The Mineralogical Society of Victoria Incorporated

A0001471E

Newsletter No. 200

August 2009

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6mm field of view

Print Post Approved PP332785/0015

The Mineralogical Society of Victoria Inc.
P.O. Box 12162
A'Beckett Street
Melbourne Vic. 8006

Patron: Professor Ian Plimer FTSE, Hon FGS, FAIG, Hon SGA, BSc(Hons), PhD

Office Bearers:			
President:	Alex Blount	General Programs:	Dermot Henry
Vice President:	TBA	Special Projects:	Dermot Henry
Secretary:	Lia Bronstijn	Resources (incl Library):	TBA
Treasurer:	John Bosworth	Publicity	TBA
Excursions:	TBA	Committee Persons:	Jo Price
			John Haupt
			Bill Birch

Newsletter: Editor & Layout: Michael Hirst
Assembly and Circulation John Haupt

Contact Numbers:	Excursions	Micro-mineral Group	Mineral Appreciation Group
	TBA	Jo Price	Alex Blount
		(03) 54 284 762	0407 879 097

Membership Details:

Joining Fee	$5.00		
City Adult Member	$25.00	Country Adult member	$20.00
City Family membership (2 adults & children under 18)	$35.00	Country Family Membership (2 adults & children under 18)	$30.00
Student Member (full time)	$15.00	Newsletter only	$15.00

(N.B. - Country membership - more than 50 km from Melbourne G.P.O.)

Applications for membership can be obtained by writing to:-

The Secretary, Ms. Lia Bronstijn,
P.O. Box 12162,
A'Beckett Street,
Melbourne, Vic, 8006.

General meetings are held on the 2nd Monday of each month (except January) commencing at 8.00 pm at the Royal Society of Victoria, 8 Latrobe St. Melbourne.
Visitors are most welcome.

Newsletter of the Mineralogical Society of Victoria
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FORWARD DIARY

PLEASE NOTE:- General Meetings of the Society are now held on the second Monday of each month, 8:00pm at the Royal Society Building.

Aug 10 (Monday) General Meeting: Dermot Henry, Museum Victoria.
Topic: Collectors: cornerstone of Museum collections.

Aug 16 Mineral Appreciation Group – At Nunawading Lapidary Club Rooms, Silver Grove, Nunawading. Topic: Mineral Lustre – Choose one 'lustre' and bring examples to represent it.

Aug 30 Micro Group Meeting – at Judy Rowe's home.
Topic: Minerals from the Middleback Range, S.A.

Sept 14 General Meeting: Dr Rick Squire, Monash University.
Topic: The environmental catastrophe we had to have.

Sept 20 Mineral Appreciation Group – At Nunawading Lapidary Club Rooms, Silver Grove, Nunawading. Topic: Mica Group Minerals – Round 2

Sept 27 Micro Group Meeting – at Jo Price's home. Topic: Pseudomorphs.

Oct 12 General Meeting: Speaker to be advised. Topic: TBA

Oct Mineral Appreciation Group – No meeting due to NDLC Exhibition.

Oct Micro Group Meeting – Likely no meeting.

MINERAL RELATED EVENTS

Sept 12 – 13 Bendigo Gem Club Inc, Gemarama 2009 - Annual Exhibition. YMCA Leisure Centre, Browning Street, Kangaroo Flat. Saturday 10:00am - 5:00pm, Sunday 10:00 am - 4:00 pm

Oct 17 – 18 NDLC Annual Exhibition 2009. Blackburn High School, Cnr Williams and Springfield Roads, Blackburn North

Jun 12 – 14 2010 33rd Joint Mineralogical Societies of Australasia Seminar, The Royal Society Rooms, Adelaide. Host by The Mineralogical Society of South Australia.

NEXT ISSUE

PLEASE NOTE:- Material for the October Newsletter to be with Michael Hirst by **September 30th.**

FROM THE COMMITTEE

As we enter the next financial year of the Society we have some changes to the new Committee. Details of the Committee members and positions at present are shown on the inside cover of the Newsletter and we welcome Lia Bronstijn as our new Secretary. In additional to thanking our immediate past Secretary, Lesley Slattery and Excursions Officer, Volker Hoppe, we would like to make a special note of thanks to Volker for his previous 12 years of service to the Committee including 9 years as Excursions Officer.

You may hopefully by now have noticed a few things about the Newsletter. Yes, we are now brought to you in glorious colour, thanks to the generous assistance of Jon Mommers. This edition also marks the 200th issue and seems a fitting place to both update the printing and reflect on some articles from the past. Our thanks go out to Peter Day and the NDLC printing equipment for their previous years of service in the production of the Newsletter and we hope that you won't miss the bi-monthly printing chore too much!

Alex Blount
President

Special thanks to Jon Mommers (www.earthstones.com.au) for providing the printing services and allowing us to present the Newsletter in colour.

EXCURSIONS

Previous Fieldtrips

June 20th: Lake Boga

For an 'inspection' trip, a reasonably large group was reportedly present. Unfortunately, although the quarry was indicated to be working in the potentially good 'upper' areas, no specimen material was reported. Whilst some mineral species were apparently seen (apatite?) no significant specimens were extractable.

Forward Diary

Pending the appointment of a new Excursions Officer, the Committee is looking at some other localities and these will be notified in the next newsletter. The museum with Dermot and Bill are reviewing some new localities and we await their feedback.

PUBLICITY

Micro Group Report

May Meeting. The topic, minerals of the alunite-jarosite group gave us far more species than we had expected as it covered trigonal sulphates, arsenates and phosphates. So everyone brought along a good selection, and some that caused comment were svanbergite, from Nevada; hinsdalite on pyromorphite, Sylvester Mine, Tasmania; good segnitites from Kintore, including one aesthetic piece with segnitites "arranged" in a vugh with carminite and mimetite; crandallite (glistening white microcrystals); jarosite and natrojarosite; beudantite from Tsumeb, (dark brown lustrous big crystals); plumbogummite; and woodhouseite which *looks* cubic but is trigonal.

June Meeting. Seven members met to look at minerals containing magnesium, and of the 791 minerals listed, lots were tabled.

Magnesite from the Anakies and from Collingwood was white and opaque, but when asked to name the mineral, nobody could pick the large, clear, well-formed trigonal crystals from Brumado, Brazil which turned out to be magnesite too.

Nor were species always white. Clinochlore from Turkey was purple, dolomite (pink) with chalcopyrite

from Arkansas, USA; and holmquistite (black) from Greenbushes, W.A.

Other species which caused comment were staurolite, Kola Penn., Russia; kornerupine, Harts Range; good erionite crystals with (not *on*) levyne, Merriwa, NSW; woodallite, Mt. Keith, W.A.; rhonite and roedderite from the Eifel Mts., Germany; big newberyite crystals, Skipton; and collinsite, Reaphook Hill.

While there were lots more good specimens, we noted that magnesium, a metal, does not occur alone as a native element.

Next Meetings

July 26 at John Bosworth's home. Topic: Halides (Dana Class IV) *See* Mason & Berry, "Elements of Mineralogy" – 'Halides are primarily compounds of…F, Cl, Br, I. In addition, some minerals classified as silicates, phosphates etc., contain minor amounts of halogen elements … (and halides) occur in the oxidised zone of many ore deposits'.

August 30 at Judy Rowe's home. Topic: Minerals from the Middleback Range, S.A.

Sept. 27 at Jo Price's home. Topic: Pseudomorphs.

October – probably no meeting due to Nunawading Show and New Zealand mineral meeting.

Nov. 29 - venue to be arranged. Topic: Minerals forming in granitic rocks.

The Group welcomes new members. Our meetings are informal and tea, coffee and cake are provided. It's only necessary to bring your lunch, microscope and any minerals you may have for the day's topic.

No minerals? No problem – come anyway as many minerals will be tabled for all to see, but if you haven't attended one of these meetings before, do let the host of the day know you are coming so that there will be enough seats for everyone.

Mineral Appreciation Group Report

In June, the group met to look at minerals containing uranium and/or thorium. A reasonable list of uranium minerals was available to choose from, whilst the thorium species were somewhat less abundant (around 50), and most of those species were quite rare. As a great generalisation it could be noted that these minerals with uranium and thorium tended to be either rather plain, earthy to metallic ores, or else spectacularly colourful specimens in vibrant green or yellow.

Of the thorium minerals we saw euxenite-(Y), monazite-Ce and samarskite-(Y). Of the uranium minerals we saw examples of autunite and meta-autunite, boltwoodite, carnotite, davidite-(La) from Radium Hill, kasolite, saleeite, torbernite and ulrichite. Whilst our particular 'local' granite quarry was well represented, I didn't recall seeing any lakebogaite, but I could have been mistaken..

Gordon Maddocks brought a fine selection of fluorescent species and his UV display case to provide an excellent addition to the meeting that was admired by all. The, sometimes very small, quantities of uranium within otherwise non-uranium-containing minerals can produce dramatic differences in fluorescence.

For the July meeting, with the convenor absent, there had been some earlier discussion on changing the topics around. Thus, among those present at the meeting, there was some confusion as to what the subject was for the month: was it lustre? Or was it mica?
The result was that everybody had brought specimens of mica as well as specimens of a particular lustre.

We heard that the mica group covers a large number of species, but many of them are not common for collectors. There are true micas, brittle micas and interlayer-deficient micas. So-called "isinglass" mica was

formerly used for peepholes in boilers and heaters. Mica species shown at the meeting included biotite, muscovite, phlogopite, margarite, lepidolite, zinnwaldite, celadonite, tainiodite, annite and paragonite.

On the subject of lustre (which is to be continued next month) we heard that this is the mineral property which shows how light is reflected from the surface of a mineral. Dull minerals have lost their sheen because an element was lost from the mineral. An example displaying this phenomenon was a specimen of dull fluorite crystals on quartz from Arkaroola, and glauberite turned into calcite. Ian Strachan had brought along some of his beautiful specimens having metallic lustre, which he subdivided into sulphides, non-sulphides and sub-metallic minerals. On display were, among others, galena, molybdenite, pyrite, stibnite, bournonite, hematite, hausmannite and scheelite.

The meetings are an open show and discussion format and all society members are welcome to attend. Meetings typically aim for people to arrive around 10:00am for a 10:30am start, allowing time for people to unpack specimens. If you wish to attend, have any questions or have suggestions for topics you would like to see covered then please catch up with Alex Blount.

Society Micromineral Collections

Broken Hill Collection – Alex Blount
Iron Monarch Collection – Alex Blount
Victorian Collection – Alex Blount

The collections currently contain over 600 micro-mineral specimens from their respective regions. We are always looking for new donations of specimens (preferably mounted but not essential), especially from new or recent finds, but updates or multiples of existing species are also appreciated.

The collections are available to all members to borrow on a monthly basis and they provide an excellent way to compare your own material from field-trips with 'already identified' reference specimens. If anyone wishes to borrow the collections or peruse a copy of the catalogue, please catch up with the curators listed above.

RESOURCES, NEW PUBLICATIONS & REFERENCES OF INTEREST

If any Society members become aware of new publications relevant to mineralogy or existing items that they feel would be of benefit to members, please feel free to let a committee member know. Where appropriate, the Society can look to obtain copies for inclusion within the library.

The Mineralogical Record: May-Jun 2009
- Supplement: Wilensky Fine Minerals Vol 3
Rocks & Minerals: May-Jun 2009

SOCIETY MICRO-MINERAL COLLECTIONS

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FIELD NATURALISTS CLUB OF VICTORIA
GEOLOGY SPECIAL INTEREST GROUP

Meetings take place at 8pm at the FNCV Clubrooms at 1 Gardenia Street, Blackburn, 3130 (Melway 47 K10) Further information on the talks and excursions is available from Rob Hamson, 9557 5215 AH, *robhamson1949@hotmail.com*, Clem Earp 9885 1548 AH or Noel Schleiger 9435 8408 AH.

Details of field trips appear in the issue of the *Field Nat News* published the month before the date of the excursion. As a voluntary organisation funded entirely by our members' subscriptions, we welcome visitors but there is a charge of $2 per non-member for each meeting and $5 per excursion attended to help cover our costs. Members of affiliated clubs pay $2.50 for excursions.

Membership: Joint/Family $85, Single $65, Concession $50, Student $25. Further details from FNCV Office 9877 9860.

WANTED

Mineralogical Record Back Issues Vol 2 No 2 & Vol 2 No 5 for the **MinSoc Library**.

Please contact any committee member if you can assist with these.

GEOLOGY CALENDAR
August – September 2009

Wednesday 26th August - The Port Phillip Bay Channel Deepening Project. Jeff Bazelmans. General Manager Environment with the Port of Melbourne's channel deepening project

Wednesday 23rd September - Silver deposits in the Czech Republic, the rise and fall of two empires. John Haupt, Foundation member of the Mineralogical Society of Victoria

Contact Ruth Robertson 03 9386 5521 rutherob@hotmail.com

THE MINSOC TRADING POST
For Sale
Microscope 15X, 30X good condition with box $200
Minerals of Broken Hill 1st edition Ex condition still in original cardboard packing cover.

Contact Volker Hoppe 03 9578 4029

Society members can submit brief descriptions of specimens, equipment or other mineral related items that they wish to sell, swap or give away.

At General Meetings there are often some minerals for sale after the meeting.

This is open to all – feel free to bring your minerals along.

PRESIDENTS REPORT – JULY 2009

Firstly I would like to thank the outgoing Committee and everyone else who has contributed to the smooth-ish and successful operation of the Society over the past year.

As usual I will try to mention as many of you as possible in the following report but any omissions are entirely accidental on my part.

General Meetings

Dermot Henry again coordinated a program of speakers and presentations throughout the year, although this year Dermot had to carry the load without the assistance of Dr Mills. Our guests and presentations included the following:

Alex Blount – Mica miners of the Harts Range, NT
Ed Richards – Part 2 and mineral highlights from his USA trip
Michelle Berry – Restoration of Mawson's Hun in the Antarctic
Joe Francese – Visits to and minerals of Mogok, Myanmar
Jenna Sharp – Geological study of potential landing sites for Mars science laboratory
Dr Bill Birch – Recently described Australian minerals
Dr John Long – Fabulous Fossil Fishes of Gogo
John Bosworth – New Zealand's North Island Volcanics
Dr Keir Reeves – Heritage aspects of the Castlemaine diggings
Dr Sturt Mills – New minerals from the USA

Short Talks were presented by John Bosworth, Volker Hoppe, and on several occasions by Judy Rowe. Special thanks again go to Ed Richards, Lia Bronstijn and Margaret Day, without whose assistance our General Meetings would certainly be less professional and enjoyable.

In September we also saw the description of a new mineral species Birchite, named to recognise the work of our own Dr Bill Birch.

Field Trips

Volker Hoppe again coordinated a series of field excursions, and the photographic reports provided at subsequent General Meetings provided added interest, especially for Members unable to attend the trips themselves. In spite of diminishing numbers of locations, increasing travel distances and the effects of bushfires and Victorian weather, we still managed to undertake a number of trips including the following:

August:	Mt Wallace and other localities with Julian Hollis.
October:	Anakies scoria quarries.
December:	Christmas BBQ Caulfield Park – despite some unhelpful weather and equally unhelpful barbeque equipment.
March:	Pittong mine.
May:	Castlemaine / Campbells Creek quarry
June:	Lake Boga granite quarry.

The Joint Societies Seminar was held in Brisbane in June. The Seminar was held at the Queensland Museum and was attended by a number of Society Members from Victoria.

Newsletter

In his role as editor, Michael Hirst has continued to deliver this, our key communication medium, as a valuable publication on-time every two months. This year continued the publication of articles by John Haupt, including photographic sections with improved paper and printing quality. For future issues the Newsletter is looking to colour printing and further improvements in quality of images.

Our thanks go out to Michael as editor, Peter, Margaret and Bernie Day for printing, collation and distribution, and to all those members who have contributed. With special mention to Judy Rowe for an on-going supply of fine mineral photographs to grace the cover.

Membership

The Society's currently consists of around 120 Members with numbers remaining steady. During the past year we welcomed new members: Michael Brook, John Pettiford and Andrew Fishman.

Publicity and Publications

We presented our usual information stands at the Bendigo and Nunawading shows as our main exposure in the community. Our initial site on the internet continues to receive interest and to direct mineral-related enquiries from the community. Plans are in progress to upgrade the website to include more information and useful resources for members.

Our publications continue to sell, albeit slowly. And members remain an integral part of the Australian Journal of Mineralogy. We recognise the continued contributions of Dermot Henry, Bill Birch, John Haupt, Bernie Day and John Bosworth.

Special Interest Groups

Photographic Group
The photographic group remained in a holding pattern pending new projects, whilst members continued with individual activities.

Micromount Group
The micro-group met almost every month during the year with a consistent core of attendees and a diverse range of topics.

Mineral Appreciation Group
The mineral appreciation group met during the majority of months, again with a dedicated group of attendees who never failed to provide interest – although the organiser continued to cause angst with vague topics and ill-conceived definitions!

All members are both welcome and encouraged to become involved in any of the interest groups. Contact details for each group are provided in the Newsletters.

Resources

I thank Jo Price for continued management of the Library collection. This remains one of our most valuable assets and resources and which we will continue to develop with new publications as they become available. Movement of the Library cabinets has also provided Jo with a timely opportunity to undertaken a stock-take of the collection.

Micromineral Collections

The three Society collections continue to grow with donations from members. The Micromount Group also began the process of developing new reference collections to cover other states and regions of Australia.

Society Historian

Margaret Day has continued as the keeper of the Society's archives. The majority of our new administrative documents and records are retained in electronic format and in future this should help to reduce the bulk of paper archives and also to make information easier to access.

Financial Report

We again owe our thanks to John Bosworth for his careful and effective management of the Society's accounts. In a year of global financial uncertainty, and some difficulties in the Society itself, it is as usual a credit to John that we remain in a strong position.

Secretary

I wish to thank Lesley Slattery for taking on the role of Secretary and for the dedication, enthusiasm and quality of administration that you have provided over the year. Even with a broken foot Lesley still managed to update us on committee requirements and pending deadlines.

In Closing..

I would like to draw special recognition to the contributions provided by some of our Members in their services to the Society. John Bosworth, our able Treasurer, who as of this year has served 30 years in various Committee capacities and who we hope shall continue to keep our finances safe for some time to come. Volker Hoppe, who is standing down from the Committee this year after some 12 years of service, the past 9 of which have been in the sometimes thankless position of Excursions Officer. Whilst we may well congratulate ourselves and bask in glory upon finding a spectacular specimen after much hard work with a chisel and hammer, it is likely to be the Excursions Officer who bears our blame when a cold wet locality fails to live up to our hopes. No amount of negotiating with land-owners, organising safety inductions or tracking down rumours of 'new localities' will guarantee successful collecting. Collecting is only becoming more difficult, and I acknowledge the contribution to this important aspect of Society life that Volker had provided.

Overall, I believe the past year has seen some challenges for the Society, especially the uncertainty over our meeting venue and the needs to continue to provide for the requirements of the Members whilst staying financially viable.

I see the past 12 months as a settling period, where we have tried to make sure the Society is well-grounded, but where we haven't exactly taken any great strides into the future. A number of proposed ideas and projects were put on hold whilst we looked into the more pressing issues of our meeting 'home' and our finances.

For the coming year, the Committee will be looking to the growth and development of the Society and trying to make the best use of the resources and members that we have available. And as usual, our best and most valuable resources are our Members.

Once again I would like to thank all the members of the committee and all Society members for their contributions throughout the year.

Alex Blount
Society President

2009 BRISBANE SEMINAR

The Brisbane Seminar was the 32nd meeting since the commencement of the series in 1978 which was hosted by The Mineralogical Society of Victoria at the Melbourne Townhouse in Carlton. The Seminar returned to the traditional Queens Birthday weekend meeting time this year being the 6 to 8 June after two years in the October/November time slot. It was hosted by the Mineralogical Society of Queensland and held in the theatrette of the Queensland Museum located at Southbank in the heart of the arts and museum precinct of Brisbane. The Museum is adjacent to the Southbank parklands which occupy some 17 hectares of gardens and tourist facilities on the former Expo 88 site with one of the main features being a meandering path parallel to the Brisbane River and covered by a canopy of purple bougainvillea. It is also a popular dining area with a wide variety of restaurants in or adjacent to the gardens.

There were 57 delegates registered for the Seminar with eight Victorian Society members being in attendance. The Museum theatrette has excellent facilities for meetings with speakers and delegates both enjoying the amenities. It was a very well organised event and the Queensland Society is to be commended for their efforts. The Seminar dinner was held on Saturday evening at the Ship Inn, a pleasant 15 minute walk from the Museum through the Southbank parklands. A pre-Seminar tour of the University of Queensland's Experimental mine at Indooroopilly was arranged on Friday morning for delegates who arrived early. Field excursions were organised to Toowoomba and Laidley, both west of Brisbane, to collect zeolites. There were 29 attendees at the former locality on Monday and 23 attendees at the latter locality which was held on Tuesday.

The theme of the Seminar was Minerals, Mines and Collectors giving speakers a wide range of material for their respective talks. The full list of talks in order of delivery was:

Saturday
Minerals of the Chillagoe area – John Haupt
Mineral Magic from the Franklin and Sterling mines, New Jersey – Paul Carr
Queensland Gem minerals – rough and smooth – Lin Sutherland and Gayle Webb
A romp through the berylliant world of beryllium minerals – Steve Dobos
Moving Collections – Penny Williamson
Candles, kerosene and carbide – early mine lighting – Tony Forsyth

Sunday
Miners and Minerals of Leadville, Colorado – John Bosworth
Collectors: corner stone of museum collections – Dermot Henry
The geology and mineralogy of Binntal – Theo Kloprogge
Huge mountains filled with precious metal – Sunny Corner, NSW – Peter Williamson
Aragonite and moonmilk – Jenolan Caves mysteries – Ross Pogson
Uranium minerals in the Lake Boga granite, Victoria: a clue to sequestering uranium for long periods of time – Bill Birch

A mineral bazaar was held on the Monday morning with many enthusiastic buyers looking over a range of material on offer.

A copy of the Seminar colour publication of abstracts has been forwarded to our Society with the compliments of the Queensland Society. It will be placed in the library to allow interested members to peruse it.

The Mineralogical Society of South Australia has advised that they will be hosting the 2010 Seminar to be held in The Royal Society rooms behind the South Australian Museum in Adelaide on 12 to 14 June with the theme being "Collectors and Collecting".

FLASHBACK

With this issue being the 200th issue of the Newsletter of The Mineralogical Society of Victoria, I thought it would be interesting to take a retrospective look at some early articles published in the Newsletter. I have selected two items which are reproduced herewith. The first is the inaugural editorial by editor Chris Burns who managed to produce the first Newsletter in May 1976 just two months after the Society's formation in March 1976. The second article is by the Society's inaugural president, Dr Bill Birch, and was published in issue No 2 in July 1976.

John Bosworth

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EDITORIAL

To begin with, I would like to take this opportunity in our first Newsletter, to express, on behalf of all members of our Society, sincere thanks to a gentleman who, with time at a premium, spent considerable effort in organising the first meeting of a group of mineral enthusiasts interested in forming a Mineralogical Society. That man, of course, was Cyril Kovac and we are most appreciative of his work.

It was at this initial meeting that an Interim Committee was formed, which group ultimately arranged the General Meeting which saw the formation of The Mineralogical Society of Victoria.

Although this is the first Newsletter, we hope from the beginning to develop a format which will be both informative and interesting to our members. To what degree we succeed in this aim will depend very considerably on the supply of articles contributed by Society members.
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Articles relating to the care and preservation of mineral specimens, articles describing display techniques, articles on mineral photography, notes on mineral collecting localities or any topic relevant to our Society's aims, will assure us a Newsletter with appeal to all. Naturally, articles must be authentic and accurate as possible and specific references will always be appreciated.

Finally, I must say that if all lectures are as factual an as enthusiastically presented as that by Dr Ralph Segnit on the Copper Minerals of Dome Rock, the benefits to our Society will be very considerable indeed.

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A MESSAGE FROM THE PRESIDENT

Most members of the Mineralogical Society will have joined in order to increase their knowledge of minerals. However, it is a useful exercise to ask yourself what exactly is this knowledge and how is it to be obtained. For example, do you wish only to learn where to collect interesting and attractive specimens or are you interested in being able to recognise minerals and apply simple identification techniques? Or does your interest lie in one group of minerals, in methods of classification or would you like to acquire a broad, rather than specialized knowledge of Mineralogy?

Unfortunately, minerals and mineralogy cannot be discussed in a completely non-technical fashion. For a scientific approach, it is always necessary to introduce terms which to many amateur enthusiasts are near to meaningless. Most of these terms refer to tho more sophisticated identification methods and their application to the structure and composition of minerals. In your reading of the Australian Mineralogist, or the Mineralogical Record, you may come across terms such as Electron Microprobe Analysis, Spectrographic Analysis, Differential Thermal Analysis, X-Ray Diffraction, etc. Behind the high sounding names are quite simple principles, which in turn provide a sophisticated means of identifying and specifying the properties of mineral species.

I would plead that you don't become discouraged by these technical aspects of mineralogy. Many are essential for that broad knowledge which you would all like to have. There are members of the Society who are only too happy to offer you an explanation. A useful proposal may be for the Society to produce regular work-sheets or information sheets which could build into a simple but comprehensive text. Thought can be given to producing a few trial sheets over the next few months, perhaps starting off with some basic definitions.

In the meantime, you would waste no time in familiarising yourselves with simple definitions, classifications, properties, methods of determination, etc., merely by browsing through a few of the abundant books on minerals, which are available. Of course, this should be combined with a visit to the Museum to inspect the mineral displays, as it is only by examination of the real thing that your knowledge becomes useful to you.
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THE MINERALOGICAL SOCIETY OF VICTORIA INCORPORATED

A0001471E

INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 MARCH 2009

INCOME

2007/08	Particulars			2008/09 General	2008/09 Books	2008/09 Total
25.00	Joining Fees	Joining Fees		20.00		20.00
690.00	Subscriptions:	City	610.00			
440.00		City Family	515.00			
650.00		Country	680.00			
320.00		Country Family	350.00			
35.00		Student	-	2,155.00		2,155.00
569.50	Door Fees			509.70		509.70
5.00	Badge Sales:			-		-
2,347.57	Interest			2,777.89		2,777.89
-	Raffle			74.00		74.00
60.00	Zeolite Book Sales		120.00			
(31.26)	Less: Cost of Books - 3 @ $10.42		(52.10)		67.90	67.90
72.50	Phosphate Book Sales - Soft Cover		252.03			
(96.00)	Less: Cost of Books - 8 @ $12.00		(216.00)		36.03	36.03
419.80	Gem Mineral Book Sales - Soft Cover		1,463.36			
(219.75)	Less: Cost of Books - 15 @ $14.65		(996.20)		467.16	467.16
220.00	Minerals of Broken Hill		80.00			
(127.06)	Less: Cost of Books - 3 @ $42.35		(42.35)		37.65	37.65
70.50	Book/CD postage				83.95	83.95
8.00	Postcard/CD Sales			28.00		28.00
-	Surplus on Fleischer sales			57.28		57.28
$5,458.80	**TOTAL INCOME**			$5,621.87	$692.69	$6,314.56

EXPENDITURE

2007/08	Particulars		2008/09 General	2008/09 Books	2008/09 Total
391.60	Insurance:	Public Liability	313.89		313.89
129.55	Stationery/Postage		66.25	69.65	135.90
186.96	Newsletter - Stationery		63.40		63.40
514.89	Newsletter - Postage		486.42		486.42
513.75	Newsletter - Printing		337.30		337.30
115.00	PO Box Rental		123.00		123.00
89.50	Meeting Expenses - Supper etc.		164.65		164.65
1,734.00	Royal Society of Victoria - Theatrette Hire		1,815.00		1,815.00
103.50	City of Glen Eira - rent for Christmas BBQ		-		-
701.40	Library Purchases/Binding		536.97		536.97
157.60	Audit/Incorporation Expenses		158.60		158.60
1,200.00	Write down Phosphate Books soft cover		-	1,200.00	1,200.00
4.75	Miscellaneous		58.30		58.30
637.30	Depreciation		749.30		749.30
$6,479.80	**TOTAL EXPENDITURE**		$4,873.08	$1,269.65	$6,142.73
($1,021.00)	**NET SURPLUS/(DEFICIT)**		$748.79	($576.96)	$171.83

THE MINERALOGICAL SOCIETY OF VICTORIA INCORPORATED

A0001471E

BALANCE SHEET AT 31 MARCH 2009

				2009 $	2008 $
ASSETS					
Current Assets					
Cash at Bank	- ANZ Interest Bearing Cheque Account			1,336.26	1,146.20
	- J B Were Cash Management Trust			4,842.86	3,136.76
Petty Cash				100.00	100.00
J B Were Deposit Notes	9.00% due 18 June 2009			11,715.52	11,003.83
ESANDA Finance - Debentures	8.40% due 1 July 2009			12,000.00	12,000.00
CommInvest Term Deposit	4.85% due 23 November 2009			10,000.00	10,000.00
Debtors				1,948.93	1,571.66
Prepayments	- General			415.38	123.00
Inventories					
Zeolites Books		Nil		-	52.10
Phosphate Books - Hard Cover		29 @ $20.00		580.00	580.00
Phosphate Books - Soft Cover		71 @ $12.00		852.00	2,268.00
Gem Minerals - Hard Cover		3 @ $25.00		75.00	75.00
Gem Minerals - Soft Cover		54 @ $14.65		791.10	1,787.30
Minerals of Broken Hill		6 @ $42.35		254.12	296.47
Total Current Assets				44,911.17	44,140.32
Fixed Assets					
Slide Projector/Cabinet/Showcase/Lib Cupboard			2,605.00		2,605.00
Less: Depreciation			(2,605.00)	-	(2,605.00)
Data Projector			1,098.90		1,098.90
Less: Depreciation			(1,098.90)	0.00	(732.60)
Laptop Computer			1,147.85		1,147.85
Less: Depreciation			(654.00)	493.85	(271.00)
Total Fixed Assets				493.85	1,243.15
TOTAL ASSETS				45,405.02	45,383.47
LIABILITIES					
Current Liabilities					
Subscriptions Paid in Advance				895.00	1,005.00
Creditors				261.37	388.65
Museum Fund - General				420.24	333.24
Dookie Mineralogical Reserve Funds held in trust				257.05	257.05
Total Current Liabilities				1,833.66	1,983.94
TOTAL LIABILITIES				1,833.66	1,983.94
TOTAL NET ASSETS				$43,571.36	$43,399.53
ACCUMULATED FUNDS					
Opening balance				43,399.53	44,420.53
Surplus /(Deficit) for year				171.83	(1,021.00)
TOTAL ACCUMULATED FUNDS				$43,571.36	$43,399.53

THE MINERALOGICAL SOCIETY OF VICTORIA INCORPORATED

A0001471E

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 MARCH 2009

1. Basis of Accounting
   The accounts have been prepared on an historical basis with accruals and prepayments calculated where appropriate.

2. Depreciation
   Depreciation calculations are made for all non-current assets using the straight line method after giving due regard for the remaining life and residual value of the individual asset. The resulting annual calculation has been shown as a charge in the Income and Expenditure Statement.

STATEMENT BY THE TREASURER

I, John Bosworth, being the person responsible for the preparation of the financial statements of The Mineralogical Society of Victoria Incorporated for the year ended 31 March 2009, consisting of the Balance Sheet, Income and Expenditure Statement and accompanying notes are drawn up so as to present fairly the financial position of the Society at 31 March 2009.

Dated at Wantirna South this 20th day of April 2009

Signed
John Bosworth

INDEPENDENT AUDIT REPORT

Scope
I have audited the financial report of The Mineralogical Society of Victoria Inc. for the year ended 31 March 2009. The financial report includes the Receipts and Payments Statement, Income and Expenditure Statement, Balance Sheet, Membership Register and accompanying notes of the Society.

The Society's Committee is responsible for the preparation and presentation of the financial report and information contained therein. I have conducted an independent audit of the financial report in order to express an opinion on it to the members of the Society.

The audit has been conducted to provide reasonable assurance whether the financial report is free from material misstatement. My procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial report. These procedures have been undertaken to form an opinion whether the financial report is presented fairly so as to present a view consistent with my understanding of the Society's financial position, and performance as presented by the results of their operations and their cash flows.

No physical check was made of the existence of the petty cash and non-current assets listed on the balance sheet.

The audit opinion expressed in this report has been formed on the above basis.

Audit Opinion
In my opinion, the financial report of The Mineralogical Society Inc. is properly drawn up so as to give a true and fair view of the Society's financial position as at 31 March 2009 and of their performance for the year ended on that date.

Signed
Michael Caruana CPA
Date: 26 June 2009

MINERALOGICAL TRAVELS IN EUROPE

Part 10: The French Alps

By John Haupt

After visiting Bourg d'Oisans on the M&M 5 Field Excursion (see Part 8), we travelled to ski village of Chamonix, located in the Arve valley below Mont Blanc.

The Mont Blanc Massif (Italian: *Massiccio del Monte Bianco*; French: (*Massif du Mont-Blanc*) is a mountain range in the western part of the Alps. It is named after Mont Blanc, which at 4,810m (15,780 ft) is the highest mountain in the Alps. It is located across the border between France (Haute-Savoie and Savoie), Italy (Aosta Valley), and Switzerland (western Valais). The Alps are the largest mountain system in Europe. The towering snow-capped peaks and green valleys make them one of the most spectacular sights on the European continent. They extend northward from near the Mediterranean Sea in France and form the border between France and Italy. They continue eastward through northern Italy, Switzerland, Liechtenstein, southern Germany, Austria, and Slovenia. The entire mountain system is about 1,200 km long. Its widest point between southern Germany and northern Italy, is 260 km and its narrowest point, 48 km wide, is in the Ligurian Alps of northwestern Italy.

The next day we caught the rack railway up the mountain to Montenvers, where the Mere de Glace (Sea of Ice) flows off the northern slope of the Mt Blanc massif. At 7 km long and 200 m deep, it is the largest glacier in France, originating at an elevation of 2,400 metres and descending to 1,400 metres. It was once easily visible from Chamonix, but has been shrinking. The glacier's speed, although not perceptible to the naked eye, is considerable. From more than 120 meters a year in its upper part, the Mer de Glace moves about 90 meters per year (1cm per hour) in the region of Montenvers. Tunnels bored under the glacier collect water from the base of the glacier and channel it down to a hydropower plant in the valley. We went inside the glacier through a man-made tunnel cut into the side of the glacier.

The following day was the highlight of our trip – a ride across the mountain by cable car and gondola from France to Italy. The first cable car makes a spectacular ascent travelling from Chamonix in the valley to the top of the Aiguille du Midi - an altitude gain of over 2,800 m in just 20 minutes. At 3,842 m (12,605 ft.), the Aiguille du Midi is a rocky outcrop in the Mont Blanc massif and has a panoramic viewing platform with breathtaking views over the mountain peaks and across to the Matterhorn in Switzerland.

From the Aiguille du Midi, it is a magical trip by gondola to Punto (Point) Helbronner (3,452 m) on the Italian side of Mont Blanc. This stage is by a 4 person gondola in groups of 3, stopping several times on the way suspended over the glaciers, as each group of gondolas load their passengers. The view looking down on the Glacier du Géant with its brilliant white ice-falls and crevasses, the surrounding high mountains and blue sky is spectacular. A closer look shows mountaineers as specks moving across the glacier on their way to ascend Mont Blanc. This scenery, coupled with the silence and the gentle swaying of the gondola during the stops, makes it a truly memorable experience. This is a 30 minute trip over 5 km, high above the France – Italy border, with only one intermediate support wire strung across 2 pylons holding up the cable along the way.

The trip down the mountain on the Italian side from Punto Helbronner is by 2 cable cars, arriving at the ski village of Courmayeur in Italy. From there we travelled by bus to the town of Aosta, where we attended a special exhibition of minerals from the Aosta valley in the town museum. This exhibition featured the collections of 3 active crystalliers, Franco Lucianaz, Roberto Ferronato & Aldo Cambiolo, with an excellent publication on the exhibition. The large display of beautiful specimens of alpine minerals was greatly enjoyed by the group. We were fortunate to meet the Museum's curators and the cristalliers at an enjoyable evening dinner in the stone cellar of an Aosta restaurant. Our return was via the Mont Blanc tunnel, which links Chamonix and Courmayeur. It is one of the major trans-Alpine transport routes for Italy, transporting as much as one-third of its freight to northern Europe. Completed in 1965, the Mont Blanc Tunnel is 11.6 km long and consists of a single gallery with a two-lane dual direction road. The tunnel is sadly famous for a

major accident which occurred on March 24th 1999, when a truck caught fire inside the tunnel, creating a fire that lasted for 53 hours and cost the lives of 39 people.

Geology
Around 770 million years ago, an upheaval of the earth's crust raised a mass of schist, gneiss and limestone to form the under lying axis of the Alps range. Towards the end of this upheaval, around 300 million years ago, intrusions of granite in the western sector of these ancient mountains brought with them metamorphic rocks which together formed the base of the Mont Blanc and Aiguilles Rouges massifs. Following extensive erosion and inundation by the sea when sedimentary rocks were laid down, this part of the Alps underwent a further uplift around 70 million years ago, caused by the collision between the African and European plates producing great mountain building creases in the earth's crust. These earth movements created cracks and fissures in the intrusion, allowing hydrothermal fluids to percolate through the rock and depositing crystals within the cavities. Fluid inclusion studies have shown that the forming of quartz crystals occurred at a depth of 16 km and 400 ^{O}C. The formation of the Massif was completed towards the end of the Tertiary era, some 15 million years ago.

Four successive glaciations occurred in the Quaternary era (an ice age) helped to sculpt the present profile of the Mont Blanc range and carved out the Chamonix valley. At the time Chamonix was buried under a large expanse of ice, 1000 m deep which stretched as far as Lyon. Finally the climate became milder and the glaciers retreated to higher altitudes. Although still retreating, the glaciers still play a major role in erosion.

Minerals
The Mont Blanc region is a world famous locality for alpine cleft minerals, with specimens of quartz and pink fluorite eagerly sought after and prized by collectors worldwide. Collecting is limited to those with the knowledge, skills, and experience of alpine mountain climbing and equipped with climbing gear. A group of mineral collectors with these abilities are known as cristalliers in France and Italy and strahlers in Switzerland. These collectors risk their lives climbing near vertical rock walls searching for and removing the beautiful crystal specimens. The money they receive in selling specimens cannot pay for their efforts and risks - they are motivated by living life at the edge, the exhilaration of the climb, and a passion for crystal specimens and having the finest specimens in their collection. The mineral collecting season is limited to 2-3 months annually, and in many years there is no collecting done at all because of inclement weather during the collecting window. The rock surrounding the crystallized fissures is mostly fractured with loose chunks, making secure footing difficult. Some cristalliers have been killed by rockslides and avalanches whilst attempting to collect minerals.

Every winter there are avalanches and landslides. The expansion of the water as it freezes in the cracks and crevasses fractures the surrounding rock like explosives. Snow and ice melt run-off during springtime warming reshapes the mountain surfaces and along with the cold induced rock fractures, new parts of the massif are exposed. Most of Mont Blanc and the surrounding regions are very difficult to reach because of the rugged terrain making travel by any means strenuous, slow, and dangerous and it is estimated that only about 20% of this region has been systematically explored.

The most sought after minerals are quartz and pink fluorite.

Quartz
Mont Blanc quartz crystals are generally stocky and of a medium size, typically ranging from 3 cm to 10 cm. They usually exhibit a macromosaic structure as a result of growth of subparallel multiple crystals. In fissures they are often found detached from the granitic matrix because of tectonic movements, often after crystallization. Some crystals occurrences exhibit recrystallization after tectonic fracture, which are also of particular interest and beauty. Dauphine Law crystals are relatively common. This is a crystal twinning habit observed in quartz (and some other hexagonal system minerals) in which two right handed or two left handed crystals interpenetrate after one has revolved 180 degrees about the twinning axis.

Crystals exhibiting color, always have the greatest intensity of coloration at the base of the crystal. This habit is the result of two phenomena:

Atomic substitution of cations for silicon in the quartz crystal lattice is more likely at the base of the crystal because of its proximity to the granite matrix to which the base of the crystal is attached, and

Natural radioactivity. The structural impurities present are typically a substitution of atoms of silicon (valence +4) by aluminum (valence +3) and either hydrogen (valence +1) or lithium (valence +1). These atomic substitutions are only potential color altering centers and must be activated by high energy short wave electromagnetic radiation, from x-rays to gamma-rays. The source of the natural radioactivity is the Mont Blanc granite which has a relatively high content of uranium (approximately 0.10 to 0.25 g/kg) and thorium (approximately 0.25 to 0.40 g/kg).

The occurrence of the many shades of quartz at Mont Blanc is also related to the altitude at which the crystals are found. Geological experiments and studies of activation of color centers by high energy radiation explain this unusual distribution of crystal colors as a function of the altitude in which they are found. It has been demonstrated experimentally that color centers are activated at temperatures below 225 ^{O}C. Quartz crystals found below 2,400 meters altitude are colorless, brilliant, and transparent as glass. Above 2,400 meters to 4,000 meters in altitude the quartz crystals are a smoky color, with the intensity of coloration increasing in direct proportion to the proximity of crystal location toward an elevation of 4,000 meters. At elevations above 4,000 meters above sea level, the quartz crystals are black and called morion quartz crystals. Since the beginning of the Alpine Orogeny, Mont Blanc has been uplifting which continues to this day. The rock and its fissures containing quartz crystals, at the highest elevations cooled faster than the more deeply seated granite. Therefore, the higher altitude quartz cooled to the transitional 225 ^{O}C (mentioned above), at which the coloration centers can begin to be activated. The crystals of higher altitudes have been colder longer than the crystals at lower altitudes.

Faden quartz (pronounced "fah-den") is a rare quartz crystal in which the inclusion of one or more white thread-like fibrous line formations occurs. The faden line is visible within the quartz structure because it is surrounded by either a fluid filled or gaseous chamber. The fiber line is usually at or in proximity to the center of the crystal and perpendicular to the termination of the crystal. It may either be straight or curved/bent. Faden quartz is a rare anomaly; though it has been found in most of the quartz mining regions of the world in very limited amounts. It seems to always take a tabular formation (flattened), and more often than not is doubly terminated or multiple terminated. The occurrence of japanese law twins in faden quartz seems to be more frequent than other types of quartz crystallization. The faden quartz mine in Dara Ismael, Pakistan has been to date the largest producer of fine fadens, and also some of the oddest ones. Richards (1990) has a detailed article on the formation of faden quartz.

Gwindel quartz, also a very rare crystal form, occurs at Mont-Blanc. It is named 'peigne' in France, 'Gwindel' in Switzerland and 'elicoidali' in Italy. This type is the result of parallel growth on a matrix of bi-terminated crystals, but the main axis of the crystals is rotated and exhibit helicoidal growth. It appears that this form is caused by piezoelectricity during the crystal growth. The torsion angle can range from few degrees to an exceptional specimen with an angle of 66 degrees that was found in northern Italy. Moore (2007) has a detailed description on the formation of Gwindels.

Fluorite

The fluorite occurrences at the Mont Blanc massif are the jewels of alpine mineralogy, with the pink fluorites the most spectacular. Deposits of pink fluorite are found in alpine clefts and are very rare. The pink variety of fluorite, caused by inclusions of the REE yttrium within the crystal, can also be found in pegmatites in Pakistan, Poland, and the metalliferous deposits of Huanzala, Peru. For collectors of mineral combinations, the Mont Blanc pink fluorite octahedra on smoky quartz are considered to be among the worlds most attractive mineral combinations.

The pink fluorites are rare and found in octahedral groups on smoky or morion quartz.. Pink fluorite octahedral aggregates can also be found directly on the granitic matrix. Other crystal forms of fluorite are very uncommon. Many of the pink fluorites, being a softer mineral, show the corrosional effects of ice which has made a satin surface on the crystal faces with some rounding of the corners. The pink fluorites are

usually from a light pink to strawberry red in color. Some light green fluorites can be found but are rare and an interesting green fluorite with a pink center also occurs.

Fluorite comes in a wide range of sizes, from a few millimeters to exceptional octahedral crystals to 20 cm. The largest specimen was found by George Bettembourg in 1982 and is now in the Mineralogy Museum of Chamonix. The most recent important discovery of fluorites was in 1997 by Danielle Lagarde on the Tour Noir in the Argentiere glacier.

The better fluorite specimens are named after its discoverer. So there is a one specimen of granite matrix of 25 cm with a perfect morion quartz in the center surrounded by many red fluorites of 4 to 5 cm, which is named "Amedee" after its discoverer. An octahedra of pink fluorite to 18 cm on edge, named "George", was discovered by George Bettembourg.

Mont Blanc Minerals:

Aeschynite-(Y)
Albite
Allanite-(Ce)
Anatase
Ankerite
Apatite-(CaF)
Bazzite
Biotite
Bismutite
'Chlorite Group'
Crichtonite
Epidote
Fluorite
Galena
Galenobismutite
Brookite
Calcite
Cerussite
Chalcopyrite
Hematite
Ilmenite
Limonite
Malachite
Molybdenite
Monazite-(Ce)
Muscovite
Orthoclase var: Adularia
Powellite
Pyrite
Quartz
Rutile
Stilbite
Synchysite-(Ce)
Thorite
Thorogummite
Titanite
Wulfenite
Xenotime-(Y)
Zircon

Source: Mindat

References:

Mineralogie du Massif du Mont-Blanc, Le Règne Minéral. Hors Serie V – 1999.

Cristalli e minerali in Valle d'Aosta, Exhibition publication , Aosta Museum, June – October 2004.

Moore, T.P., 2007: Alpine Quartz Gwindels, The Mineralogical Record, 38, 2, 101-121.

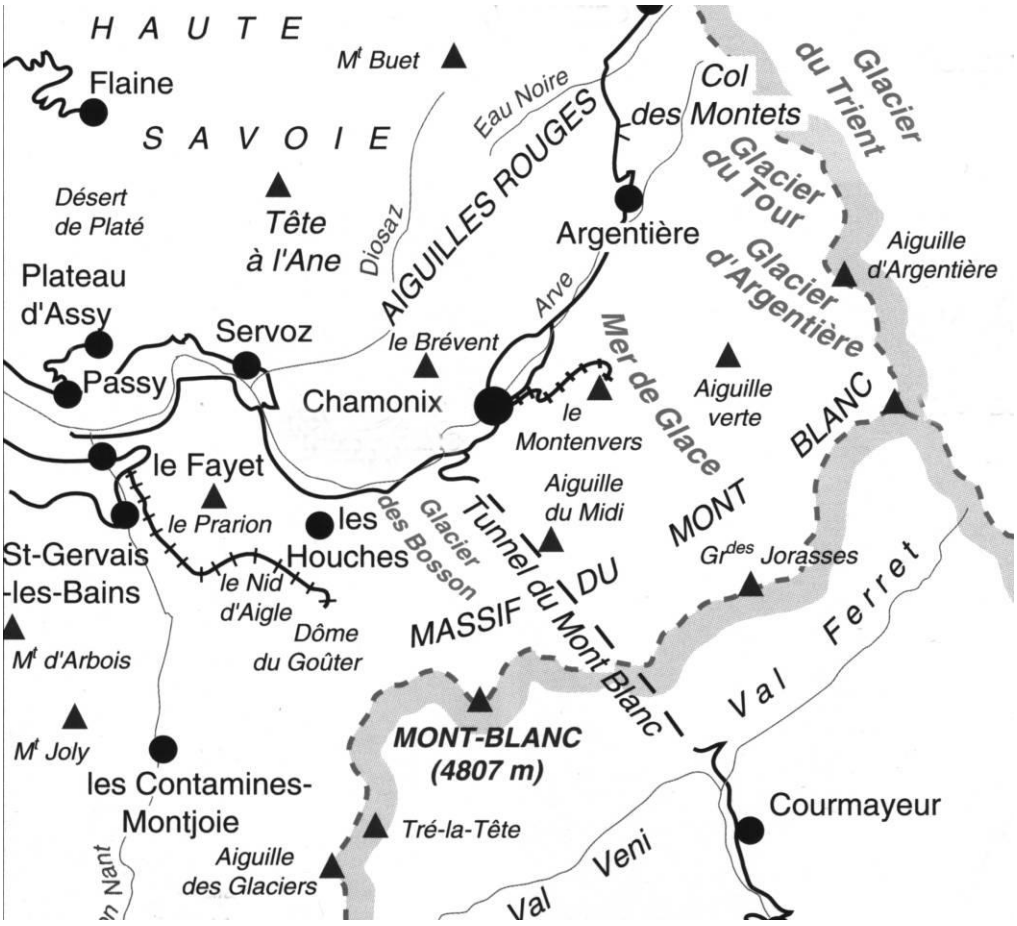
Richards. R.P., 1990: The origin of Faden Quartz, The Mineralogical Record, 21, 3, 191- 201.

Websites:

www.pro-mont-blanc.org/MontBlancGB.pdf

www.macminerals.com/artmbian.htm

This is the final part in this series.



Above: View from Aiguille du Midi overlooking Glacier du Géant. The mountain slopes are a collecting area for alpine cleft minerals.

The Mont Blanc massif is on the border of France (upper left), Italy (lower right) and Switzerland (upper right). The shaded lines show the country borders.

Map after Le Règne Minéral.

Above: View from a gondola perched above the France - Italy border.

Entrance to the tunnel cut into the side of the Mer de Glace at Montenvers.

Above: Faden quartz, 2cm. From Chamonix France. J. Haupt Specimen.

Above left: Gondolas stopped over the France-Italy border.

Left: A cristallier collecting alpine cleft minerals in a vertical rockface on the Mont Blanc massif.

Left: Stilbite on quartz, 16 cm tall. Specimen: Aldo Cambiolo, Aosta Museum.
Right: Quartz gwindel, 10 cm. Specimen: Chamonix Museum.
Below: Pink fluorite, 30cm. Specimen: Chamonix Museum.

From: A well full of stars. By David Shiga

New Scientist 22 Nov 2008

In 1908, Robert Wood converted a disused well in Long Island for use as a strange sort of telescope: for a mirror it had a pool of mercury rotating slowly at the bottom. News of this curious device spread fast, and before long, Wood was being offered impressive sums of money to build a much larger version. Its backers planned to use it to beam light signals to Mars in the hope of receiving a reply from the intelligent beings they assumed were living there.

The concept was simple. Fill a basin with mercury and set it spinning, and the surface of the silvery liquid curves to make a parabolic mirror. This is just the right shape to focus light to make images in a telescope without the expense and labour of grinding and polishing a parabolic mirror from glass.

The idea of making a telescope mirror from a spinning dish of mercury had been around since at least 1850, when Italian astronomer Ernesto Capocci described the concept in a letter to Belgium's Royal Academy of Sciences. In the late 1860's, English astronomer Richard Carrington experimented with a steam-powered version. Yet the liquid mirror had never come to anything, for one simple reason: images would be ruined by ripples on the surface of the mercury, not least those caused by the vibration of the motor that kept the mirror spinning.

Woods was not an astronomer but an experimental physicist and by 1901 a professor at Johns Hopkins University in Baltimore. He had a knack for finding simple solutions to problems that defeated others and in 1908, as a diversion during a holiday, he set himself the challenge of making a practical telescope. After experimenting with motors and magnets and small bowls of mercury, Wood settled for a 50-centimetre dish connected to a motor by fine rubber bands, which transmitted the required rotational force but not the motor's vibrations.

Now to build the telescope. The old well house suited Wood's purpose perfectly. With a hole cut in the roof, the building would be his observatory. He filled the well with lumps of rock and cement to just above the water level, creating a solid base, and then lined the walls with cement. The result was a watertight tube about 4 metres deep and 75 centimetres across. This was too tight a squeeze to work in so he had a second pit dug just outside the well house and a tunnel to link the two. Once he had installed the mercury mirror at the bottom of the well, all that remained was to start the mirror.

By the time Wood set the mirror spinning it was well past dark, and he was at once rewarded with a view of the Milky Way's ghostly glow as it passed overhead. "its appearance when I observed it from the roof of the house the first time the motor was started amply rewarded me for all my trouble", he wrote, "No eyepiece was used, the star images appearing in space about 3 feet above the mouth of the pit….rising and falling rhythmically, dancing up and down like will-o'-the-wisps."

(However,) by the end of the summer, Wood had abandoned the mercury telescope. He had rid it of the most crippling vibrations, though occasional annoyances remained. "The approach of a horse and carriage could be detected….when it was an eighth of a mile away," he explained in The Astrophysical Journal, "and the footsteps of a person running across the lawn 50 yards from the telescope house caused a perceptible vibration of the image ….and after every storm, vibrations were found resulting from the pounding of the surf on the beach a quarter of a mile distant."

The idea lay dormant for more than 70 years. Then in the early 1980's, Ermanno Borra, an astronomer at Laval University in Quebec, picked up where Wood had left off.

By the 1980's, steadier motors were widely available, easily eliminating the one serious source of distortion Wood had not solved. Just as important, since Wood's time astronomers have learned how to glean useful information by surveying strips of the sky, giving telescopes that are limited to staring at what passes overhead an important role.

Following positive results from several experimental liquid-mirror telescopes, a group of astronomers from Belgium and Canada, including Borra, is now preparing to build a high-altitude observatory with a 4-metre mercury mirror in the mountains of northern India. The International Liquid Mirror Telescope is expected to make its first observations in January 2010.

For an update on the International Liquid Mirror Telescope visit www.aeos.ulg.ac.be/LMT

Another use for mercury.

Visiting Cape Leeuwin and Cape Naturaliste in Western Australia, we went on guided tours of both lighthouses. Built in the late nineteenth century by the Government of Western Australia, these lighthouses were both essential navigation aids.

The Cape Leeuwin light, on the extreme south-west point of Australia, was important to one of the busiest sea traffic routes on the Australian coast.

The elevation of the light is 56 metres above Mean Tide Level. The original kerosene lamp has been replaced with an electric light with a range of about 25 nautical miles. The point if interest here is that the revolving lamp structure rests on a tray of mercury, the mercury acting as both bearing and lubricant.

Jo Price

Zircon, Anakies, Victoria
2mm Field of View