YBRA UPLIFT

Annual Newsletter of the Yellowstone-Bighorn Research Association

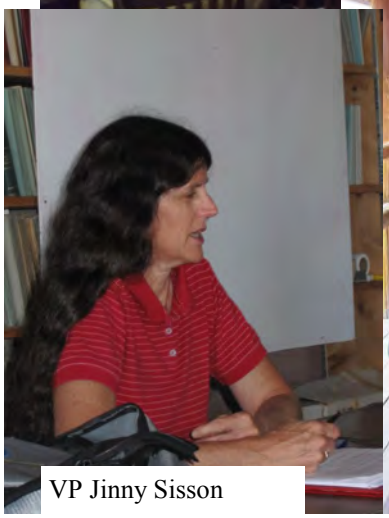
Issue 19 ***2013***

The Fifareks

Winter

Field Camp Meal

Summer



VP Jinny Sisson

YBRA Council 2012

YBRA President's letter 2009

YBRA 75th Anniversary Campaign - 2013

From the President,

Enrollments in all of our field courses are up significantly this year, reflecting a national trend of increasing geoscience majors and declining numbers of field courses. While this is good news for our bottom line, the projected spike of >100 would have exceeded our capacity to lodge, feed, and provide study space for students during previous years. Fortunately, we had set in motion a plan to convert the Library to a study hall and Dusenbury to a dormitory with an additional 8 bunk beds. During peak times Jeanette Reinhart (head cook) and the kitchen staff are serving breakfast in two shifts and buffet-style meals in the evening. At the time of writing this note, the system is working well thanks to the hard work and planning of Ray Raymond (camp manager), Jeanette, and their crews.

Ohio University will conduct part of its field geology course from the YBRA field station for the first time this year. About 26 staff and students will spend 15 nights in camp during a traditionally slow period in July. We look forward to getting acquainted with their faculty and a long association. Welcome OU!

Changes to the camp continue, most visibly with the fire hazard mitigation program of replacing one to two flammable roofs per year with metal, and thinning of trees and brush. However, the growing use of camp only highlights the need for major infrastructure projects we have yet to tackle, such as a new student dormitory, new study hall, expanded and updated wash houses, and an upgraded water supply system. Revenues from camp usage typically cover operating expenses and perhaps one or two modest extraordinary items. Accordingly, the funding of major upgrades and new buildings must come from other sources….which brings me to the title of this letter and a reminder. We are in the midst of the multiyear YBRA 75th Anniversary Campaign to acquire funding for major projects that would allow us to enhance our mission of supporting and providing geoscience education and research. To date, over $17,000 has been contributed toward our campaign goals. I urge all YBRA members to keep these needs in mind when mailing their 2013 dues. Participation by companies and foundations is particularly welcome. Donations can be directed to the *Dutcher Dorm fund* for constructing a student dormitory or to the *YBRA 75th Anniversary Campaign fund* for fire hazard reduction, water system improvements, and other needs. Tax deductible contributions can be made by check,
money order or donated stock and sent to Denny McGinnis (see enclosed Proxy).

This year's Uplift includes an article on the names of the camp buildings, a poem, and obituaries for two individuals associated with YBRA. I also note with sadness the passing of Dale Ritter, a faculty colleague of mine at SIU and former president of YBRA. "Dusty" was a pre-eminent geomorphologist and wonderful mentor and friend to many. His obituary is at: http://www.legacy.com/obituaries/rgj/obituary.aspx?pid=158121480. Note that the summer **YBRA meeting is July 21** and **Work Week is Aug. 18 – 24**. Please stay in touch and visit camp if possible.

Richard Fi-

Letter From The Camp Manager

We are looking forward to another busy summer. All class sizes has expanded and we welcome Ohio State to YBRA this summer. Increased numbers put a strain on the infrastructure. Plans are to convert a study hall to a dorm and use the library as a study hall will be implemented this summer. Our water system was put to the test last year with the severe drought we suffered. I am glad to report the efforts at eliminating leaks and fixing long standing problems allowed us to keep up with demand. There is a need to add additional water storage capacity as the camp use increases. Bids for adding a 5000 gallon and a 10000 gallon tank should be submitted soon. Our fuel reduction program was slowed last summer by the drought as cutting restrictions were imposed early in the summer. We will continue with the thinning again this year. Three committees have been formed to help plan the future of YBRA. Anyone interested in helping with the work should contact Dr. Fifarek. Any alumni traveling in the Red Lodge area are encouraged to check on the availability of accommodations. We are always glad to welcome back former students and faculty. Once again I would like to remind everyone about Work Week in August. Room and meals are provided for all interested in working on the camp. Many projects can be completed when we have enough help. Please contact Jeanette if you think you can attend work week or can volunteer some time. It will be an exciting year and I hope you will be a part of it.

Ray Raymond, YBRA Camp Manager

Significant YBRA People

Officers
President: Rich Fifarek, retired, SIU
Vice President: Virginia Sisson, U of Houston
Past President: Peter Crowley, Amherst College
Secretary: Laurel Goodell, Princeton University
Treasurer: Betsy Campen, Billings, MT

Councilors
Marv Kauffman, Sunset Beach, TX
Jennifer Lindline, New Mexico Highlands University
Eric Ferre, SIU
Don Fisher, Pennsylvania State University
Jerry Bartholomew, University of Memphis
Rob Thomas, University Western Montana
Mari Vice, Univ Wisconsin, Platteville
Rpbert Giegengack, University of Pennsylvania
Phil Robertson, retired, SIU
Jennifer Smith, Washington University
Mike Murphy, Houston University
Tom Anderson, University of Pitsburgh
John Weber, Grand Valley State University
Tom Kalakay, Rocky Mountain College

Special Councilors (Emeritus)
Bill Bonini, Princeton University
Gerry Brophy, Amherst University
David "Duff" Gold, Penn State

Archivist
Linda Dutcher, Carbondale, IL

Accountant and Member
Denny McGinnis, Billings, MT

Newsletter Editor
Betsy Campen (Betsycampen@bresnan.net)

Camp Manager
Ray Raymond

Webmaster
Kate Atkins, U Penn

OBITUARY

Arie Poldervaart, (born July 6, 1918, Bandung, Java, now in Indonesia—died Oct. 28, 1964, New York City), U.S. geologist and petrologist, noted for his work concerning crustal evolution and the petrology of igneous rocks.

Poldervaart was a lecturer at the University of Cape Town from 1946 until 1949, when he joined the Bechuanaland Protectorate (now Botswana) Geological Survey; he became a member of the faculty of Columbia University in 1951. His work includes investigations of the petrogenesis (composition, occurrence, and origin) of igneous and metamorphic rocks and Precambrian (older than 570,000,000 years) geology. He specialized in applying petrologic techniques to problems of Earth history. He edited *Crust of the Earth* (1955) and wrote *Basalts* (*The Poldervaart Treatise on Rocks of Basaltic Composition*)

YBRA summer schedule for 2013

Our 2013 schedule shown below may be subject to change, but most user dates have been confirmed. Groups will arrive for dinner on the first date of their respective schedule and will depart the morning after the last date. If you notice any incorrect dates, please contact fifarek@geo.siu.edu

JUNE

June 3-22: Univ. of Houston/YBRA Geology Field Camp I
June 8-15: Penn State Univ. Geology Field Camp
June 16-30: Southern Illinois Univ. Geology Field Course

JULY

July 21: YBRA council and general meetings
July 5-7: Univ. of Houston/YBRA Geology Field Camp I
July 1-8: Southern Illinois Univ. Geology Field Course
July 7-26: Univ. of Houston/YBRA Geology Field Camp II
July 11-26: Ohio Univ. Geology Field Course
July 14-31: New Jersey State Museum

AUGUST

August 5-14: Univ. of Houston Geophysics Field Camp
August 1-8: New Jersey State Museum
August 7-8: Univ. of Houston/YBRA Geology Field Camp II
August 14-17: Franklin and Marshall Faculty
August 18-24: Volunteer Work Week

Please join us for Work Week or visit anytime, if you can

The Ruined Shack
Caleb Ray Mills, Red Lodge MT

I walked along the canyon floor,
Among the tree and rocks
Where snows and suns forevermore
At human transients mocks

I came upon some rotting wood,
Among the rocks and sage,
Where once a cabin's walls had stood
And fallen down with age.

A threshold in a log was hewn,
Where'd hung a cabin door,
And bits of colors china strewn
Where once had been a floor

I found where little children play
In long gone days of yore
Where rocks in little square had laid
Before the cabin door.

Some bits of broken window glass
Through which in long ago
The house-wife gazed the greening grass,
Or watched the falling snow.

Where shone the welcoming lights of home
Across the shimmering snow
To husband, father through the gloam,
In nights of long ago.

O, little cabin here I stand,
And gaze with knowing eyes,
Upon thy bit of rocky land,

I know thy purpose well was served,
Thy story I surmise,
I know thy builder well was nerved
To Life's high Enterprise.

I know the shouts and childish glee
Which in those walls once rung,
I know the loving thoughts of thee

I long to step within thy door
To greet with loving kiss,
Those loved ones whom I see no more,
Whom I so sadly miss.

If I could feel the shuddery shock
Of the canyon winds that blow,
The blasts that made thy walls to rock,
And now has laid them low. (Continued on Page 6)

The above poem was written by one of the pioneer homesteaders of Red Lodge, Caleb Ray Mills. The poem was shared with Jinny Sisson by Mr and Mrs Toombs. They have a cabin along the West Fork Rock Creek and have a path across their land that generations of YBRA field campers have used to access the "Front" mapping area. Mr. Toombs has set up a parking area for vans as well as maintained an old wagon trail just for our students. He was given this poem by the daughter of the couple that made the wagon trail. It used to be used for trips to Red Lodge for supplies. In the flat area above their place (now BLM land) you can see ruins of stone walls that were placed there by the homesteaders in an attempt to raise vegetables to sell in Red Lodge. One time when the wife was returning with supplies, her wagon and horse were swept away by the water. That was apparently the straw that broke the camel's back and they decided to move back into Red Lodge instead of continue living on their homestead. This is just a small piece of Red Lodge history that may be of interest to readers of the Uplift since they probably noticed the ruined stone walls when doing their mapping.

Leo Hickey – A Remembrance

Leo Hickey, a leading paleobotanist and Renaissance man who led Yale's Peabody Museum of Natural History from 1982 to 1987, died on Feb. 9. He served as councilor for YBRA and used the facility as a base for some of his research. He taught for many years at the Princeton YBRA course and his knowledge of Paleocene flora was second only to Erling Dorf, his mentor and colleague. He always made a point of stopping at camp when he was in Montana to make sure all was running smoothly even if he wasn't using the facility. He was 72. The cause was melanoma, said his wife of 45 years, Judy. Leo was an expert in stratigraphy, the plant fossil record, and the history of life broadly, Hickey from the start melded botanical and geological approaches to understand plant evolution. He revolutionized the study of fossil leaves by making a comprehensive study of leaf vein patterns in living plants and using the detailed patterns he found to identify and classify the fossils. By analyzing the sediments in which the earliest fossils of flowering plants were preserved, he could reconstruct the ecological setting in which this preeminent group of plants evolved. Hickey joined the Yale faculty in the early 1980s from the Smithsonian Institution's Museum of Natural History, where he began as a postdoctoral fellow and became curator and research scientist in paleobiology. While at the Smithsonian he served as chief scientist for four major permanent exhibits that have educated and attracted millions of visitors. The last time he stopped at camp, he was investigating the flora in western Wyoming and Montana particularly focused on the Cretaceous-Tertiary boundary.

When he joined Yale's Department of Geology and Geophysics as a professor in 1982, he also took on the directorship of the Peabody, and during his tenure there significantly modernized its operations. From 2003 to 2006 he served as chair of the Department of Geology and Geophysics. All along he forged ahead with his research, producing more than 80 scientific papers and six books.

Inspired by fieldwork, especially in the northern Rocky Mountains and the Canadian Arctic, Hickey led numerous collecting expeditions, often with students in tow. These trips led to important discoveries about mass extinction at the end of the Age of Dinosaurs and the vegetation of a period of global warmth 50-150 million years ago.

Leo Hickey was born in Philadelphia on April 26, 1940. He attended a minor seminary in Indiana for high school and graduated from Villanova University in 1962. He received his Ph.D. in geology from Princeton University in 1967

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Even in the roughest field conditions, amid rattlesnakes and polar bears, Hickey maintained certain formalities, his family said. These included a morning shave, a clean khaki shirt, a brimmed field hat, chocolate chip cookies at lunch, and a bourbon in the evening.

In 2009 Hickey was awarded the Moore Medal by the Society for Sedimentary Geology for his major insights into plant ecology and evolution, insights enabled by his integration of geological and biological approaches to the plant fossil record.

Hickey is survived by his wife, Judy; his sons Geoffrey, Damian, and Jason; three grandchildren, Ephraim, Tallulah, and Ellery; a sister, Patricia; an aunt, Marguerite; and numerous nieces and nephews. This remembrance is condensed from his Yale website with comments from Marv Kaufman and Jinny Sisson.

Summer Reading Suggestions for Geologists

By Jinny Sisson

It has been my custom to review books relevant to geology of the Red Lodge area or geologists and crime for summer reading. This year, I have read two books that may be of interest to readers of the Uplift. The first is by one of our former councilors and a long time teacher at the UPenn and now UH field camp, Rob Thomas. Rob has many accolades including Montana Regents Professor at University of Montana, Western, invited instructor for the Khumbu Climbing Center in Nepal, and on the Playboy honor roll for top 20 professors in 2010. Some of his photography has won awards at recent GSA meetings and been published in their calenders. On a side note – in 2012, Rob did an amazing round the world semester at sea with his family. Before he left, the second edition of the "Roadside Geology of Yellowstone Country" published by Mountain Press. It is an update of a popular book first published in 1985. The new edition is significantly improved with much more detailed road logs and incorporates much of the recent geologic work in Yellowstone National Park and environs. There are ample road logs (19 in all) to guide anyone around the area including the road traveled by many field camps from Red Lodge to Cooke City and on to Yellowstone. Rob has even mentioned YBRA camp and encourages visitors to see where generations of geologists have gotten their field training. In addition, to describing the volcanic and hydrothermal features, the road logs incorporate the petrified trees described by Earling Dorf, Hegben Lake earthquake site, Heart Mountain thrust fault investigated most recently by Ed Beutner, the thrust faults near Red Lodge with illustrations from Don Wise, the Absoraka volcanics and glacial features as well. It has eye-catching pictures to accompany the text and many geologic maps. It is a bargain for any one wanting to learn more about the world's largest geothermal region. This revised edition is superb and will be useful to future generations of YBRA students to learn more about the regional geology.

The second book that I just recently read is "Fracture" the 5th in the series featuring the sleuthing by geologist Frankie MacFarlane. The title refers to the San Andreas Fault, which plays a major role as the backdrop for the mystery. The book opens with geologist Frankie MacFarlane and her long-time boyfriend and collaborator, P.I. Philo Dain packing for a trip to a cooler climate when Philo's Aunt Heather is murdered in her empty Tucson mansion. As is often the case, the chief suspect is a philandering spouse – a wealthy developer Derek Dain. A further complication is that the day before Aunt Heather got murdered, she had left town with a coin collection, worth millions. Though Philo and his Uncle Derek are estranged, Philo and Frankie agree to investigate Heather and find the missing coins; this adventure takes them from Tucson to the foggy, soggy San Francisco Peninsula. While investigating near the San Andreas Fault, they find deceit and secrets about Philo's past as well as a 200-year-old chess set worth more than the coins. This Dain family kept this set hidden; yet, coveted by others. I won't go into any more details so that you can enjoy the solution to this mystery as well as the geology that sets the stage for the mystery. This book was a finalist for ForeWord Magazine's 2011 Book-of-the-Year Award, the 2012 WILLA award as well as the 2012 New Mexico-Arizona Book Award.

This poem is continued from Page 4.

If I could sniff the venison stew,
That simmered on thy fire,
When you and I, old shack, were new,
T'would slake my deep desire.

But never more on summery days,
I'll seek thy shady rest,
Thy walls have dropped to ruin's ways
Thy birds have flown their nest.

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And soon I'll totter down with age,
To moulder, and to rot,
Like you, to sleep beneath the sage,
On some wild rocky spotTies well, Old Shack,

We both served in our prime,
We'll journey back,
To serve another Time.

Written down by Patricia S. Mills –
December 30, 1967
Granddaughter of Caleb Ray Mills

Dale F. Ritter

After a long and courageous battle with esophageal cancer, Dale F. Ritter died on June 1, 2012. Dale passed peacefully in his home along side his wife of 49 years, Esta.

Dale Franklin Ritter was born on November 13, 1932 in Allentown, PA to Elizabeth Stewart and C. Century Ritter.

Dale Ritter was a multi sport star in high school and his athletic ability led him to Franklin & Marshall (F&M) college in Lancaster, PA. He continued to excel in football and basketball and years later would be part of F&M's inaugural class for their sports hall of fame. One of his records stood for almost 60 years before being broken. Dale graduated from F&M with a BA in education in 1955. After a brief period teaching and coaching at his high school alma mater, Ritter returned to F&M to pursue a newfound love of Geology.

Under the tutelage of Dr. John Moss, Ritter earned a BS in Geology from Franklin & Marshall in 1959. He continued his education at Princeton University who awarded him a Masters in Geology in 1963 and a PhD in 1964. Once again Dale returned to his alma mater and began his professional career as an Associate Professor of Geology at F&M. He stayed at F&M until his mentor, and life long friend, Dr. Russell Dutcher convinced him to accept a position at Southern Illinois University in Carbondale, IL. From 1972-1990, Dr. Ritter began to establish himself as one of the most respected specialists in the field of Geomorphology. He ha received numerous awards and honors to include the "Outstanding Scholar Award": President of the Yellowstone Bighorn Research Association (1983-1985); Chairman of the Quaternary Geology/Geomorphology Division of the Geological Society of America; and served as US Representative to the International Association of Geomorphologists.

During this period of time, Dr. Ritter was the author of the book "Process Geomorphology" which has now become established as the authoritative textbook in Geomorphic sciences in colleges and universities around the United States. The fifth edition, now co-authored by Dr. Craig Kochel and Dr. Jerry Miller, of this book was published in March of 2011.

In 1990, after extensive years of teaching Geology, Dr. Ritter decided to return to research and accepted the position of Executive Director, Quaternary Sciences Center with the Desert Research Institute at the University of Nevada-Reno. There, he directed the paleoenvironmental studies program, concentrating on paleoclimate reconstruction and drought history in the Northern Sierra region.

Throughout his life, Dale was an avid sports fan, a frustrated golfer, a lover of dogs ("of course they should eat people food!"), and a connoisseur of American Politics.

Dale "Dusty" Ritter is survived by his wife Esta; children Duane, Darryl, Glen and Lisa; eight grandchildren; and two great grandchildren; sister Kay and brother Jack.

The Ritter Family would be grateful for friends and colleagues to visit The Book Of Memories at www.waltonsfuneralhomes.com

YBRA Cabin Names

Compiled and written by Marv Kauffman

Many of us know where some of the cabin names at YBRA come from. For example the Princeton, Amherst, and Franklin and Marshall cabins named for the respective colleges and universities. But what about the other cabin names? Here are the histories of some of those cabins.

Nevin M. Fenneman (1865-1945): American geologist, geographer, and teacher, b. Lima, Ohio; B.A. (1883) Heidelberg College, Ohio; M.A. (1900); Ph.D. (1901) Univ. of Chicago. He founded and was chairman (1907-37) of the department of geology and geography at the Univ. of Cincinnati. Fenneman was associated (1901-24) with the U.S. Geological Survey and also with three state geological surveys. He is noted for his work on the physiography of the United States; his physiographic map of the United States (1915-16) was adopted by the U.S. Geological Survey. He is the author of Physiography of Western United States (1931) and Physiography of Eastern United States (1938), both of which remain as standard reference works. Fenneman served as president of the Association of American Geographers (1918) and of the Geological Society of America (1935).

His papers are housed in the Beloit College archives, along with the papers of his son, Rollin T. Chamberlin, who was also a geologist. There are buildings named for him on the Beloit College and University of Wisconsin-Madison campuses, where he served as President. The lunar crater Chamberlin and a crater on Mars are named in his honor.

Nelson Horatio Darton (1865 – 1948) was a geologist who worked for the United States Geological Survey. He was born in Brooklyn, New York, and started working in his uncle's drug business at the age of 13, also becoming a practicing chemist. His interest in geology started as a sideline, and he was hired by the U.S. Geological Survey in 1886. Darton was an expert at geological photography, a noted geologic map maker, and a hydrogeologist. He was awarded the Penrose Medal in 1940. He also made some important paleontological discoveries. He retired in 1936 at the age of 71 but was allowed to keep his office at the USGS, and he continued an active geological career with a focus on the geology of the Washington DC area. He produced more than 200 publications and received many honors and awards. Three weeks before he died in 1948, he was still coming daily to the USGS and gave a lecture to the Geological Society of Washington on the geology of the DC area.

James Dwight Dana (1813-1895): As a student at Utica (New York) High School, James Dwight Dana showed a strong interest and aptitude in science. He was encouraged by his science teacher who had attended Amos Eaton's school. When it came time for Dana to go to college it was almost inevitable that he would want to go to Yale to study with Benjamin Silliman. He arrived at Yale in 1830.

In August, 1838 he sailed with the United States Exploring Expedition under the command of Charles Wilkes. Two important things happened before Dana set sail that would affect his future life in science. First, he had a strong Christian enlightenment experience, and secondly, he had developed his system of mineralogy. The former affected his life in various ways including his resistance for many years to the theory of evolution, and the latter made sense of an unorganized field of mineral taxonomy. We still use Dana's "System of Mineralogy", now in its eighth edition (Gaines, et al., 1997) which is based on chemistry rather than morphology of crystals or associations.

Four years of exploration, mainly in the Pacific and the Pacific rim, provided Dana the background for much of his geologic thinking in the future. He came away from the experiences of the expedition with a large scale view of the development of geology. Much of geological exploration was regional at that time with careful mapping of strata or of ore deposits. It was Dana who viewed Earth as a whole. His unifying view was a contracting Earth which resulted in the mountains and broad troughs seen in such features as the Andes or the piles of sediments accumulated in eastern North America. His identification of the need for the broad depression of the Pacific sea floor to accommodate the upward growth of coral reefs to form the fringing reefs and atolls of the Pacific was a unique insight of Dana's and contributed to his grand view.growth of coral reefs to form the fringing reefs and atolls of the Pacific was a unique insight of Dana's and contributed to his grand view.

Dana did his work on the expedition as a natural scientist. He was a careful observer and collector. His work on the taxonomy of corals stands to this day.

While working on the reports of the Wilkes expedition, Dana looked for a job. At first there was nothing available at Yale but when Asa Gray at Harvard offered him a professorship there, private funds were

forthcoming to keep Dana--already a famous scientist--in New Haven. A chair was established specifically for him, named for his father-in-law, Benjamin Silliman.

Dana was a correspondent with Charles Darwin since in many ways they had had similar experiences as shipboard scientists. Yet Dana did not accept Darwin's evolutionary ideas until the end of Dana's career. Perhaps it was his strong biblical training that deterred him for so long, but eventually he accepted evolution as the way in which a wondrous God did things. Dana did his work on the expedition as a natural scientist. He was a careful observer and collector. His work on the taxonomy of corals stands to this day.

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Joseph Barrell (15 December 1869 – 4 May 1919) was an American geologist who proposed that sedimentary rocks were produced by the action of rivers, winds, and ice (continental), as well as by marine sedimentation. He also independently arrived at the theory of stoping as a mechanism for igneous intrusion.

Norman Levi Bowen was born in Kingston, Ontario, Canada June 21, 1887 and died on September 11, 1956. Bowen *"revolutionized experimental petrology and our understanding of mineral crystallization. Beginning geology students are familiar with his "reaction series" depicting how different minerals crystalize under varying pressures and temperatures.* "(Chamot) Bowen conducted experimental research at the Geophysical Laboratory, Carnegie Institution of Washington from 1912 to 1937. He published *The Evolution of the Igneous Rocks* in 1928. This book set the stage for a geochemical and geophysical foundation for the study of rocks and minerals. This book became *the* petrology handbook. He was awarded the Penrose Medal in 1941.

Dr. **Walter Hermann Bucher** (March 12, 1889 - February 17, 1965) was a German-American geologist and paleontologist. He was born in Akron, Ohio of Swiss-German parents. The family then returned to Germany where he was raised. In 1911 he was awarded a Ph.D. by the University of Heidelberg with a focus on geology and paleontology. The same year he returned to the U.S. and joined the University of Cincinnati as a lecturer. By 1924 he was a professor of geology at the institution. His early works were on paleontology, and he performed studies of stromatolettia, oolites, and ripple-shaped markings.

In 1935 he became president of the Ohio Academy of Sciences. In 1940 he joined the Columbia University, specializing in structural geology. In the same year he joined the National Research Council serving as chairman of the Division of Geology and Geography. In 1946 he was elected president of the New York Academy of Sciences, and from 1950 until 1953 he served as president of the American Geophysical Union. From 1920 onward Dr. Bucher was noted for his studies in cryptovolcanic structures, significant deformations of the crust of the Earth, and structural geology. He died in Houston, Texas.

Erling Dorf was an American Geologist. He was born July 19, 1905 and died in April, 1984. He was hired in 1928 as a professor of Geology at Princeton University. He retired from Princeton in 1974. He was a renowned paleobotanist working on the floras of the Late Cretaceous and early Tertiary. He was married to Ruth Kemmerer Dorf. They had three sons and a daughter: Thomas Alfred Dorf (1937-1958), Norman Kemmerer Dorf (1939-2007), Robert Erling Dorf (1941-) and Molly Drejer Dorf (1948-). Probably his best known work today is a comprehensive article on the petrified Yellowstone forests where he reported the presence of conglomerates from stream deposits, breccias from mudflows or landslides, and volcanic tuff from the numerous volcanic events, and lava beds. Professor Dorf theorized that these specimens do not merely represent one entombed forest but rather include trees from 27 separate forests (the most in the world), each stacked on top of the other, layer by layer, to a thickness of 1,200 feet. He explains that the Absaroka volcanism lasted for 15 million years. In that time, there were alternating periods of activity and dormancy. The active periods caused trees to be encased and eventually fossilized. During the ensuing dormancy, new trees grew up on top of the old, only to be encased by the next volcanic activity.

Grove Karl Gilbert (May 6, 1843 - May 1, 1918), known by the abbreviated name *G. K. Gilbert* in academic literature, was an American geologist. Gilbert was born in Rochester.,New York and graduated from the University of Rochester. In 1871, he joined George M. Wheeler's geographical survey as its first geologist. He then joined the Powell Survey of the Rocky Mountain Region in 1874, becoming Powell's primary assistant, and stayed with the survey until 1879. During this time he published an important monograph, *The Geology of the Henry Mountains* (1877). After the creation of the U.S. Geological Survey in 1879, he was appointed to the position of Senior Geologist and worked for the USGS until his death (including a term as acting director).

Gilbert published a study of the former ancient Lake Bonneville in 1890 (the lake existed during the Pleistocene), of which the Great Salt Lake is a remnant. He named that lake after the army captain Benjamin L.E. de Bonneville, who had explored this region previously. The type of river delta that Gilbert described at this location has since become known to geomorphologists as a Gilbert delta.

In 1891 in one of the most controversial moves of his career, he proclaimed that Coon Butte in Arizona was the result of a volcanic steam explosion rather than an impact of a meteorite. Gilbert had based his conclusions on a belief that if it was an impact crater then the volume of the crater including the meteorite should be more than the ejected material on the rim and also a belief that if it was a meteorite then iron should create magnetic anomalies. Gilbert's calculations showed that the volume of the crater and the debris on the rim were roughly equal. Further there were no magnetic anomalies. Gilbert argued that the meteorite fragments found on the rim were just "coincidence." Gilbert would publicize these conclusions in a series of lectures in 1895. Subsequent investigations would reveal that it was in fact a meteor crater. Ironically, Gilbert would be among the first to say that the moon's craters were caused by meteors rather than volcanos. He joined the Harriman Alaska Expedition in 1899. Two weeks after the 1906 San Francisco earthquake, Gilbert took a series of photographs documenting the damage along the San Andreas fault from Inverness to Bolinas.

Gilbert is considered one of the giants of the sub-discipline of geomorphology, having contributed to the understanding of landscape evolution, erosion, river incision and sedimentation. Gilbert was a planetary science pioneer, correctly identifying lunar craters as caused by impacts, and carrying out early impact-cratering experiments. Gilbert was one of the more influential early American geologists.

Dr. **Ferdinand Vandeveer Hayden** (September 7, 1829 - December 22, 1887) was an American geologist noted for his pioneering surveying expeditions of the Rocky Mountains in the late 19th century. He was born in Westfield, Massachusetts. He graduated from Oberlin College in 1850 and from the Albany Medical College in 1853, where he attracted the notice of Professor James Hall, state geologist of New York, through whose influence he was induced to join in an exploration of Nebraska. In 1856 he was engaged under the United States government, and commenced a series of investigations of the 109 Western Territories, one result of which was his *Geological Report of the Exploration of the Yellowstone and Missouri Rivers in 1859-1860(1869).* About this time, he also became identified with the Meaatherium Club at the Smithsonian Institution in Washington. D.C.

During the Civil War he was actively employed as an army surgeon. He rose to be chief medical officer of the Army of the Shenandoah. In 1867 he was appointed geologist-in-charge of the United States Geological and Geographical Survey of the Territories. From his twelve years of labour and annual survey journeys there resulted a most valuable series of volumes in all branches of natural history and economic science; and he issued in 1877 his *Geological and Geographical Atlas of Colorado.* In 1871, Hayden led a geological survey into the Yellowstone region of northwestern Wyoming. A year later, Hayden was instrumental in convincing Congress to establish Yellowstone as the first U.S. National Park, aided by the stunning large-format photographs of William Henry Jackson. The last of the annual survey journeys was in 1878. Hayden Valley in Yellowstone is named after him. Upon the reorganization and establishment of the United States Geological Survey in 1879 he acted for seven years as one of the geologists. He died at Philadelphia on the 22nd of December 1887. The town of Hayden. Colorado, located in the Yampa River valley, is named for him. Many mountain peaks have been named after Hayden as well.

John T. Rouse (1906-1982) Consult., Amarillo, TX, United States
John was active in the petroleum industry and did much research in the Wyoming/Montana area. He was a major figure in the Yellowstone-Bighorn Research Association for many years.

William King (1809-1886), an Anglo-Irish geologist at Queen's College Galway was the first (in 1864) to propose that the bones found in Neanderthal, Germany in 1856 were not of human origin, but of a distinct species: *Homo neanderthalensis.* He is commonly thought to have been a professor of anatomy, but never taught the subject.

John Wesley Powell: After fighting in the American Civil War, Powell joined Illinois Wesleyan University as professor of geology. In 1867 he became a lecturer at Illinois Normal College (now Illinois State University at Normal) and began a series of expeditions to the Rocky Mountains and the canyons of the Green and Colorado rivers. From 1871 to 1879 he directed a federal geologic and geographic survey of western lands in the public domain and encouraged the government to initiate land-utilization projects. During this period he published three major works. In *Exploration of the Colorado River of the West and Its Tributaries* (1875; rev. ed., *Canyons of Colorado,* 1895), he originated and formalized a number of concepts that became part of the standard working vocabulary of geology. His *Introduction to the Study of Indian Languages* (1877) firmly established him as an anthropologist. It contained a linguistic classification of Indian languages and grouped words according to use and emotion. Powell's *Report on the Lands of the Arid Region of the United States* (1878; reprinted 1962) is regarded as a landmark in conservation literature.

When the U.S. Bureau of Ethnology of the Smithsonian Institution, Washington, D.C., was established in 1879, Powell became its first director and remained with it until his death. Continuing the study of Indian ethnology and languages, he published the first complete and still-authoritative classification and distribution map of 58 language stocks of the United States and Canada (1891). Powell also served as director of the U.S. Geological Survey (1881-92), working extensively on the mapping of water sources and advancing irrigation projects.

William Bayard Heroy, Jr. died on September 25, 2005. He was 91 years old.
Dr. Heroy was born in Washington, DC on Friday the 13th, August 1915. In 1933, he graduated from White Plains High School where he met his wife of 70 years: Dorothy Marie Meineke. Bill majored in geology, earning a B.A. from Dartmouth College in 1937 and his Ph.D. from Princeton University in 1941. He worked in the southwest for Texaco during WWII, and then joined The Geotechnical Corporation in Dallas, where he worked from 1945-1965, advancing to President of the company. When Geotech was purchased by Teledyne, Dr. Heroy took the post of Group Executive Assistant to the President, until lured to academe by Southern Methodist University. For seven years, Bill served as Vice-President Treasurer of SMU; then he presided over the Institute for the Study of Earth and Man until his retirement in 1982. Among his many professional and civic activities, Dr. Heroy served as Treasurer of the Geological Society of America for many years, as President of the American Geological Institute, and as Treasurer of the Dartmouth Class of 1937. He was awarded the G.S.A. Distinguished Service Award and the A.G.I. Campbell Medal; he was elected to membership in Phi Beta Kappa and the Cosmos Club. He also served for six years on NASA's Space Applications Board. He served many years on the Council of the Yellowstone-Bighorn Research Association and ·was a major benefactor of that organization.

Bill enjoyed hiking and camping and was an avid scout leader in Texas for many years as well as a generous supporter of Greenpeace, The Nature Conservancy, the World Wildlife Fund and his alma mater, Dartmouth College. Dr. Heroy traveled extensively during his career and retirement, including the Caribbean, Europe, Hawaii, Alaska, China, the Philippines, Antarctica, Australia and New Zealand.

Dr. Heroy is survived by his wife, Dorothy Marie Meineke of Durham, NC; four children [Bayard Page Heroy and his wife Barbara Ellen of Durango, CO; David Bassett Heroy of Dallas, TX; June Heroy Leverett of Pottsboro, TX; and Barbara Heroy John and her husband Richard Stock of Oakwood, OH], seven grandchildren [Kimberly Heroy Rogalski of Martinez, CA; William B. Heroy HI of Durango, CO, Catherine Anne Heroy of Anchorage, AK; Eluid, John of Atlanta, GA: Shaka Nesta John of Las Vegas, NV; and Micah Isaiah Stock and Rachel Mallory Stock of Oakwood, OH], and four great grandchildren [Cody and Stephen Heroy of Durango, CO and Maya and Theo Rogalski of Martinez, CA]. He was a member of the Eno River Unitarian Universalist Fellowship in Durham, NC.

Arie Poldervaart, (born July 6, 1918, Bandung, Java, now in Indonesia - died Oct. 28, 1964, New York City), U.S. geologist and petrologist, noted for his work concerning crustal evolution and the petrology of igneous rocks. Poldervaart was a lecturer at the University of Cape Town from 1946 until 1949, when he joined the Bechuanaland Protectorate (now Botswana) Geological Survey; he became a member of the faculty of Columbia University in 1951. His work includes investigations of the petrogenesis (composition, occurrence, and origin) of igneous and metamorphic rocks and Precambrian (older than 570,000,000 years) geology. He specialized in applying petrologic techniques to problems of Earth history. He edited *Crust of the Earth* (1955) and wrote *Basalts* (*The Poldervaart Treatise on Rocks of Basaltic Composition*) (1967).

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