver, sugar, and coffee, be very great, the quantity being so small, it would not be easily known. It will likewise be prudent to carry some barrels without money, in order to sell them before arriving [upriver], if it should so happen that any one should offer to buy these goods; because not to sell them, when it might be done to advantage, would excite suspicion....<sup>20</sup>

Outlining a smuggling venture much like the one Power described, William purchased two barrels—one of coffee beans, the other of sugar—and arranged to have them shipped upriver to Kentucky aboard a vessel commanded by a man he called both “Mr. Brown” and “Capt. Brown.” The first barrel would hold coffee beans and 430 pieces of eight—162 of them for Croghan and almost 265 of them for “Mr. Sebastian.” The other barrel would contain sugar and 670 pieces of eight.<sup>21</sup>

Before Brown set off, Clark paid him freightage of twenty-four dollars, evidently calculating that amount from the weight of the containers, their contents, and the money for Croghan, but not from the weight of the other coins. Anticipating that Croghan and Sebastian would take their respective shares shortly after Brown reached Louisville, Clark composed a letter instructing his father to make use of the coffee and sugar but to hold “the money” (the 670 Spanish dollars) “for Mr. Riddle.”<sup>22</sup>

## LINKS TO CONSPIRATORS

Although William Clark is not known to have written another word about this particular mission, Spanish documents show it was completed. Apparently “Mr. Brown” was Samuel Montgomery Brown, a principal in the Spanish Conspiracy who, as the proprietor of a store in Frankfort, Kentucky, was able to transport upstream-bound containers of groceries and smuggled coins without drawing undue attention. In 1798, he and accomplice Benjamin Sebastian descended the rivers to New Orleans, seeking royal approval for a devious plot by which they hoped to gain two hundred thousand Spanish dollars and a monopoly on the exports of Louisiana. On June 23 they presented their proposal to Manuel Gayoso de Lemos, governor of Spanish Louisiana. Evidently Sebastian, having collected his clandestine annual compensation of two thousand dollars, asked Brown to convey at least a portion of those pieces of eight back to Kentucky. Because Sebastian would later confess to receiving Spanish money for scheming against the United States (rather than for carrying on lawful commerce with Spain) we can presume the money earmarked for him in Clark’s coffee barrel was part of his illegal pay.<sup>23</sup>

And what about the 670 pieces of eight in Clark’s own sugar barrel? According to details published in 1809 by Daniel Clark Jr., those coins may have been reimbursement, plus interest, on an old account due General Wilkinson from Spain. Other documents suggest a boatman actually named Riddle provided the link between John Clark and Wilkinson.<sup>24</sup>

Yet none of this evidence *proves* William Clark knowingly participated in the Spanish Conspiracy or even realized that Brown and Sebastian were paid operatives of Spain. If the money in the sugar barrel was indeed for Wilkinson, Clark may have been ignorant of the general’s shocking but artfully concealed disloyalty



HERITAGE AUCTIONS

The coin: Called Spanish silver dollars or pieces of eight in the United States, the eight real pieces most commonly used in New Orleans in 1798 were minted in Mexico and shipped to Louisiana by way of Cuba.

to the United States. It’s possible, of course, Clark may have presumed the coins were payment for legitimate business dealings with Spain.<sup>25</sup>

The silence in the notebook and certain corroboration in Spanish archives leave us with many lingering questions: Why did Clark, ostensibly an aspiring trader, record so little about his own cargo and revenues? Why did he write nothing at all about consulting with the illustrious Daniel Clark Jr. although recording details of his own, illicit payments to Spanish officials, as well as his role in smuggling Spanish dollars? Why did he violate the law against espionage by charting the lower Mississippi River, compounding that offense by adding to his map the location of Spanish defensive works? Having no known plans to return home by way of the Mississippi, a river difficult if not impossible for most commercial craft of his era to ascend, why did he list the coordinates of thirteen strategic places in the order of

commercial craft of his era to ascend, why did he list the coordinates of thirteen strategic places in the order of



LIBRARY OF CONGRESS, PRINTS & PHOTOGRAPHS DIVISION, LC-DIG-CSAS-01257

The Cabildo: Flat-roofed and two stories high in 1798, the Cabildo was then the seat of Spanish government in New Orleans.



The French Market: Still located just inside the levee protecting the Vieux Carre, the French Market was seven years old when William Clark reached New Orleans on April 24, 1798.

one heading upstream? Did Clark have a non-civilian use in mind for that information—as did his brother George, Daniel Clark Jr., and their associates?

We may never have definitive answers to these questions and to the many others raised in *The Unknown Travels and Dubious Pursuits of William Clark*. We should, however, consider the notebook entries that give rise to such questions as rare insights into the formation of their author, deservedly a national hero for his role in the 1804-1806 expedition and his subsequent public service. More important, we must pay due regard to the notebook for revealing William Clark as an individual of greater complexity than previously assumed, a complexity we might not want to believe. 🌿

---

*Jo Ann Trogon* is the author of *The Unknown Travels and Dubious Pursuits of William Clark* (University of Missouri Press, 2015). A practicing lawyer, she lives in Columbia, Missouri. As *Jo Ann Brown* she has previously written for *We Proceeded On*: “New Light on Some of the Expedition Engages” (August 1996), and “George Drouillard and Fort Massac” (November 1999).

## NOTES

1. See “Hiding in Plain Sight: The Curious Afterlife of William Clark’s 1798-1801 Notebook,” *We Proceeded On* 41, no. 3 (August 2015): 10-14.
2. Item C1075, William Clark Breckenridge (WCB) Papers, State Historical Society of Missouri (SHSMO).
3. Ibid. In March of 1798, Clark completed at least three surveys of islands in the lower Ohio River. See Kentucky Secretary of State, Land Office Division, patents 5687.2, 5895, and 5896 in “Virginia and Old Kentucky Patent Series.”
4. William Clark (WC) to Edmund Clark (EC), 25 November 1794, Draper Mss., 2L36.
5. Samuel W. Thomas, “William Croghan, Sr. [1752-1822]: A Pioneer Kentucky Gentleman,” *Filson Club History Quarterly* 43 (January 1969): 48; Elizabeth U. Alexander, *Notorious Woman: The Celebrated Case of Myra Clark Gaines* (Baton Rouge: Louisiana State University Press, 2001), 3, 47.
6. See articles 2, 4, and 22 of Pinckney’s Treaty in Jon Kukla, *A Wilderness So Immense: The Louisiana Purchase and the Destiny of America* (New York: Alfred A. Knopf, 2003), 342, 349; Arthur P. Whitaker, *The Mississippi Question: A Study In Trade, Politics, and Diplomacy* (1934; repr., Gloucester, Mass.: Peter Smith, 1962), 95.
7. Whitaker, *Mississippi Question*, 133-34.
8. Item C1075, WCB Papers, SHSMO.
9. Ibid., “Sundry Latitudes & Longitudes taken on the Mississippi ascending,” ca. 1798, WC Papers, Clark Family Collection (CFC), Missouri History Museum (MHM).
10. Jo Ann Trogon, *The Unknown Travels and Dubious Pursuits of William Clark* (Columbia: University of Missouri Press, 2015).
11. Item C1075, WCB Papers, SHSMO.
12. Ibid., Archivo General de Indias (AGI), Papeles Procedentes de Cuba (PC), legajo 631, no. 4, which is available in facsimile through the Historic New Orleans Collection (HNOC).
13. AGI, PC, legajo 631, no. 4 (HNOC); Item C1075 WCB Papers, SHSMO.
14. AGI, PC, legajo 502, no. 16 (HNOC).
15. Item C1075, WCB Papers, SHSMO; AGI, PC, legajo 502, no. 16 (HNOC).
16. Whitaker, *Mississippi Question*, 133-34; Alexander, *Notorious Woman*, 71-72.
17. Alexander, *Notorious Woman*, 3, 71-72; Allen Johnson and Dumas Malone, eds., *Dictionary of American Biography* 20 vols. (New York: Charles Scribner’s Sons, 1958-1964), 4:125; WC to EC, 25 November 1794, Draper Mss., 2L36. See also entry of 9 July 1798 in WC’s 1798-1801 Notebook; Item C1075, WCB Papers, SHSMO.
18. Daniel Clark Jr. (DCJ) to WC, 15 January 1800, and two letters of 22 June 1800, all in WC Papers, CFC, MHM; Andro Linklater, *An Artist in Treason: The Extraordinary Double Life of General James Wilkinson* (New York: Walker, 2009), 178-79.
19. Johnson and Malone, *Dictionary of American Biography*, 4: 125; Jefferson County (Kentucky) Will Book 1:86; James A. James, *The Life of George Rogers Clark* (Chicago: University of Chicago Press, 1928), 511-15; Kenneth C. and Nancy Son Carstens, eds., *The Life of George Rogers Clark, 1752-1818: Triumphs and Tragedies* (Westport, Conn: Praeger, 2004), 230-56.

20. Daniel Clark, *Proofs of the Corruption of General James Wilkinson, and of his Connexion with Aaron Burr* (Philadelphia: Hall and Pierie Printers, 1809), 35.

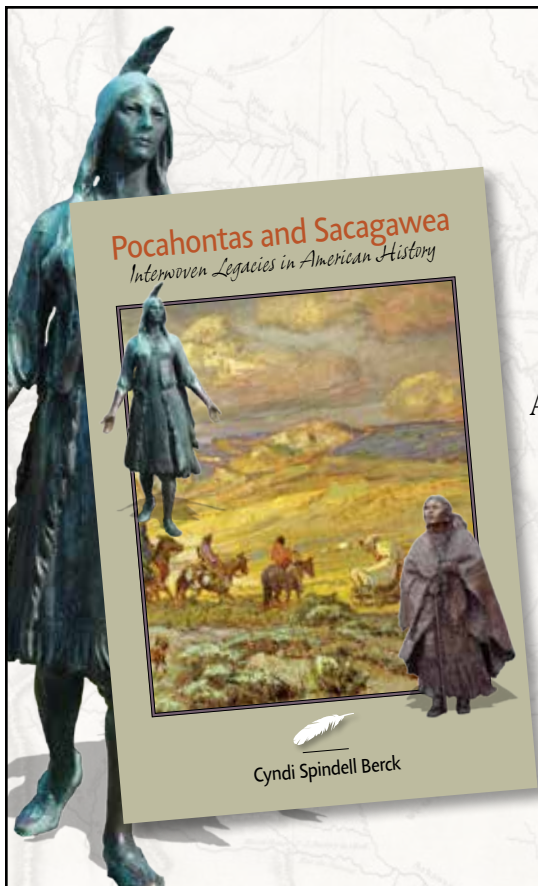
21. Item C1075, WCB Papers, SHSMO.

22. *Ibid.*, WC to John Clark, 19 June 1798, WC Papers, CFC, MHM.

23. Clark, *Proofs of the Corruption*, 27-28, 37-38; Samuel M. Brown to Gayoso de Lemos (GDL), 23 June, 1798, AGI, PC, legajo 2371, fols. 306-8; Elizabeth Warren, "Benjamin Sebastian and the Spanish Conspiracy in Kentucky," *Filson Club History Quarterly* 20 (1946): 118-23; Benjamin Sebastian (BS) to GDL, 14 June, 17 September 1798, AGI, PC, legajo 2371, fols. 664-65, 694-97; BS to GDL, 10 March 1799, AGI, PC, legajo 2375, no. 42 (the Library of Congress (LC) mistakenly attributes this letter to James Wilkinson); GDL to Principe de Paz (PDP), 5 Junio 1798, Archivo Historico Nacional (AHN), Estado, Legajo 3900, Apartado 4, No. 20. Facsimiles of AGI, PC, legajos 2371 and 2375 and of the AHN letter are available through the LC.

24. Clark, *Proofs of the Corruption*, 33, 37-38, 71-72; GDL to PDP, 5 Junio 1798, AHN, Estado, Legajo 3900, Apartado 4, No. 20 (LC); James Brown to BS, 8 November 1806, BS Papers, Indiana Historical Society; Arthur P. Whitaker, "James Wilkinson's First Descent to New Orleans in 1787," *Hispanic American Historical Review* 8 (1928): 94-96.

25. Because conclusive evidence of Wilkinson's treasonous connections would lie hidden in Spanish repositories until the early twentieth century, numerous courts martial and Congressional committees in the first two decades of the nineteenth century were to exonerate him. See Trogdon, *Unknown Travels*, 347-51; Arthur M. Schlesinger Jr. and Roger Bruns, eds., *Congress Investigates: A Documented History, 1792-1974*, 5 vols. (New York: Chelsea House, 1975), 1: 105-20; William R. Shepherd, ed., "Papers Bearing on James Wilkinson's Relations with Spain, 1787-1789," *American Historical Review* 9 (July 1904): 748-66; and hundreds of Wilkinson's own letters in AGI, PC, legajos 2373, 2374, and 2375, all of them available in facsimile through the LC.




**"This book offers an original perspective on two of the best-known, least-understood women in American history."**

Landon Y. Jones  
author of *William Clark and the Shaping of the West*

## Pocahontas and Sacagawea

Author Cyndi Berck offers a 21st century interpretation of the exploration and settlement of America.

**Pocahontas and Sacagawea • Interwoven Legacies in American History**  
A Non-Fiction Narrative  
ISBN: 978-0-9909592-5-0 (Paperback)  
Size: 6"x9"/Pages: 282  
Images/Maps: 24 (Black and White)  
Published by Commonwealth Books of Virginia (CBOV)  
Distributed nationally by Casemate Distribution Services  
Available at selected bookstores, online, and from  
CBOV at [www.commonwealthbooks.org](http://www.commonwealthbooks.org)  
Retail Price: \$19.95



## Reviews

Robert Heacock, *Wind hard from the west* (Liberty Lake, Washington: Crown Media & Printing [self-published], n.d. [2015], 164 pp., color illustrations & maps, sources, addenda. Photography by Kris Townsend. \$32.95, softcover. ISBN: 978-1-4951-3639-9.

The book starts without fuss—no overview of or introduction to the Expedition. It's like when the writing teacher has you remove your first paragraph and get straight to the action. Page one starts: "October 10, 1805. While in present-day Idaho, the Expedition had spent two nights camped...." Targeted at Lewis and Clark enthusiasts, the book also assumes deep knowledge of the Corps' story, devoting all of its text to interpretation for the cognoscenti, rather than attempting a general-purpose narrative.

In some sense an update to *Seeking Western Waters* (Strong/Beals, 1995), the book describes the course and campsites of the Corps of Discovery on the Snake and Columbia Rivers, from leaving the Clearwater by canoe on October 10, 1805, to returning to present-day Idaho on horseback on May 5, 1806. It combines a narrative of the journey with a guide to its sites—just what an aficionado today would need to visit or view where the Corps traveled and where it landed or stayed, within the context of the journey's daily routine. It answers the question: "So *I'm* here, now just where were *they*?" for more than 100 locations.

To accomplish this, the book is laid out well, with distinctive fonts for different types of information. Much site/travel information, including mile marker data, appears in the page margins, accompanying rather than interrupting the story. Very specific directions guide the reader (e.g. "From Hwy 12, take 32nd Street to Captain William Clark Park, then go west to gate #2."). Detailed modern topographical map excerpts allow readers to identify site locations. The overview maps

are helpful—although they could have showed campsites/dates instead of just the general course of the trail.

The straightforward text has touches of wry humor, such as the suggestion that readers "stop and smell the basalt." It deals deftly with the "Ocian in view" controversy (...did they see the Pacific on November 8?), and refers euphemistically to the acquisition of the Clatsop canoe as "without a direct trade."

*Wind hard from the west* (the title derives from an October 27, 1805, journal quote) is clearly the work of a well-read and ground-savvy enthusiast who knows the Corps' story and how it overlays the present-day local geography. It's like having a competent "Old Toby" as a personal field guide!

The text and maps appear extremely accurate and faithful to the history. Moreover, they give a sense of the day-to-day rhythm of Expedition travel—across the days and across the terrain. In particular, the book delivers an excellent description of the events surrounding the Corps' arrival at the mouth of the Columbia, without the flamboyance of some other accounts.

Readers will have to forgive the occasional spelling inconsistencies—limited mostly to a number of proper nouns that apparently evaded spell-check—as an inadvertent homage to William Clark.

Current-day photography by Kris Townsend not only helps identify sites for readers, but provides attractive and explanatory illustrations for the text. The occasional historical image rounds out the 60+ illustrations, and 100+ maps. Helpful addenda list campsites (by date, county, and river mile), all sites (by activity, location, river mile, and landmark), and maps and photos. The acknowledgments list many members of the Oregon and Washington Chapters of the Lewis and Clark Trail Heritage Foundation who contributed to the book, no doubt helping to refine it.

Rob Heacock, based in the Spokane area and a native of Kennewick, has

belonged to the Lewis and Clark Trail Heritage Foundation and the Washington Chapter since 1998, serving most recently as chapter president. His next goal "is to fish at all of the locations listed in this book...." Kris Townsend lives in eastern Washington, and currently serves the foundation as its webmaster and board member. Together they have created a useful, no-nonsense, ground-truthed, illustrated guide to following the Lewis & Clark Expedition on the Snake and Columbia Rivers, which any Lewis and Clark fan will appreciate having in hand when traveling the Trail.

—Reviewed by Ted Kaye, executive director of Lewis & Clark Bicentennial in Oregon (1996–2002); secretary, Oregon Chapter—LCTHF (since 2005); and author of the map-guide *Lewis & Clark on the Columbia River* (2001 & 2013).

### CONNECTING READERS & HISTORY



#### River Song

*Naxiyamtáma  
(Snake River-  
Palouse) Oral  
Traditions from  
Mary Jim,  
Andrew George,  
Gordon Fisher,  
and Emily Peone*

Collected and edited by Richard D. Scheurman and Clifford E. Trafzer

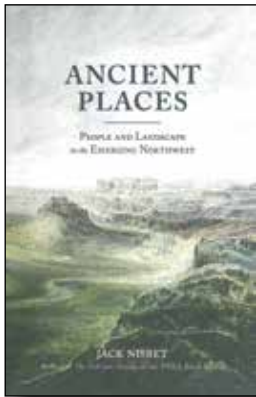
Denied a place on their ancestral lands and forced to scatter, Snake River-Palouse people continued their oral customs. Four Naxiyamtáma elders who had once lived in the traditional way—gathering, hunting, and fishing—share their stories.

Paperback • \$27.95  
ISBN 978-0-87422-327-9

Available at bookstores,  
online at [wsupress.wsu.edu](http://wsupress.wsu.edu),  
or by phone at 800-354-7360.



WSU PRESS  
WASHINGTON STATE UNIVERSITY



Jack Nisbet, *Ancient Places: People and Landscape in the Emerging Northwest* (Seattle: Sasquatch Books, 2015). 247 pp., map and illustrations by Hannah Small; notes, bibliography, index. \$21.95, hardcover in dust jacket.

Jack Nisbet's *Ancient Places* gathers engaging essays of a naturalist's impressions and anecdotes on the Pacific Northwest. Nisbet, perhaps best known for his work on two giants of Northwest history, David Thomp-

son and David Douglas, digs deep into the natural world in this latest work, but always with fascinating characters and clever storytelling to carry the reader.

Of particular interest to Lewis and Clark enthusiasts is chapter four: "A Taste for Roots." Upon reaching the westering waters of the Columbia and its tributaries, the Corps of Discovery had their first taste of biscuitroot, particularly cous (pronounce both as "coos" and "cows") in late fall 1805 at the Cascades of the Columbia near present-day Bonneville Dam.

The chapter is a revelation on the botany of this important root crop, used for centuries by native peoples. The author includes a wonderful account by Palouse elder Mary Jim, who traveled across the land with her family in the early twentieth century gathering plants, repeating an age-old cycle of movement to coincide with the favorable collection of plants. Lewis and Clark, the Hudson's Bay Company

traders, and David Douglas all wrote of the biscuit root.

There is far more of interest in this work than the tasty roots enjoyed by the corps. A wandering meteorite, the wonders of the aurora borealis, the magical ice caves that served as refrigerators for the pioneers, the remarkable dolomite and high-wire transportation are all given fascinatingly unique essays that inform and entertain. A powerful earthquake in the Cascades that rocked eastern Washington in 1872 is revealed in the eyewitness accounts of early settlers and native peoples, and the impact on the landscape painted in vivid word pictures.

Nisbet is a fine writer. His *Sources of the River* was awarded the Murray Morgan Prize by the Washington State Historical Society. The ten chapters in this book invite us to explore with new eyes the landscape around us, to kick rocks and see things in new ways.

—Reviewed by Robert Clark, editor of *We Proceeded On*.

## We Proceeded On

The Journal of the Lewis & Clark Trail Heritage Foundation

### ADVERTISING RATES

	B&W	Color
FULL PAGE (7.25" x 9.25"):	\$400	\$500
2/3 page vertical (4.25" x 9.25"):	\$300	\$400
1/2 horizontal (7.25" x 4.625"):	\$250	\$300
1/3 vertical (2.25" x 9.5"):	\$150	\$250
1/3 square (4.75" x 4.625"):	\$150	\$250
1/6 vertical (2.25" x 4.625"):	\$75	\$100
Inside back cover (7.5" x 9.5"):		\$500
Inside front cover (7.5" x 9.5"):		\$500
Outside back cover (7.5" x 9.5"):		\$450
Double spread, inside (14.5" x 9.25"):	\$800	\$1300

Ads are required to be submitted either as a minimum 300-dpi jpeg or as a high-resolution pdf with embedded images and fonts.

### RESERVATION DEADLINES

Issue	Reservation Due Date	Artwork Due Date
February (Spring)	November 15	January 1
May (Summer)	February 20	April 1
August (Fall)	May 15	July 1
November (Winter)	August 25	October 1

### DISCOUNTS

- 2 ads earn a 2% discount
- 3 ads earn a 3% discount
- 4 ads earn a 4% discount
- 5 ads earn a 5% discount

Advertiser must place a minimum of at least 2 ads within 12 months in the same calendar year or at least 2 consecutive ads if the ads fall in different calendar years. Payment must be received 30 days in advance of the ad deadline for the first scheduled ad. Multiple ads must be paid for 30 days in advance of the deadline for the first advertisement. Payment must be in cash, check, or money order.

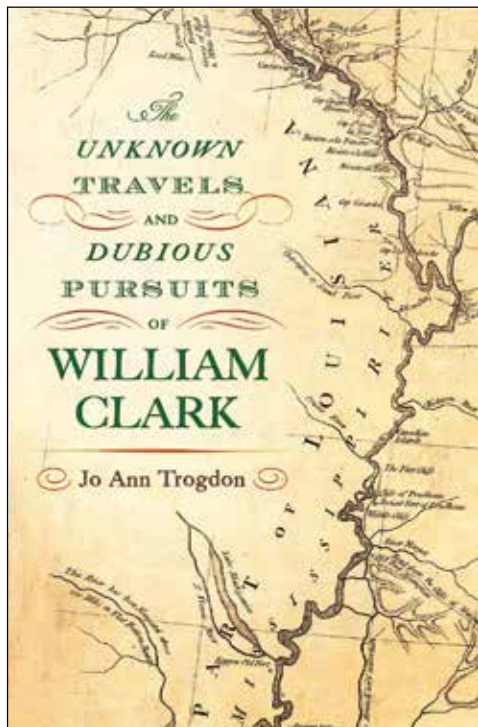
### FOUNDATION MEMBER DISCOUNT: 15%

For example, a Foundation member who runs ads in the May, August, and November issues of *WPO* would receive an 18% discount on the total bill if paid by cash, check, money order, or credit card through our website—[www.lewisandclark.org](http://www.lewisandclark.org)—by selecting "Join" or "Donate."

Direct all advertising correspondence, including ad reservations, to [Rebecca@lewisandclark.org](mailto:Rebecca@lewisandclark.org) or call 406-741-5860.

# UNIVERSITY OF MISSOURI PRESS

113 HEINKEL BUILDING ◆ 201 SOUTH 7TH STREET ◆ COLUMBIA, MISSOURI ◆ 65211



978-0-8262-7350-5 Price: \$36.95 – Sale price: \$30

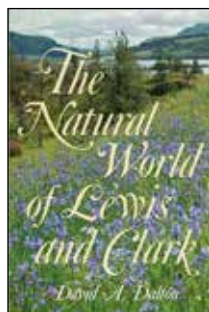
“Imaginative historical detection and good writing will make this a widely read and much discussed book. Trogdon’s surprising discoveries point to Clark’s apparent involvement in a tangled web of conspiracy involving a foreign power. This thought-provoking book illustrates the potential rewards of curiosity and painstaking research in out-of-the-way places.”—William E. Foley, author of *Wilderness Journey: The Life of William Clark*

In this vivid history, Jo Ann Trogdon reveals William Clark’s highly questionable activities during the years before his famous journey west of the Mississippi. Delving into the details of Clark’s diary and ledger entries, Trogdon investigates evidence linking Clark to a series of plots—often called the Spanish Conspiracy—in which corrupt officials sought to line their pockets with Spanish money and to separate Kentucky from the United States. *The Unknown Travels and Dubious Pursuits of William Clark* gives readers a more complex portrait of the American icon than has been previously written.

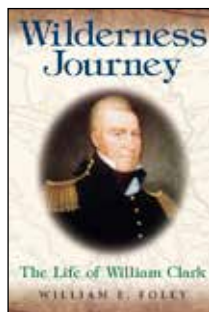
Attorney Jo Ann Trogdon lives in Columbia, Missouri, the same city where the 1798-1801 journal of William Clark has been housed, virtually overlooked, in the State Historical Society of Missouri since 1928. She was led to the journal by her research in Spanish archives for her book, *St. Charles Borromeo: 200 Years of Faith*. Her articles on history have appeared in publications including *Arizona Highways* and *We Proceed On*.

USE PROMOTIONAL CODE  
LCHF15 AT CHECKOUT

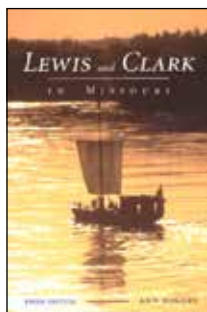
PHONE ORDERS: 800.621.2736  
UPRESS.MISSOURI.EDU



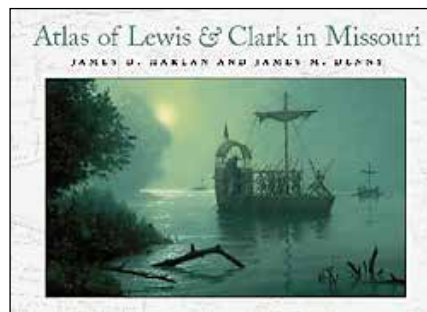
978-0-8262-1766-0  
Price: \$45.00 • Sale price: \$36



978-0-8262-1663-2  
Price: \$24.95 • Sale price: \$20



978-0-8262-1415-7  
Price: \$19.95 • Sale price: \$16



978-0-8262-1473-7  
Price: \$70.00 • Sale price: \$56

Lewis and Clark Trail  
Heritage Foundation, Inc.  
PO Box 3434  
Great Falls, MT 59403



NONPROFIT  
U.S. POSTAGE  
**PAID**  
PULLMAN, WA  
PERMIT NO. 1

