
Littleton Gem and Mineral Club

January 2022 Newsletter



Time and Place: **JANUARY MEETING IS CANCELED** for pandemic reasons.

January Program: Canceled

Speaker: Canceled

Trustee Message

January 2022

Happy New Year!

As the Littleton Club was unsuccessful in filling the President and President Elect positions, the Board of Trustees has stepped up to take over the running of the club in a shared fashion during 2022.

Pandemic permitting, Lynette Warren will run the February and March meetings, and Lesley Sebol the April and May meetings.

Meetings scheduled to be held in the fall will be assigned leadership roles later.

To quote Ron Wankner, we are “always looking for volunteers to help make our club stronger and relevant to our members”.

As incentive to join the Club Board of Trustees, it was decided at the January board meeting that Board of Trustee members will have their club dues waived for the year in which they are on the board. Note, the idea for the waived-dues policy was copied from the former North Jeffco Gem and Mineral Club.

Lesley Sebol
LGMC Trustee



2021 Odiorne Award Winner

Congratulations to Nancy Kimber for her beautiful fossil fish!!!

As our winner, she receives a patch for the club vest, a \$50 cash award, and gets to sign the travelling trophy, which is a copy of Tom Odiorne’s book, *Colorado Amazonstone, the Treasure of Crystal Peak*.

Selected upcoming LGMC and Earth Science Events

January (no meeting) – Littleton Gem & Mineral Club January meeting has been canceled.

Tues, Feb. 15 (?) Faceters and Cabbers - When the pandemic situation changes we will try to resume in-person meetings. Keep your fingers crossed for a February resumption. Meanwhile, the Zoom meetings have been suspended. I'll keep the group posted about an opportunity for an in-person Faceters and Cabbers meeting. If you would like to be added to our faceters and cabbers mail list, let me, John Kleber, know at jkleber@att.net.

Fri, Feb. 18 LGMC February Meeting, 7:30pm, St Philip Lutheran Church, 7531 S. Kendall Blvd, Littleton, CO 80128. (COVID permitting) ***We need volunteers to bring snacks for upcoming meetings Thank you!***

Fri-Sun, Feb. 25-27 Denver Gem & Mineral Guild (DGMG) Show (returning to its old location), Jefferson County Fairgrounds, Exhibit Building 15200 W. 6th Ave., Golden, CO. Free parking & free admission; hours 10-6 Fri. & Sat., 10-5 Sun. DGMG had earlier announced that it would be necessary for this show to move to the Wheat Ridge United Methodist Church gymnasium; but this will NOT be necessary, the show will take place at the Jeffco Fairgrounds after all, as in past pre-COVID years.

Grab Bag News Update



January Grab Bag News

No new news this month. If you have any minerals or sewn grab bags to contribute, contact me, John Kleber, at jkleber@att.net or 303-570-8164, or Lynette Warren at flywithle123@comcast.net.

John Kleber and Lynette Warren
The Bag Begger and Bag Party Lady



BAUXITE AND GREENHOUSE EARTH

Bauxite is a hard, clayey material, generally white to red with dark spots or blotches called pisolites. It looks like it has an illness of some sort. This material was once described as a mineral ($\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$). We now know it is a mixture of various aluminum hydroxide minerals (gibbsite, boehmite, diaspore) with minor amounts of clays and iron oxides. The reason one can still find it discussed in mineralogy classes is that once mineralogists describe something, they hate to let go of it. It is also a handy field name because one can't determine the specific mineral composition of bauxite without sophisticated analytical tests. Bauxite is our major source of aluminum. Aluminum is one of the most common elements in the earth's crust, but it usually occurs in minerals that are difficult to process, such as feldspar. Aluminum is handy stuff. It's light, relatively strong, and corrosion resistant. Charles Martin Hall, an industrial chemist and founder of what was later to become ALCOA, first learned to extract aluminum commercially in 1886. He used a rare mineral called cryolite, found mostly in Greenland. Cryolite was later supplanted by bauxite as the major aluminum source. The production of aluminum really expanded after World War II, when more uses were found for it.

Bauxite is a type of ancient soil or regolith. It requires tropic to sub-tropical climates to form. Bauxite will form only over rocks that are already rich in aluminum but poor in silica - such as nepheline syenites or clay-rich limestone. Then strong weathering is required over a long period of time. This leaches out anything even remotely soluble, leaving behind only the very insoluble aluminum hydroxides. Thus, bauxite is a good indicator of areas that have in the past experienced very warm, moist climates. Not surprisingly many economic sources of bauxite are in tropic areas such as Surinam, Brazil, New Guinea and Jamaica.

Bauxite was first described in 1821 for deposits at Les Baux, St Remy, Bouches de Rhone, France. France is not known for a tropic climate, so a good question is why did bauxite form there? The answer is that the bauxite formed when the climate was much different from today.

Much bauxite worldwide formed during the Cretaceous and early Tertiary periods, from 50 million to 150 million years ago. This is when the large deposits in Arkansas formed. Often this is ascribed to the effects of plate tectonics. Areas that are not now in the tropics were moved through such climates as their plates shifted. During the Cretaceous, for example, Minnesota was at the same latitude as present-day Spain. But there is a second factor. During that period of geological time, the earth was experiencing a large-scale greenhouse effect.

A startling picture of this period of earth history is emerging from new studies of sediments laid down then on land and in the sea. During this time, CO_2 levels were over 1000 ppm and perhaps as high 4000 ppm. (For comparison today's values are about 380 ppm, and may go up to 750 ppm by the year 2100.) The source of this ancient CO_2 is thought to be from excessive volcanism. The world had a very different climate in Cretaceous and early Tertiary times. It was warm enough that continental temperatures may never have dropped below freezing. Crocodiles and palm trees grew at latitudes now occupied by the Arctic Ocean. There was likely no polar ice. Sea surface temperatures were very warm. In places in the equatorial oceans during the Cretaceous, sea surface temperatures were 95°F , and locally as high as 107°F . Today, sea surface temperatures at the equator are about 82°F . At the latitudes of Newfoundland, sea surface temperatures were about 86°F , compared to $37\text{-}39^\circ\text{F}$ today. If this sounds good, realize also that the ocean often went stagnant for periods of time, and that sea level was 300 to 600 feet higher than today. This was enough to put a major seaway across the Dakotas, give Minnesota monsoons and cause Gulf of Mexico waves to lap at the tip of Illinois. In such a warm climate, weathering conditions to make bauxite were much more widespread, and it's not surprising to find it formed in areas we think of as non-tropic.

Bauxite-like materials that formed at this time can be found in western Minnesota. Glaciers distribute this material widely in gravel pits where rock hounds often pick agates. This turns out not to be true bauxite. It's mostly clays (kaolinite), so weren't leached quite enough to get rid of the silicate minerals. Still, its formation in the local bedrock also speaks to this large-scale climate change, giving us a window into a very different past, and perhaps a model of the future.

- Dr. Bill Cordua, University of Wisconsin-River Falls

References:

Jensen, M. and Bateman, A, 1979, Economic Mineral Deposits, John Wiley Publishers, 593 p.

Setterhom, D and Morey, G.B., 1989, An extensive Pre-Cretaceous weathering profile in east central and southwestern Minnesota, U.S. Geological Survey Bulletin, 1989 H, 9p.

Takashima, H. et. al., 2006, "Greenhouse World and the Mesozoic Ocean", Oceanography, vol. 19, #12, p. 94-103.

Club Announcements



Moving? Change of Address, Email or Phone Number?

Please notify **Ian Duncanson** of any changes at idunc@q.com or 303-798-9174.

Club Vests Show your club support at the meetings and other events! **Ian Duncanson** has club vests available for sale. Price includes vest, sewed on club patch (on back) and a club pin

\$18 for small and medium sizes

\$19 for large and X-large sizes

\$20 for XX-large and XXX-large

Do you know someone who could use some sunshine? Nobody knows everybody. If you know of a club member or family who is having a health problem or other problem, and who could be encouraged by receiving a thinking-of-you card, please let us know so that we may encourage them. Send a note to our sunshine coordinator and let her know, **Lynette Warren**, flywithle123@comcast.net.



0lnh#xv#rq#ldfhE rrn#

LIKE and FOLLOW us @LittletonGemAndMineralClub

See you on Facebook! Nicole Bolger

LGMC Website

Our website has been updated!

Please check out the new "Member" section of the website! We'll archive Newsletters, share photos, and get details of upcoming field trips.

To view the "Member" section, you must register as a member of the website:

<https://littletongemandmineralclub.com/register/>

As only LGMC members will have access to this material, we'll be checking your name against the current club roster, so if you haven't yet, reach out to Ian Duncanson to pay your 2022 dues!

Thanks,
Gus

Club Membership Dues

2022 Membership Dues

We've celebrated the end of 2021 and the arrival of 2022 with the hope for a return to more "normal" activities. Imagine....awesome field trips, general meetings, parties, picnics, incredible rock & mineral displays and even getting free rocks!! **dues are only \$20!!**

Don't delay!!! Send your 2022 dues to:

**LITTLETON GEM AND MINERAL CLUB
P.O. BOX 283
LITTLETON, COLORADO 80160**

Ian Duncanson

LGMC dues for 2022

Please bring the following form to the next meeting with your \$20 check:

Name(s) _____

Dues payment (\$20) _____ Renewal

Email address: _____

Thanks to everyone who contributed to the newsletter! As this is my first newsletter, please let me know if anything is in error. ~Lesley

☞ 2022 Board of Trustees ☞

President	<i>Vacant</i>	
Vice President and Membership Chairman	<i>Ian Duncanson</i>	303-798-9174
Secretary	<i>Larry Havens</i>	303-757-6577
Treasurer	<i>Lynette Warren</i>	303-956-4634
President elect	<i>Vacant</i>	
Program Chairman	<i>Brittany MacRostie/open</i>	630-699-2415
Field Trip Chairman	<i>Jim Hooten</i>	303-770-7177
Highlites Newsletter Editor	<i>Lesley Sebol</i>	720-999-1372
Trustee (Year of 2022 as past President)	<i>Ron Wankner</i>	303-887-9787
Trustee (2 year term 2021 & 2022)	<i>Charlie Wall</i>	303-933-0368
Trustee (2 year term 2022 & 2023)	<i>Lesley Sebol</i>	720-999-1372

☞ Chairpersons & Appointed Officers ☞

Sunshine Chairperson	<i>Lynette Warren</i>	303-956-4634
Refreshments	<i>Anne Jenkins</i>	303-730-7696
Librarian	<i>Mary Davis</i>	303-680-5112
Historian	<i>Vacant</i>	
Facebook Editor	<i>Nicole Bolger</i>	720 344-5280
Hospitality	<i>Vacant</i>	
Grab Bags	<i>John Kleber</i>	720-851-8510
Web Administrator	<i>Gus Hansen</i>	480-489-3978
Show Committee Representative	<i>Lynette Warren</i>	303-956-4634
RMFMS & AFMS Representative	<i>Larry Havens</i>	303-757-6577
Denver Council Representative	<i>Lesley Sebol</i>	720-999-1372
Cabbers & Faceters Group	<i>John Kleber</i>	720-851-8510
Mineral Study Group	<i>Lesley Sebol/Richard Parsons</i>	720-999-1372

Meetings: The Littleton Gem & Mineral Club meets the third Friday of each month, September through May, at the St Philip Lutheran Church, 7531 S. Kendall Blvd, Littleton, CO 80128. Doors open at 7:00 p.m. and the meetings begin at 7:30 p.m. All meetings are open to the public. Club and section meetings may deviate from their regular schedules due to holidays, shows, inclement weather, pandemic, etc.

The Littleton Gem and Mineral Club is affiliated with the American Federation of Mineralogical Societies, The Rocky Mountain Federation of Mineralogical Societies, The Colorado Federation of Gem and Mineral Societies, and the Greater Denver Area Gem and Mineral Council.

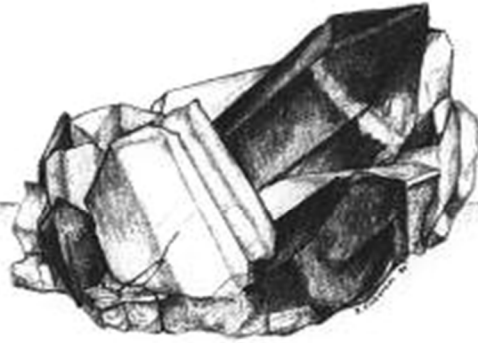
Any material contained in the HIGHLITES may be reproduced, provided credit is given, unless otherwise indicated. Contribution articles are welcome. ****The deadline for submissions is the 1st Friday of each month.** Please send your material by email to editor.lgmc@gmail.com.

Advertising Rates: \$50 / Full Page. \$30 / Half Page. \$20 / Quarter Page.



HighLites

LITTLETON GEM & MINERAL CLUB



HARRIS PARK AMAZONITE & SMOKY QUARTZ

LITTLETON GEM & MINERAL CLUB
P.O. Box 283
Littleton, Colorado 80160

FIRST CLASS MAIL

