

THE AGATEER

The Newsletter of the Madison Gem and Mineral Club

Volume 8, Issue 3

March 2008

March 25 Meeting – A Coming Out Party

Greiner Collection Unveiling

Our March 25 meeting will be a very special event - the unveiling of the Richard Greiner mineral collection. This extraordinary mineral collection is a gift to the geology museum from Richard Greiner, emeritus professor of electrical engineering. We will meet in AB20 (our usual meeting room) where Museum Curator Richard Slaughter will give a presentation about the collection, and then proceed upstairs to the museum for an inspection of the collection. Here is how the gift was reported in the Geology Museum Annual Report when first received:

A Brilliant Gift

A major highlight of the past year occurred in December when Dr. Richard A. Greiner, a retired UW-professor of electrical engineering, donated his mineral collection to the museum. With 684 specimens and a nearly \$120,000 appraised value, the R.A. Greiner Mineral Collection is the most impressive set of minerals the museum has ever received. The array of colors and crystal shapes represented in this collection is staggering. It also contains especially spectacular examples of azurite, orpiment, and creedite. The minerals are now in the process of being accessioned and will go on display in the fall of 2007 (ed's note – the unveiling will be March 25, 2008). Carlos Peralta and Steve Harsy assisted with the transfer of this collection to the museum and their efforts are much appreciated. Dr. Greiner loved gazing at these minerals, and thanks to his generosity, thousands of others will be dazzled by their beauty as well.

Thank you, Doc.

From the Museum's Annual Report 2006

The night will include Friends of the UW Geology Museum, faculty and students, and other interested members of the public.

Next Meeting:

Tuesday, March 25, 7:00 PM

AB20 Weeks Hall

UW Department of Geology and Geophysics

1215 West Dayton Street

Dues

Please check the date on the address label of this newsletter. If you have paid your dues for 2008, that is the date that should appear on the label. If the date is earlier than 2008 your dues are in arrears. Dues may be sent to the club PO Box; or given directly to treasurer Gerry Gunderson, or president Steve Harsy. Individual \$12; Family \$16; Junior \$5.

2007 Member Competition

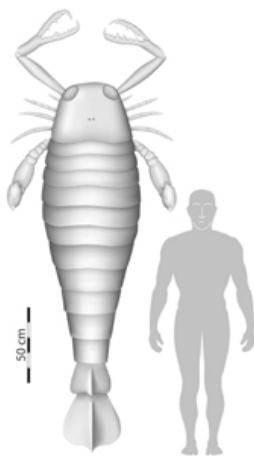
There will be no monthly competition this month due to the nature of our meeting. We will resume competitions in April.

April - petrified wood, palm, etc

May - self-collected mineral or crystal specimens

Questions may be directed to Metje Butler, Education Chairperson, at 244-3659.

Stay Out of the Water!!!



This is a computer generated image, issued by the University of Bristol in England released on Nov. 20, 2007, showing a size comparison between a human and an ancient sea scorpion. British and German researchers on 11/21/07 reported they had discovered the giant fossilized claw of an ancient sea scorpion that, in its heyday hundreds of millions of years ago, would have been some 2.5 meters (8.1 feet) long. The find, in a quarry near the western German border town of Pruem, is the biggest specimen of arthropod ever found, they said in a study published by *Biology Letters*, a journal of Britain's Royal Society. The 46-centimeter (18.4-inch) claw was wielded by a species of sea scorpion called *Jaekelopterus rhenaniae* that lived between 460 and 255 million years ago. (AP Photo/University of Bristol, HO/AFP/GettyImages)

Via the February *Trilobite*

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Field Trip Info

Megan and Ken Woodford – Trip Chairpersons

Megan and Ken are working on a spelunking field trip either June 7 or June 21. Which cave and other specifics are not yet worked out. More information will follow as it becomes available, but pencil in these dates on your calendar.

Calendar

Mar 15-16: CEDAR RAPIDS, IA, ANNUAL SHOW, CEDAR VALLEY ROCKS & MINERALS SOCIETY, Teamsters Union Hall, 500 J St SW, Sat 8:30-6:00, Sun 9:30-5:00, Contact: Marv Houg, 1820 30th St Dr SE, Cedar Rapids, IA 52403, (319) 364-2868, m_houg@yahoo.com

Mar 15: MIDWEST FEDERATION SPRING MEETING. 1 p.m. Hosted by the Weis Earth Science Museum on the campus of the University of Wisconsin-Fox Valley, 1478 Midway Road, Menasha, WI

Mar 25 – Madison Gem and Mineral Club meeting 7 pm

Mar 27-28: PALO, IA CEDAR VALLEY ROCKS & MINERAL SOCIETY ANNUAL AUCTION, Palo Community Center. Sat 9 a.m. - ?; Sun. ? Contact Marvin Houg, 1820 30th Dr. SE, Cedar Rapids, IA 52403 (319) 364-2868, m_houg@yahoo.com

Mar 29: MIDWEST MINERALOGICAL & LAPIDARY SOCIETY METRO SWAP, Democratic Club of Taylor, 23400 Wick Rd. Sat. 10 a.m. - 5 p.m. Contact Cindy & Lou Talley, 30994 Dover, Garden City, MI 48134 (734) 525-1684, cindylou0202@yahoo.com

Mar 29-30: THE BADGER LAPIDARY & GEOLOGICAL SOCIETY 38TH ANNUAL MINERAL, GEM & FOSSIL SHOW; Monroe High School, 1600 - 26th St. Monroe, WI; 9 a.m. - 5 p.m. Dealers, Speaker, Education Exhibits, Gold Panning, Fluorescent Mineral Tent Demonstrations, Hourly Door Prizes, Videos and a "Fish Pond" for the kids

Apr 5-6: GREEN BAY, WISCONSIN. THE NEVILLE PUBLIC MUSEUM GEOLOGY CLUB is having a rock, gem, and mineral show at the Neville Public Museum, 210 Museum Place. Sat. 9:00 - 5:00 Sun 10:00 - 4:00. Contact Dan Tumpach dtumpk@yahoo.com

Apr 5-6: MARION, IL, SOUTHERN ILLINOIS EARTH SCIENCE CLUB 2008 FREE GEM & MINERAL SHOW, NEW LOCATION, Williamson County Pavilion, 1602 Sioux Dr., Marion, IL (Behind Illinois Centre Mall) Sat. 10 a.m. to 6 p.m.; Sun. 10 a.m. to 5 p.m.

Apr 12-13: DES PLAINES, IL 43RD ANNUAL SHOW, DES PLAINES VALLEY GEOLOGICAL SOCIETY, Des Plaines Park District Leisure Center, 222 Birch St. Sat 9:30 a.m. - 5 p.m.; Sun. 10 a.m. - 4 p.m. Jewelry, gem, fossil, rock and mineral dealers. Live lapidary arts demonstrations, silent auction, educational exhibits, kids' room, raffles and door prizes. Contact Lois Zima at (847) 298-4653 or Jeanine N. Mielecki, jaynine9@aol.com.

Ancient Sea Scorpion cont'd.

Gigantism during the Late Paleozoic is one of evolution's many bizarre developments. It produced creatures enormously larger than their modern descendents. The most widely accepted explanation is that this was due to increased levels of oxygen in the atmosphere at the time, although other factors may have contributed as well. As an organism becomes larger, it becomes more difficult to deliver oxygen to all parts of its body. The mammals and some other large vertebrates have big lungs situated near the center of the body. This helps overcome of oxygen-delivery problem. But, insects don't have lungs. (Really, when is the last time you heard an insect cough?) Instead, they have a 'tracheal system' – a branching system of ducts that allow for oxygen to be delivered to all of its cells. This system works via diffusion – the tendency for all gases to spread out, going from regions of high concentration to regions of low. But as an insect increases in size this diffusion becomes less and less efficient. Now, if there is more oxygen in the air, perhaps as much as 35% (compared to today's 21%) this overcomes some of the diffusion inefficiency. And that's what we think occurred in the middle to late Paleozoic.

Why So Many Silicate Minerals?

Many, if not most, minerals of interest to lapidaries are of a class known as silicates. All of these minerals have as their basic structure what is called the oxygen-silicon tetrahedron, a combination of four oxygen atoms surrounding a central silicon atom – SiO₄. This little cluster of atoms forms a three-sided pyramid, and plus the base, a four sided solid. Hence its name 'tetrahedron' - four-sided solid. Silicate minerals are common because oxygen (47%) and silicon (28%) compose most of the earth's crust. But, this is only part of the story. What makes the oxygen-silicon tetrahedron especially interesting is its ability to polymerize – to chemically bind to the next adjacent O-Si tetrahedra. Most of the polymers we are familiar with are based on carbon – nylon, polyethylene, dacron, etc. Life on earth owes its existence to the ability of carbon atoms to combine with other carbon atoms, producing all the complex compounds that make up living organisms. Atoms with four electrons in their outer shells have this ability, but especially so with carbon and silicon. Science fiction writers often hypothesis that if there *is* extra terrestrial life it is most likely based on carbon. But if it is not carbon-based, the next most likely candidate would be silicon-based life.

The polymerization of oxygen-silicon tetrahedra produces more than a thousand different minerals. In quartz, one of the most common silicate minerals, every oxygen atom is shared between two adjacent tetrahedra, so that the total number of oxygen atoms is double the number of silicon atoms, giving the familiar formula for quartz – SiO₂. Other polymerization schemes produce long single chains of tetrahedra, or double chains, or sheets, or rings, etc. The silicate minerals are usually divided into subclasses based on these polymerization patterns, so we have

Nesosilicates (single tetrahedra)

Sorosilicates (double tetrahedra)

Inosilicates (single and double chains)

Cyclosilicates (rings)

Phyllosilicates (sheets)

Tectosilicates (frameworks)

Words 101

The following words all sound rather similar, but refer to quite different ideas.

Silicon – is the name of an element, atomic number 14

Silicate – is the name of a class of minerals

Silicone – is a rubbery compound frequently in cosmetic surgery, caulking windows, etc.

From the silicate classes above, the prefixes translate as:

Nesosilicates = 'island' silicates

Sorosilicates = 'group' silicates

Inosilicates = 'thread' or 'chain' silicates

Cyclosilicates = 'ring' silicates

Phyllosilicates = 'sheet' or 'leaf' silicates

Tectosilicates = 'build' or 'framework' silicates

The Agateer is the official publication of the Madison Gem and Mineral Club. It is published monthly, and mailed as a benefit of membership to all Madison Gem and Mineral Club members.

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Membership is open to all individuals, and applications for membership will be accepted upon payment of annual dues, which are \$12.00 for adults (18 and older), \$5.00 for junior members (ages 6-17), and \$16.00 for families.

Visit the official website of the Madison Gem and Mineral Club at www.madison.com/communities/madisonrockclub/contact.php for more information

Madison Gem and Mineral Club
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