

The Explorers Club

Northern California Chapter

September 2007

Note venues and dates with care.
We will meet in Sonoma County!
Our event is at 3:00 on
September 23rd, a Sunday, at the
Boudreau home, 1209 Beattie Lane,
Sebastopol.

In color at our web site: <http://www.diggles.com/ec/>

Sebastopol—September 23, 2007

Richard Blake

California's First Known Meteor Impact Crater Sacramento Valley, California

Since the early formation of the earth, asteroids from outer space have bombarded the planet. Both surface and subsurface craters evidence the effects of these impacts, and approximately 150 meteor craters have been discovered worldwide. But not until the late 1990's had an impact crater been discovered in California. Then in a strange twist of fate, during an oil and gas exploration project in the Sacramento Valley of California, geologist Rick Blake (FN01), found the first meteor impact crater ever discovered in California. While exploring for natural gas with a small group of exploration partners, the group shot approximately 40 square miles of 3D seismic imaging data about 10 miles southwest of Sacramento. While looking for natural gas at depths from 4000-6500' in older Cretaceous sediments (65-130 MYBP*), the group discovered an unusual depression that was circular in form at a much shallower depth, about 2500 feet below ground surface. The feature was identified as a meteor crater, approximately three-quarters of a mile in diameter and 100-150 feet deep. The feature is now buried in non-marine Miocene sediments (20 MYBP) below the Sacramento Valley floor. The crater was discovered below property owned by the S.H. Cowell Foundation, and thus was named the Cowell Crater. The Cowell Crater is slightly smaller than Meteor Crater in northern Arizona that was formed by an impact on the Arizona desert approximately 50,000 years ago.

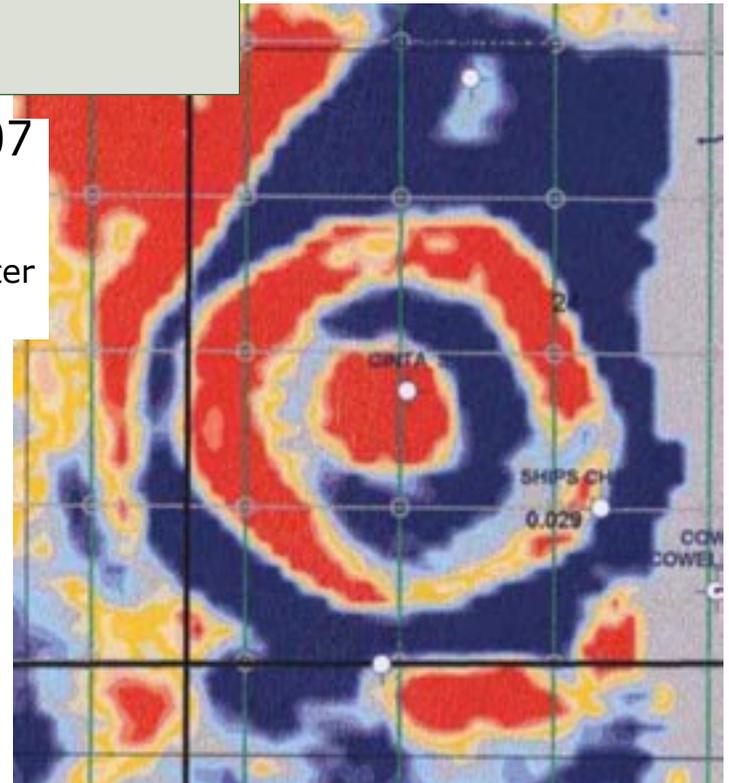
To form a crater the size of the Cowell Crater, the USGS suggests that it would take a meteor of about 50-100 feet in diameter, and the amount of rock ejected at impact would have been about 100 million tons. The impact would be equivalent to a 10-megaton explosion, or 1000 times more powerful than the atomic bomb



dropped on Hiroshima during World War II. The meteor would have struck at about 10 miles per second, fast enough to cross the continental United States in about 4-5 minutes. The Cowell

Geologist Rick Blake in the field holding a fragment of a meteorite collected from Meteor Crater, Arizona (see page 3.) This nickel-iron meteorite specimen is a remnant of the meteor that struck Arizona 50,000 years ago.

* MYBP: million years before present



Seismic data show the Sacramento-Valley-buried Cowell Meteor impact crater that was formed 20 million years ago. The crater, three quarters of a mile in diameter, is buried below 2500 feet of sediments.

Meteor smashed into the ancestral Sacramento River flood plain during Miocene time and was subsequently buried by river sediments.

This talk describes the distribution of impact features around the globe, concepts in crater formation, the economic importance of oil and gas production attributable to impacts features, the link between the extinction of the dinosaurs and meteor impacts, and geologic field activities of such well-known geologists as Dr. Eugene Shoemaker. Also to be discussed is the looming question, "when will the next big one hit?" After the breakup of the solar system, most of the asteroids remained in the "asteroid belt" between Mars and Jupiter. Any deflection of these asteroids causes them to take on another orbit, potentially turning them into "earth-crossing asteroids." NASA and other astronomers are tracking these celestial bodies, but not all are known! It is one of these earth-crossing asteroids that created the Cowell Crater and all of the other impact features on earth. The question is not "if", but "when" will the next asteroid strike the earth? Could there be another killer asteroid coming our way and are there any plans to head it off?

Rick has spent over 27 years exploring for natural gas and oil in the Great Valley of California. His exploration activities have led to some large natural gas discoveries, including California's largest gas well. He has a M.S. degree in geology, and is a trained petroleum geologist. He is a California Licensed Professional Geologist and is a Board Member and Vice President of the California State Board for Geologists and Geophysicists. For the past 15 years he has worked at Lawrence Livermore National Laboratory where he manages the water monitoring program for the Lab's Environmental Protection Department.

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Between East and West, by Boat!

Don Dana
Portola Valley

Don Dana listened intently to a lecture on the scientific debate comparing how man crossed from Asia to America over 10,000 years ago. As an avid student of various aspects of man's prehistory, he took action. He conceived and implemented a demonstration of just how early men, women and children could have populated the New World in ancient times. At our May meeting he presented the rationale, the supportive evidence and, most importantly, he showed pictures of the actual recreation of a very practical means of coming to what we now name North and South America. His first premise: ancient people were just as intelligent and creative as are those of us sitting listening to his talk. Indeed, living under the stress of hunting and gathering each day to subsist they were very attuned to creative ways in order to live, day-to-day. There is no reason to believe they were not capable of innovating for tools and habitations.

His second premise: supportive evidence is continuing to build showing peoples traveled 30,000 or 40,000 years ago from the cradle of Africa, across that daunting 12 miles at the mouth of the Red Sea and, as they explored the beach beyond, along the shores of the Indian Ocean to the South Seas and, a big leap, to Australia. Man clearly had boats; his remains have been found in Oz.

Over an eight-year period he studied and traveled the environs of the Bering Straights. In the Summer of 2006, he achieved his goal: he had convinced a group of natives near the Siberia coast to build a 'skinboat' from the hides of walrus.

(In fact, the inch-thick hides of two female walrus, tied to a frame of north-latitude timbers, comprises the basic *umiak* craft. [The male walrus hides have too many scars from doing battle to be very useful.]) In August, with his family along for the experience, the *umiak* was launched with success—about 100 km south of the Diomedes along the eastern coast of Siberia. The goal was to round the eastern-most extremity of Russia and pass to the north. The Danas rode in a 'safety' boat made of aluminum and powered by dual outboards. (The Alaskans call these 'kickers'!) The skinboat builders rowed and used a square sail. The water was very cold; a few moments overboard would kill most. This was a dangerous experiment.

As they proceeded north, the sand-beach coves along the coast turned to sheer rock walls. If a boat capsized, there was no place to grasp the shore. The safety boat was essential; however, one of the outboards failed. To proceed to the planned destination became too risky; they turned back. This was hardly a failure: the skinboat was just fine; the modern technology had the problem. The demonstration of how a small boat could make its way along the northern coast line from Asia, along what is now Alaska, Canada, the USA, and beyond was convincing.



DON DANA

The *Beluga* sails north along the Siberian coast, demonstrating a way man could have crossed from Asia to the Americas.

There was further insight. The *umiak* was easily pulled ashore each evening by its occupants. Then, when tilted over, it provided a dry shelter! The aluminum craft required excess people, perhaps 20, just to haul above the water line. It was too heavy to become a useful shelter.

Don Dana provided a practical demonstration of an alternative to the all-too-common belief that man walked across a land bridge when the glaciers lowered the sea level. Creative thinking. Take-charge entrepreneurial spirit. We welcome Don as a new member of The Explorers Club!



Don and his assembled team of builders and sailors, from the Chukchi village of Lorino and the Inua village of Yanrakynno, with their two-walrus skin boat, the "*Beluga*."

Don Dana, in Portola Valley, being congratulated on an excellent talk by Chapter Chair, Lee Langan.



KARINE LANGAN

Rick will give his talk in the relaxed living room of Gene and Sibyl Boudreau's home in Sebastopol. Before he speaks the Chapter and friends are invited as guests of the Boudreaus for an afternoon of libation, conversation and viewing of recent and previous ethnographic findings from Mexico's Tarahumara and Kenya's Turkmana. We have been their guests before, and Boudreau hospitality is a wonderful beginning for our annual lectures.

The Sunday drive is about one hour north of the Golden Gate Bridge.



Aerial view of Meteor Crater, Arizona, a surface feature approximately one mile in diameter.

Searching For and Finding MIAs

"The 'Last Flight Home' documents the story of Dr. Patrick Scannon's work searching for and finding missing World War II aircraft and the MIAs associated with them in Palau. A ferocious battleground nearly forgotten by history, yet more than 200 US aircraft went down on and around the islands. Almost half of those with crew now listed as Missing In Action. Over 60 years ago all the families got was a telegram. Whereabouts unknown, Missing In Action. And over the generations these families have refused to forget and refused to stop waiting. For an answer, for their return, for some clue as to what happened. Surprising though it may be, hope has remained. Then, the phone call out of the blue, "Are you the nephew of Arthur Miller?," finally brings the answers. Dr. Scannon furthers his research into the MIAs of Palau by scouring the National Archives, After Action Reports, and interviews with veterans of the campaign, no stone left unturned. Scannon's small team of self funded private citizens have taken on these tasks simply as a way of thanking the MIAs and their families for the sacrifices made decades ago. Our film follows the story of three searches in Palau and the families touched by the work. Filmed over the course of nearly six years and seven expeditions to Palau, where we thought the adventure was to be found. It was our delight to discover the adventure and heart of the story here in the U.S. with the families."

The above is the introductory text by film makers Jennifer Powers and Daniel T. O'Brien from Chapter member Pat Scannon's (FN96) film web site: <http://www.lastflighthome.org/> He has gifted the Chapter with a copy of the film (67 minutes); we will look for the opportunity to show it. (The DVD is available for sale at the web site.) Many of you may have listened to his story of two of the expeditions at lectures in October 2001 and December 1997 and visited his web site about the searches: <http://www.bentstarproject.org/>

This film is a documentation of true exploration in the 21st century—funded as it was in the 19th century, *¡a su costa!*



The Chapter Chair

Summer and many field trips have passed too quickly. It is time to begin our series of exploration lectures, once again. The series schedule has not been completed in time for this publication; rest assured, nevertheless, that you will be pleased with the ensuing line up of excellent speakers. October had a last minute glitch, but talks are in progress.

Bits of news drifted into the email box over the Summer to be noted here; if I have missed news let me know.

My Summer included a leisurely auto trip along US highways, excluding Interstates for the most part, in a clockwise circumnavigation north, east-into-the-West, and south through the Basin & Range country. We crossed the Sierra at Sonora Pass. It was somewhat of a nostalgic tour, for I had been most places before. Yet, the grandeur that one feasts upon is never the same; one does not have to travel to hinterlands to find wonder. Highlights included the MacKenzie River, Mt. Borah, the Tetons' Leigh Lake and Mono Lake. These

should hardly detract from the many vistas between. I hope each of you had some chance to wander.

Sunday the 23rd of September will be the fourth time Gene and Sibyl Boudreau have opened their home (and veritable museum) to our Chapter—and have welcomed us as their guests. It is a bit of a trek to Sebastopol for some, but may I assure you the trip is very worth the effort! Not only are the Boudreaus wonderful hosts, but Gene's collections from Mexico's Sierra Madre and Northern Kenya are the stuff of rare finds normally behind curator's glass.

All who have made the trip (it is a beautiful drive during the Fall wine harvest!) will attest to the good chance to visit with fellow members and their guests. The Boudreaus have made an open invitation. It is especially a good time to bring prospective members. It is a great opportunity for new Chapter members, as well. If you are in town, this is a splendid way to begin our new year!

In our last newsletter I stated that I encourage someone to step forth to organize a means that would allow car-pooling to meetings. There are a substantial

number of Chapter members who choose not to attend because they do not want to drive solo and return after a full evening. If we can coordinate carloads, more will attend (and a designated driver can be selected!) I look forward to hearing from someone willing to organize this. It could be a one-person responsibility: someone to coordinate those who will drive and those who need a ride. Step forth!

A slate of officers will be put forth at the meeting; the election will be in October; a new term begins in January. Anyone interested in participating contact me or Lesley Ewing.

See you at the Boudreau's!

—Lee Langan (FN99)

**Go see Bob Cameron's
"ENVIRONMENTAL JOURNEY"
at the Presidio Officer's Club.
You have until September 18!**

September 2007



Chair: Lee Langan
415 567-8089
lee@langan.net
Vice Chair: Alan Nichols
415 789-9348
ahnichols@att.net
Treasurer: Anders Jepsen
925 254-3079
ajviking@aol.com
Secretary: Stephen E. Smith
Webmaster: Mike Diggles
Newsletter: Lee Langan

Rick Blake — Meteorite Collision
23 September — Boudreau home, Sebastopol

**Northern California
2007-2008 Calendar of Events**
(Venues will be identified at time of event.)

Our next Meeting

September 23 (Sunday) Gene & Sibyl Boudreau
Meteorite Collision (Rick Blake)
Boudreau Home, Sebastopol

Future Meeting Schedule

October 19
to be announced
Golden Gate Yacht Club, San Francisco
November 9 (Thursday)
Marco Polo, Lawrence Bergreen
Golden Gate Yacht Club, San Francisco
December 9 (Sunday)
A gathering of Explorers
2660 California Street, San Francisco

Meetings earlier in 2007

January 19 Olaf Malver
Kayaking the Frontiers of the Seven Seas
Golden Gate Yacht Club, San Francisco
February 23 Helen Klaben Kahn
Hey! I'm Alive! Lost in the Yukon
Golden Gate Yacht Club, San Francisco
March 23 Craig Childs
Tracking Vanished Peoples Across Southwest
Golden Gate Yacht Club, San Francisco
April 20 Phil Rasori
Ceremonial Dress in New Guinea
Golden Gate Yacht Club, San Francisco
May 18, 2007 (Friday) Don Dana
The First Americans: Siberians!
Parkside Grille, Portola Valley

September LOCATION

Date Sunday, 23 September 2007
Place: Boudreau home, 1209 Beattie Lane, Sebastopol, CA
Time: 3:00 pm
4:30 dinner & talk
Cost: FREE to members and reserved guests of members

Please reserve promptly to help Sibyl plan!
Leave message for Sibyl at
707 824-8241
or
boudreau707@gmail.com

Reserve ___ spaces for **September 23, 2007**, at the Boudreau's, Sebastopol, CA

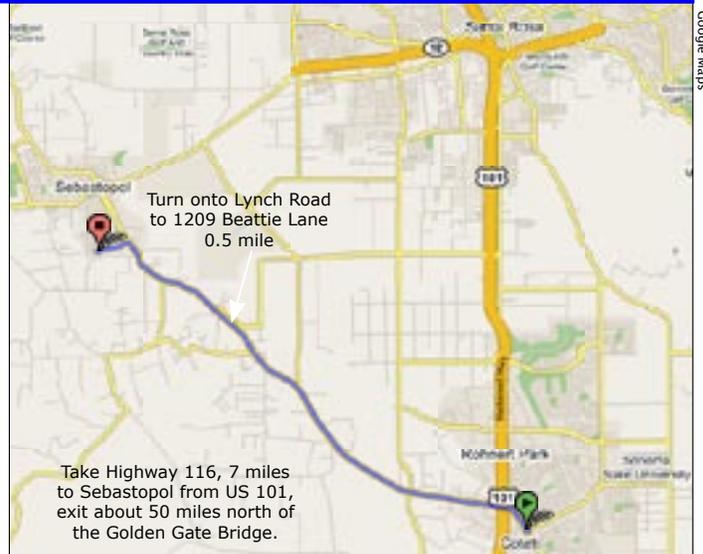
Prospective members are welcome.

Name: _____

Address (if changed): _____

Guest(s): _____

Please mail information above to Sibyl Boudreau
1209 Beattie Lane
Sonoma, CA 95472
or email
boudreau707@gmail.com
or call 707 824-8241



Google Maps