



SharkBites

NEWSLETTER

HAVE YOU HEARD THE NEWS? BVM IS BUYING THEIR BUILDING!

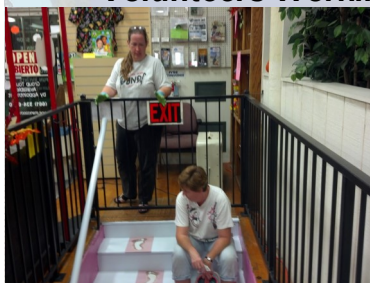
December 2014 Buena Vista Museum of Natural History and Science (BVM) Announces a Campaign to Raise Funds for a Building.

An Appeal letter was sent out regarding the funds needed for our building. The Board of Directors and Executive Director thank all those who have pledged or sent donations. Your continued support of BVM is a very important part of the many positive changes happening at the Museum. **2015 CELEBRATES OUR 20TH YEAR** of incorporation and service to the community as a science educational resource for children and adults. During 2014 over 12,000 people visited and experienced BVM's exhibits and/or participated in outreach programs. In our twenty years of service, this is the highest number ever recorded.

HERE IS THE EXCITING NEWS! For years we have longed for a permanent home for the museum and have looked at a wide variety of options. We have chosen to purchase the building we currently occupy at 2018 Chester Ave. We think we can better serve Kern County, build equity and financial stability, improve exhibits, programs and infrastructure by making the bold step of owning our building. We have negotiated a price and have entered into escrow.

In December the Museum established a Building Fund with a goal of \$300,000. We are off to a great start, our Building Fund as of January 31st with pledges and donations total over \$150,000. We are half way! We need to raise another \$150,000 by March 31, 2015. We are hopeful that each person receiving this newsletter will support this opportunity and be able to help. (cont. pg. 2)

Volunteers Working on Improvements



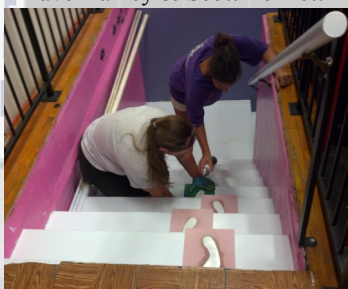
Pat Galvin and Greg Galvin



Dave Hanley & Scott Bennett



Chuck Mast & Zach Sprague



Eagle Scout Project

The Museum is open: Thursday - Saturday 10 am - 4 pm and Sunday 12 pm - 4 pm, during high heat days hours are subject to change please call the museum at (661) 324-6350 for more information..

WINTER
2015

CELEBRATING



Board of Directors

Gary Paddock
President

David Hanley
Vice President
Secretary

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Jon Allen
Steve Collett
Tim Elam
Mark Hodson

Koral Hancharick
Executive Director



Buena Vista Museum of
Natural History and
Science

2018 Chester Ave.
Bakersfield, CA 93301
661-324-6350

buenvistamuseum@gmail.com



"Like" Us on
Facebook

**The Museum
will be
CLOSED
in
Observance of
Easter
on
Sunday
April 5, 2015**

Have You Heard the News?

(Cont. from page 1)

Every donation, helps us get closer to our goal.

Please consider what the museum offers our community and visitors:

- **A well rounded view of science.** We are the only museum in central California with exhibits of Anatomy, Astronomy, Anthropology, Archaeology, Biology, Geology, and Paleontology. Our hands-on interactive Science Discovery Center, which includes the “Oh! Zone” and “Explore-it Zone” are very popular with kids.
- **On permanent display are:**
 - An extraordinary collection of world class local Miocene marine and land fossils from the famous Sharktooth Hill area;
 - Our Native American Lifeways interpretive dwelling, sponsored by Occidental Petroleum. It shows artifacts from local excavations celebrating the San Joaquin Valley Yokuts Indian heritage;
 - Animal mounts from Africa, Asia, Australia and North America;
 - A diversified Geology section with hands-on rocks and stunning gems, minerals, and petrified wood;
 - Ancient Life exhibits with life-size dinosaur casts and fossils;
 - Newer displays including California’s Changing Water, Nano Technology, Heart and Cell displays, and the “Mars and More” display featuring items from NASA’s Jet Propulsion Laboratory (JPL), and a new area of the Explore-It Zone, designed for our youngest visitors.



The heart and soul of the museum are children. We make science an educational, fun experience. Imagine a child seeing and touching for the first time a dinosaur bone, shark tooth, meteorite, gold nugget, or fluorescent rocks that glow in the dark, staring at a fully-grown lion, spinning on an astronaut training chair, or building a catenary arch! These things happen every day at BVM! Science is important in helping our children observe, experiment, reason, and think critically - skills our teachers see lacking in many students today.

Consider what we are doing for school-aged kids today:

- Each year volunteer docents **lead thousands of school children on tours** through the museum over 50 school tours in 2014.
- Off-site presentations allow **museum volunteers to “take the Museum” to schools** and have students and teachers participate in **interactive learning experiences**.
- During the summer and spring breaks from school we offer week long **Science Camps for children**. In 2014 the summer camps were **expanded** an additional week to meet the needs of the community. To meet the community’s demands we will add another week in Summer 2015.
- The first Saturday of each month we have “**Just For Kids,**” a science enrichment program geared toward interactive, hands-on learning.
- Our **Junior Docent program** is designed to help improve youths’ (ages 12-17) knowledge of science, speaking abilities, and leadership skills.
- Each spring for the past three years the museum has partnered with the Kern County Science Foundation and the Kern County Superintendent of Schools to hold a new event, **The Spectacular World of Science**. It has been a huge success.
- BVM also has an **ongoing relationship** with California State University Bakersfield’s Math and Science Planning team through the National Science Foundation, as well as relationships with Bakersfield College, University of LaVerne, Kern County Superintendent of Schools and many other educational partners.

In our 20 years of service to Kern County the museum has grown tremendously! During this time, we have demonstrated our persistence, resilience, and commitment to science and history education, that includes exhibits celebrating Kern County and California.

Now more than ever the Museum needs your help in raising funds to purchase the building we currently occupy and a few improvements that are needed. **You can make a difference with a donation supporting the Museum.** Please remember no donation is too small. Every dollar counts.

If you have not visited the Museum in the past year, please come by. You will be amazed at the positive changes and growth. We would love to share with you our plans for the future.

Sincerely,
Gary Paddock
BVM Board President
and
Koral Hancharick
BVM Executive Director



2015 Buena Vista Museum Calendar

Save these dates! More information available on our website: www.sharktoothhill.org

2015 Celebrating our 20th year serving the community!

Watch for special events and presentations throughout the year.

February

February 28, 2015 3:00pm to 5:00pm "Archaeobotany of Tell El Hibe, Egypt" Presented by BVM curator John P. Stegall & Dr. Robert M. Yohe II Archaeologist, and CSUB Professor
An overview of the food resources used by local Egyptians for the last 2,000 years with a reevaluation of the archaeobotany (or ancient foods) of the Tell El Hibe site in middle Egypt.

March

March 6th, 7th, 8th Paleo Dig Near the Famous Sharktooth Hill with BVM Would you like to be a paleontologist for a day? Do you like to dig in the dirt? Would you like to find fossils? Join the museum field guides on this adventure to the Quarries near Sharktooth hill. No experience necessary. More details on BVM Website.

March 7th is FAMILY DAY at BVM, 10am- 4pm 2 adults and up to 6 kids- admission is only \$20! Ask at register for Family Day Special admission price!

March 7th 10:30-12 noon "Just for Kids" Presented by Dr. Steve Collett Learn the facts of faults and earthquakes and how earthquakes affect us here in Kern County. Children will build a paper craft model of the movement of the San Andreas Fault. There will be no extra charge for attending this event...just the normal Museum entrance fee and BVM Members are Free!

March 7, 3:00 PM History and Geology of the Grand Canyon Join local geologist Tim Elam as he takes you on a rich photographic tour of the geology, and history of the 277 mile long Grand Canyon. The colorful cliffs of the Grand Canyon are contain a record of Earth history duplicated nowhere else. How did it form? Why is it there? There will be no extra charge for attending this event...just the normal Museum entrance fee and BVM Members are Free!

APRIL

April 4th is FAMILY DAY at BVM 10am- 4pm 2 adults and up to 6 kids admission is only \$20! Ask at register for Family Day Special admission price!

April 4th 10:30-12 noon "Just for Kids" "Dinosaurs" with Travis Bibee, Dino expert.



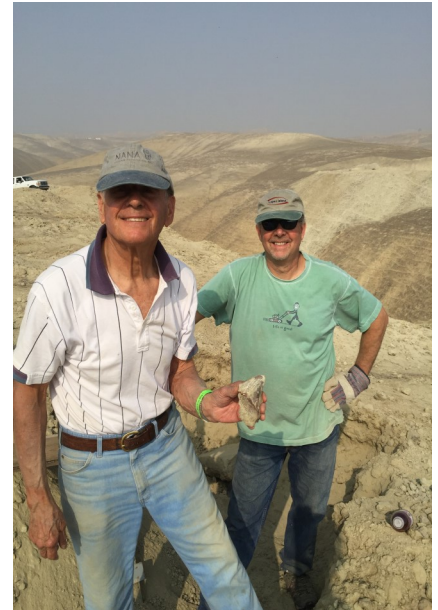
April 4, 3:00 PM "DINOSAURS!" with Geologist Tim Elam What do we know about dinosaurs? Where are dinosaur fossils found? How did dinosaurs become extinct? Join geologist Tim Elam and Museum dinosaur expert Travis Bibee as they take you on a journey to learn more about T-Rex, Barney, Dino, and the Jurassic Park creatures as well as bones and models of dinosaurs on display at Buena Vista Museum. The presentation will be informal, and questions are encouraged. No geologic or paleontologic background is necessary to enjoy the event. There will be no extra charge for attending this event...just the normal Museum entrance fee.

April 17th 6:30 PM BVM's 20th Anniversary and Volunteer Appreciation Dinner details coming soon.



Paleo Digs at Ernst Quarries, Sharktooth Hill Area

Would you like to be a paleontologist for a day? Do you like to dig in the dirt? Do you like a treasure hunt? Would you like to find shark teeth and other marine mammal fossils? Join the museum field guides for the next dig: March 6, 7 & 8, 2015 on an adventure to the quarries near Sharktooth Hill. No experience necessary. The museum field guides are there to show you where and how to dig. Member rates: \$85 per day, per person; multiple day reservations and discount available. All attendees must be BVMNH members*. All Diggers will be allowed to keep all teeth (including Megs) and all fossils with the exception of scientifically significant assemblages or articulated fossils will be the property of the land owners. * BVMNH one year membership: Individual \$25, senior \$20 or Family \$75. For registration or more information contact BVMNH 661-324-6350 or www.sharktoothhill.org.



Photos provided by
James and Joe Prola

OnCell Tour Sphere™ Mobile Audio Enriches Museum Tours



Beginning mid February 2015, BVM will launch a cell-phone-driven audio tour system provided by OnCell, a New York based service.

- Visitors to the museum will be able to dial up a local (661) number, then a 3-digit code, and hear a minute or so of explanation for a given exhibit.
- In the beginning, eleven of the most popular exhibits will be on the audio "stops" including the amethyst "cathedral", the sperm whale skull, Ben Nafus' Miocene sea-life mural, our model Megalodon jaw, and the fluorescent minerals room, to name a few.
- Potentially, hundreds of exhibits can be included on the cell-phone audios.
- Each month more audios will be added. This is just one more educational tool the museum is adding to enrich the visitor's experience.
- BVM thanks BVM Board Member Jeff Johnson for sponsoring OnCell.

For more information about how to sponsor an exhibit, display or area within the museum contact Executive Director Koral Hancharick.



JP Stegall, Curator

Paleo Research Center

January 2015 Buena Vista Museum of Natural History and Science officially opens the Paleontological “Paleo” Research Center to provide research opportunities for academic researchers and students associated with other museums, universities and government agencies as well as BVM members doing independent research on the paleontology of Kern County and neighboring areas. For educational purposes researchers may access the BVM repository collection of fossils, research papers, books and art works related to paleontological studies. Among the vast repository collection includes rarely seen vertebrate and invertebrate fossils from the Sharktooth Hill bone bed, Olcese Sands, Pyramid Hill and other fossil localities within the county along with a growing research library collection. In addition to the library and fossils, the research center has a growing special collection of archive photographs and paleontological artworks created by a local artist, BVM volunteers and supporters.

Access to the Center is strictly for research purposes, by appointment only and with the approval of BVM’s Curator. For appointments and questions about the Paleo Research Center and collections, please e-mail the Museum’s Curator John P. Stegall at jpstegall84@yahoo.com or call 661-324-6350.

Snapshots from the 2014 Gala A Fundraiser for Our Educational Programs

Photos by

JP Stegall



Paulina and Ted Stanfield and Tim Elam



Tristan Shamp and Brittne Smith



Jill and Dave Hanley



Gerard Scott



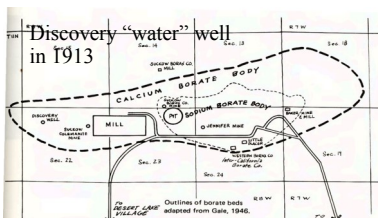
Geology & History of the Kramer Borate Mineral Deposit, Kern County, Ca.

By: Geologist Tim Elam

Being in the oil and gas production business, we are familiar with many wells drilled that have resulted in significant production. In Kern County and the San Joaquin Valley, wells like the Lakeview #1, drilled in 1910, stands out because it was the largest gusher in the United States, and a significant well of the supergiant Midway-Sunset Field. Collectively, the shafts and wells dug and drilled by the Elwood brothers led to the discovery of Kern River Field in 1901. In 1911, Associated Oil Company drilled Well #1 in Section 26R, the first producing well at Elk Hills.

However, some might argue that the single most important well ever drilled in Kern County was not an oil, gas, or even a water well. In fact, it was a dry hole.

SAY WHAT? ONE OF THE MOST IMPORTANT WELLS EVER DRILLED IN KERN COUNTY HAD NOTHING TO DO WITH PETROLEUM OR WATER? AN IMPROBABLE DISCOVERY



In 1913 in the Mojave Desert, a 450-foot well was drilled by J.K. Suckow. He was attempting to find water in the desert, but the well turned out to be a dry hole. However, at

369 feet, the well did encounter an unusual gray crystalline rock. The rock turned out to be colemanite, a hydrated calcium borate, and a primary ore of the borate



View looking north toward the Rio Tinto Borax operations at Boron, Ca. Photo by the author.

family (Siefke, 1980). Suckow's well encountered the western edge of the largest borate mineral deposit in the western hemisphere! As the Suckow ore body was defined, in 1925 a more desirable hydrous sodium borate body was discovered a mile to the east. (Siefke, 1980). That led to the beginning of mining of sodium borate in 1927. The biggest operator was the Pacific Coast Borax Company. All borate mining and processing were eventually consolidated into one operation: the Pacific Coast Borax Company (now Rio Tinto Minerals.). The deposit is known as the Kramer Borate Deposit, or the Kramer Mining District, near Boron in eastern Kern County.

IMPORTANCE OF BORATE MINERALS

Historically, the production of borates has been strategically important worldwide, and remains so today. Arabian gold and silversmiths used borax in gold and silversmithing in the 8th century AD. Marco Polo brought borax back to Europe from China in the 13th century. For hundreds of years, in the 13th-17th centuries, European gold refining via use of borax was a well-kept secret (U.S. Borax, Inc., 1997.)

Since mining began in the 1920's, the Kramer deposit has produced over 50% of all the borate feedstock (B_2O_3) used in the world. California borate production today also comes from smaller operations at Searles Lake in San Bernardino Co. The Kramer borate production operations are rivalled only by deposits in Turkey (Liday, 1994). For the first 30 years at Boron, mining was done underground. In 1957, the complex became an open pit operation. In 2005, the pit was one mile wide, 1.5 miles long, and up to 700 feet deep (Borax, 2005).



White-colored borate ore contrasts with underlying dark basalt inside the open pit. Rock layer contacts are obscured by mine road benches. (Photo by the author.)

Borates are used for making nearly 200 products. The most recognizable use of borates is in soaps and detergents. But borates are a key ingredient in diverse products such as ceramics, pesticides, rocket fuel, cancer treatment drugs,

cosmetics, flame retardant, and wallboard (U.S. Borax, Inc. 1997).

In the 87 years since production began at Boron, tens of millions of tons of borate ore has been mined and processed at Boron. In 1992 and 1993, the U.S. produced just over 1 million metric tons of borate ore, virtually all mined from the Kramer District. The product value in 1992 was \$330 million and \$370 million in 1993 (Smith, 1994.) 2004 production at the mine was about three million tons of ore (Borax, 2005). Between 2008 and 2012, the boric acid and sodium borate exported each year by the United States was between 580-800 thousand metric tons. The worldwide need for borate continues to rise. Worldwide demand for B_2O_3 is expected to be 2.0 million tons in 2014 (Crangle, Jr, 2014). Reserves at the Kramer deposit are classified; however, a huge body of calcium borate remains in the ground.

IF ONLY THEY HAD KNOWN

Kramer District borate mineral production is a classic "If They Had Only Known" story. California borate mining began in the 1850's, and by the 1880's, all borate production was from Death Valley.

(cont.)

Geology & History of the Kramer Borate Mineral Deposit, Kern County, Ca. (continued)

Since there was no railroad to Death Valley, borate ore was shipped 165 miles to the nearest railhead at Mojave, Ca. by the legendary 20-Mule Teams. The Mojave-Death Valley teams operated only six years, from 1883-1888 (U.S. Borax, Inc. 1997.) But after the 20 Mule Team product name was trademarked in 1894, the mule teams became a part of Americana by appearing in parades, presidential inaugurations, advertising ventures, television shows and movies, artwork, etc. (U.S. Borax, Inc. 1997.)

The westernmost part of their journey to Mojave is now in part covered by a road, 20 Mule Team Parkway. Ironically, the Kramer Borate Deposit, the largest in the world, lies only 12 miles south of Twenty Mule Team Parkway. The mine is only 25 miles from Mojave. If the borate miners had only known of their proximity to the Kramer Deposit! But the Kramer borate was discovered 25 years after the last Death Valley-Mojave 20 Mule Team journey.

The Mojave-Death Valley round trip was twenty days. Each load was carried from an elevation below sea level to over 4000' elevation. The teams and their handlers...a muleskinner (driver) and a swamper (cook/handyman), had an amazing safety record covering the hot, dusty, dry, rattlesnake-infested trail (U.S. Borax, Inc., 1997.) The end of 20 mule team transport occurred due to bankruptcy of the company owner, William T. Coleman, and discovery of other borate deposits near Barstow (Woodman, 1951.)

GEOLOGY OF THE DEPOSIT

The borate ore occurs in lenses of Middle Miocene shale and claystone of the Kramer beds within the Tropic Group (Siefke, 1980.) The entire borate mineralization mass is The Saddleback Basalt, dated at 18-19 million years old, marks the base of economic borate ore. The ore, shale and claystone are 16-18 million years old. The open pit is located to optimally mine the sodium borates. Sodium borate beds consist mostly of kernite, but transitional zones enveloping kernite lenses are largely borax (Ver Planck, 1962.) Above the borate pay zone are middle Miocene arkosic sandstones. A thin veneer of Quaternary alluvium lies unconformably on top of the Miocene arkosic sandstones and covers the land surface

(Siefke, 1980.)

A large, down-to-the-north fault, the Western Borax Fault, bounded the lake in the middle Miocene. After borate ore deposition, other faults developed, segregating ore bodies (Siefke, 1980.) The borate minerals have a somewhat problematic genesis. But most workers think the minerals precipitated from hot springs adjacent to volcanoes into lacustrine/playa settings. The remnants of many Miocene volcanoes, such as Soledad Mountain and Castle Butte, still exist in the western Mojave. Hot waters dissolved boron from basalt, sediments, and quartz monzonite beneath the lacustrine sediments (Siefke, 1980.) They precipitated in the lacustrine sediments. Mineralogy of the borate deposit has changed since time of deposition. The two most important sodium borates, kernite and ulexite, are diagenetic products...likely after the mineral borax (Siefke, 2007.) Colemanite also likely formed diagenetically.

CONCLUSION

Borate minerals mined from the Mojave Desert at Boron continue to supply borate needs around the world. Like many mineral discoveries, luck played an important role. And, like oil and gas of the San Joaquin Valley, borate mineral production will continue to be important to Kern County's economy.

REFERENCES

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Marty Stuart Concert a Success!



Marty Stuart, well known country music artist, came to Bakersfield Fox Theatre to perform a benefit concert for BVM. Over 800 people were in attendance and an outstanding time was had by all. This was a successful fundraiser supporting the museum's educational programs.

We wish to thank the following sponsors for their generous support!:

Diane Lake
Grimmway Farms
Houchin Blood Bank
Mark & Randi Hodson
XEROX
Bob Bender



Executive Director Koral Hancharick with Marty Stuart

2014 School Tours

*A Big Thank You to All of the Students and Teachers
Who Visited the Museum From the Schools Listed Below!:*

January, 2014

Horce Mann School
Bakersfield, CA

February, 2014

Laurelglen Elementary Special Education
Bakersfield, CA

Owens Valley Career Development Center
Bishop, CA (Bakersfield Location)

DiGiorgio School
Arvin, CA

March, 2014

Morningside School
Delano, CA

Mojave Elementary
Mojave, CA

Downtown Elementary
Bakersfield, CA

Sequoia Elementary
Shafter, CA

Tehachapi School District
Tehachapi, CA

April, 2014

Girl Scout Troop

San Lauren School
Bakersfield, CA

St. Paul's Preschool
Bakersfield, CA

Springfield School

May, 2014

Harding Elementary
Bakersfield, CA

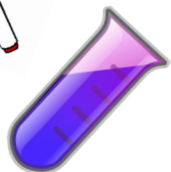
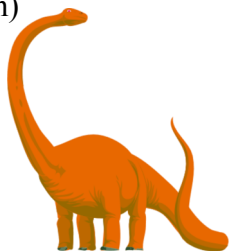
Berkshire Elementary
Bakersfield, CA

Miller Elementary
Bakersfield, CA

Cub Scouts

Harvest Elementary
Delano, CA

Downtown Elementary
Bakersfield, CA



June, 2014

Jr. Science Discovery Group
American Association of University Women

Home School Group

Alia Jr. Science Group

July, 2014

Ethel's Kiddie Corral

CAL Ivy Group

Boys & Girls Club
Bakersfield, Ca

August, 2014

None

September, 2014

Cub Scouts

October, 2014

Carden School
Tehachapi, CA

Our Lady of Guadalupe School
Bakersfield, CA

Peak to Peak School
Pine Mountain Club, CA

St. Francis School
Bakersfield, CA

November, 2014

Horce Mann School
Bakersfield, CA

Country Christian School
Bakersfield, CA

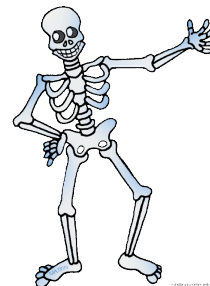
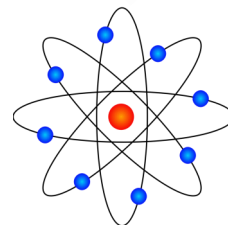
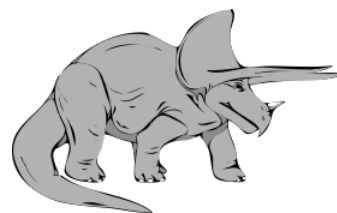
Buena Vista High School
Taft, CA

Our Lady of Perpetual Help
Bakersfield, CA

Valley School
Bakersfield, CA

December, 2014

Valley Oaks Charter
Bakersfield, CA





Through the Years....
Celebrating 20 Years!



Donation and Pledge form

We offer multiple ways for you to financially support the Museum throughout the year. Please consider that BVM's **average year operating expense is \$175,000 per year, or about \$14,583 a month, \$486 per day.**

In 2015 WE CELEBRATE OUR 20th YEAR OF OPERATION!

It is an Exciting time! We are **purchasing our current building. We need to raise close to \$150,000** While this is a large number, No donation is too small...a few dollars or even spare pocket change all adds up! Your donation will help the museum continue the many Science Educational programs for Children and Adults.

*****cut and detach*****

Name _____ E-mail _____

Address _____ City _____ State _____ Zip _____

Phone: _____ Cell: _____

Please accept my donation in support of the museum's operation and many Science Educational programs.

_____ Enclosed is my donation for the **Building Fund** in the amount of \$ _____

_____ Enclosed is my donation in support of many **Educational programs** \$ _____

_____ Enclosed is my donation in support of **Exhibit Acquisitions and improvements** \$ _____

_____ I would like to **pledge** on a monthly basis \$ _____

_____ I would like to receive pre-addressed monthly pledge envelopes.

_____ Please charge the above amount to my credit card # _____

Name on Card _____ Expiration date _____

Signature _____

_____ I would like to have more information about being a Major Sponsor of the museum. Please contact me at Ph # _____ Best time to call _____

_____ I would like to be a volunteer. Please send me an application and more information.

Please mail to **BVM, 2018 Chester Ave, Bakersfield, CA. 93301 USA** Or call 661-324-6350



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Bakersfield, CA 93301

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Many THANKS to those who support us in so many ways!



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The Bakersfield
Californian



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