


CATALYST

DENVER MUSEUM OF NATURE & SCIENCE MAGAZINE

APRIL | MAY 2013

INSIDE /// MAMMOTHS AND MASTODONS
FLIGHT OF THE BUTTERFLIES 3D
EARTH AND SPACE DAYS





Flight of the Butterflies in 3D

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AN SK FILMS RELEASE OF A CANADIAN-MEXICO-UK CO-PRODUCTION A FILM BY MIKE SLEE STARRING GORDON PINSENT PATRICIA PHILLIPS SHAUN BENSON STEPHANIE SIGMAN NARRATED BY MEGAN FOLLOWS
MUSIC BY LEONARDO HEIDLUM & JACOBO LIEBERMAN EDITED BY SUSAN SHIPTON SOUND DESIGN PETER THILLAYE DIRECTORS OF PHOTOGRAPHY SIMON DE GLAINVILLE & PAUL WILLIAMS PRODUCTION DESIGN BY SANDRA KYBARTIS WITH SALVADOR PARRA
COSTUMES BY STEVEN WRIGHT WRITTEN BY MIKE SLEE & WENDY MACKEIGAN BASED ON A CONCEPT BY PHIL STREATHER WITH SK FILMS & PRINCIPAL LARGE FORMAT SUPERVISING PRODUCER MYLES CONNOLLY PRODUCED BY JONATHAN BARKER RAFAEL CUERVO MIKE SLEE
CO-EXECUTIVE PRODUCERS WENDY MACKEIGAN MARIA ELENA GUTIERREZ SANTOSCOY JOANNA BALDWIN-MALLORY EXECUTIVE PRODUCER JONATHAN BARKER DIRECTOR MIKE SLEE

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Dear Members,

One of the highlights of the new construction on the south side of the building is the chance to incorporate green initiatives into the project. From recycling electronics to installing photovoltaic panels on the roof, the Museum strives to reduce its carbon footprint, no matter the size of the project or opportunity. In recent years, we have participated in Greenprint Denver, an action agenda for sustainable development, and used Better Denver bonds to create new efficiencies throughout the Museum.



In early 2013, crews constructed a recycled water pipeline outside the Museum in City Park. This line will run from the new wing, along the west side of the building, and through City Park Golf Course to connect with a Denver Water recycled water main near the zoo. The recycled water will use heat pump technology to increase efficiency of the new wing's heating and cooling plant. The water will not be consumed; 100 percent of the water will return to the original line. In the summer, after removing heat from the building, the water will be returned to the line approximately 10 degrees warmer, and in the winter it will return 10 degrees cooler. This innovative project is partially funded by a grant from the Department of Energy.

This ground source heat pump is just one feature that will help the new wing earn LEED Platinum Certification by the U.S. Green Building Council. It is designed to use 50 percent less energy than a standard building of its type. Automated shades on the exterior glass will move based on the angle of the sun to save energy. Natural daylight will be tapped in order to reduce the use of electric lights. Rooftop solar thermal collectors will provide hot water. Updated landscaping will have native plants, with nonpotable water used for irrigation.

The Museum is committed to being a showcase of sustainability, so we will continue to consider how our actions affect our planet. We invite you to help us celebrate Earth Day on April 21 as we continue to work together to encourage support for human and planetary wellness.

George Sparks
President & CEO

You may contact George Sparks at president@dmns.org.

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ON THE COVER

From the zoology collections

Chipping sparrow
(*Spizella passerina*)

Egg set, ZO.1611

Nest, ZN.494

Pierce County, Washington,
1910



Rick Winkler

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DR. SCOTT SAMPSON NAMED VICE PRESIDENT OF RESEARCH AND COLLECTIONS

We welcome Dr. Scott Sampson as the new vice president of research and collections and chief curator at the Denver Museum of Nature & Science.

Sampson is a paleontologist, evolutionary biologist, and educator—particularly noted for his research on dinosaurs—and well-known as “Dr. Scott the Paleontologist” on the highly acclaimed PBS KIDS television series, *Dinosaur Train*. He most recently was research curator at the Natural History Museum of Utah at the University of Utah, and served the past two years on the Board of Trustees for the Denver Museum of Nature & Science before resigning to take his new position.

“This is an exciting time for our organization and the community we serve,” said George Sparks, President and CEO of the Museum. “We are incredibly pleased to welcome such a passionate and visionary scientist such as Dr. Sampson. He brings the leadership necessary to ensure our continued quality scientific research, collections stewardship, dynamic educational programming, and exhibition content, all of which contribute to the Museum’s continued success.”

Sampson’s primary responsibilities will be to oversee the Research and Collections Division’s staff, including 15 PhD scientists, as well as the Museum’s collections, numbering nearly 1.5 million artifacts and specimens. Sampson will also serve on the Museum’s executive team.

Sampson received his PhD in zoology from the University of Toronto in 1993. He spent a year working at the American Museum of Natural History in New York City, followed by five years as assistant professor of anatomy at the New

York College of Osteopathic Medicine on Long Island. From 1999 to 2007, he held a dual position with the Utah Museum of Natural History and the Department of Geology and Geophysics at the University of Utah, serving for the last several years as chief curator and associate professor, respectively. In 2007, Sampson moved to the San Francisco Bay Area, where he continued his dinosaur research and pursued a range of projects focused on science education.

His research has focused on the ecology and evolution of Late Cretaceous dinosaurs. He has conducted fieldwork in Kenya, Zimbabwe, South Africa, Madagascar, Mexico, the United States, and Canada. His current research is focused on a large-scale project in the Grand Staircase-Escalante National Monument in southern Utah, which has yielded abundant remains of a previously unknown dinosaur assemblage. Sampson has published numerous scientific and popular articles, and lectured extensively to audiences of all ages.

Sampson was the primary scientific consultant and on-air host of the four-part Discovery Channel series *Dinosaur Planet*. As noted, he is “Dr. Scott the Paleontologist” on *Dinosaur Train*, produced by the Jim Henson Company. His book *Dinosaur Odyssey: Fossil Threads in the Web of Life* (University of California Press, 2009) is the first general audience review of dinosaur paleontology in more than two decades. Sampson is currently working on a book about the importance of fostering a love of nature in children.

Meet Dr. Sampson when he presents a special lecture on Tuesday, April 16, at 7 p.m. Find it @ www.dmns.org/afterhours.

NEW SCFD WEBSITE

The Scientific & Cultural Facilities District (SCFD) has a new website. Learn more about how this important funding has enlightened and entertained millions in our community, and access a calendar of Free Days not only at our Museum but at other cultural organizations supported by the SCFD. Find it @ www.scfcd.org.



EARTH AND SPACE DAYS

Celebrate Earth Day with us on Sunday, April 21. This SCFD Community Free Day will feature family-friendly activities such as face painting, crafts, and hands-on learning activities about animals, energy, and planetary wellness. You'll see Mr. Bones the giant dinosaur puppet, follow a scavenger hunt through the Museum, take a Secrets of the Diorama tour, and help us celebrate the 40th birthday of the roaring saber-toothed cat in the main lobby. Thank you to Xcel Energy for their sponsorship.

On Saturday, May 11, enjoy special space science activities in Space Odyssey. Focus on space exploration throughout the day as you catch lectures and presentations by space scientists, space educators, and space explorers; safely view the sun through solar telescopes (weather permitting); and find out how to get involved in astronomy. These activities will be free with general Museum admission.

Find out more about these events @ www.dmns.org.



HEAVENS ABOVE

At one time or another nearly everyone has caught sight of a fleeting streak of light shooting across the night sky. These sudden celestial visitors, or shooting stars, are meteors that enter our atmosphere at speeds up to 160,000 mph. Their light is produced by velocity and friction when they encounter Earth's atmosphere. Most are smaller than a grain of sand and burn up within a second or two, high in the ionosphere.

Sporadic meteors are random bits of solar system dust and debris, particles from collisions that occurred eons ago and were thrown into arbitrary orbits around the sun. Their chance encounters with Earth are unpredictable and are the ones most people see while gazing at the night sky.

Shower meteors originate from the dust released by comets as they travel through our solar system. The dust spreads out along the comet's orbit and forms a trail of

debris. Meteor showers occur when Earth passes through this comet trail during its yearly orbit around the sun. Every year, on about the same date, Earth passes through the same debris trails, making meteor showers predictable annual events.

Meteor shower particles travel in parallel paths at the same velocity and because of this appear to radiate from a single point in the sky. They are named for the constellation from which they appear to radiate. For example, April's Lyrid meteor shower appears to radiate from the constellation of Lyra, while May's Eta Aquarid meteor shower appears to radiate from the constellation Aquarius.

Find out more about what's happening in the skies in April and May @ www.dmns.org/heavensabove.

CONSTRUCTION UPDATE

The new underground Rocky Mountain Science Collections Center will have four major preservation areas for anthropology, archives, earth sciences, and zoology. This photo from Level B2 shows where the rails have been installed to support new movable storage cabinets for the mammals, birds, and insects in the zoology collections. Find out more about the science collections center @ www.dmns.org/futureplans.





MAMMOTHS AND MASTODONS: TITANS OF THE ICE AGE

Once you come face-to-face with life-size models of a 16-foot Columbian mammoth or a gigantic Ice Age short-faced bear, you'll wonder how humans outlived these beasts! The dynamic exhibition *Mammoths and Mastodons: Titans of the Ice Age* explores this epic time in Earth's history, with a focus not only on the iconic animals but on the peoples who lived among them.

Mammoths and mastodons are the ancestors of modern elephants; they are all members of the order Proboscidea. Interactives give you a chance to try your hand at picking up objects with a mechanical trunk, balance the weight of a mammoth's tusks, learn how mammoths wrestled to establish dominance and win a mate, and "feel" an elephant's rumble. You'll also investigate the extinction mystery of mammoths, and learn more about the challenges facing elephants today.



Photos: Chris Schneider



Early humans both feared and relied on the majestic beasts, 10,000 years before the dawn of modern civilization. The animals provided ancient peoples with food, tools, decorative objects, artistic inspiration, even shelter! The exhibition examines the weapons and other tools used to hunt and process such enormous mammals. You'll also look into a "cave" in southwest France to view reproductions of prehistoric cave paintings, and learn about their possible meanings through a series of games.

Humans are still interacting with the "titans," although in a very different way. Modern scientists have uncovered some amazing Ice Age sites and animals in recent years, including the unprecedented discovery in Colorado in 2010. The Museum added an entire section to the exhibition that is devoted to the fossil excavation at Snowmass Village. You'll see some of the bones recovered from the site and hear about the science that is emerging. Toward the end of the exhibition, you'll see volunteers in action as they clean fossils and talk about the techniques that prepare fragile specimens for study.

Pair your exhibition experience with the 3D film, *Titans of the Ice Age*, in Phipps IMAX Theater. Dazzling computer imagery reveals an ancient world of ice, when humans fought for survival alongside majestic woolly beasts. Location shots from Yellowstone National Park, the Northern Great Plains, the Rocky Mountains,

and Alaska provide the backdrop from which the drama of the Pleistocene unfolds. You'll roam the mammoth steppe with baby Lyuba, the famous baby woolly mammoth found in the melting Siberian permafrost, and Zed, one of the most complete Columbian mammoth skeletons ever uncovered.

MEMBERS SAVE 75% ON TICKETS!

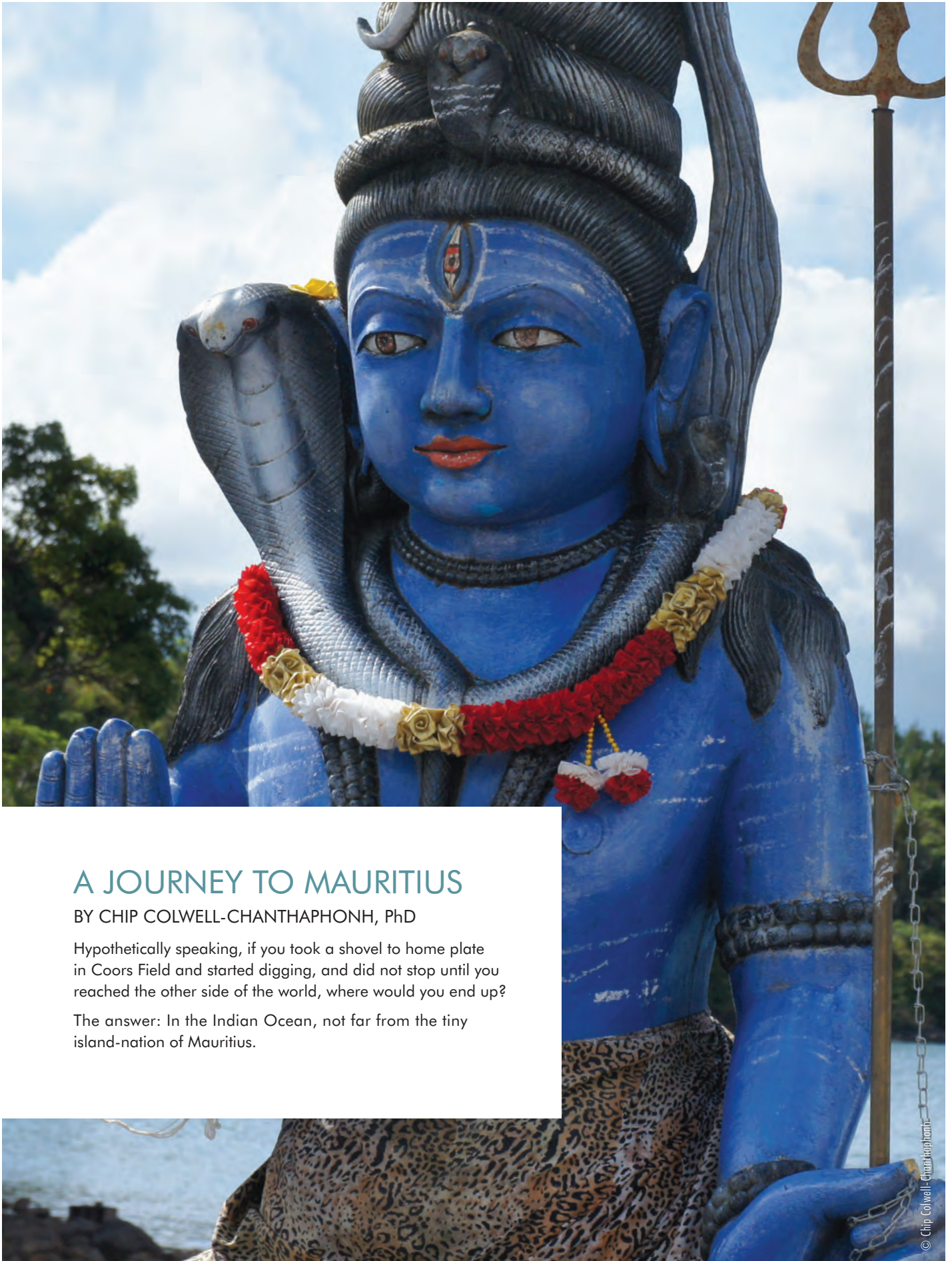
- Timed tickets are required for Mammoths and Mastodons. Find ticket availability @ www.dmns.org/mammoths. The exhibition is open daily from 9 a.m. to 5 p.m., and will be open until 7 p.m. from March 23 to 30.
- Advance tickets are recommended. Weekday late afternoons and weekend early mornings tend to be less busy. School groups generally visit during weekday mornings.
- Members receive up to 75% off admission: \$7 adult, \$6 senior (65+), and \$3 student (with ID) or junior (3–18). There is a \$2 handling fee per ticket by phone or online. Purchase tickets @ www.dmns.org/mammoths or 303.370.6000 (M–F, 9–5). Afternoon is the best time to call.
- Please allow extra time for parking and ticketing, and plan to spend 60–90 minutes in the exhibition.
- Complimentary "pink" member guest vouchers are valid only for general Museum admission and cannot be used for Mammoths and Mastodons.
- *Titans of the Ice Age 3D* is presented daily in Phipps IMAX Theater. Members save 30% on IMAX tickets! Find showtimes @ www.dmns.org/imax.
- Enjoy Ice Age spring break fun through Sunday, March 31. Dig for Ice Age fossils, learn how to draw Ice Age animals, play Ice Age Trivia for a chance to win prizes, and more. Activities are free with general admission and available each day from 10 a.m. to 4 p.m.



Presented in Denver by



This exhibition was created by The Field Museum, Chicago.



A JOURNEY TO MAURITIUS

BY CHIP COLWELL-CHANTHAPHONH, PhD

Hypothetically speaking, if you took a shovel to home plate in Coors Field and started digging, and did not stop until you reached the other side of the world, where would you end up?

The answer: In the Indian Ocean, not far from the tiny island-nation of Mauritius.



Last summer, I left Denver for its near antipode. Thirty-six hours and 10 time zones later, I began a yearlong fellowship as a Fulbright Scholar at the University of Mauritius. Like most visitors who come to Mauritius, I have been happy to enjoy its heavenly beaches and tropical wildlife. These are impressive, but as an anthropologist I am first drawn to the country's complicated history and luminous cultures.

No one knows when humans first touched their feet to the island. Perhaps it was sailors from India or Southeast Asia millennia ago. Perhaps it was Arab traders, since the geographer Al Idrissi included the island on a map he drew in the 12th century. For certain, the Portuguese arrived in 1507, followed in turn by the Dutch, French, and British. These nations settled this distant outpost with grand ambitions, mostly failing except in freeing the land of its natural bounty—most famously, wiping the dodo bird off the face of the earth. These colonies were an improbable assortment of people who portended the island's multicultural future: various Europeans, but also slaves, convicts, and indentured workers taken from throughout Africa and Asia.

Today, 1.3 million descendants of these groups live in an ongoing experiment in cultural coexistence. They must find a way to live together on an island smaller than Colorado's Jefferson County, and 33 times more densely populated than the continental United States. Everyone in Mauritius converses in French or Creole, sometimes English, and depending on their background, often Hindi, Bhojpuri, Urdu, Marathi, Telugu, Tamil, Hakka, or Cantonese. Religions are as diverse. Islamic and Catholic believers abound, but Hindus are in the majority. The meaning of home when everyone came from another homeland is the tide that pushes and pulls Mauritian society between cultural purity and cultural fusion.

During my time in Mauritius, I am seeking to understand where and how such diverse cultures can find common ground. One surprising place is along the island's roads, which are garlanded with scores of vernacular shrines called *lagrot* in Creole. These shrines have a facade of Catholic belief; they contain statues of saints and votive offerings of candles and flowers. But in practice they are a convergence of different faiths. Hindus and Catholics both revere the Christian saints, who are approached in prayer in hopes of good health and good fortune. The Virgin Mary—more than God or Jesus—is the principal theme in the *lagrot*. Hindus consider her a goddess; at a shrine near my house, the Virgin is surrounded by effigies of Hindu gods.

Mauritians of all religious creeds believe that *lagrot* shrines provide direct access to the world of the spirits, especially the *mal mor*—the evil dead. On the backside of shrines is the material evidence of *sorciers* (sorcerers) who seek to *soulev le mor* (raise the dead). Rituals are performed to call a soul and ask it to do a task in return for gifts left at the back of the *lagrot*. The shrine's spatial division is a physical manifestation of beliefs about the dualism of natural forces: the front/back of the shrine are spaces dedicated to the day/night and good/evil practices of faith. Other signs of sorcery I have documented include the use of limes, tobacco, red candles, half coconut shells (to hold prayers), a pile of beans, a burned coin bundle, a doll's body, and nails and notes in nearby trees.

I have found that outside the bounds of official state or church control, roadside shrines are unique spaces where the local beliefs that bridge the country's ethnic and religious groups overlay a global Catholic faith. Shrines are key sites where the island's splintering multiculturalism quietly comes together.

This research is but one of my activities here in Mauritius, all of which have not only given me an appreciation for a place unknown to me just a short time ago but also new perspectives of home. With this experience I will be a better, more knowledgeable steward of the world ethnology collections I curate at the Museum, helping our visitors understand cultures almost a world apart. But more, it has encouraged me to look anew at cultural diversity—to see what forces draw us together and bind us together as a community and a nation, despite our many differences.



Facing page: This Hindu temple is situated at a sacred lake. Top of this page: A Hindu procession through the streets of the Mauritius capital of Port Louis. Above: A shrine covered with plaques that attest to the many prayers believed to have been answered by the Virgin Mary.

FIND IT @ DMNS.ORG



Dr. Chip Colwell-Chanthaphonh is curator for anthropology. He shares his experiences in Mauritius @ www.dmns.org/culturelab.

See more photos from Mauritius on the digital version of *Catalyst* @ www.dmns.org/catalyst.



CRANE NATIVE AMERICAN REFERENCE LIBRARY

BY BRENT WAGNER AND KATHIE GULLY

In 1968, an eclectic and educated New England couple donated a major Native American collection to the Museum. With the luxuries of time, money, idealism, and national connections, Mary W. A. and Francis V. Crane devoted half of their lives to acquiring pieces related to the American Indian. Hundreds of artifacts from the Crane Collection are on permanent display in North American Indian Cultures Hall on Level 2. Lesser known, however, is the Crane's generous donation of their entire reference library of more than 1,000 books and periodicals.

The Cranes originally exhibited their vast collection in the Florida Keys at the Southeast Museum of the North American Indian, which they planned, built, and operated as a labor of love for 10 years during the 1950s and '60s. Despite the self-proclaimed status of the collection as the "largest and finest south of the Smithsonian," it was generally not well-known. The Cranes realized they could reach a larger audience by relocating.



Photos: Rick Wicker



The Crane reference library contains hundreds of historic volumes about Native Americans. Facing page: This illustration depicts Ne-Sou-A-Quoit, a Fox chief, from *History of the Indian Tribes of North America* by McKenney and Hall, 1838.

At the same time in Denver, the Museum's assistant director, Roy E. Coy, was searching for items for the new Hall of the North American Indian. He wrote to his longtime friends, asking if they would consider presenting their very excellent and large collection to the Museum. Francis Crane said, "We struggle to get 5,000 people a year [at our museum] and [the Denver Museum] has that many in a day." And so in 1968, four large moving vans brought the 14,000 artifacts in the collection to Denver.

The Crane book donation, perhaps singlehandedly, shaped the Bailey Library into what it is today. Prior to its arrival, the Museum not only lacked print materials on Native Americans, but it did not offer much in the way of a formal library and didn't have a full-time librarian. In 1975, the Museum's first professional librarian, Stephanie Stowe, was hired partly due to the need to catalog the Crane donation. Today, Bailey Library houses more than 55,000 books, and a significant portion of the oldest and most valuable rare books remain volumes from the original Crane gift.

The Museum's archives contain the correspondence files from the Crane Foundation. The Cranes' letters show that while not professionally trained in the book trade, they doggedly strove to receive solid advice from an array of university presses and antiquarian book dealers, from Boston to Los Angeles. In one unorthodox instance, they inquired with Yale about conservation methods for preserving leather bindings amid the humid weather in insect-laden Florida. Following this exchange, the Cranes cajoled a friend from Lowell, Massachusetts, into shipping them a large can of Neatsfoot oil and thick grade lanolin.

These are just a few of the gems in the Crane reference library:

- *History of the Indian Tribes of North America, with biographical sketches and anecdotes of the principal chiefs. Embellished with one hundred and twenty portraits, from the Indian gallery in the Department of war, at Washington.* McKenney and Hall. 1838, 1842, and 1844. These volumes are significant because a fire at the Smithsonian in 1865 destroyed all but four of the 120 painted originals.

- Several works by George Catlin, often considered the "dean" of American Indian painters, including *Catlin's North American Indian portfolio. Hunting scenes and amusements of the Rocky Mountains and prairies of America. From drawings and notes of the author, made during eight years' travel amongst forty-eight of the wildest and most remote tribes of savages in North America. A portfolio of spectacular engravings of Native American life.* 1844 and 1845. The Museum owns both the New York and London editions.
- *Smithsonian Bureau of American Ethnology Bulletins* (200 volumes). 1887–1967. These contain accounts of field work with native tribes, often the earliest published accounts by government anthropologists.
- *Sketches of the Indian war in Florida: embracing a minute account of the principal cruel and horrible Indian massacres!* 1837. This is one of several "captivity stories" included in the Crane collection that was published during the Indian Wars. Some of the content within these best sellers was later found to be spurious.
- Accounts of all three of James Cook's voyages, eight volumes plus an atlas. 1773–1784. These provide the first accounts, descriptions, and illustrations of all the peoples they encountered along the way.

SEE IT

Some of the books from this collection are on display just outside Bailey Library on Level 3. Artifacts from the Crane Collection are on exhibit in North American Indian Cultures on Level 2.



FIND IT @ DMNS.ORG

Brent Wagner is librarian and curator of rare books for the Bailey Library and Archives. Kathie Gully retired as librarian in 2011 after 20 years of service. Find out more @ www.dmns.org/science/bailey-library-and-archives.



GAIN EVEN MORE ACCESS!

Upgrade your membership today to the Giving Club and experience exclusive events and perks! Membership in the Giving Club provides unique access to the Museum, allowing you to receive new opportunities for discovery and learning, while providing critical support for the Museum.

IMAX NIGHT: All Giving Club members are invited to a special night in Phipps IMAX Theater on Thursday, June 6. Bring the whole family and go to the movies, IMAX style! Enjoy complimentary movie munchies and soft drinks.

MAMMOTH PERK: All Giving Club members receive free “anytime” tickets to all surcharged exhibitions, including Mammoths and Mastodons: Titans of the Ice Age. This new benefit guarantees quick and easy access to temporary exhibitions, making your visit even more convenient. No reservations needed, even if it’s sold out! The number of tickets you receive is determined by your membership level.

BEHIND-THE-SCENES BONUS: On Wednesday, October 23, Giving Club members will be treated to an exclusive Behind-the-Scenes Night. This free event will offer unique opportunities to meet Museum scientists, explore Museum treasures and collections not on public display, and enjoy a buffet and cash bar.

Membership in the Giving Club starts at \$300, and a monthly installment program is available. Find out more about Giving Club levels and benefits @ www.dmns.org/join/giving-club.



NOT TAKING CARE OF YOUR TEETH IS A MAMMOTH MISTAKE!

Did you know that cavities are the most common chronic childhood disease? They account for more than 51 million hours of school absenteeism nationally every year. Here in Colorado, more than 55 percent of our third graders have had cavities, and 15 percent have cavities that have not been treated. And yet it is almost completely preventable if children have regular access to dental care.

Delta Dental of Colorado is working to make cavities extinct. By supporting the temporary exhibition, *Mammoths and Mastodons: Titans of the Ice Age* at the Denver Museum of Nature & Science, Delta Dental is emphasizing the importance of early preventive oral health care. The massive tusks of the mammoths and mastodons on display offer a fun way to have a conversation about your own oral health care.

“Our support will help further our shared passion with the Museum for educating children and families in Colorado and advancing the science of eliminating cavities for future generations,” said Kate Paul, President and CEO of Delta Dental of Colorado. “We love seeing all the smiling faces of the children as they visit the exhibition, and we hope to see even more smiles in the future as we successfully treat this preventable disease.”

For 55 years, Delta Dental of Colorado has provided dental benefits to Colorado residents and worked to improve their oral health by emphasizing preventive care. Since 1997, the Delta Dental of Colorado Foundation has worked to eradicate cavities in the state’s children by supporting and partnering with organizations dedicated to improving oral health and education. Over the past seven years, the foundation has contributed more than \$12 million to programs that have developed creative, long-term approaches to preventing cavities in Colorado’s children.

Find fun facts and oral health care tips @ www.deltadentalco.com/mammoths.

Make a purchase in the Museum Shop and receive a free toothbrush compliments of Delta Dental, while supplies last!



FUN EVENTS FOR YOUNG PROFESSIONALS

The Museum’s Young Professionals are a group of our community’s young leaders who not only support the mission of the Museum but also receive a full year of benefits designed specifically for them. These are the YP events scheduled for 2013:

YP COCKTAIL PARTY

Friday, April 12, 7 p.m.

A private party for YP members only.

YP PRE-SCIENCE LOUNGE COCKTAILS

Thursday, May 16, 6 p.m.

Enjoy a drink before Science Lounge begins.

IMAX NIGHT

Thursday, June 6, 6–9 p.m.

Join Giving Club members to indulge in movie munchies and enjoy a big-screen double-feature.

SCIENCE ON TAP

Monday, July 22, 6–9 p.m.

Mix and mingle with YPs while learning about the science and history of craft brewing in Colorado.

MILE HIGH HAPPY HOUR

August, date to come

Enjoy cocktails with like-minded, young philanthropists as you help raise funds for the Museum.

AFTER DARK SOIREE

Friday, November 8, 9 p.m.–1 a.m.

Join us for the YP event of the year.

We invite you or a young professional you know to join today. Find out more @ www.dmns.org/YP.

DID YOU KNOW?

Museum memberships are tax-deductible, depending on your level. Find out more @ www.dmns.org/join/memberships/FAQ.



Illustration by Václav Štránský © The Field Museum

TODAY'S PALEO DIET

BY NICOLE GARNEAU, PhD

Does “Paleo Diet” conjure up images of a caveman devouring slabs of mammoth meat? Or are you reminded of your super-dedicated CrossFit friend who swears by it? You might think of the cabbage soup diet, the raw diet, and other trendy diets of the past. Hot topics in health come with wide-ranging perspectives and opinions because your health is personal and impacts everything you do.

The *paleo* in Paleo Diet is short for Paleolithic Era, spanning from 10,000 years ago to 2.5 million years ago. Modern humans (*Homo sapiens*) emerged as a species in the Middle Paleolithic Era, about 200,000 years ago, and migrated from Africa into nearly every corner of the world. Until about 10,000 years ago, our species was comprised of bands of hunters and gatherers. The Paleo Diet is generally prescribed as eating only food sources available at this time predating structured domestication and agriculture, primarily lean meat, seafood, nuts, fresh fruits, and vegetables. These are common-sense choices, clearly excluding processed foods that have proven to have little health benefit. At first glance, the Paleo Diet does not appear to be a fad at all and simply reinforces what we already know. However, closer inspection of the scientific claims behind the diet, specifically related to genetics and the exclusion of certain foods, is where detractors have voiced concern.

First, the genetics. Some of the diet’s advocates make the scientific claim that the human genome has not changed significantly from the Upper Paleolithic Era (50,000–10,000 years ago), so we are genetically adapted to survive as modern humans by following the Paleo Diet. While the genetic claim for the Paleo Diet seems oversimplified, it is true that humans possess a genome that

has evolved for millions of years to allow for survival. However, evidence from published studies shows that our genes have continued to evolve. As our modern *Homo sapiens* ancestors migrated, the ways they ate and survived was uniquely shaped by their specific environment and cultural influences, bringing about small, but significant, genetic changes. One example is lactose tolerance in most humans. This is the result of the coevolution of cattle following domestication of the animal within the last 10,000 years. Milk was a new food source. To take advantage of this energy dense and nutritious option, humans adapted by making the enzyme for digesting lactose long after weaning, when the enzyme normally stops being produced. The end result was evolution and survival.

The second questionable area stems from following an exclusionary diet. The Paleo Diet does not include grains, dairy products, and legumes. Many dieticians and nutrition specialists are concerned about the exclusion of these particular food sources because there is clear evidence they all contribute to a healthy diet, providing excellent sources of essential vitamins and nutrients. Exclusionary diets are also difficult to follow. Human nature dictates that when we restrict ourselves from something we crave, we are more susceptible to lapses that can lead to binge eating. Satisfying a craving in moderation is a healthier approach. On the flip side, under the guise of the Paleo Diet, some followers assume that all meat is okay, not just lean meat and seafood. This divergence from the true origin of the diet leads to the consumption of much higher, and healthier, percentages of saturated fats, which is not the intention of the Paleo Diet. In general, health professionals promote a diet that is well-rounded and follows realistic portion controls.

At the end of the day, your health is a complicated story that represents a complex interaction of genetic evolution, culture influences, and the environment. “Clearly, one size does not fit all ... modern-day Paleo Diets represent the starting point for good human nutrition, and modifications can be made individually,” Dr. Loren Cordain, the diet’s founder, quotes on the Paleo Diet website. Being aware of how you are unique and how this affects your own individual health is the first step in developing eating habits that will benefit you in the long-term.

SEE IT

Want to get your fill of mammoths? Visit the animals of the original “Paleo Diet” at Mammoths and Mastodons: Titan of the Ice Age. Find it @ www.dmns.org/mammoths.



FIND IT @ DMNS.ORG

Dr. Nicole Garneau is curator of human health. Find out more about her research at www.dmns.org/genetics.

Find out more about a well-rounded diet @ www.choosemyplate.gov.

Special thanks to Melissa Wdowik, PhD, RD, and Lance Holly, MA, for their contributions to this article.

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SUNDAY, APRIL 7

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