

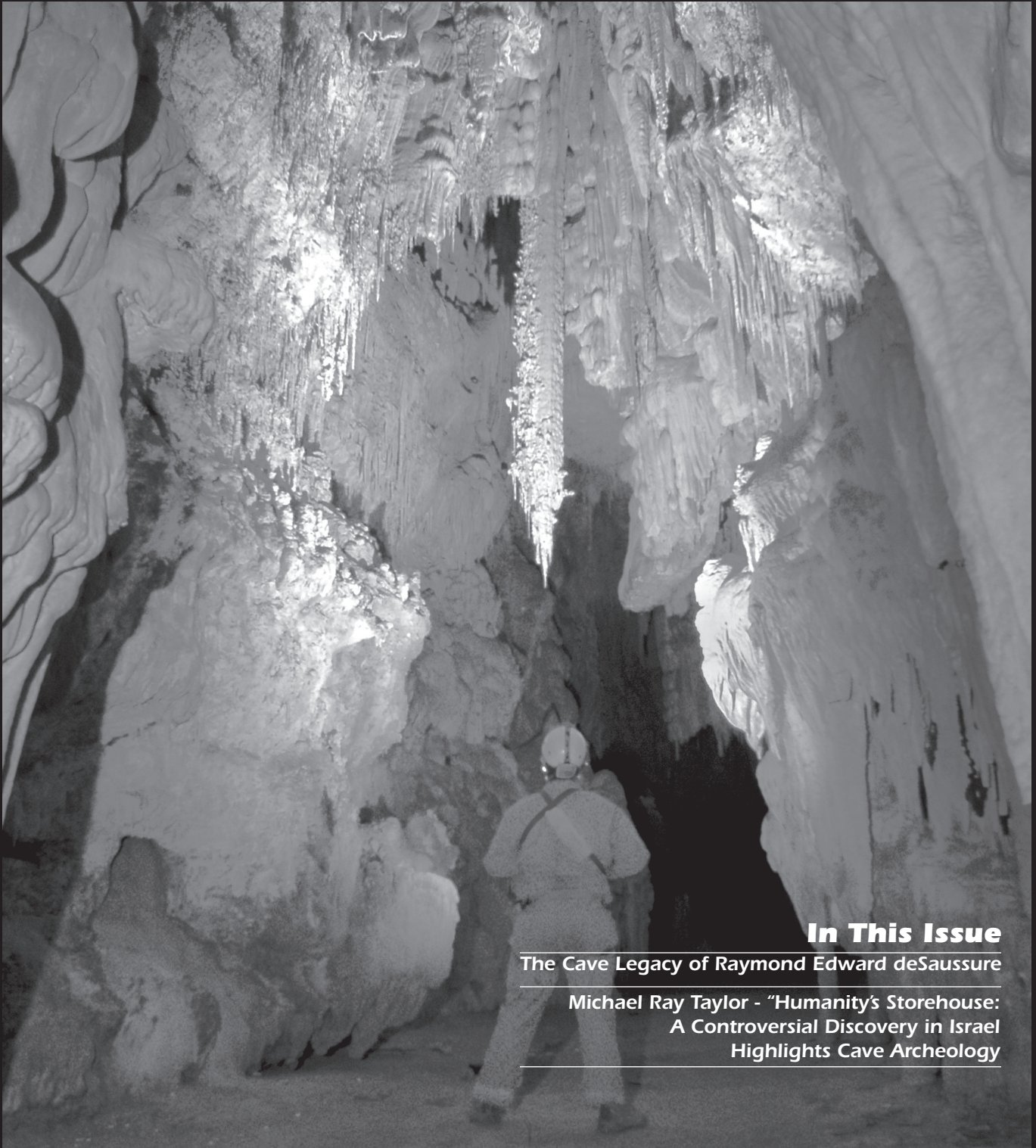
American Caves



American Cave Conservation Association

www.cavern.org

Fall/Winter 2004



In This Issue

The Cave Legacy of Raymond Edward deSaussure

**Michael Ray Taylor - "Humanity's Storehouse:
A Controversial Discovery in Israel
Highlights Cave Archeology**

Contents

Humanity's Storehouse: A Controversial Discovery in Israel Highlights Cave Archeology

by Michael Ray Taylor

8

The Cave Legacy of Raymond Edward deSaussure 1927 - 2000

by Arthur L. Lange

12

Sections

Forum

3

ACCA News

4

Below America

17

Photos:

Front: A caver illuminates the right hand tunnel in Hidden Cave, New Mexico. Photo by John Charles Woods.

Back:

John Chang climbing in a waterfall chimney in Crystal '67 Cave, California. Photo by Chang/Woods

"Below America" Graphic: Courtesy Bob Springston.

American Caves

Vol. 18 No. 2, Fall 2004

Managing Editor: Debra L. Silverman
Contributing Editors: Michael Ray Taylor
Arthur L. Lange
Layout & Design: Debra L. Silverman
Printing: Liberty Printing

American Caves (ISSN 1524-4709) is an educational publication produced by the American Cave Conservation Association. Contributed manuscripts and photographs are welcomed and should be addressed to the Editor. Articles are published for educational purposes and do not necessarily reflect the views of the Association. ©The American Cave Conservation Association 2005.

MEMBERS: Please send change of address and correspondence to: P.O. Box 409, Horse Cave, KY 42749; (270)786-1466. Email: shannon@cavern.org

Board of Directors:

President: Jim Richards; *Vice President:* Roy D. Powers, Jr.; *Secretary:* Dave Derrick; *Treasurer:* Steve Sullivan; *Directors:* Thomas Aley; Richard C. Bell; Patricia Daugherty; Dr. Horton H. Hobbs III; Dr. Philip E. LaMoreaux; Julian J. Lewis, Ph.D.; Dr. James W. Middleton, Jr.; Jim Nieland; Anna G. Smith; Ronald R. VanStockum, Jr.

Honorary Directors:

Honorary President: John Wilson; The Honorable Frederick C. Boucher; William R. Halliday, M.D.; Dr. Francis G. Howarth; Joyce Kelly; Ronal Kerbo; John MacGregor; Dr. Merlin Tuttle; Pamela White

Executive Director: David G. Foster

Administrative Assistant: Shannon L. Johnson

Marketing/Community Relations: Peggy A. Nims

Museum Staff: Hannah Carroll; Christopher Clark; Sherry Delk; C. Earl Ellis; Edith Johnson; Stan McKenney; Donna Monroe

The American Cave Conservation Association was incorporated in 1981 in the Commonwealth of Virginia for scientific and educational purposes. The Association is a nonprofit, tax-exempt corporation under Section 501(c)(3) of the Internal Revenue Code and is a publicly supported organization as defined in Sections 170(b)(1)(IV) and 509(a). Contributions are tax deductible. Membership includes: Student \$15; Regular/Subscription \$25; Foreign \$30; Family: \$35; Supporter: \$50; Sustainer: \$100; Guarantor: \$200; Benefactor: \$500; Patron: \$1,000.

Visit our web site: <http://www.cavern.org>

Forum



From the Director

Dear Member:

Seventeen years ago, when the American Cave Conservation Association decided to build a museum in the town of Horse Cave, we made a giant leap of faith. We gambled that the problems that made Hidden River Cave one of the most polluted caves in America could be solved. We gambled that a high profile museum project would help us raise substantial funding... money that could help us build an institution and develop educational programs to further our mission.

Both of these gambles turned out to be good bets. Today, as we are poised to dramatically expand the American Cave Museum, we have a facility that attracts visitors from throughout the world. The Hidden River Cave success story has received international media coverage. For a tiny organization with 500 members, these are pretty impressive accomplishments.

We also made a third gamble. That gamble was that a conservative, rural community would welcome a group like the American Cave Conservation Association with open arms and work with us to achieve our vision of a national cave and karst center.

In the early years of the project, we weren't always welcomed enthusiastically. Some had difficulty understanding the value of restoring the

cave and building a museum in Horse Cave. One of the most gratifying aspects of my job has been watching the community of Horse Cave gradually begin to get excited about the Cave Museum and our vision for the town.

Over the past two years, the City of Horse Cave has embraced the fact that it is built over a major cave system. The town is building and planning interpretive walkways, exhibits and even a park area built around the theme of Hidden River Cave and cave resources. From imprints of cave fish in sidewalk blocks to surface trails that mimic the path of the underlying cave, the City of Horse Cave is poised to become the most "cave friendly" town in America.

As a Director of a nonprofit environmental organization, I can attest that the biggest educational challenge that all environmental groups face is reaching the vast majority of citizens who either are too busy to be concerned with environmental issues or simply don't care.

This is why the work ACCA is doing in the town of Horse Cave is so very important. An entire community is involved. In my opinion, the more that we can reach out and help ordinary citizens living and working in karst areas understand why these resources are important, the more public support there will be for protecting caves for future generations.

In Horse Cave, the future is now and the message is simple. We live in an environment where what we do on the surface affects the underground. Likewise, history records that, as

Hidden River Cave was degraded, so also declined the City. It's a good lesson and one that lots of folks, not just the ones that care about caves, are learning by our example.

David G. Foster
Executive Director

P.S. Horse Cave's Main Street project is well underway. I invite you to visit Horse Cave, meet the ACCA staff at the Cave Museum and take a look at the exciting things happening downtown!

Happy New Year

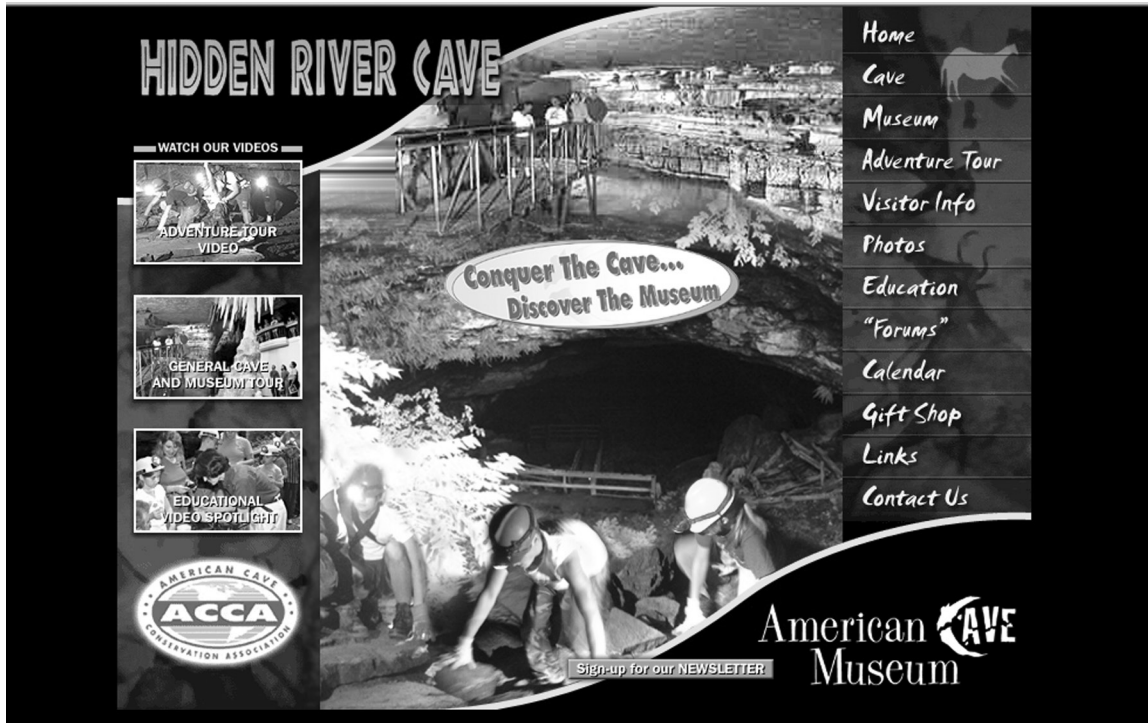
*from the
Board of Directors*

*and
Staff*

*of the
American Cave
Conservation
Association!*



ACCA News



The new www.cavern.org site

New Website and Expanded Outreach

ACCA's website has a new look! This past year, we have been working to update the website and make it more interesting and informative. A key feature of the new site are video segments about the American Cave Museum, our educational programs, and our Adventure Tour Program at Hidden River Cave.

The site has several additional features designed to increase interaction among ACCA members. We have set up a members cave conservation forum where you can post messages and ask questions about various topics. Over the next year, we also plan to give all ACCA members a complimentary e-mail with our cavern.org domain.

American Cave and Karst Center Expansion

Plans for the new expansion of the American Cave and Karst Center are well underway. A groundbreaking ceremony for the project was held on July 29, 2004 to introduce architect Merrill Moter of Joseph and Joseph Architects and project construction manager Tim Peters of Peters Construction. Horse Cave Mayor JoAnne Smith addressed the nearly 100 local citizens attending the event

by saying "this is a very exciting day for Horse Cave. We are in the midst of two projects – the expansion of the museum and our streetscape project, both of which will be tremendous assets to our community."



Pictured from left to right are: David Foster, Executive Director, American Cave Conservation Association; Tim Peters, Peters Construction; Kentucky State Representative Dottie Sims; Bill Nighbert, Deputy Commissioner, Kentucky Department for Local Government; JoAnne Smith, Mayor of the City of Horse Cave; and Merrill Moter, Joseph and Joseph Architects at the ribbon cutting ceremony for the expansion of the American Cave and Karst Center.

American Cave Museum 2004 Group Programs



Clues From the Past: Throughout the year, students, scouts and other groups travel to the American Cave Museum & Hidden River Cave to discover the wonderful, fragile world of caves. Presently, the American Cave Conservation Association offers scouts the opportunity for partial badge requirements in: geology, ecology, soil and water conservation, and archaeology. In addition to in-depth, hands-on classroom instruction, ACCA's 2-hour or 3-hour "wild" caving adventure provides students with valuable field experiences and is ideal for teambuilding/leadership training. Members of the Glasgow (KY) Recreation Department's summer camp are seen digging for Clues from the Past at the American Cave Museum's simulated archeological site. For more information about ACCA's scouting programs or service learning projects, contact Peggy Nims or Chris Clark at (270) 786-1466.



Each year thousands of students enhance their understanding and appreciation of caves and cave resources by visiting the American Cave Museum & Hidden River Cave. All educational programs include a museum scavenger hunt, one-hour guided walk of Hidden River Cave and hands-on learning centers that focus on the geology, conservation, history, and culture of caves. ACCA's environmental education sessions allow teachers to expand the walls of their classrooms as students engage in real-life learning. Museum staff, Edith Johnson, leads local students, Jonathan Bunnell, Deanna Bray and Kenny Bray, on a guided tour of the American Cave Museum's biology exhibits. For specific program descriptions, visit ACCA's revised web site (www.cavern.org). Photos courtesy of Michael Betts Consulting

Horse Cave Streetscape Renovation

The efforts to expand the American Cave and Karst Center will be complemented by the City of Horse Cave's streetscape renovations. The streetscape project involves construction of new sidewalks, paving streets and developing green space around town. The new streetscape will feature a brownish, cobble type pavement which will overlay areas of the town which lie above Hidden River Cave. When completed, visitors to the City of Horse Cave will be able to trace the path of the cave on the surface and view interpretive exhibits which will help them understand the valuable natural resource that lies beneath the streets. The streetscape will also feature etchings of cave animals in sidewalk blocks.

Cavers help clean up WKU Biological Preserve

by Dr. Ouida W. Meier

On one recent glorious November Saturday, wearing heavy protective gloves and boots, a team of 34 people took on the massive task of cleaning up materials illegally

dumped years ago on property that is now part of the Upper Green River Biological Preserve of Western Kentucky University in Hart County, Kentucky. The cleanup force, organized by the American Cave Conservation Association (ACCA), included ACCA members, members of the National Speleological Society (including



Workers create aggregate sidewalks that will overlay sections of Hidden River Cave in downtown Horse Cave as part of the City's Streetscape program.

Kentucky University students and faculty.

The leavings had the quantity and variety of an appliance store: a deep-freeze, a refrigerator, three pairs of washers and dryers, a stove, two lawnmowers, plus a golf cart, several boxsprings, a couch, chair, and table, and parts of two automobiles. The volunteers wrestled these items up steep slopes, and they were carted by trailer or tractor to a dumpster on the site. Numerous smaller items of metal, plastic, paper, glass, and fabric were hauled out as well, including a teddy bear and a large number of shingles from a dumped roof. Numerous tires, several car batteries, and two five-gallon drums of discarded motor oil were also recovered from a slope above the Green River. If not cleaned up, contaminants such as motor oil and battery acids could have leached directly into the river. The Green River is a popular destination for boating and fishing, and is well-known for its highly diverse aquatic life, especially fish and mussels.

The use of a 20-cubic-yard roll-off dumpster for the cleanup was donated by Jerry Matera of Hart County Solid Waste, which frequently donates dumpsters for ACCA cleanup projects. They hope to be able to recycle the metals collected. The dumpster was filled past the brim, and had a volume of waste comparable to over 5,000 gallon containers of water.

In addition to special projects like this one, undertaken by volunteers and donors, there are many options for cleanup of illegal dumps, including \$5 million in state funds available as grants to counties for illegal dump cleanup and litter abatement through the solid waste environmental remediation law. Citizens can find out more about how to clean up illegal dumps, as well as proper disposal of current waste and hazardous materials, at the Kentucky Division of Waste Management website at <http://www.waste.ky.gov/programs/rcla/> or by calling 502-564-6716.

ACCA sponsors sinkhole cleanups twice a year. To participate in a future ACCA cleanup, contact Dave Foster at acca@cavern.org or 270-786-1466. To find out more about the Upper Green River Biological Preserve, contact Dr. Ouida Meier at ouida.meier@wku.edu or 270-745-6001.



Volunteers at ACCA's November 2004 Sinkhole Cleanup.

Dr. Ouida W. Meier

American Cave Conservation Association November 13, 2004 Board of Directors' Meeting Summary

The American Cave Conservation Association (ACCA) held its Saturday, November 13, Board of Directors' meeting at ACCA's national headquarters, 119 East Main Street, Horse Cave, Kentucky. President Jim Richards called the meeting to order at 1:50 p.m. (CST). Those in attendance included: directors Steve Sullivan, Roy Powers, Horton Hobbs, Dick Bell, Tom Aley, Dave Derrick, and Reggie Van Stockum; ACCA executive director, David Foster; and ACCA staff members, Shannon Johnson, Peggy A. Nims, and visitor Michael Betts.

Prior to calling the meeting to order, members of the ACCA board toured the newly renovated Thomas House with Horse Cave Main Street manager, Sandra Wilson. On a motion by Roy Powers, seconded by Horton Hobbs, the minutes of the March 13, 2004 meeting were approved.

In Old Business, Tom Aley reported that the contents of the Ray deSaussure library have been catalogued and the condition of each entry noted; most are reported to be in good condition. Emily Davis is expected to evaluate the library before the end of the year; the monetary value of the library can be used as a match for fundraising purposes. Aley estimated the value of some of the library

volumes to be as much as \$500 a piece. After some discussion regarding the disposal of duplicate volumes, the board agreed to offer these for sale at their appraised value to ACCA members and then to the general public. Aley has donated 300 feet of metal shelving on which to store the volumes.

Roy Powers reported that nine cave gating projects were completed in 2004; two of these projects were significant because of the caves' (Tumbling Rock, Missouri, and Saudi in Scottsboro, Alabama) gray bat populations. Powers noted that he and Jim Kennedy are preparing an article addressing the proper utilization of cave gates by any bat species; this article will be presented at upcoming cave/conservation symposiums and published in various cave journals, including ACCA's *American Caves* magazine. Powers announced that eight gating projects are scheduled for 2005.

Executive Director David Foster reported on efforts to purchase a section of Hidden River Cave owned by the Joe Chaney Estate. The property has been surveyed and appraised and the purchase is awaiting approval by the State. The purchase funds are coming from a grant from the Kentucky Heritage Land Conservation Fund.

Foster provided the board with copies of the 2003 audit statement, 2003 financial report, balance sheet/income statement ending 9/30/04, and an estimated 2005 budget of \$275,578. On a motion by Horton Hobbs, seconded by Dave Derrick, the board adjourned to a closed session at 2:30 p.m. The board returned to open session at 2:55 p.m. following a discussion of staff salaries and annual raises.

When regular business resumed, Foster provided an overview of the Capital Campaign. \$1,562,000 is available from grants which we anticipate expending to renovate the three buildings adjacent to the current museum (including the roof), expand the cave viewing platform/painting the fire escape, conduct partial interior rehabilitation, construct a theatre and museum exhibits, conduct a promotional campaign, and expand the cave tour to the far side of First Dome. Foster also mentioned that ACCA has pledged \$20,000 to the Horse Cave Streetscape Project for work being conducted around the edge of the cave property.

Foster recommended an expenditure of \$80,000 on promotion in 2005. The promotional budget was amended on a motion by Tom Aley, seconded by Dave Derrick; to \$40,000, and the construction contingency fund was increased from \$80,000 to \$120,000. In a separate motion made by Reggie Van Stockum, seconded by Tom Aley, ACCA's director was authorized to spend up to \$20,000 on the 2005 promotional campaign, with an additional \$20,000 to be authorized by the executive

committee prior to the Spring 2005 directors' meeting. The directors agreed to revisit the promotional expenditures at the next meeting.

In *New Business*, Roy Powers on the Nominating Committee, placed the following names in nomination for the Board terms beginning in 2005: Dick Bell, Julian Lewis, Philip E. LaMoreaux, Jim Nieland, Richard Blenz (Bloomington, IN), and Bernie Szukalski (Redlands, CA). On a motion by Dave Derrick, seconded by Tom Aley, the board approved the slate of directors, subject to confirmation. Ballots will be mailed to ACCA members before the spring 2005 directors' meeting at which time the new directors would begin their term of office.

Roy Powers also reported on the development of a membership profile that would be a menu driven system and would interact with the revised www.cavern.org website. Michael Betts reported that Jim Risen was working with Powers to develop the membership system; however, it was noted that the current system would have to be utilized for end of the year fundraising initiatives. Betts described the advantages of the on-line membership system, the availability of cavern.org e-mail addresses for all ACCA members, perpetual calendar, museum store, and on-line forums. Board members were informed that ACCA staff would provide them with the passwords that would allow them to access the on-line forums.

Foster reported that Michael Betts Consulting had been retained to develop and initiate a branding campaign to establish an image for the American Cave Museum and Hidden River Cave and to build visitation, as part of the capital campaign. Foster and Betts described in detail the completed promotional materials including: billboards, posters, banners, postcards, revised web site, educational brochure/companion disk for educators, museum brochure, educational/museum & walking tour/adventure tour videos, regional advertisement pieces, video fundraising presentation, upcoming direct mailings to scout troops/church youth groups. The board previewed a 28-minute promotional video, "Living On Karst," that will be made available for cable television, including PBS. Foster briefly outlined the diverse marketing/economic development efforts in which ACCA is actively involved: Horse Cave's Main Street project, the Horse Cave Rest Area educational/tourism displays, Owens Hotel project, and the cross-selling of cave tickets with area attractions.

On a motion by Tom Aley, seconded by Roy Powers, the meeting was adjourned at 5:30 p.m. and the next board meeting scheduled for Saturday, March 12, 2005, with alternative dates of March 5 and March 26, 2005.



HUMANITY'S STOREHOUSE: A CONTROVERSIAL DISCOVERY IN ISRAEL HIGHLIGHTS CAVE ARCHEOLOGY

Michael Ray Taylor

THE FIND

Ragged lines of wild hair, radiating from the head of a roughly drawn male figure.

That was what Shimon Gibson saw emerging from the plastered limestone wall. The 41-year-old archeologist lay sweating on his back, waving his flashlight parallel to the wall to tease out the incised image. He brushed away the dust of centuries.

"What do you make of this?" he asked the teenager who had volunteered to assist him. The two had fought their way through a tangle of thorny desert bushes to enter the "cave" on the property of the Kibbutz Tzova, in the hill country about 15 miles west of Jerusalem. It was cool afternoon in November 1999, and Gibson had only just learned of the existence of the cave from an archeology buff who lived on the kibbutz.

The entrance lay in a depression along the side of a dry valley. Faint signs of an ancient reservoir and agricultural terracing could be picked out amid the more modern olive orchard that filled much of the valley. The hills, springs, dry valleys and small caves west of Jerusalem are not unlike those of the Texas Hill Country. As in Texas, a hidden aquifer nourishes what would otherwise be a desert wasteland, and humans have long taken advantage of the fact. At first glance, it appeared the small entrance might lead to a natural cave spring used by ancient inhabitants.

But after wriggling over centuries of fill material near the entrance, Gibson and his assistant had quickly realized that they had entered a manmade structure hewn from the native limestone, one much larger than a simple cistern or storage area. They lay in a rectangular tunnel about 24 meters long, with a constant width of about 3.5 meters. Farther ahead, they could see that the dirt sloped downward to a damp floor on which they would be able stand.

But here, just barely beyond the reach of daylight, an enticing figure had been carved into the yellowish plaster coating the wall.

As he stared at the crude representation, Gibson had the first glimmer of an idea that he would pursue over the next five years. He thought he just might be looking at a drawing of the biblical John the Baptist, who according to ancient texts was born in the nearby village of Ain Karim.

In August 2004, after leading major excavations in the cave by a team from the University of North Carolina from 2000 to 2003, Gibson stunned the archeological world with the public announcement that he had found a center for ritual bathing, constructed in about 600 B.C., which had probably been used by John for the baptisms crucial to his evangelisms. Gibson outlined the arguments and evidence for his conclusions in a book published the following month, *The Cave of John the Baptist: The Stunning Archaeological Discovery that has Redefined Christian History*.

Almost immediately, other scholars of the region began attacking Gibson's claims as overly broad and unsupported by the few bits of evidence he was able to extract from the tunnel deposits and drawings. While critics agreed the simple drawings do depict John the Baptist, they say the evidence just as likely leads to a conclusion that the site was visited by Byzantine monks hundreds of years after the Crucifixion.

Whether or not Gibson has located the historical location of the biblical figure's ministry, he has found a site that will contribute to the understanding of how people lived in ancient Palestine. Much more than that, he has highlighted a long-standing archeological truth: caves are perhaps the world's greatest repositories of lost human history, and new archeological discoveries continue to be made in caves around the world and here in the United States.

THE SCROLL

On October 27, 1990, Hershel Shanks, the editor of *Biblical Archaeology Review*, gave the first of a four-part lecture series at the Smithsonian Institution, concerning the most famous of all the archeological cave finds in Israel—one of the most famous finds of the past century. As Shanks took the podium, he began speaking not of caves, but of orchids. He displayed a slide of a flower with delicate white arms and a gaudy pink tongue; his next slide showed a field thick with them.

“This is a picture of a rare wild orchid,” Shanks began, “a Showy Lady Slipper. In the United States, east of the Mississippi, there is only one place that it grows. The place is kept secret by the few people who know about it because if it became known, nothing would be there anymore. The next picture gives you a longer view. As you can see, in this one bog there are thousands of Showy Lady Slippers.”

A confused whisper passed through the crowd.

“At this point you may be wondering whether I have gotten the wrong auditorium, the wrong lecture, or the wrong date,” Shanks said. “No, I have a point to make. Even though the Showy Lady Slipper is very rare and grows only in one place, in fact, when you find it, there are thousands of them in that one place.” Such was the case, Shanks explained, launching into the true subject of his lecture, with the Dead Sea Scrolls.

A library of more than 800 religious and secular scrolls on paper, leather, and copper, and many thousands of writing fragments, were found after Bedouin shepherds stumbled into a cave in 1947, near the ruined desert outpost of Qumran, in search of lost sheep. Among the scrolls were the oldest known books of the *Old Testament*, and many manuscripts, which shed light on ancient Jewish practices and on—some scholars believed—an early pre-Christian sect known as the Essenes. While some of the scrolls were published in the 1950s, many others were kept from the

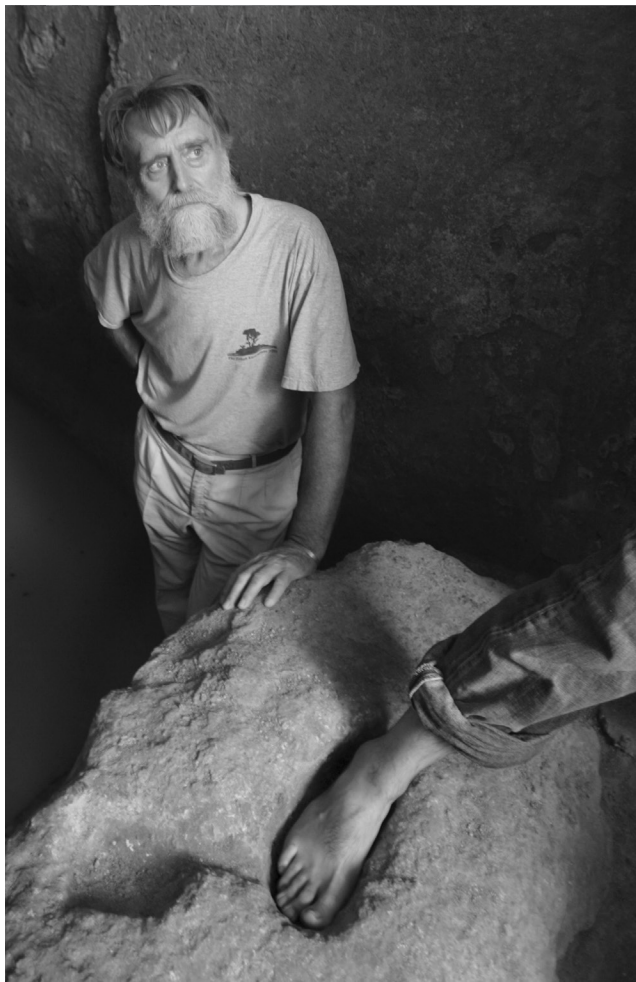
world for four decades by the small group of scholars who had access to them. It wasn't until 1991, the year after Shanks gave his Smithsonian lecture, that photographs of all the scrolls were first made available to the public.

The scrolls have become central to many archeological interpretations of ancient Judean sites, including the underground structure discovered by Shimon Gibson. A key to Gibson's argument that the limestone reservoir was used by John the Baptist is that the nearby village of Ain



AP Photo/Oded Beatty

A Byzantine era carving in a stone wall that an Israeli archaeological excavation team believes to be of John the Baptist is seen in a cave on the Kibbutz Tzuba, near Jerusalem. Archaeologists said they have found a cave where they believe John the Baptist anointed many of his disciples from a huge cistern with 28 steps leading to an underground pool of water.



AP Photo/Kevin Frayer

Israeli archaeological site manager Rafi Lewis places his foot on a stone the excavation team believes was used for ceremonial foot washing as archaeologist Egon Cass looks on, in a cave the group believes was used by John the Baptist, on the Kibbutz Tzuba, near Jerusalem.

Karim, known in antiquity as Karem, is the same as the biblical city as Beth Haccereem, mentioned in several books of the *Old Testament*. While books of the *New Testament*, especially Luke, give clues to John's dwelling place that can be interpreted to suggest Beth Haccereem, none mentions a location by name (although he is often described as living in caves). Biblical passages describe John baptizing followers in the Jordan River—not underground—but others seem to suggest that he lived in the hills beyond the Jordan.

Which is where Gibson brings in the Copper Scroll, found in March 1952 in Cave 3, about two kilometers north of Qumran. The Copper Scroll is unique among the hundreds of Dead Sea Scrolls—indeed, among all ancient texts—for being written on a surface that its creator clearly intended to last for millennia. According to P. Kyle McCarter, the leading expert on the artifact (who also delivered a talk on it that night in 1990, after Hershel

Shanks sat down), the Copper Scroll was written in a different language from all the other scrolls, and in a different form of script. It was placed in a different location in the cave than any other scroll or artifact, in a manner that suggested it was of great importance.

In translation, the Copper Scroll is a sort of ancient treasure map to sites where sacred gold and silver objects from the Jewish Temple at Jerusalem are said to be hidden, perhaps from Romans during the Jewish Revolt of 66 to 70 A.D. Unlike the religious books and references of other Dead Sea Scrolls, the Copper Scroll contains nothing but a list of 64 locations, and the objects to be found at them—the sort of treasure map one would expect from a Hollywood cave, as opposed to an actual one in the Israeli desert.

Gibson believes one of these locations ties John to Ain Karim. "In the pool near the reservoir which is in Beth Haccereem," he translates, "as you enter, to its left ten cubits, there are 62 talents of silver."

While Gibson does not venture to guess whether the silver might be lying nearby today, he is convinced that the reservoir described is the same one that existed in the valley at Ain Karim. The ancient engineering, which kept the reservoir full, and led the small hill town to be an important agricultural center, would also have insured a steady water supply for the bathing pool excavated at the base of the cave.

THE IMAGE

What is probably the best known example of cave archaeology is now used to illustrate the first chapter of art history books from the grade school level to graduate study. It was found September 12, 1940, by four teenagers visiting the village of Montignac, above the banks of the river Vézère in central France. In the woods above the Lascaux manor, they came upon a hole that had opened up from the fall of a pine tree in a storm. The four friends began poking around the hole, and soon found themselves descending into a painted limestone gallery that had been sealed from the surface for 17,000 years.

Inside they found red cows, yellow horses, black stags and brown bulls; Lascaux was instantly famous, and remains the most visited archeological site in Europe. But the breathtaking paintings of Lascaux and similar sites have overshadowed a more common sort of cave art that has been used to study ancient peoples throughout the world: incised figures and shapes, carved directly into cave walls (and sometimes into soft cave mud). Such cave glyphs can be found within at least some caves in every region where prehistoric peoples lived.

Some of the first examples of prehistoric cave art to be studied in the United States were the geometric shapes carved into some of the walls of Mammoth Cave. In the 1960s, the renowned cave archeologist Patty Jo Watson conducted the first systematic study of petroglyphs in Mammoth Cave and nearby Salts Cave. As the pace of cave exploration and discovery increased in the southeastern U.S. during the 1970s and 1980s, a number of new petroglyph sites were found. Jan F. Simek, an archeologist based at the University of Tennessee, is one of several scholars who began to study and attempt to preserve this enigmatic art.

Toward that end, Simek enlisted a well-known caver and photographer, Alan Cressler, to help in creating photo-documentation of several well-decorated glyph sites. Cressler developed the photographic method of flashing the images from extremely oblique angles, in order to highlight the relief between the art and the surface in which it is carved. As he began to examine these photographs, Cressler realized that in many cases other, ghostly drawings, invisible to the human eye, could be seen emerging from the cave walls. Through trial and error, and by revisiting sites already associated with Native American use, Simek, and Cressler began to discover hundreds of examples of ancient cave art that had never been detected.

In 1996, Simek formed The Cave Archaeology Research Team (CART), a research group dedicated to the identification and documentation of caves exhibiting evidence of dark zone exploitation by prehistoric peoples, including the production of dark zone cave art, chert and mineral mining, habitation, exploration, and other uses. Since then, CART members have identified numerous new dark zone cave art sites in Tennessee, Alabama, Georgia, and West Virginia.

The methods employed by CART have spread through the archeological community to researchers working in many underground locations, including the Middle East.

THE ARGUMENT

The figure with the wild hair wore what appeared to be an animal skin toga. He carried a staff, which was raised as if in blessing. While Gibson immediately associated the image with John, he also knew it was likely that it was carved in the Byzantine period. Between 300 and 400 A.D., Byzantine monks established shrines to many Christian figures throughout the regions. But the figure meant that the site was definitely worth excavating, if Gibson could put together a team and funding.

John C. Whitehead, a wealthy New York banker and former deputy secretary of State under Ronald Reagan,

visited the cave with Gibson. After seeing the petroglyphs in person, he agreed to put together funding for the excavation. "You can't help but be a little tingly about what might have taken place there," Whitehead told *Newsweek* magazine.

Gibson enlisted James Tabor, professor of early Christianity at the University of North Carolina at Charlotte, to assist the dig and provide student labor. In March 2000, two of those students uncovered a delicate red pottery shard that was completely unlike the third and fourth century pottery they had been excavating. Gibson pronounced it "First-century Roman"—which meant that the site had indeed been in use at the time of John.

Beneath this level of the cave were thousands of Roman shards, suggesting to Gibson that the pottery that was intentionally shattered, as if in a ritual. (Interestingly, such ritual breaking of pottery in caves was common among the Maya and other Central American cultures, as well as in many Asian and Middle Eastern societies.) Gibson soon found a stone with a carved indentation in the shape of a human foot, with a channel leading to a small basin that might have contained oil for ritual foot washing.

It was these clues that led him to make the leap—since challenged by many of his colleagues—that John himself may have baptized followers at the site.

"In archeology, nothing is certain, not even written evidence," Gibson told one interviewer. But he claimed his evidence "is as strong as you can get in terms of archeological remains. Of course it would be nice to have an inscription saying, 'I, John the Baptist, was here and my disciples are using it as a ritual site.' But you usually don't get that."

John the Baptist "might very well have sent Jesus intentionally to visit the scene of his early baptism activities... and our [Tzuba] was just that place," Gibson writes enthusiastically. While there is no hard evidence for such a claim, 550 inhabitants of Kibbutz Tzuba have been overrun by religious tourists since Gibson went public in August. It is unlikely that there will ever be scholarly consensus as to whether or not John used the cave. What is far more likely is that archeologists will continue poking into dark holes wherever they find them and will continue to bring human history to light.

Whether it is 62 talents of silver, copper scrolls, painted buffalo, or simply an enticing geometric design scratched in mud by a finger that moved 4000 years before, the secrets of humanity still lie in caves, waiting to be studied and understood.

The Cave Legacy of Raymond Edward deSaussure 1927 - 2000

Arthur L. Lange
Karst Geophysics Inc.

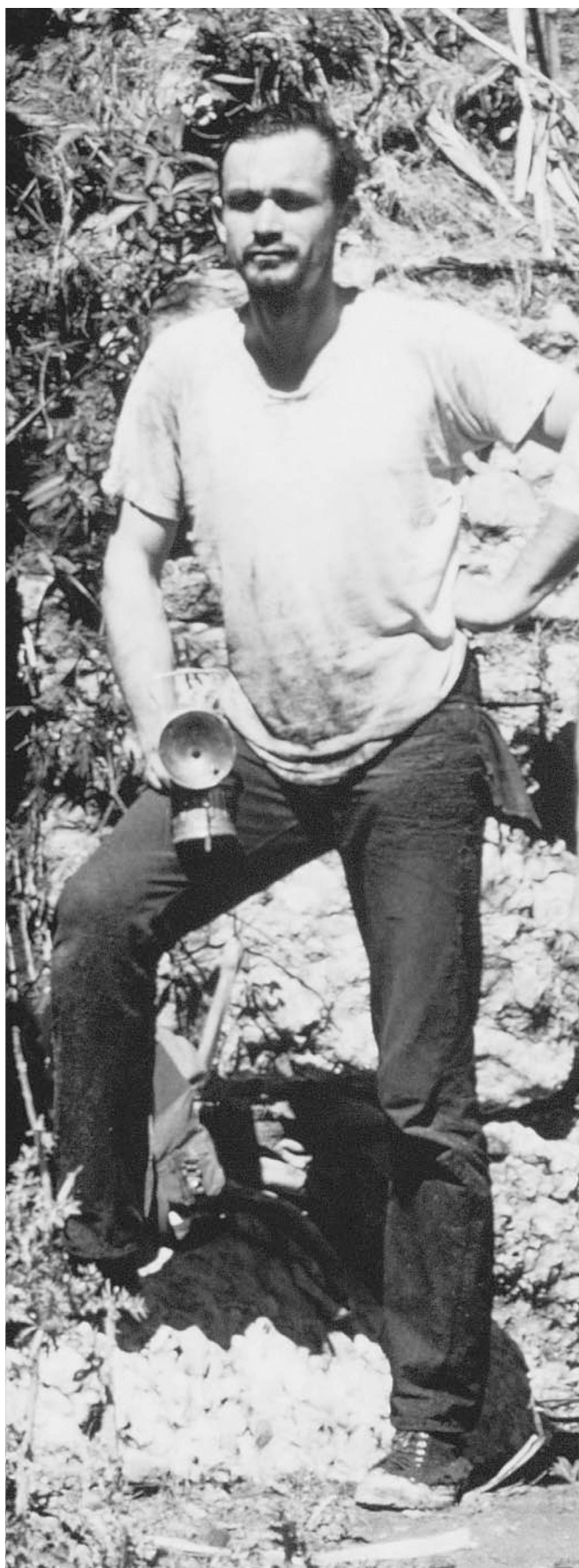
“Exact cave locations should remain in the author’s files or in closed museum records. Published accounts should specify the name and cave location only to the minimum accuracy required for scientific work. This location should be given solely in terms of latitude and longitude rather than place names, and not to an accuracy greater than minutes...”

It is the policy of Cave Research Associates to protect sites in such a manner that the specific site is not revealed.”

—Raymond deSaussure, 1959

Raymond deSaussure was born in Lewiston, Idaho on 8 August 1927 of parents Emmett and Raymonda deSaussure, the younger of two brothers. His father was an auto mechanic. I know little about his boyhood, other than that he had attended public schools and St. Ignatius High School in San Francisco, where he developed a keen interest in mathematics and the sciences. Towards the end of World War II he joined the Navy, where he received schooling and experience in electronics. Thereafter he enrolled in the University of California at Berkeley, where he majored in physical chemistry and graduated in 1953. In 1962 Ray married Barbara Newcomb, who shared his enthusiasm for music and

Right: Raymond deSaussure during 1958 explorations in Mexico. Ray always protested being a photographer’s model.



George Moviet

the out-of-doors. The couple settled down in Castro Valley, in the East Bay across from San Francisco, where in time three children, Marc, Paul and Laura completed the deSaussure family.

I first met Ray at a meeting of the Stanford Cave Club² on the University campus, sometime in 1950. The club had been founded approximately two years earlier for the purpose of exploring West Coast caves and studying their geology and fauna. I had joined the group in 1949 and developed a lively interest in the formation of caverns and karst features. Among our discoveries was a particularly challenging vertical cavern in the mining town of Volcano in California's Mother Lode. Taking a cue from an 1881 newspaper exploration account, we dubbed the cave "The Black Chasm of Volcano." Exploration involved considerable rope work along slippery mud slopes that led to an underground lake at a depth of about 180 feet.³

A published account of the Stanford group's exploits in the Black Chasm attracted the attention of climbers from the Sierra Club Rock Climbing Section; among them, Raymond deSaussure⁴. It must have made a penetrating impression on Ray, who from that experience made the discovery and study of caves a lifelong challenge and passion. During the ensuing year Ray, in company with Cave Club members, had visited most of the known caves of central and northern California as well as many that, like Black Chasm, had been lost since the Gold Rush days, and still others that became new discoveries.

Scientific curiosity directed Ray's attention to the mechanisms of origin and the chemistry of depositional cave features, including stalactites and stalagmites as well as the less prominent deposits of cave coral, flowstones and crystalline encrustations. While these features became the



George Mowat

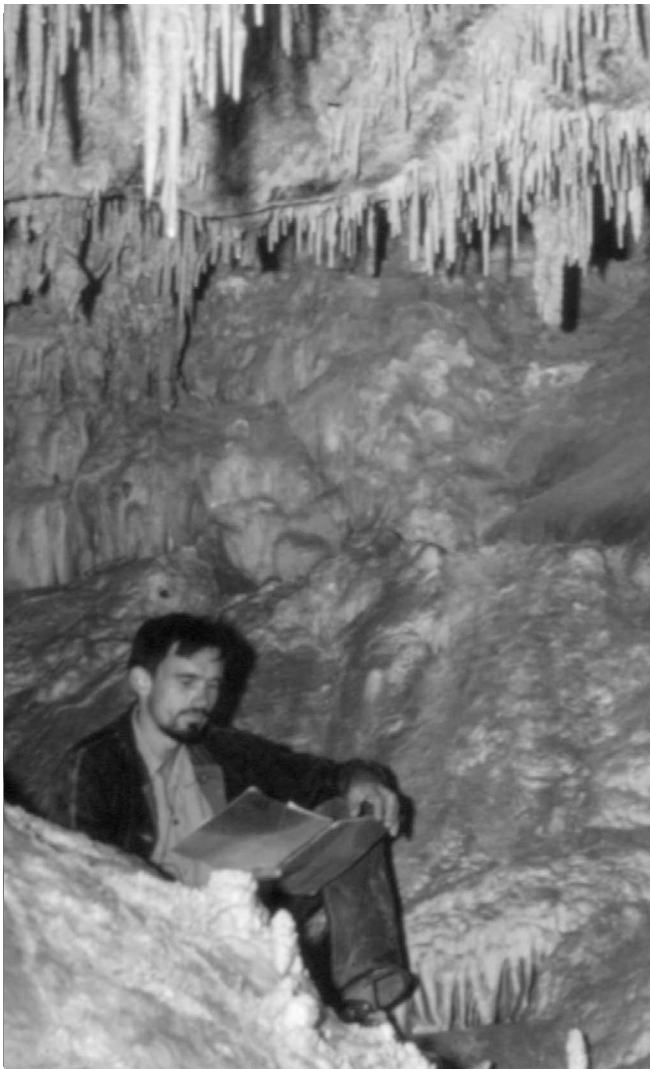
Members of the California/Nevada Speleological survey camped in the Baker Creek Pictograph Rockshelter during several weeks of August 1952, while investigating caves around Lehman Caves (now Great Basin National Park, Nevada). Chef Art Lange on the left, Ray deSaussure on the right.

focus of his underground explorations, the creatures that inhabited the caves also caught his eye, with the result that Ray became a collector and clearing house for cavernicolous zoological specimens that he sent off to specialists for identification. Many of these specimens turned out to be new species, of which some came to bear the cumbersome Latinized form of the deSaussure name.

In a fertile mind, one thing leads to another, and Ray's interests turned to the examination and identification of skeletal and fossil remains of extant and extinct mammals, and concurrently human remains and artifacts. The rediscovery of a Wintun Indian burial site, Cave of Skulls in the Mother Lode, attracted the attention of retired geophysicist and astronomer O. H. (Lee) Truman, who had a lively interest in finding remains of early man along the West Coast of North America. As a result, Lee Truman funded not only archeological excavations in Cave of Skulls and nearby Moaning Cave, but particu-

larly promising expeditions of the Stanford cavers. The Santa Barbara Museum of Natural History enlisted Ray and myself to assist Curator Phil Orr in excavations of dwarf mammoth and Canaliño Indian burials on Santa Rosa Island off the Santa Barbara Coast. Here Ray honed his expertise for identifying the remains of humans and exotic animals. And in 1952, Lee Truman funded a three-month expedition consisting of geological colleague George Mowat, Ray and myself for the purpose of extending our explorations in the southern Sierra Nevada eastward into the Mojave Desert and Nevada. Ray's sampling efforts on this summer-long expedition resulted in the identification of numerous new species, as well as new caves and archeological sites.

In 1953, after jointly completing a 200-page illustrated report on the California-Nevada expedition⁵, Ray joined me in Grand Canyon, where I had initiated an exploration program. Ray and I investigated the few previously reported caves and whatever



George Mowat-1952

Raymond deSaussure reviews his notes while studying the deposits of Whipple Cave, Nevada. Ray was a meticulous note-taker.

other caves we could detect in the Canyon's Redwall and Muav carbonate cliffs. There proved to be no shortage of new openings in the canyon walls, many of which could not be entered without rope and climbing tools. With financial support from Lee Truman, Ray and I, under federal permit as Research Associates of the Museum of Northern Arizona, assembled a prehistoric zoo of creatures that have long since disappeared from Grand Canyon. Among these were American horse, camel, ground sloth, woodchuck and California condor, that we documented in appropriate publications⁶. Most striking, however, were evidences of an obscure prehistoric

Canyon caves without recognizing them as animal images. Upon revisiting particular caves beneath the South Rim, we discovered more of these figures projecting from beneath rock cairns in the entrance chambers. These discoveries prompted Lee Truman to fund two archeological cave digs. Split-twig figurines and associated artifacts produced from the cave trenches reside in collections at the Grand Canyon museum, the Museum of Northern Arizona and the Peabody Museum at Yale⁷.

The figurines, which ranged in size from less than an inch to fourteen inches high simulated deer, bighorn sheep and possibly mammals now

society referred to as the split-twig figurine culture.

Split-twig figurines were artifacts woven from willow twigs split down the middle to form toy-like images of animals. Some of these artifacts had been described previously from a cave in south-central Nevada and during the 1930s had been found by CCC workers in a shallow Redwall cave below the North Rim of Grand Canyon. When Ray and I inspected that particular site, we realized that we had spotted fragments of these wooden figures in other

extinct in the Southwest. Does and fawns exhibited looped ears, while bucks sported twig-like antlers. At least one doe contained a tiny split-twig embryo; other specimens were pierced by miniature arrows. The occurrence of little in the way of hearths or utilitarian objects suggested that their makers did not inhabit the caves. Radiocarbon dating assigned an age of approximately 3300 to 3600 years. The culture evidently centered around Grand Canyon about 1300 B.C., while the willow twigs and associated botanical materials indicated a cooler wetter time when the Redwall slopes were covered with willows and spruces typical of the present North Kaibab Plateau.

In 1955 Ray organized an expedition to map and explore caves in the cliffs along the Colorado River in Marble Gorge and Grand Canyon. Two experienced boatmen were hired as guides. Solution channels severed by the downcutting of the river were found in opposite walls of Marble Gorge evidencing deep circulation of ground waters from the karst terrain of the Kaibab Plateau eastward underneath the Navajo Reservation. An additional figurine cave was also identified within the gorge. Throughout the expedition, Ray's derring-do proved him to be a skilled boatman who successfully steered his single-person raft through rapids that others of us portaged.

At least twice during the 1950s, Ray investigated caves in Mexico. The first of these came about when the leading cave geomorphologist of that era, J Harlan Bretz, invited Ray to act as guide for a University of Chicago expedition to Mexico⁸. Ray also initiated underwater explorations in Bower Cave of California's Mother Lode, where remarkably decorated interior chambers were discovered by diver Jon Lindbergh in 1953. In his dauntless, adventuresome way, Ray also tried his fins as an aquanaut during that expedition.



George Mowat

In Summer 1957 Ray deSaussure collected geochemical samples from the tundra near Eskimo Point on Hudson Bay, Keewatin District, Canada. The strange headgear is a mosquito net.

In 1959, what had been an informal affiliation of persons conducting research independently became under Ray's impetus consolidated into a non-profit corporation called Cave Research Associates. Ray and I alternated as editors of the organization's two publications—the bi-monthly *Caves & Karst* (originally called *Cave Notes*) and an occasional venue for longer works—*Cave Studies*. The former became the first purely technical periodical on cave science published in the U.S. The journals maintained a worldwide, though limited circulation during the next fifteen years.

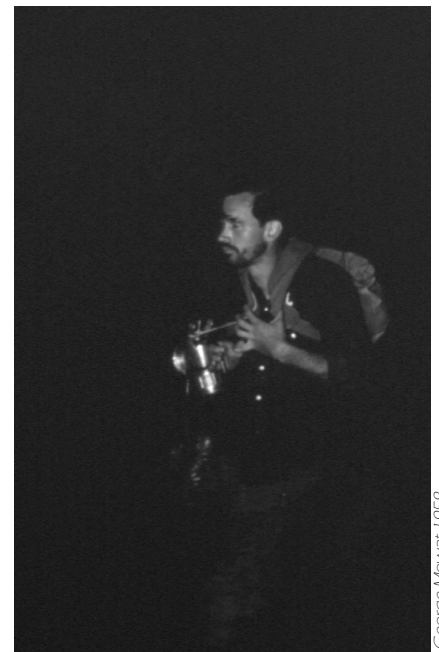
In 1960 Ray took a full-time position at the U.S. Department of Energy's Lawrence Livermore Laboratories, where he initially worked on chemistry programming. He found himself on the ground floor of computer development, including the invention of the first mouse, early computer graphics and interactive technology. In time Ray became the person responsible for selecting, testing and evaluating mini-computers for the

Lab. Ray's purchasing decisions played an important role in the R&D orientation of various computer firms and in some cases affected the survival of particular computer lines and companies. He seldom talked about his work at the Lab, as I suspect much of it involved classified information. Ray retired from that position in December 1989⁹, financially independent, thanks to his lifelong investing savvy.

Ray's individualism and bravado came not without idiosyncrasies and contradictions. I cannot remember that he ever wore a caver's soft hat, no less a hardhat, in even the most treacherous caves. As for footgear he was a devotee of sneakers underground for as long as I can remember. Yet in rigging and climbing practices he was strict and exacting. In the days before copying machines Ray could type historical accounts from old newspaper archives on a portable typewriter almost as fast as one could read them. As a result he amassed a voluminous collection of historical cave references systematically

compiled in binders labeled by state. Books he collected with a passion and he couldn't pass up an old bookstore in a new town. These trophies included not only the technical books of his cave and karst library, but any children's books and dime novels that had the word "cave" in the title. Nor did he overlook bargains in art books, mountain climbing, classic literature and assorted other hobbies. Ray was a devoted opera fan and built up a sizable collection of music recordings and opera videos. And he had tried his hand at guitar, and the instrument now and then turned up in bluegrass serenades around a campfire. For weeks at a time, I found myself to be a guinea pig for his culinary experiments, among which were his special salads concocted with hydrochloric acid. On Santa Rosa Island one

morning he made pancakes using plaster of Paris, which he mistook for flour. I dubbed them crêpes parisiennes. Nor am I the only one of his cave colleagues who can remember making a wild goose chase with Ray over rough terrain searching for a



George Mowat 1958

Raymond deSaussure illuminating the darkness of Cueva de Dos Bocas in Mexico.

cave entrance that he had discovered a month earlier.

The deSaussure library of cave and karst literature was accumulated over many years both by searching international book dealers' catalogs and by scouting through bookstores wherever he traveled, including overseas. As Secretary and de facto Librarian of Cave Research Associates he received publications on exchange from karst groups and institutions around the world, including those from behind the once rigid Iron and Bamboo Curtains. Through his extensive correspondence with prominent geologists, archeologists and zoologists he assembled a diverse collection of reprints and separates on subjects as exotic as sloth coprolites and the bleaching of hair by cave atmospheres. It was Ray's bequest, with which the former officers of C.R.A. concurred, that the entire collection of karst literature form the nucleus of a research library within the facilities of the ACCA. Ray was an indefatigable note-taker and his collection of field notes from caves sites around the world is in itself a valuable resource for cave scientists and preservationists.

Preservation was an underlying motif pervading all of Ray deSaussure's research and speleological activities. If he is remembered for nothing else it will be for his dedication to the safeguarding of caves and their resources from the irresponsible degradation of the cave environment by careless sport cavers and the deliberate vandalism perpetrated by pot-hunters and mineral collectors. Ray had a better strategy for protecting caves than the installation of gates on caves and the enactment of legislation against cave trespass, for as we now well recognize, gates as well as laws can be violated. His strategy was, in a word, secrecy. It is hard for fun-seekers on a cave outing to damage a cave if they don't know where it is, and better, if they don't know that it exists. *Secrecy* is the title

of a paper Louise Hose published in 1992, in which she specifically cited Ray and myself, as follows:

The unique qualities of the West prompted the practice of "secrecy." The concept was first strongly advocated by members of the Stanford Grotto of the NSS in the 1950s. Art Lange, Ray deSaussure and others opposed the publications of *Caves of California* and refused to provide information from their files. There was a battle that ended with some fine cavers and speleologists abandoning the NSS when mainstream organized cavers refused to respect their insistence on putting the best interest of the caves (as they saw it) ahead of the interest of cavers.

It was Ray deSaussure, more than any of the rest of us, who drove this policy forward to the extent that the Stanford group declined to release cave locations and the University defended their right to withhold them. It was a policy adopted from the practices of archeologists, who had long since witnessed the destruction and desecration of invaluable historic and prehistoric sites, resulting from too specific identification of their locations. At the time, there was much ado about that Stanford knot of self-serving cavers out West, who refused to bow to authority and release their cave files to headquarters; which meant, in effect, to organized cavers and, ultimately, to the public. It is today a tribute to Ray's perseverance on the policy of cave secrecy that few, if any, readers of the National Speleological Society's official publications will find the location of a cave spelled out or delineated by anything other than a very broad dot on a state map. In fact, it is difficult in some articles for anyone but an informed caver to figure out which state contains the cave being described. It has taken up to fifty years for deSaussure's policy of cave-location suppression to become the rule, and although determined organized cavers can probably ferret

out the locations, at least exposure of the cave to the wiles and mischief of the general public is discouraged and hopefully impeded.

SOURCES:

- ¹ From: *Editorial Note: Publishing Cave Locations. Cave Notes*, Publication of Cave Research Associates, Vol. 1: p. 13.
- ² The Stanford Cave Club became a Grotto, or Chapter, of the National Speleological Society shortly after its founding in 1948.
- ³ Despite its foreboding reputation this cavern has been recently developed as a tourist cave.
- ⁴ Ray was a dedicated climber and mountaineer before being lured underground into the cave world. In July 1950 he joined an American Alpine Club expedition that made a first ascent of Mount Waddington via the Chimney Route. The peak is British Columbia's highest mountain. [Houston, Richard C. (1951). *New Routes on Mount Waddington. American Alpine Club Journal*, Vol. 8, no. 25, p. 33-44]
- ⁵ Twelve copies of the report were produced by the Western Speleological Institute, under whose aegis Ray and I functioned between 1952 and 1956. The Institute had been formed by Phil C. Orr, oriented toward cave investigations, as an ancillary unit of the Santa Barbara Museum of Natural History and the Nevada State Museum. The document, authored by R. deSaussure, George Mowat and Arthur Lange was entitled *Report of the California-Nevada Speleological Survey*, dated 15 March 1953. An illustrated, somewhat garbled, summary of the expedition appeared on the op-ed pages of the *San Francisco Chronicle* during the five days 5-9 January, 1953.
- ⁶ See, for example: *Remains of the California Condor in Arizona Caves. Plateau*, Vol. 29, no. 2: p. 44-45. October 1956. Woodchuck remains in northern Arizona caves. *Journal of Mammalogy*, Vol. 37, no. 2: p. 289-291. May 1956.
- ⁷ Schwartz, D.W., A. Lange & R. deSaussure (1958). Split-twig figurines in the Grand Canyon. *American Antiquity*, Vol. 23, no. 3: p. 264-274.
- ⁸ The expedition, which explored Cueva de la Estrella in the Río Zapote gorge, was publicized in *Collier's* magazine (1 October 1954) and showed a picture of Ray descending a rope ladder on its front page, much to Ray's displeasure.
- ⁹ A retrospective interview on Ray's computer science career was conducted by George Michael of LLL in 1995. It can be read on the following website: <http://www.nersc.gov/~deboni/Computer.history/DeSaussure.html>
- ¹⁰ *Secrecy: An alternative and successful model for cave exploration. National Speleological Society Bulletin*, Vol. 54: p. 17-24. June 1992.

Below America

\$632,641 Granted by the Missouri Department of Natural Resources

An initial award of \$289,045 has been granted for the first two years to the Laclede County Soil and Water Conservation District. This is a four year grant and will total \$632,641. The grant will be used by dairy producers in the Osage Fork of the Gasconade watershed for cost-share and technical assistance.

Approximately 325,000 acres in Laclede, Webster and Wright counties are included in this watershed and are extremely vulnerable to nonpoint source pollution from livestock manure runoff. Some of the funding will be applied to construct lagoon facilities, which will allow manure to be contained. This will later on be used for fertilizer. Lagoon facilities provide a healthier environment for dairy cows and make animal waste management easier.

Additional goals of this grant include a demonstration of manure transfer using underground pipes, the development of comprehensive management plans for producers, a website and newsletters, and educational field days. Technical assistance will be provided by the Natural Resources Conservation Service and the Laclede County Soil and Water Conservation District in Lebanon.

Contact Mary Jo Tannehill with the Laclede County Soil and Water Conservation District at (417) 532-6305, or Colleen Meredith with the Department of Natural Resources' Water Protection Program at

(573) 526-7687
(<http://www.dnr.state.mo.us/wpscd/wpcp/index.html>)
http://www.dnr.state.mo.us/magazine/2004_springsummer/NewsBriefs.htm

U.S. Fish & Wildlife Service Grants Support \$70 Million for Land Acquisition and Conservation Planning for Endangered Species

Tennessee:

- \$65,500 to purchase Bellamy Cave in Montgomery County, Tennessee. This is identified as a priority one site in the Gray Bat Recovery Plan and is home to approximately 91,000 gray bats during the winter and a maternity colony of 35,000 bats during the summer. Due to the size of the population, and the fact that gray bats are extremely sensitive to human disturbance, protecting this cave is a high priority. Bellamy Cave will be purchased by the State of Tennessee and will provide long-term management for the gray bat, the small-footed bat, southern cavefish and even potentially the Indiana bat.

Arkansas & Oklahoma:

- \$584,237 to purchase tracts in Arkansas and Oklahoma which are adjacent to protected habitat areas for the Ozark big-eared bat, gray bat, Indiana bat and the Ozark cavefish. This is a unique approach to protect an entire cave system, watersheds in the Ozark Karst Ecosystem, and foraging habitat and wildlife corridors for these species. The Ozark big-eared bat Recovery Plan will be supported by acquisition of land adjacent to the Ozark

Plateau National Wildlife Refuge in Oklahoma. An additional acquisition will protect the recharge zone of Cave Springs Nature Area. Over half of the world's population of Ozark cavefish is found in this area.

<http://southeast.fws.gov/news/2004/n04-041.html>

Cave Conservancy Buys New York State's Most Popular "Wild" Cave

(Clarksville, NY – October 7, 2004)

The Northeastern Cave Conservancy, Inc. (NCC) has purchased 11 acres of land containing Clarksville Cave. This purchase is in keeping with the NCC's mission to protect caves, underground wilderness, and to provide a safe and environmentally educational experience to the many who visit the cave.

Clarksville cave was owned by the Alberts-McNab family for over 50 years, who faithfully maintained the long tradition of keeping the cave open to the public since it was discovered in the early 1800's. Thousands now visit Clarksville Cave each year. With liability concerns growing the owners approached the NCC about buying the cave. Bob Addis, President of the NCC, stated that "the NCC will continue to allow visitation, while emphasizing caving safety and protection of these unique underground resources and still have an enjoyable trip" To help with this, the NCC will post trained volunteers on the property during peak visitation hours.

In conjunction with the purchase, the Albany County Legislation will vote in October to turn over the Gregory Entrance and about 0.6 acres surrounding it to the NCC.

The Gregory Entrance is one of three entrances to Clarksville Cave. The County acquired the land 25 years ago and it had been used by the Onesquethaw Fire Department to fill fire trucks. With the advent of a piped water system in Clarksville in recent years, this fluctuating source of water had been abandoned. "The NCC is a natural protector of this cave entrance" says Addis. "Also by controlling several acres in the watershed, the NCC can improve the water quality of the stream flowing through Clarksville Cave and coming out the Gregory Entrance."

The NCC is a nonprofit organization which owns and manages several cave preserves in the state of New York and has been operating since 1978. "We are in the process of obtaining nonprofit corporate status in Vermont and are also considering other caves throughout the Northeast as the need for cave conservation increases," says Addis.

For additional information contact: Bob Addis, Northeastern Cave Conservancy, Inc., P.O. Box 254, Schoharie, NY 12157, (518) 237-1165, nccpresident@caves.org, <http://www.necaveconservancy.org/>

Beyond America

Peking Man's Digs Gets Archaeological Redo

The first phase of work to reinforce caves where the 500,000-year-old Peking Man was found has been completed, with six relic sites threatened by collapse successfully saved.

The project at the Zhoukoudian area, a World Heritage site 50 kilometres southwest from downtown Beijing, started in July after archaeologists reported 21 areas at the site in danger of geological calamity.

The second work phase will be carried out next year, protecting a further group of seven ruin sites, according to the Zhoukoudian management.

The project, which is the most complete effort since the 1920s when the first complete Peking Man skull was unearthed, is expected to last until 2007.

Qi Guoqin, a researcher with the Institute of Vertebrate Paleontology and Paleoanthropology at the Chinese Academy of Sciences, said the effort appears to have been taken in time after worrying signs at the site were spotted. A series of caves located in rolling hills had begun to disintegrate, with small stones falling from the ceiling at several spots.

"I'm glad to see the six relic spots, including the Pigeon Hall where Peking Man's parietal bone, collarbone and lower jawbone were discovered, have become safer, and their outward appearance did not change a lot after consolidation," said Qi.

Since Peking Man was first unearthed in 1929, archaeologists have found fossils belonging to 40 different individuals and more than 100,000 stone implements and other objects.

The discovery of Peking Man was one of the most decisive steps in the scientific quest to trace man's pre-historical development from apes.

Mou Huichong, a professor with the Institute of Geology and Geophysics Research at the Chinese Academy of Sciences, said the second phase of work will be more difficult than the first because the coming work will be done on areas near the cultural stratum that may contain valuable fossils.

"If the sites are reinforced by cement, further archaeological excavation will be severely impacted," said Mou.

"It is a complicated preservation project and related to many other aspects such as geological structure and relic protection issues.

"We are discussing this with experts from different fields of study and trying to find the best solutions to the problem," said Mou.

Du Xiaofan, a member of the United Nations Educational Scientific and Cultural Organization's Beijing Office, hailed the protection work at Zhoukoudian.

He said it is a good example of finding potential hazards and taking immediate measures before possible geological disaster occurs.

"Heritage protection authorities should strengthen daily supervision and maintenance on cultural relics in order to avoid any damage — such as the collapse of the city wall of Pingyao," said Du.

A section of Pingyao's ancient city wall, a world cultural heritage site in North China's Shanxi Province, collapsed last month due to lack of maintenance.

The first phase of reinforce work at Zhoukoudian, lasting more than three months, cost more than 2.5 million yuan (US\$302,000). And the second phase is expected to cost at least 3 million yuan (US\$363,000), according to the management office of the site.

By Li Jing (China Daily) Updated: 2004-11-23 00:37
www.archaeologica.org/NewsPage.htm

Contributors 2004

\$100 - \$499:

Abell Elevator International
Dr. Billy W. Andrews
Mr. Jim Baichtal
Charles S. Bartlett, Ph.D.
John and Susan Branstetter
Mr. Richard C. Bell/Seneca Caverns
Mr. Robert D. Brown
Sue and Sydney Bunnell
Mr. Robert E. Burnett
Cave of the Mounds
Caverns of Sonora
The Cleveland Grotto, NSS
Colossal Cave Mountain Park
Mr. Keith Dunlap
Mr. and Mrs. Myron C. Dunlavy
Forbidden Caverns
Dorothy O. Foster
Mr. John P. "Jack" Freeman
Mr. Douglas E. Gilb
Dr. Nancy S. Hafkin
Dr. & Mrs. Horton H. Hobbs III
Dr. and Mrs. Francis G. Howarth
Howe Caverns, Inc.
Ann and Charles Jett
Julian J. Lewis, Ph.D.
Louisville Bedding Company
Marengo Caverns U.S. National
Landmark
Natural Bridge Caverns
Donald and Peggy Nims
Mr. Kevin Nunn
Mr. Arthur N. Palmer
Roy D. and Carole Powers
Dr. and Mrs. Stanley D. Sides
Square Deal Lumber Co.
Mr. and Mrs. James C. Sturgeon
Mr. Bernard W. Szukalski
Mr. Kevin Toepke
Mr. John W. Twiss, Jr.
Reverend Raymond J. Urbanek
Frank and Anita Vlcek

\$500 - \$999:

Con Cave
Mr. Fred Grady
Horse Cave Rotary Club
Kentucky Banking Centers, Inc.
Mr. and Mrs. Roy D. Powers, Jr.
Mr. Robert B. Sims

\$1,000 - \$4,999:

Anonymous Donation
Tom and Cathy Aley/Ozark Under-
ground Lab.
Mr. Earl Biffle
Bluespring Caverns/Mr. Jim Richards
The Corradino Group, Inc.
Mr. David Derrick
Green Thumb, Inc.
Mr. Bruce Herschend
Dr. Philip E. LaMoreaux
Mr. Chuck Pease, Jr.
Mr. Steve Sullivan
Ronald R. VanStockum, Jr.
Wal-Mart

\$5,000 - \$9,999

Anonymous Gift
Estate of Raymond deSaussure
Mr. W. Austin W. Musselman, Jr.
Charles Pease, Jr.

\$10,000 or more:

Mr. and Mrs. Allen M. Bond, III
Brown-Forman Corporation
Charles Stewart Mott
Foundation
City of Horse Cave
Mr. and Mrs. Robert E. Danielson
The Dart Foundation
Environmental Protection Agency
Kentucky Division of
Conservation
Kentucky Division of Water
Transportation Enhancement Prog.
USVA HUD Program

Museum Founders

James Graham Brown Foundation,
Inc.
Mary & Barry Bingham, Sr. Fund
W.L. Lyons Brown Foundation
City of Horse Cave, Kentucky
Commonwealth of Kentucky
Kentucky Bicentennial Commission

In Memory of W.T. Austin

Hart of Kentucky Grotto

In Memory Of Jay Kessel

Ms. Jean Kessel



Bob & Bob

"Cavers Serving Cavers Worldwide"

Suppliers of:

- Helmets
- Tubular Webbing
- Books and Videos
- Gibbs Ascenders
- Cave Packs
- Racks and Brakebars
- Carabiners
- Climbing Systems
- Jumars
- Knee Pads and Gloves
- PMI Rope and BW Rope
- Petzl Gear
- Harnesses
- Canvas Grip
- Compasses and Clinometers
- Electric Lights
- Repair Parts and Bulbs
- T-Shirts and much more

For your free price list,
write or call:

Bob & Bob
P.O. Box 441-C
Lewisburg, WV 24901
304.772.3074
304.772.3076 fax
800.262.2283

BULK RATE
U.S. Postage
PAID
Horse Cave, KY
42749
Permit No. 61

Address Service Requested. Return to: ACCA, P.O. Box 409, Horse Cave, KY 42749