

THE BADGER DIGGIN'S

The Badger Lapidary and Geological Society, Inc.

Monroe, Wisconsin

Devoted to the Earth Sciences

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President's Message

Dear Badgers:

Welcome back from a summer's worth of exploring and collecting! I hope that all of you had an opportunity at least to visit some geologically-interesting places, if not to bring back some new specimens of rocks, minerals, and fossils (if even from a show). As you know, our upcoming meeting (on Saturday, Sept. 14, at 10 a.m.) is a collective show-and-tell, where you'll get to exhibit your finds and tell all of us about the adventures that went into acquiring your latest (or earlier) showpieces. Hopefully, some of those were gained as a result of our own BLGS-sponsored field trips.

The suggestion was also made, back in the spring, that we use this opportunity to photograph members' specimens for our next (2014) mineral calendar. Toward that end, John Peterson and I can bring our cameras and take good-quality digital images after the meeting. Each of us has portable macro-imaging capabilities, although I don't recommend your bringing thumbnail-sized specimens alone. Hopefully, we'll get another good mixture of flat (i.e., slab) as well as three-dimensional objects from which to choose. So please bring in any showy specimens that have not been photographed before. That way, it shouldn't be too hard for us to come up with a dozen or more good images. Thank you in advance for your cooperation!

Our last 'meeting' was the June picnic, which was graciously hosted by Tom and Dar Gitchel at their home near Freeport. I take this opportunity to thank them once again for putting on such a fine multi-club function. But no formal business was conducted, and so there are no printed minutes to be approved.

I look forward to seeing you at the next meeting, and to hearing reports of your collecting experiences.

Jordan

Jordan Marché

BLGS president



Have you hugged your rock today? If not, bring it along to the September Show & Tell so that it gets the attention it deserves!!!

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BLGS 2013 Calendar of Events

September 14th: Meeting – Show & Tell

September 28th: Field Trip – Savannah, IL

October 12th: Meeting – Chain mail/Jewelry making

October 26th: Field Trip – Lapidary Day

November 9th: Meeting – Presentation (tbd)

December 14th: Meeting - Holiday Party



Join us for the September meeting

At the Monroe Public Library at

10:00 on Saturday, September 14th.

This will be our annual Show & Tell.

Bring along your newest treasures

from the summer or share some

old favorites!

Mesosaurus – the ‘Continental Drift’ Reptile

Story and photo by Jordan D. Marché II

For several years now, I’ve occasionally seen mineral and fossil dealers (at both our own show as well as other annual shows) offer for sale well-prepared fossils of a particularly rare and valuable kind — those of a small aquatic reptile from the Permian period known as *Mesosaurus*.

What few people realize today, however, is that these fossils played an important role in the history of our understanding of how the Earth fundamentally operates. Because of their intrinsic rarity (explained below), such fossils can command a justifiably elevated price (that lies beyond the budget of most of us). But at the 2013 MAPS show in Iowa City, I was pleased to discover that a museum-quality *replica* of a complete *Mesosaurus braziliensis*, cast in plaster from an original specimen about 15 inches long and roughly 260 million years old, has been prepared and offered for sale by PaleoScene® (www.paleo.cc/paleoscene.htm) for about one-twentieth of the asking price of an original.

Needless to say, the replica made its way back to Wisconsin and which I have since framed for display.



Replica of *Mesosaurus braziliensis*.

Mesosaurus's occurrence is restricted in geological time to the period preceding the Mesozoic era (and thus it predates all of the later dinosaurs). But more importantly, its distribution is famously restricted to rock formations on either side of the Atlantic Ocean; that is, they are found only in eastern South America (Brazil) and portions of western Africa. Indeed, this was the conundrum that they posed for geologists and paleontologists in the early twentieth century— how could one explain the existence of such identically-appearing animals on land masses that are now separated by as much as three thousand miles of ocean? It would have been preposterous to assume that tiny *Mesosaurus* could have swum across the present-day Atlantic. Furthermore, studies of its habitat have revealed that *Mesosaurus* likely lived in freshwater or estuarine environments and was not a marine reptile. So how did it come to occupy such widely-separated locations at that time?

Although not the first to make the suggestion, German-born meteorologist Alfred Wegener (1880-1930) soon became the most outspoken advocate during the 1910s and 1920s of the notion that the continents have not always occupied their present positions — a theory then referred to as ‘continental drift’. Like others before him, Wegener argued, for instance, that the present-day coastlines of eastern South America and western Africa had once fit closely together, but had long since drifted slowly apart. But this was only the most basic piece of evidence that he amassed. Not only the two continent’s coastlines, but also matching geological structures and formations likewise suggested that the two had once been united, as part of a ‘supercontinent’ that Wegener had called Pangaea (meaning ‘all-Earth’). Along with *Mesosaurus*, abundant leaf fossils known as *Glossopteris* that are associated with coal deposits produced from Permian-age forests have also been found in places as widespread as South America, Africa, India, and Australia. Paleobotanists argued that it would have been impossible for such a flora to have developed in nearly identical ways had the continents always been in their present positions. As well, *Glossopteris* seeds were much too large and heavy to have been distributed on a global scale merely by the winds (Levin, 1994). So, collectively, both geological and paleontological

evidence suggested that most of the present continents had formerly been united into one or two large landmasses (e.g., a northern supercontinent, Laurasia, and a southern one, Gondwana).

Wegener announced his theory in a monograph entitled, *Die Entstehung der Kontinente und Ozeane* (*The Origin of Continents and Oceans*, 1915), with revised editions appearing in 1920, 1922, and 1929. The work was also translated into several other languages, including English. But why, then, was Wegener’s theory of ‘continental drift’ so strongly *rejected* at the time? The reasons are multiple and complex, and can only be hinted at in this brief account. Nonetheless, they appear to have as much to do with social as well as scientific factors.

For one, Wegener was not a trained geologist and, as such, remained largely on the outside of that scientific community (Cohen, 1986). Thus, he experienced what is commonly known as ‘boundary work’ in the field of science studies, and struggled to gain legitimacy from his peers. His ideas challenged much of conventional wisdom in the early twentieth century geosciences, and bore a ‘revolutionary’ aspect that was only vindicated several decades later when the newer theory of plate tectonics was successfully advocated. Wegener’s ‘grand theorizing’ went against the grain of most academic geological work in field and

laboratory; it also seemingly flaunted the principle of uniformity and the notion of the present as the key to the past (Oreskes, 2001).

Perhaps the most common 'explanation' for the rejection of Wegener's theory is that it lacked a causal mechanism. To a certain degree this was true, although a contemporary geologist sympathetic to Wegener's position, Arthur Holmes, proposed in 1929 that mantle convection currents might so enable the motions of continental blocks through an underlying, 'plastic' layer. Most geophysicists, however, regarded the Earth's interior as being too solid and rigid to permit any kind of lateral motions within its outer layers. In addition, Wegener's theory was seemingly incompatible with leading (if erroneous) notions of isostasy (an hypothesis that sought to explain the thickness, elevation, and subsidence of the Earth's crust). As an alternative to Wegener's theory, two geologists proposed instead that continents had once been connected by 'land bridges' (analogous to the recently elevated isthmus of Panama connecting North and South America), but that those bridges had since subsided. But this was an ad hoc notion for which even *less* evidence existed than for 'continental drift'.

In the end, what was needed was a completely new body of geophysical evidence, based largely upon measurements of the remnant magnetism contained in

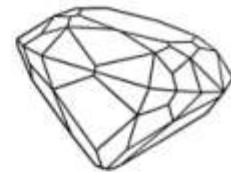
rocks of the oceanic crust, to bring Wegener's ideas (and body of fossil evidence) back into consideration. Today, there is virtually no doubt among geoscientists that the continents have shifted their places, as Wegener long ago advocated, and the reasons are broadly (if still incompletely) understood. South America and Africa (along with other continents) were indeed once united, and fossils such as *Glossopteris* and *Mesosaurus* dutifully recorded their occurrences as markers of those once closely-adjoining landmasses.

References

- Cohen, I. Bernard. (1986). "Continental Drift and Plate Tectonics: A Revolution in Earth Science." In *Alfred Wegener: The Father of Continental Drift*, by Martin Schwarzbach, pp. 167-185. Madison, WI: Science Tech.
- Levin, Harold L. (1992, updated 1994). *The Earth Through Time*, 4th edition. Fort Worth, TX: Harcourt Brace College Publishers, pp. 208-213.
- Oreskes, Naomi, ed. (2001). *Plate Tectonics: An Insider's History of the Modern Theory of the Earth*. Boulder, CO: Westview Press, pp. 3-12.

7th
Annual

Wausau Gem, Mineral and Fossil Show



Come and enjoy a day of amazing displays, unique treasures and fascinating presentations that the whole family can enjoy!

Where: The East Gate Hall @ Marathon Park
(directions on website listed below)

When: October 11-13, 2013

Friday: 12:00-5:00pm (Youth Day)

Saturday: 9:00am-5:00pm

Sunday: 10:00am-4:00pm

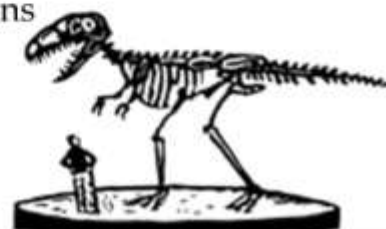
This event is **FREE** to everyone!!!

Featuring: Unique Jewelry, Dinosaur Fossils, Rare Mineral Specimens, Wisconsin Fossils and Minerals, Cut Gem Stones, Pearls, Shells, Materials for your own creations, and our first ever Silent Auction! (Sat/Sun only)

Explore a new hobby: Beading, Wire Wrapping, Fossil & Mineral Collecting, Stone Cutting, Metal Detecting and so much more!



For additional information, contact
Jennifer Damrow/Exclusive Inspirations
at 715-212-7080
or visit
www.exclusiveinspirations.com



September Mineral Events

September 13-15-DENVER, COLORADO

Martin Zinn Expositions LLC; Denver Mart Plaza; 451 E. 58th Ave.; Fri. 9-6, Sat. 10-6, Sun. 10-5; adults \$6, seniors and students \$4, children free; 50 dealers, fossils, amber, petrified wood, meteorites, large fossil displays; contact Regina Aumente, PO Box 665, Bernalillo, NM 87004, (505) 867-0425; e-mail: mzexpos@gmail.com; Web site: www.mzexpos.com

September 13-15-HOLLAND, MICHIGAN

44th Annual Rock, Gem, Fossil and Jewelry Show; Tulip City Gem & Mineral Club; Holland Civic Center; 150 W. Eighth St.; Fri. 9-8, Sat. 9-7, Sun. 11-5; adults \$3, 3-day family pass \$8, students free with adult, military or Scouts in uniform free; "Made in Michigan": dealers, crystals, fossils, geodes, agates, special exhibits, kids' games, demonstrations, silent auction, club sales; contact Christine Silich, 416 W. Mae Rose, Holland, MI 49424, (616) 786-2480; e-mail: duncastle1977@charter.net; Web site: www.tulipcity.org

September 14-15-GRAPEVINE, TEXAS

Arlington Gem & Mineral Club; Grapevine Convention Center; 1209 S. Main St.; Sat. 10-6, Sun. 10-5; adults \$8; silent auctions, gem identification, demonstrations, door prizes, grand prize, Kids' Korner, displays, class information, 27th annual Grapevine Grapefest nearby; contact Randall Lantz, 1408 Gibbins Rd. , Arlington, TX 76011; e-mail: show@agemclub.org; Web site: www.agemclub.org/events.php

September 14-15-HARRISBURG, PENNSYLVANIA

Central Pennsylvania Rock & Mineral Club; Zembo Shrine; Third and Division St.; Sat. 10-6, Sun. 10-5; adults \$6, children (under 12) and Scouts in uniform free; dealers, jewelry, gemstones, minerals, fossils, children's activities, prizes, educational exhibits; contact Betsy Oberheim, Central Pennsylvania Rock & Mineral Club, PO Box 6271, Harrisburg, PA 17112-0271; Web site: <http://rockandmineral.org>

September 20-22-LINCOLN, MISSOURI

Mozarkite Society of Lincoln; Lincoln City Park; Shelter House, two blocks east of Casey's; Fri. 9-5, Sat. 9-5, Sun. 9-4; free admission; contact Ted Bolich, (660) 890-4983; Web site: Mozarkite.com

September 21-TWO HARBORS, MINNESOTA

14th annual retail show; Agate City Rock Shop; Agate City Grounds; 721 7th Ave.; Sat. 9-5; free admission; dealers, collectors, buy, sell, trade, Lake Superior and other agates, thomsonite, fossils, crystals, minerals, rough and polished rocks, flintknapping, marbles, spheres; contact Bob Lynch, 721 7th Ave., Two Harbors, MN 55616, (218) 834-2304; e-mail: bob@agatecity.com; Web site: www.agatecity.com

September 21-22-HOWELL, MICHIGAN

Livingston Gem & Mineral Society; Hartland Education Support Service Center; 9525 Highland Rd.; Sat. 10-6, Sun. 10-4; adults \$2,

students (12-18) 50 cents, children (under 12) free; contact Chuck Amberger, (248) 787-6586; e-mail: camber459@gmail.com

September 21-22-POUGHKEEPSIE, NEW YORK

44th Annual Gem & Mineral Show & Sale; Mid-Hudson Valley Gem & Mineral Society; Gold's Gym & Family Sports Center; 258 Titusville Rd.; Sat. 10-5, Sun. 10-4; adults \$5, seniors \$4, students \$2, children (under 12) free with adult; "Exploring the Rockhound Hobby"; free rocks for kids, 30 dealers, minerals, fossils, meteorites, gemstones, jewelry, beads, tools, books, museum and club mineral displays, fluorescent mineral display, lapidary demonstrations, mineral photography show; contact Carolyn Reynard, 110 College Ave., Poughkeepsie, NY 12603, (845) 471-1224; e-mail: sunstone33@verizon.net; Web site: www.mhvgms.org

September 28-29-FRANKLIN, NEW JERSEY

57th Annual Show; Franklin-Sterling Gem & Mineral Show; Franklin School; 50 Washington Ave.; Sat. 9-5, Sun. 10-4; adults \$7, children \$4; more than 30 dealers, fluorescent displays; contact Pat Seger, 22 Palomino Trail, Vernon, NJ 07462, (862) 266-4472; e-mail: pesolutions.minerals@gmail.com; Web site: <http://franklinmineralshow.webs.com/>

September 28-29-OSHKOSH, WISCONSIN

42nd Annual Gem & Mineral Show; Oshkosh Earth Science Club; Sunnyview Expo Center; 500 E. County Road Y; Sat. 9-5, Sun. 10-4; adults \$2, students with I.D. \$1, children (under 12) free; "Minerals of the Midwest"; 25 dealers, mineral specimens, geodes, fossils, lapidary material, jewelry, home décor, member, dealer and museum displays, demonstrators, silver work, gem faceting, lapidary, beading, children's area, rock polishing, rock painting, jewelry making, fluorescent rock display, take home mineral kits and chalk and fossil making; contact Ann Voges, (920) 725-1640; e-mail: hankemps@milwpc.com; Web site: www.facebook.com/pages/Oshkosh-Earth-Science-Club/202088083155987?ref=hl



September Events in Wisconsin

13 Sturtevant - Racine Zombie Prom & Pageant. On Friday, the 13th of September the "Undead" will be helping the living! The Racine Zombie Pageant & Prom is a fundraiser to benefit Life's Transitions, a non-profit group which enables Racine's disabled and disadvantaged individuals find meaningful employment. The Zombie Prom will include a guest DJ, food & drinks. There will also be a charity auction and raffles held. Bring your Zombie gear and Party Zombie Style! Fountain Banquet Hall, 8505 Durand Ave. For more information call (262) 456-5194 x103

13 - 15 Wisconsin Dells - Wisconsin Dells Wo-Zha-Wa Festival. A festive celebration of autumn, Wo-Zha-Wa Days is filled with free family activities, including an arts and crafts fair, antique flea market, Maxwell Street Days, live entertainment and a 100-unit parade. Enjoy great food from service clubs and downtown restaurants, visit attractions and the street carnival. Downtown Wisconsin Dells.

14 Boulder Junction - 21st Annual Colorama Arts & Crafts Fair . Craft show, farmer's market and wild game sandwiches at the Community Center from 9am-3pm. 5386 Park Street. For more information call (715) 385-2400.

14 - 15 Soldiers Grove - Driftless Area Art Festival. Celebrating the visual, performing and culinary arts of the Driftless Area. County Roads 131 & C. For more information call (608) 624-3600

15 - 16 Delavan - Wisconsin Food Festival Food Showcase. The centerpiece of the Wisconsin Food Festival is a 2-day exhibition of Wisconsin made products. These local food artisans are bringing products from across the state to show to you! The complete list of participants will be posted September 1, 2013. Lake Lawn Resort, 2400 E. Geneva St. Event starts at 12:00PM and ends at 5:00PM. For more information call (608) 616-9823

Sep 20 - Nov 2 Walworth - Pearce's Haunted Barn & Hayrides. Come to Pearce's Haunted Barn & Hayrides for heart-pounding suspense, animated thrills, unexpected chills and creepy campfires. Nighttime hauntings run Friday and Saturday nights from dusk till 11:30 pm. Pearce Farms, W 5740 North Walworth Road. For more information call (262) 949-4992.

21 - 22 Cedarburg - Cedarburg's Wine & Harvest Festival. Come to Cedarburg for the 41st Annual Wine & Harvest Festival. This two day event is filled with fun

for the whole family including tons of delicious food and wine, live music, a scarecrow contest, giant pumpkin weigh off, kids play area and so much more! Downtown Cedarburg. For more information call (888) 849-4001.

21 Green Bay - Rails & Ales Brewfest. Sample craft beers, wine, and food among the historic trains. Call for admission info. 2285 S. Broadway. For more information call (920) 437-7623.

21 - 22 Stevens Point - WR Woodcarvers Woodcarving Show, Competition, Sale. Wisconsin's largest woodcarving show with judging, displays and sale of exceptional wood art by over 85 carvers and pyrographers from Wisconsin and around the country. Demonstrations, Kids' Carving Classes and huge raffle. See unique items done with wood. \$3 (under 13 free). Sat. 9-5, Sun. 9-4. Holiday Inn, 1001 Amber Ave. For more information call (715) 341-2214.

21 Wausau - Hoofbeats of the Heart Fundraiser and Fair. Fundraiser event including arts/crafts vendors, pancake breakfast, bounce houses, indoor horse rides, horse soccer clinic and K-9 & therapy dog demos. Vendors wanted, \$50 per 10'x 10' vendor booth. Event admission is free. Marathon Park Multi-Purpose Building. For more information call (715) 845-7090.

26 West Bend - Imprisoned Spirits: Paranormal Museums Tour. Are the Old Washington County Courthouse and Old Jailhouse in West Bend haunted? Visit areas in both Museums where bizarre and unsettling phenomena have been experienced by staff, volunteers, and visitors. 90-minute guided tour of both historic buildings. Old Courthouse Museum, 320 S. 5th Ave. For more information call (262) 335-4678.

27 - 29 Mineral Point - Cornish Festival & Celtic Celebration. Twenty-first Annual Cornish Festival and Celtic Celebration. Three days of music, food, workshops, films, craft demonstrations - : too much to list here. Festival events happening all over the town of Mineral Point, WI. Come for the whole festival or come for a single event! City Wide. For more information call (608) 987-2122

28 Janesville - Waggin' Tails on Twilight Trails - Dog Walk. Twilight Dog Walk in beautiful Palmer Park - Janesville, WI. Registration begins at 5 pm, cost is \$20. Each registered dog walker receives an "Every Dogs De-Light" prize pack - a \$45 value - all the essentials you'll need for twilight walks with your furry friend. Come meet Zasha, Wisconsin Vest-A-Dogs Ambassador, and have a nice twilight stroll through the park. Palmer Park - corner of E Racine St, Palmer Drive. For more information call (608) 752-3539.

ROCK & MINERAL SWAP MEET



Saturday September 14, 2013

6219 Forest Hills Road Rockford, Illinois
ODD FELLOWS HALL

Bring it, Swap it, Buy it, and Sell it

9:30 am to 4:00 pm

\$20 space donation for 10ft by 10ft

Rain or Shine Public Admission Free

Sponsored by the Rock River Valley Gem & Mineral Society

Contact Bill Horschke at 815-544-2073, [whorschke @ yahoo.com](mailto:whorschke@yahoo.com)





**The Wil Ward
Memorial Picnic
hosted by Tom &
Dar Gitchel**





Agate Hunting!



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