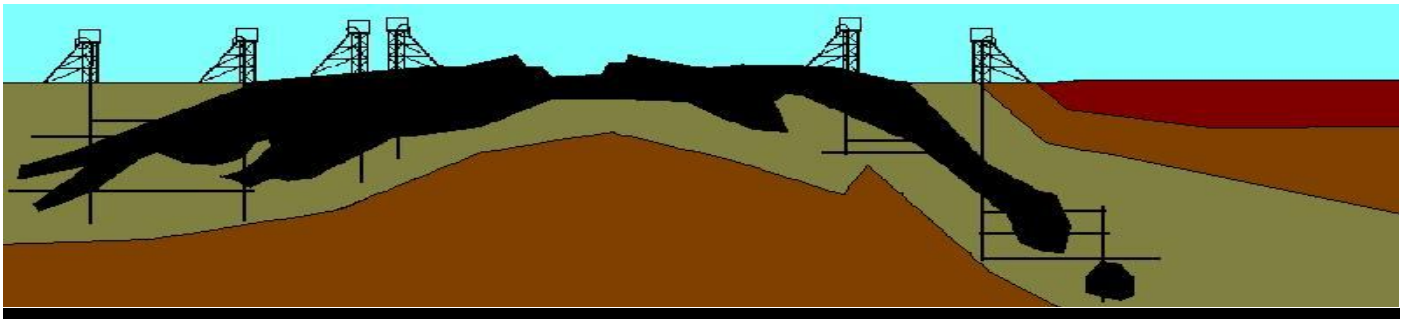
The line from the lode



Volume 9, Issue 4 December 2008

The Newsletter of The Broken Hill Mineral Club Inc.

PO Box 747 Broken Hill. NSW. 2880. (ABN:11502101481)

Inside This issue

SUBSCRIPTIONS

2009 Annual Membership to the Broken Hill Mineral Club Inc. is as follows

Full Membership - $25
Associate Membership - $15
Family Membership - $40
Child Under 16 - $5
Newsletter Subscription - $5

For Community Inc. Membership add an extra $3.50 per person

Nine years young

Another year passes and the club has continued to grow. Over this past year we have had eight field trips including two overnight, work has continued on the new clubroom to a point that we are nearly ready to move in and we have become an affiliated club under GEMCASA.

While our membership has been relatively stable we have had a number of new members this year and it is good to see some younger people taking an interest. This is where the future of the club lies and hopefully we can encourage and build the interest in these new members to enable them to learn new skills and lead the way to others.

Once the new clubroom is opened we will be starting up cutting and polishing classes. This along with our regular mineral of the month should help us become more formal in our competitions. One thing that was learned at the Gemboree this year is that if we are to place entries into competitions, then we must become a lot more familiar with the national judging and rules. I am hoping to run some workshops in this area and all members are welcome to come along and learn the correct procedures for mineral and gemstone competition entries.

In this issue I have added a new section called *Blackies Brainbusters*. This issue contains a very difficult mineral crossword and Blackie has offered a prize to the first member to complete it. I'm not sure what the prize is, but entries close at the AGM. I'm hoping that Peter will submit more puzzles, quizzes, etc for future newsletters.

Finally, I have not included the field trip calendar for next year in this issue. A calendar for the first half of 2009 was in the last newsletter and the proposed locations are yet to be confirmed. Hopefully I will have a calendar set and ready for the AGM in February with the March edition next year having the full calendar attached. If you have any suggestions or contacts for field trips please let me know before the AGM.

Until next time…

happy fossicking… Trev

CLUB CONTACT DETAILS

PRESIDENT
Mr Les Creswick
347 Chloride Street.
Ph: (08) 8087 5460

VICE PRESIDENT & NEWSLETTER EDITOR
Mr Trevor Dart
405 Chapple Street
Ph: (08) 8088 7907

SECRETARY
Mrs Carol Weber
502 Radium St
Ph: (08) 8087 2983

TREASURER
Mrs Josie Hill
226 Wills Street
Ph: (08) 8088 2025

SENIOR FIELD OFFICER
Mr Trevor Dart

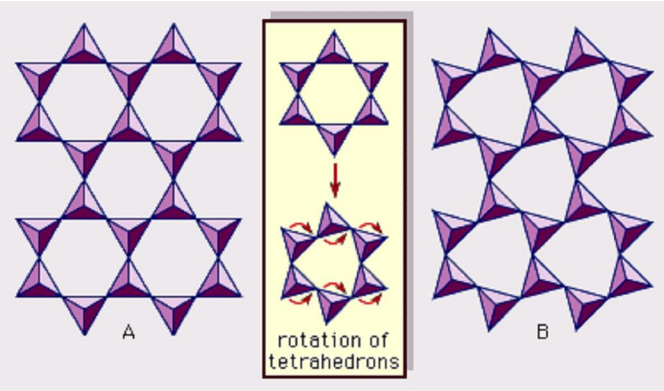
POSTAL ADDRESS
PO Box 747 Broken Hill.
New South Wales.
Australia. 2880

EMAIL
bhminclub@iinet.net.au

CYCLOsilicates # 1 - beryl AND TOURMALINE

an introduction to these mineral GROUPS

One of the subgroups of the silicate minerals is the *CYCLOSILICATES*. This group is defined by the ring structures of silica tetrahedrons that make up their basic building blocks. There are different cyclic styles including triangular, square and hexagonal. The hexagonal rings are the most common and can have two related but different orientations. It is this difference that defines the two of the most common cyclosilicate groups - the tourmalines and the beryls.



Above: The two variations of six tetrahedral ringed structures. The left structure is representative of Beryl, while the right structure is representative of tourmaline.

TOURMALINE

This group forms long slender crystals often heavily striated down their lengths and usually with a triangular or pseudo-hexagonal cross section. They share a common element - Boron and the concentration of such in igneous melts or metamorphic terraines accounts for the size and quantity of crystals. There are three main tourmaline minerals - Schorl – the black, Dravite - the brown and Elbaite - which is multicoloured.

Schorl is the most common, being found in many igneous and metamorphic rocks. Pegmatites - quartz / feldspar rocks with large crystal size - often contain tourmalines and are the major host rocks on a world wide basis.

Around Broken Hill Schorl is commonly found in the schistose rocks that make up many of the sheared zones, however the largest crystals are associated with the granites. The best areas for Schorl tourmaline are around Silverton and Mount Robe and in the vicinity of Yanco Glen. There are other areas where Schorl tourmaline is found as it is scattered throughout the whole Broken Hill and Olary districts.

Dravite tourmaline is found in Australia mostly in the west. The classic location on Yinnietharra Station in Western Australia was known to produce crystals up to a metre in length and of a dark brown colour. Dravite has been found elsewhere but not with the same size and quality as the Western Australian samples.

By far the most prized tourmalines are the varieties of ***Elbaite***, named after the type location of the island of Elba.

This mineral has several coloured varieties and these include:

Rubellite - the pink variety.
Verdellite - the green,
Indicolite - which is blue and
Achroite - colourless.

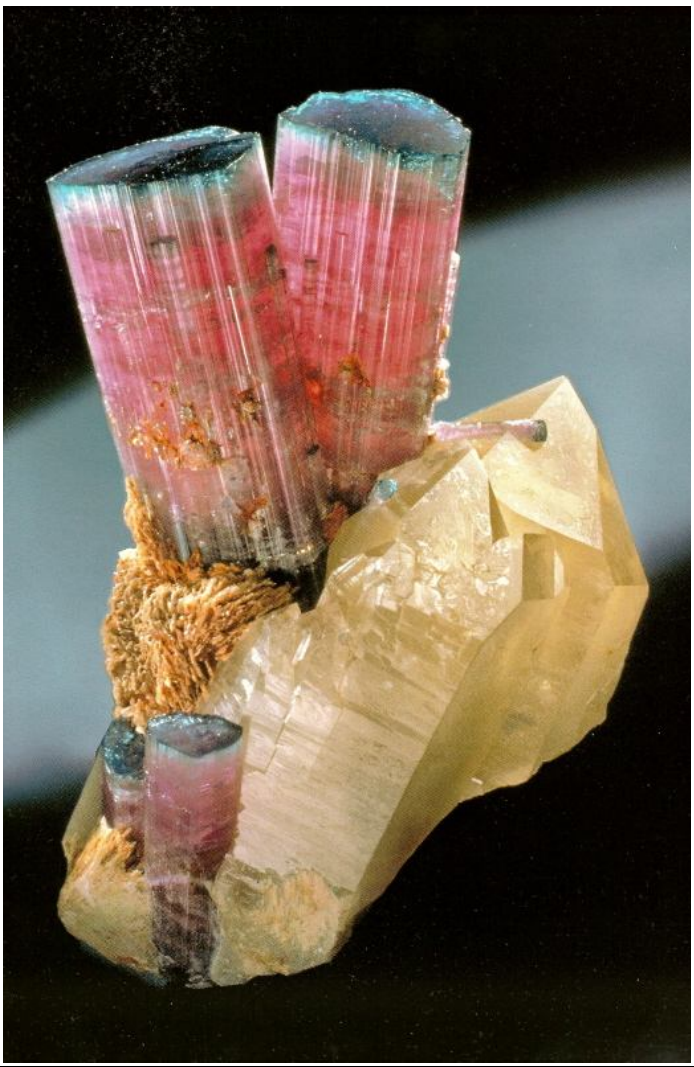
Elbaite is often multicoloured within a single crystal with the bases being colourless, and then green and / or pink near the terminations. The best Elbaite come from three locations. Pakistan, Brazil - Minas Gerais and California. Some of the pegmatites in Brazil were found to contain walk in cavities with large tourmalines. In Australia these tourmalines are rare with one famous location on Kangaroo Island, S. Aust now finished.

Above: Schorl Tourmaline from the Erongo Region of Namibia

CYCLOsilicates # 1 - beryl AND TOURMALINE. Continued

Above: Dravite from Yinnietharra, Western Australia.

Below: Elbaite on quartz from the Tourmaline Queen mine, California USA.



BERYL

While the tourmalines all contain boron, beryls all contain beryllium. It has a high hardness on Moh's Scale and a distinctive crystal shape of hexagonal prisms, the terminations of which are usually flat. The high hardness defines it as a gemstone (the gem varieties of beryl are described later) while within the beryl's atomic structure are other metal impurities that add colour to the mineral and it is these colours that define the different varieties.

Common beryl is opaque and usually green to yellow in colour. It is mined as a source of beryllium – a valuable element used as an additive in metal alloys. The beryl of the famous Triple Chance Mine out at Thackaringa was used in the 1960's by NASA in their space program.

Beryl is a common mineral in pegmatites (coarse grained igneous intrusions of primarily quartz and feldspars) like those found in the Thackaringa Hills and throughout the Olary district of South Australia. There are other regions around the world where these beryl bearing pegmatites are found, the most notable are in the Black Hills of Dakota in the USA, where single beryl crystals up to 10 metres in length and 2 metres across have been found.

The gem varieties are defined and named by their colour. These include – yellow, green, blue, pink and colourless.

Emerald – the deep green variety, due to an impurity of chromium, is the most valuable of the beryls. The problem with emeralds is that they are very rarely free from flaws. If an emerald is found without a single flaw then it will fetch a very high price. The standard cut of an emerald is a rectangle with truncated corners. This enables the natural shape of the beryl crystal to be utilised.

Morganite – the pink variety of beryl is the most rare of all and the value of good crystalline specimens is usually out of most collector's reach. Deep red Beryls are famous from the Wah Wah mountains in the USA.

Aquamarine – the pale blue variety is the most common gem variety with good samples coming from numerous locations around the world – such as Pakistan and Brazil. The colourless variety called **Goshenite** is probably a result of Aq-

CYCLOsilicates # 1 - beryl AND TOURMALINE. Continued

uamarines forming with very low impurity and hence no true blue colour.

Golden Heliodor – is the name given to the yellow gem variety of beryl. Again these are rare and the deepest yellows come from Brazil.

Right: Red Beryl from the Wah Wah Mountains, USA.

Below Left: Aquamarine from Erongo, Namibia

Below Middle: Emerald from Columbia.

Below Right: Common Beryl from the Triple Chance Mine. Thackaringa Station, via Broken Hill

PSYCHIC FAIR

March 13th and 14th 2009

An opportunity has arisen for club members to sell mineral specimens, polished stones and other lapidary items, etc. at the club stall at this event next year.

We will also be able to advertise the club and our “Rock-On” show via our stall.

We have also accepted the opportunity to run the canteen and it is hoped that as many members will volunteer their services and help out at this event.

Please let Carol or Les know if you can help out with either the canteen or the club stall and if you wish to put any minerals, etc on the stall with a club commission of 10% of sales.

Field Trip Reports - RADIUM HILL and LIMESTONE

In October we went down to Tikalina Station and visited the old Radium Hill mine site and surrounds. The day started out alright with a slight breeze, however by ten o'clock a gale force wind and dust storm had moved in making the fossicking ridiculous. Firstly we visited the museum at Tikalina, set up by the Radium Hill historical society. This is well worth a look if any members are thinking of a visit the area and contains photographs and relicts of the previous mining era as well as lists of people who worked at the mine and a layout of the old township.

At the old mine itself we were able to find some small pyrite cubes in schist and some nice radiating masses of actinolite.

Following a brief stop at the old township for a cuppa we went over to the kyanite deposit and hunted down a few choice samples. By now it was midday and the dust unbearable so we canned the rest of the afternoon and headed back into town.

Above: All that is left of the Radium Hill mine is the concrete tower of the crushing plant and the old water tanks

Above: Terry Weber and Brian Paul battling the wind at Radium Hill

Left: Brian looking for Kyanite. Note the colour of the sky - dust!

In November we went out on Limestone Station to look for a variety of minerals including gahnite, copper minerals and silver / lead minerals at three main locations. Two of these spots had been visited following last year's Rock-On and the potential was seen then to come back.

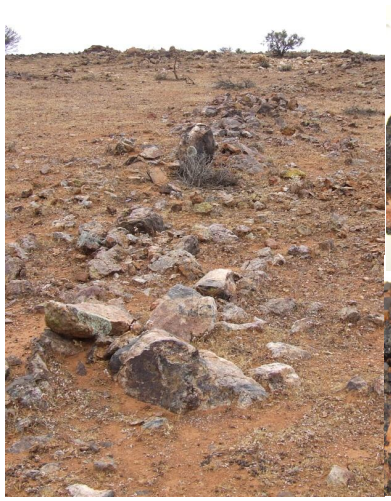
At the Hidden Treasure mine we were able to find some very well formed gahnite crystals up to 1 cm in size. Over at the Nine Mile South mine we followed a quartz-gahnite reef that yielded excellent samples of sharp dark green gahnite crystals. Finally back at the Great Western mine we were able to find some copper mineralisation as we cracked open a few boulders.

While this was just a morning venture and was finished by one o'clock, being our final field trip for the year it was great to see a good turn-up for the excursion.

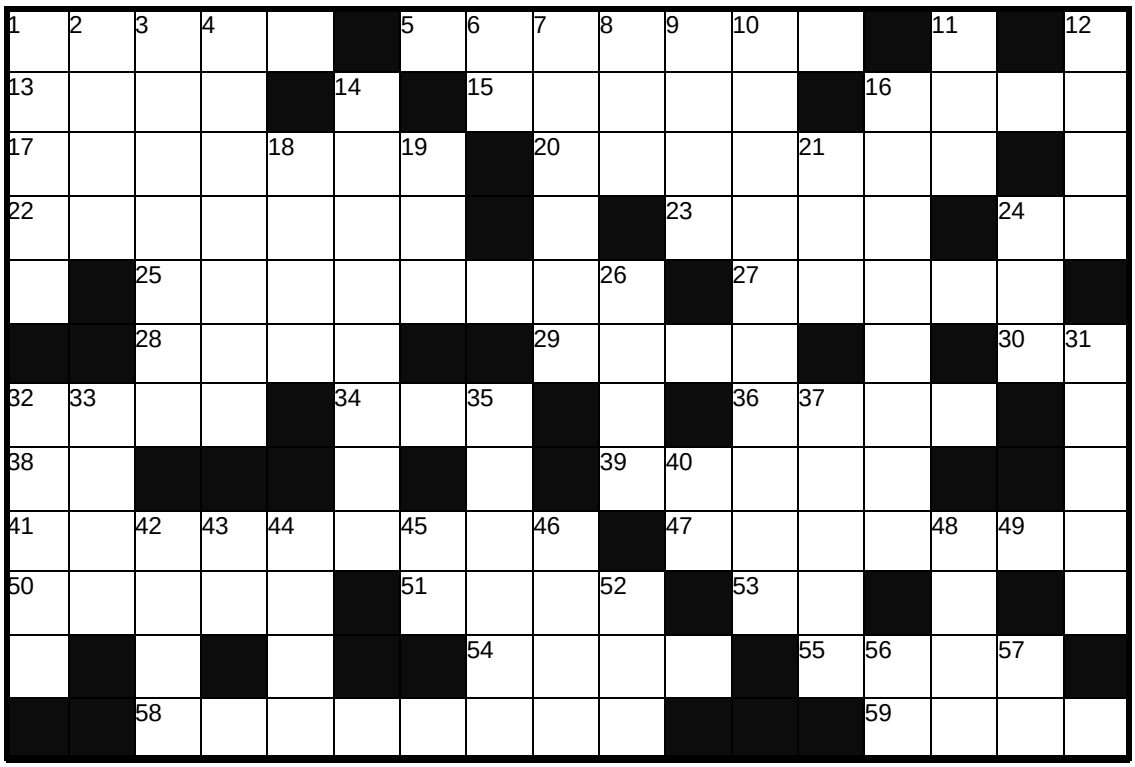
Below: Josie Hill and Ray Jones looking for gahnites at the Hidden Treasure mine.

Below: The quartz-gahnite reef at the Nine Mile South mine.

Below Right: Two samples of the gahnite crystals with quartz from the Nine Mile South mine



BLACKIES BRAINBUSTER - A Mineralogical crossword



Be Warned that this puzzle is not easy.

For people with nothing better to do (and a desire to test their knowledge of minerals) we offer the following mineralogical cross-word puzzle. Nearly all of the words in the puzzle are mineral names with the -*ite* suffix removed. But watch out-some names are obsolete or do not end in -ite anyway. The solution is available via the club email - just ask. In the meantime, cheaters are referred to Fleischer's Glossary, Hey's Mineral Index, Mindat and/or Google… Good Luck!

ACROSS

1. Named for a mine manager at Tsumeb
5. Arsenic trioxide
13. Ojuela mine analog of eveite
15. $Ni_9As_3O_{16}$ from Cornwall, England
16. _____ tlite; jurajupite is a magnesian variety
17. An aluminum phosphate named for an African country
20. Named for the mineralogist famous for his studies of liquid inclusions
22. $Sb_8O_{11}Cl_2$ from the Cetine mine
23. A lead sulfantimonide from Madoc
24. Chemical symbol for beryllium
25. Equals thorogummite from Western Australia
27. _____ cite; from the Greek for "newborn"
28. PbTe; named for a mountain range in Siberia
29. _____ pore
30. Chemical symbol for radium
32. The first mineral in Dana's classification
34. What sublimate minerals precipitate from
36. A lead oxychloride from Langban
38. "A new (old) common member of the tourmaline group"
39. _____ ooreite; named for a Chicago mineralogist
41. Named for a noted Franklin collector
47. Sodium-copper sulfate abundant at Chuquicamata
50. Named for the composition: iridium, arsenic and sulfur
51. Thorium silicate
53. _____ psum
54. _____ sonite; a nickel porphyrin
55. A potassium-zirconium silicate from Ascension Island
58. Green chlorite-like mineral found in Upper Michigan cupriferous amygdaloids
59. Named for the composition: a hydrated uranium-vanadium oxide

DOWN

1. Lead uranate-silicate from Katanga
2. A New York amphibole resembling tremolite
3. From the Greek for "luster"
4. Chromian beryl
6. Named after a ship which was named for an Egyptian god
7. Forms large peach-pink crystals at Mont St-Hilaire
8. What mineral collectors hate to see crystals treated as (spelled backwards)
9. Equals samarskite; "new mineral" in Spanish
10. Named for a town near Franklin, New Jersey
11. _____nubite; after the Roman name for Cornwall
12. Blue cubes from Baja
14. $CoTe_2$; named for a lake in Quebec
16. Yttrium phosphate
18. Named for a curator at the Royal Ontario Museum
19. _____lingite (German spelling); $FeAs_2$
21. _____rite; named for a co-author of *Rock-forming Minerals*
24. ___ ax
26. ____ tase
31. $PbBi_2Te_2S_2$; from the Alekseev mine, USSR
32. Equals meliphanite
33. Named for the Red Cloud mine's most successful collector
35. From the Sanskrit name for Ceylon
37. British mineral dealer Brian _____
40. _____ erite; variety of spinel
42. Stolzite dimorph in fine crystals from Broken Hill, Australia
43. Chemical symbol for strontium
44. ____ ebite; named for a famous African locality
45. Chemical symbol for astatine
46. ____ eite; hydrate calcium borate from Furnace Creek
48. Forms a series with danalite
52. _____ erite; named for an Austrian geologist
56. Chemical symbol for gold
57. _____g; synthetic yttrium aluminum garnet

From the Mineralogical Record Mar-April 1987

The Broken Hill Mineral Club Presents...

BROKEN HILL GEM & mineral show "rock-on" 2009

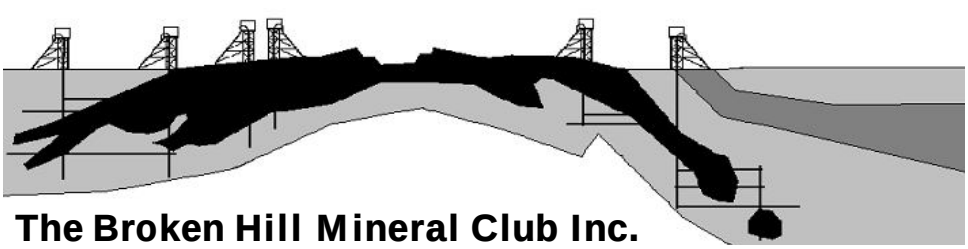
When : 24th - 28th September 2009

Where : Broken Hill Events Centre, Racecourse Road, Broken Hill NSW.

An invitation to all mineral, gemstone, or lapidary enthusiasts to come to Broken Hill in the Australian outback...

- To set up a stall, to buy, sell or trade minerals, gemstones and lapidary items.
- To see the sights of the historic Silver City and the surrounding district including Silverton with its focus on the arts and crafts of the outback.
- To meet up with old mineral and gemstone collector friends or make new ones from clubs Australia and World wide.
- To go on organised mineral fossicking trips within the mineralogically diverse Broken Hill district.

Camping facilities available on site.
Caravan Parks, Motel / Hotel
accommodation available in Broken Hill.



The Broken Hill Mineral Club Inc.

BROKEN HILL MINERAL CLUB

BROKEN HILL MINERAL CLUB INC. (ABN:11502101481)

MEMBERSHIP RENEWAL 2009

TO THE TREASURER:

Please find enclosed my 2009 subscriptions for membership to the BROKEN HILL MINERAL CLUB INC.

NAME: _____

ADDRESS: _____

_____

POSTAL ADDRESS: _____

_____

PHONE: Home _____ Work _____

EMAIL: _____

☐	Full Membership	$25.00
☐	Associate Membership *	$15.00
☐	Junior Membership (12-16 years)	$5.00
☐	Family Membership	$40.00
☐	Newsletter Subscription only	$5.00

** Only residents outside of the Broken Hill district may apply for Associate membership.*

☐ Enamelled Club Membership Badge – with blue background yellow writing and cerussite motif – @ $ 3.00 each

Quantity (please circle) 1 2 3 4 5

Committee Use Only

Receipt Number: _____

Date Received: _____

Records Updated: _____

Signed

Treasurer

Secretary