February 2025

The Cutting Edge

Monthly Newsletter of the Ottawa Lapsmith and Mineral Club

In this Newsletter:

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President's Message

Our new workshop has begun operation on a reduced schedule. We are still short of supervisors, and not all of the equipment is up and running yet.

Please note that there is no garbage collection at our new location. Everything we create we must haul away. If at all possible, please take your garbage home with you.

There is no machine plumbing at our new location. We now use bubblers for all machines except the flat laps.

There is no dirty water disposal at our new location. There is a big, black settling tank in the kitchen for holding dirty machine water.

The exterior of the building is dark at night. Our front door can be very dark. We will be addressing the problem.

Donations continue to pour in. Over the last two months we received a large Agate collection, a large mineral/lapidary collection, a tumbler and several smaller donations.

Kerry Day

OLMC President

All members are invited to submit articles, proposals, and thoughts that could be included in the newsletters. Also, feel free to send your Classified ads by e-mail to: *news@olmc.ca*

Welcome to the New Workshop

The workshop address is 136F Billings Avenue, in the pale-yellow building behind 136 Billings. Look for the blue awning. Parking is at both ends of the building. Street parking is allowed further east down Billings.

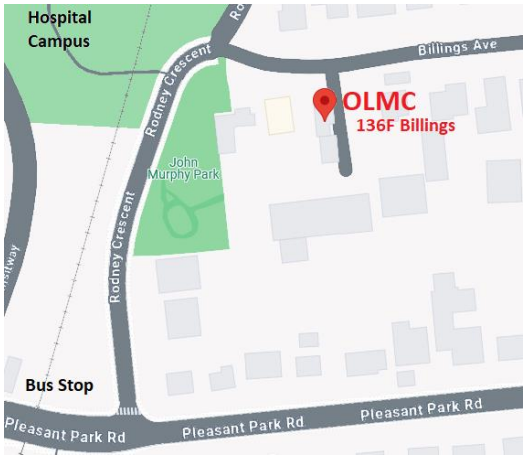
The electrical work was completed by January 10. By then, most of the equipment had been delivered to be installed. That day, the club also took possession of a new Dymon storage locker. Some surplus items were marked as surplus for anyone who wanted them.

By January 20, the workshop was almost ready to use. The workshop opened with a reduced schedule on starting January 22. Hours will be expanded, and courses will be offered as volunteers become available. Please see the workshop schedule on page 9. President Kerry Day has provided all of the photos.

The Silversmithing area (right) is coming together. Missing items will be arriving shortly.

The new library (below) has many new donations that arrived during the shut down.

Below left: Google map of the location.



The big saws will be down for the next few weeks for a complete overhaul.

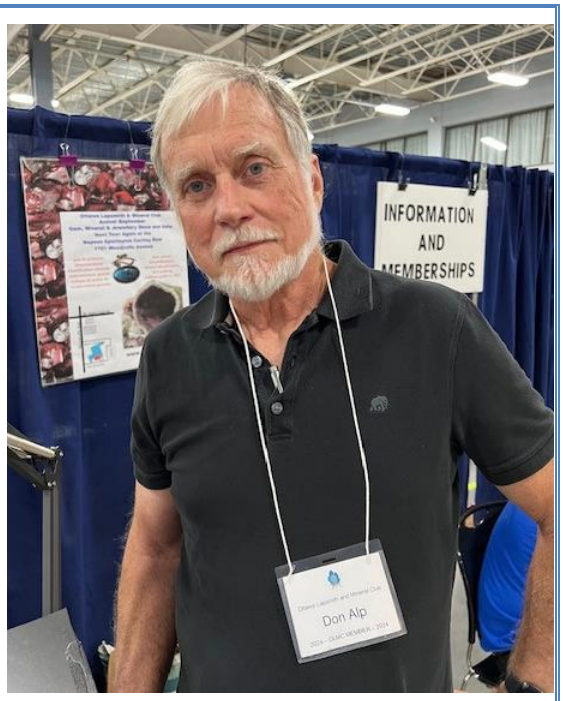
Both Titans have arrived. New grey bases are about to be installed.

Other grinders and polishers will soon be ready.

Some equipment is still missing. It will be another few weeks before we have everything.

The electrical is done. We have an abundance of new rock for sale.

Member Profile: Don Alp



I started with my first cabochon when I was twelve years old. My family got into collecting rocks and cutting and polishing. So, I have dabbled in it for a long time. I lived in Zimbabwe and South Africa. I was a member of the Victoria Gem and Mineral Club. We came to Canada. There was a club in Mount Clemens in Detroit, so I joined them. That's actually where I started teaching silver smithing. They got to know that I could solder things a bit better than the guy next to me so they said "Would you teach a class?" I taught silver smithing classes at Mount Clemens for about five years in the evenings.

When I retired, I could join a club that was in Windsor, the Sunset Gem and Mineral Club. I ended up running the club until Covid. Covid hit us hard, so we moved up here. I've just continued.

Most of the rock collection I have is stuff that was accumulated by my family in South Africa. When my brother passed away, and my Mum had to go into a retirement home, then I had to do something with the rocks. So, I shipped 1,000 kilos back to Canada. And, I've been at it since then. I have a fully equipped workshop. I do silver smithing and lapidary and cut rocks.

At the moment I'm making some custom rings. My wife usually goes out and recruits people. She sells my products to her friends, basically. I'm making some rings of different sizes and different styles to fill some orders that she got for me.

For a lot of the rings, I pick up projects from different publications. If it looks interesting to me, then I make it. Maybe based on the picture. Some of the books I've got have instructions which get into some really detailed, technical stuff.

Don Alp's Display Case

Three silver rings: skull ring, hollow ring, half-round ring, made by Don Alp.

That is a skull ring that is done from carved wax and then I made a mould after I made the first one. A lot of people admired it.

Here's one of the projects from a book. It's actually only two pieces. It's hollow inside, and there are only two solder joins, so you solder an outer band and an inner band, compress the outer band into a dome shape, and then you file very carefully so that the inner cylinder fits perfectly. Then you actually file it so it's flush, and then you bend it over. The seam all around the edge is just burnished over. It's not an actual solder join. It solves a problem when you do a hollow form like this. Usually you have to drill a hole in it to allow gases to escape.

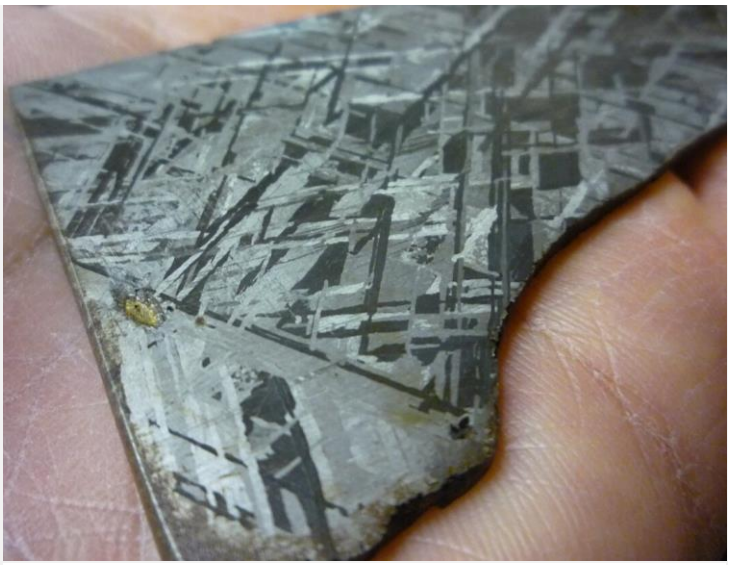
Here's another project from the book I was working from. It's actually a half-round piece that you divide up. You cut each join and you file it, instead of just buying a piece and bending it.

Nickel

Nickel is a chemical element with a Mohs hardness of 4.0 and a face-centered cubic crystal structure. It is a hard and ductile silvery-white lustrous metal with a bit of a gold tinge. It takes a high polish.

Use of nickel (as a nickel–iron alloy from meteorites) has been used as early as 3500 BCE, but it was not discovered and isolated as an element until 1751, by Axel Fredrik Cronstedt.

Ancient bronzes from what is now Syria were found to contain as much as 2% nickel. Ancient Chinese manuscripts suggest that "white copper" was used there in 1700–1400 BCE.



Acid-etched iron meteorite slice, revealing the characteristic Widmanstatten pattern. From the California Polytechnic State University Physics Department meteorite collection, presented at the April 2009 meeting of the Central Coast Astronomical Society

Pure nickel is chemically reactive, but large pieces exposed to atmosphere quickly form a surface layer of nickel oxide that prevents further corrosion. Most nickel in Earth's crust is part of oxides, but nickel sulfides have more economic value, especially pentlandite. Nickel is often found in iron meteorites as the alloys kamacite and taenite.

Approximately 3.6 million tonnes of nickel are mined worldwide every year. Major production sites include Sulawesi, Indonesia, and Sudbury, Ontario, New Caledonia in the Pacific Ocean, Western Australia, and Norilsk, Russia. About 68% of world production is used in stainless steel, another 7% is used for alloy steels, 10% is used for nickel-based and copper-based alloys, 9% for plating, 3% in foundries, and 4% in other applications such as in rechargeable batteries. Nickel has been widely used in coinage since the mid-19th century.

Nickel is the top confirmed contact allergen worldwide, partly due to its use in jewelry for pierced ears. Sensitive people may show a skin contact allergy known as dermatitis. Highly sensitive people can also react to foods with high nickel content.

https://en.wikipedia.org/wiki/Nickel

Mëllerdall UNESCO Geopark, Luxembourg

Luxembourg is Europe's seventh-smallest country and one of its least-populated countries. It has an area of 2,586 square kilometers. It is also home to the Mëllerdall UNESCO Global Geopark, which was officially declared in 2022. About 25,500 people live inside the boundaries.

Located in the hilly, rocky part Eastern Luxembourg, in the centre of the Trier-Luxembourg Basin, this Mëllerdall ("valley of the millers") geopark covers 256 km². The oldest stones in the park come from the Lower Triassic age between 251.9 Ma and 246.7 million years ago.

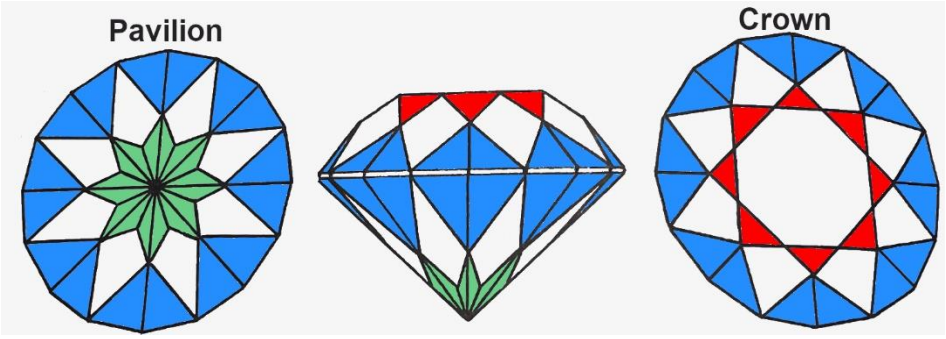
One main feature of the geopark is the Luxembourg Sandstone Formation that dates from the Lower Liassic age (205 to 180 million years ago) when part of the land was under a shallow sea. Today, it is about 400 meters above sea level, and is up to 100 metres thick in some places, with steep slopes of sandstone and dolomite covered with trees. Since the late 19th century, this rock formation has been famous in Western Europe as a tourist attraction for its various weather-carved features. There is a network of well-marked hiking trails, including the 112-kilometer Mullerthal Trail awarded the Best of Europe for trail quality.

Above: *Honeycombs are a result of weathering and re-crystallization of calcite.*
Below: *Individual sandstone towers were displaced by gliding processes, creating walkable passages. A large rock overhang is visible. Rock climbing is allowed on some rock faces.*
Photos are from www.naturpark-mellerdall.lu

Two other parts include a section of undulating hillsides in marly substrate (clay and limestone), and the valleys of the rivers Sauer and Alzette that go to the lowest point of the park.

Humans have been living in the Mëllerdall region since prehistoric times. Archeological evidence shows that rock ledges, overhangs, caves and open joints were used as temporary settlement areas, shelter and burial grounds. The oldest human skeleton in Luxembourg, known as "Loschbour man", was found in this area in the valley of the Black Ernz. Remains of a Roman villa and some medieval castles are open to tourists.

Faceting Design: Zircon Cut



This cut was designed to increase the light return of zircon so that it would be comparable to diamonds. Regardless of the ulterior motives, it does the job. This modification of the standard brilliant design uses eight extra facets around the gem's lower portion. It is a slightly deeper cut using 73 facets.

Medium to high refractive index materials from medium colour to colourless can be used to good advantage with this cut. It will tend to slightly deepen colour, so it may not be good with deep coloured material. It will work well with lower refractive indices, especially those with light colours, but it still works best with high RI stones.

It's a challenge to cut brittle zircon. Cutters usually fashion zircon in the brilliant style to take advantage of its luster and fire. Zircon can also be found in step cuts, and mixed cuts combining brilliant and step-cut facets.

From Diagrams for Faceting, Volume 1 (Revised), Glenn & Martha Vargas

Selection and Care of Your Rolling Mill

Presented by Csila Ékes at the Silversmiths Meeting 2022-11-15

A trusty little Cavallin combination mill with a 50mm flat side and a grooved side.

When starting out your jewellery-making career, do not get an expensive rolling mill. It is much easier to buy the plate and wire in the sizes needed from a supplier.

Expect to pay USD $1200 to $1800 for a new rolling mill. Each product comes with one or more sets of rollers: one flat pair, one grooved pair, a combo pair, or two pairs -- one flat and one grooved. The difference between an expensive machine and a less expensive machine generally is the hardness of the rollers.

Helping Hand: If you are unsure of what mill is right for you, walk around and ask to try out and use someone else's mill. Lots of people at the club have different rolling mill products.

The club has a Durston mill. Best Built products are popular and reliable.

Make sure the mill is bolted to a table, or the torque of the handle will cause it to move. You could also use a C-clamp. A combination mill has rollers with a flat area for plates and a grooved area for wire of various gauges. Almost all rolling mills now come with extension rollers on the side to pull half-round wire.

Watch out! Sometimes the ends of the rollers are curved a bit.

With the gear box on the side, the actual force pressing the rollers together from turning the handle is increased five-fold. Do not buy one without the gear box. The wider the plate, the harder it is to pull through the machine.

A lot of manufacturing places will have an electric motor to turn the rollers because it has more power and frees up a person to do something else.

On a lot of second-hand mills in on-line marketplaces, the top part with the dials is missing. These are graduated dials. Each of the notches is one tenth of a millimeter, so you can make very exact adjustments while milling. The dials are also used to calibrate the machine. If your dials happen to not have numbers, then you could mark your own by hand with use the calibration procedure and plates or sheets of known thicknesses.

View of the calibration/measuring dials on the top of a rolling mill.

To calibrate the rollers, close the rollers until they touch, that is, no light is coming through between them. Then remove the handle and gear connected to the dials. Set the dials to zero. Then, re-insert the handle. You can re-calibrate however often you want.

After every milling, the metal edge widens a bit. And after every milling, the metal must be annealed, so you always have to start out very soft. Everyone has their own opinion on how often to anneal it. One guideline is the 20% guide. For example, you are trying to reduce a 1 mm sheet or 1 mm wire, then at 0.8 mm you should anneal the metal.

Important Rule: Never let anything wet touch the rollers – never a drop of water, never a drop of acid. They WILL rust, and it WILL ruin your work. So, make sure all pieces are completely dry.

Make sure to lubricate all of the gears once in a while so that they turn smoothly. There is a small hole on the top of the gear box to receive a few drops of oil. There are two more holes above the rollers on either side.

Sometimes you have to bring down very expensive material like gold. One tenth of a millimeter of one millimeter plate is 10% of the price of the raw material. It can add a lot to the cost of your pieces. Consequently, it is very important that the gear dials are super accurate, and that the setting of the dials matches exactly the position of the rollers.

To make gold and silver wire, you need a torch, an ingot mould, a crucible, borax, and a draw plate. So, it is not so easy to make your own wire.

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Diamonds in Fifteen Minutes

A new technique for synthesizing diamonds at atmospheric pressure and without a seed gem may become a new way to make these stones.

Natural diamonds form in Earth's mantle, under tremendous pressures and temperatures exceeding 1,500 degrees Celsius. Artificial diamonds are made with high-pressure and high-temperature growth, using a manufactured extreme environment to take carbon dissolved in liquid metals like iron, and convert it to diamond around a small starter diamond. The process can take two weeks.

For the new method, scientists used electrically heated gallium and nickel with a bit of silicon in a graphite crucible, which was placed in a chamber maintained at sea-level atmospheric pressure. Then superhot, carbon-rich methane gas was flushed in.

The team got diamonds from the crucible's base after 15 minutes. Within 2.5 hours, a more complete diamond film formed that was pure except for some silicon atoms. One problem with this new method is that the diamonds are super tiny, hundreds of thousands of times smaller than the ones grown with HPHT.

https://www.livescience.com/chemistry/scientists-grow-diamonds-from-scratch-in-15-minutes-thanks-to-groundbreaking-new-process

Workshop Schedule

February 2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 Workshop General Use 10am – 4pm EC, RB
2	3	**4** Silversmiths 6:30-9:00 pm JB	**5** Workshop General Use 5pm – 9pm CG	6	7	**8** Workshop General Use 10am – 4pm CG, CG
9	10	**11** Silversmiths 6:30-9:00 pm JB	**12** Workshop General Use 5pm – 9pm JGB, DP	13	14	**15** Workshop General Use 10am – 4pm EC, RB
16	17	**18** Silversmiths 6:30-9:00 pm JB	**19** Workshop General Use 5pm – 9pm JGB, DP	20	21	**22** Workshop General Use 10am – 4pm SJ, NB
23	24	**25** Silversmiths 6:30-9:00 pm JB	**20** Workshop General Use 5pm – 9pm JGB, DP	27	28	

OLMC Membership Application

☐New Membership ☐Membership Renewal

☐Individual **$20**
☐Family (2+ persons in the same residence) **$30**

Benefits:

☒Monthly Newsletter

☐Newsletter advertisement: $25 per year for members or $55 for businesses
(Ten quarter pages per year over ten newsletters).

☒OLMC online auctions

☒OLMC field trips

More information can be found at http://www.olmc.ca
You can also go on our Facebook page: OttawaLapsmithandmineralclub

Names(s): _____

Address: _____

City: _____ Province: _____

Postal Code: _____ Telephone: _____

Please specify your e-mail address to receive OLMC's newsletter:
_____

Do you require a receipt? ☐ Yes

Payments are payable by **cash**, **cheque** to Ottawa Lapsmith and Mineral Club, or **E Transfer** at treasurer@olmc.ca with the application form

Please mail your membership form and fees to:
Ottawa Lapsmith and Mineral Club
P. O. Box 36042 Wellington, Ottawa, On K1Y 4V3

Please note that all membership information is used only for administrative purposes.

Administration use only
Card provided: ☐Yes ☐No Supervisor signed: ☐Yes ☐No
Date: _____