



Mineralogical Society of Western Australia (inc.)

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Forward Diary
2002

Presidents Report

Well another year has past and our AGM is almost upon us. The 2001/2002 year has been one of growth and consolidation for our Society. Considering we have only been in existence for a little over two years I feel that we have accomplished a great deal.

The past twelve months has seen an improvement in our modest finances, (please do not forget subscriptions are due) establishment of our newsletter, (the Hon editor requires submissions) a Society logo was chosen, a number of fieldtrips were arranged and an interesting lecture series was conducted. All of which was the result of the efforts of our enthusiastic team of committee members. I remind members that nominations for next years committee are due and elections will be held at the AGM, active participation is essential for the success of the society. I would like to take the opportunity to thank John for his continued administrative expertise, Jeff for his editorial skills, Mark for his tireless search for collecting localities and Ted for his input and support.

The committee has been actively preparing guidelines and groundwork for the Joint Mineralogical Societies Seminar in Kalgoorlie in 2005. I urge all members to offer some comment and input, we will need to set up a working group to oversee the organization of the event. The venue has been arranged – The Australian Prospectors and Miners Hall of Fame, the date is the June long-weekend in 2005 and the format will be one day of pre seminar and one day of post seminar fieldtrips and two days of seminars a dinner and a mineral swap and sell. We hope to provide a fieldguide to the localities visited which as I understand has not been done before as well as publish a volume on the mineral deposits of a number of 1:250000 sheets in the Kalgoorlie region. Fieldtrips will include visits to pegmatite, nickel and gold deposits. Turning to our lecturers and our occasional lecture series on specific mineralogical topics. I have received some very positive feedback from members concerning Professor Peter Williams recent lecture. Our thanks go to Peter, I have asked him to make a return performance.

The following timetable for our series on mineralogical topics is;
Mineral chemistry an introduction – Peter Clark - August
Physical properties of minerals – Ted Fowler – October
Mineral associations – Mark Jacobson – 2003
Mineral classification – Roger Staley – 2003
The rock forming minerals - Peter Clark –2003
The ore minerals - Peter Clark -2003

Finally I would like to thank all of our members for their support over the past year.

February 6th
Club Meeting

April 3rd
Club Meeting

June 5th
Club Meeting

August 7th
Annual General Meeting

October 2th
Club Meeting

December 4th
Club Meeting

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Small Scale Gold Mining in the Yilgarn Goldfield 1980-1986

Joseph Cole

Introduction

The purpose of this talk is to introduce members to the rapidly vanishing enterprise of "one man mining shows". The writer was fortunate enough to be part of the end of the era of amateur gold prospectors, who armed with dreams, a love of the bush, stubbornness and a few tools, sought that usually elusive "rich patch". To those members who have never worked mining leases, the writer attempts to convey the challenges faced by an amateur prospector in small scale mining.

Location

The area under consideration is located in the Yilgarn Goldfield within the old Kennyville mining centre, approximately 12 kilometers south of Southern Cross. Originally part of the 'Battler' group of leases, the lease was pegged in 1980 and renamed the 'Virginia Charlotte' after the writer's youngest daughter.

Mining History

The Western Australia Mine Department records show that mining in this general area commenced in 1910 and continued intermittently until 1940. No significant activity is known from the end of World War II until the writer's activity in 1980, although substantial activity was being carried out at other locations between Southern Cross and Marvel Loch, since the late 1960's.

Geological Setting

At this location, the country rock is a medium grained amphibolite with remnant igneous features, containing actinolite and/or hornblende. Pillow lava textures were observed in country rock on one of the old dumps. Close to the ore body, coarse grained amphibolite with 5 millimetre long actinolite crystals was common.

The ore bodies are quartz veins that pinch and swell, striking at varying angles west of north (295-330 degrees) and dipping at between 45 to 65 degrees to the northeast. Surface mapping indicates a major contact around 100 meters east of the area worked.

Prospecting Work -September 1980

Sampling of quartz veins to the northwest of the existing old mine workings yielded average values of 20 grams of gold per ton of ore. Initial sampling was carried out by dolly pot and later confirmed by assay. Based on this result, the southern part of the quartz vein on the licence was selected for further examination by excavating foot wall material to expose more quartz. The quartz vein width was around 200 millimetres. A decision was made to sink a shaft based on continued samples of vein material containing gold.

Mine Development

January 1981

I commenced sinking a shaft on the southern part of the vein using a Kango 950 hammer drill with AN60 gelignite and a No. 8 detonator fired by a combination of detonator cord and safety fuse. The length of the drill stem meant that the firing depth in the drill holes was limited to about 600 millimetres.

The shaft was collared using railway sleepers and haulage from the vein was achieved by a hand windlass and a 60 liter steel drum used as a kibble.

May 1981

By now, digging in the shaft had reached 7 meters deep and the ore body width at this level was 25 centimetres but this thickness was very variable in both the horizontal and vertical planes. The shaft dimensions were 1.5 metres square and the mullock to ore ratio was about 10:1. The shaft was reinforced with gimlet sets fixed with 200 millimetre deck spikes and set at 3 metre intervals. To hold back loose debris, the shaft walls were lined with corrugated iron sheeting reinforced by gimlet branches.

May 1983

A five ton parcel of ore was treated at the Marvel Loch State Battery and yielded a 150 gram gold bar; the ore thus averaged 30 grams of gold per ton.

October 1983

A 21 ton parcel of ore was treated at the Marvel Loch State Battery and yielded a 305 gram gold bar; the ore thus averaged 14.5 grams of gold per ton.

November 1983 - March 1984

This period was spent in a variety of activities including exploration of a 120 hectare Prospecting Licence pegged in the late 1983, costeaning along the northerly strike of the ore body, geologic mapping and sampling.

By 1984, further excavation resulted in the northern and southern shafts reaching 14 meter depths and all the accessible ore had been removed. The gold-bearing quartz had pinched out on the floor and barren quartz had taken over. Haulage below this depth would also become more difficult so alternative decisions had to be made on future development. I turned my attention to sampling and investigating the costeans previously dug in search of ore body extensions striking north of the northern and southern shafts.

The talk concluded with a demonstration of "panning off" a sample of dolly crushed ore to yield speckles of gold color and a small display of tools, rock samples and photographs. A future talk was suggested to cover the period 1984-86 and subsequent development of the lease.

Acknowledgements

I would like to acknowledge Peter Brady for his patience and skill as a "windlass driver", my daughters, Julia, Sarah and Virginia, for being my inspiration and Mineralogical Society members, John Reeve and Mark Jacobson, for their encouragement.

References

Department of Mines 1954. List of cancelled gold mining leases.
Geological Survey of Western Australia Bulletin 98, 1940.

Johnson well (Dollar well) lepidolite pegmatites, Yalgoo, WA

Mark Ivan Jacobson

During the June 2002, Exhibition of the Western Australian Lapidary & Rockhunting Club, in Rivervale, attractive polished slabs of fine-grained blue and purple lepidolite were offered for sale. These slabs were sold with only a label citing Yalgoo, WA as the source of the material. This report is to provide the details of the origin of this material.

Location

The lepidolite-bearing pegmatite strikes northwest-southeast for about 1 kilometre. Faulting has broken the pegmatite into isolated segments. The largest segment on the southeastern end of the pegmatite is located at 469,868 E and 6,880,440 N, AGD 1966, GPS measured. This location is just 100 metres east of the Gabyon-Carlaminda station border fence. The Dollar well of Watkins and Hickman (1990) is the same as the topographic map labeled Barry #2 well at 470,975 E and 6,878,425 N, AGD 1966, GPS measured. This lepidolite-bearing pegmatite was mapped and described as the Johnson Well pegmatites (Western Australia Mineral Exploration open file report WAMEX 4037). A geologic map of the pegmatite in the report indicates that the pegmatite crosses the fence line between the Carlaminda (on the east) and Gabyon Stations (on the west) midway between the southern Johnson well on the Gabyon Station to the northwest and the Barry #2 well to the southeast on Carlaminda Station.

The southern half of the pegmatite in September 2001 was covered by lease P59/1490, the former 6942, and was being mined by Eric McNess, 238 Burke Drive, Attadale, WA 6156 working as Jaloro Pty. Ltd. The western half of the pegmatite is within the former 6943, and appeared to be unleased in January 2002.

Directions

From the Yalgoo Hotel-Motel-Bar, travel on the Yalgoo North road northward 8.3 kilometres to the Carlaminda Station headquarters sign. Continue northward for 4.45 kilometres to a western (left side) road turnoff at 474,108 E and 6,876,021 N, AGD 1966. Turn onto this dirt track and travel 4.65 kilometres to the Barry #2 well.

At the Barry #2 well (470,975 E and 6,878,425 N), the dirt track makes a strong turn west (left) on the north side of the well. Travel west on the track for 1 kilometre to a blue painted metal sign labeled "Jaloro 2 km". The track after the sign curves northward (right) until it parallels the north-south station border fence. The pegmatite where it crosses the station border is 2.1 kilometres after the Jaloro sign. From this location, the year 2001 pegmatite excavation can be seen to the east about 150 metres (right). This route, although quite easy to drive is not allowed by the Station owner since it disturbs the sheep.

The preferred access route, used by the license holder is via a more northern dirt track. This route can be reached by traveling 19.05 kilometres north of the Yalgoo Hotel on the Yalgoo North road to a western turnoff (475,514 E and 6,881,735 N), also identified by a blue metal signed labeled Jaloro. Travel on this west-bearing road for about 5 kilometres until the pegmatite is reached.

History

The pegmatite was probably recognized during the early prospecting years of 1913-1923, but was not mined. Simpson (1948, V 3, p. 59) stated that his impression after several visits to the pegmatite field, circa 1922-23, was that lepidolite is quite rare, but he never specifically described this pegmatite. The oldest known geologic map of the pegmatite was made in 1968 by I. Lewis of Placer Prospecting Pty. Ltd. During the period 1981 - 1989, West Coast Holdings Ltd. held a license on the pegmatite. Their work included geologic mapping, rock chip drilling and chemical analysis. The pegmatite drill holes only indicated an average maximum of 7550 ppm rubidium, 579 ppm cesium, 2307 ppm lithium, 200 ppm tin and 299 ppm tantalum from a 2.3 - 2.6 metres wide pegmatite. They concluded that the pegmatite was too small to be economic for either rubidium or tantalum and dropped the license in 1990 (Western Australia Geological Survey open file report WAMEX 4037). Watkins and Hickman (1990, p. 229) cited a lepidolite-bearing pegmatite 2-3 km northwest of Dollar Well, which they referred to as the Dollar Well lepidolite pegmatite.

In September 2001, the eastern half of the pegmatite, the former 6942, was under lease P59/1490 by Eric McNess (23 Burke Drive, Attadale) and Louis James (84 Leake St., Belmont, WA 6104). The western half of the pegmatite is within the former 6943. Eric McNess has broken up the easternmost pegmatite segment into small piles of pegmatite debris. He is attempting to mine the thick, fine grained lepidolite masses, referred to by him as "blue rock," for export to China or Japan to use in carving. As of January 2002, no material has been exported. Meanwhile, he has been distributing polished slabs of the material to rock and lapidary shops in the Perth-Bunbury area.

Geology

The Johnson Well pegmatite was discordantly intruded into felsic volcanic, volcanoclastic and schistose metasediments of Archaean age. The pegmatite is approximately 860 metres long, but has been faulted into at least four major segments. The mining that has been done during 2001 occurred on the easternmost segment. The pegmatite appears to be almost flat lying, and poorly zoned into mostly albitic zones with associated microcline or albitic zones associated with purple micas of varying crystal size.

Fine-grained, bright purple to blue lepidolite masses in sugary albite is quite common. Ball lepidolite as 1-2 centimetre balls, and similar sized flat mica masses are also relatively common. A black metallic crystal, probably a tantalum mineral, was observed only once, in a matrix of coarse grained, whitish microcline and milky to gray quartz.

Mineralogy

The pegmatite contains "lepidolite" (fine grained, medium grained, ball), albite (sugary and cleavelandite), quartz, microcline, "tantalite" and muscovite. On analysis, the lepidolite contains 1.8% Li, so the purple mica is probably a lithian muscovite.

Paynes Find Field Trip July 2002.

Do you all know that feeling of anticipation that you get prior to a field trip. I mean about finding some really nice specimens, well the truth of it is that reality soon sets in and you find that it is just plain hard work or hard luck because it isn't that easy to come up with the goods. Especially when the mine site has been worked for the same minerals that you are looking for. So I commiserate with anyone who like me was not successful. However I am thankful to all those who made it along, as they were excellent company and made for a most enjoyable weekend. I do believe that I enjoy the opportunity to get away from the city as much as anything else and all was not in vain as on our last day we found some very fine grained Lepidolite which polishes up nicely. Also on the return trip we stopped off at another location and found some specimens of Molybdenite and Fluorite to add to our collection of West Australian localities.

Ed.

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Joining Fee \$5.00
Adult Member \$20.00
Newsletter only \$15.00

An application form for membership can be obtained by writing to: -

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Ordinary meetings of the Society are held on the 1st Wednesday in February, April, June, August, October and December in the **W.A. Lapidary and Rock Hunting Club rooms 31 Gladstone Street Rivervale**, commencing at 7.30pm. The January meeting will involve social activities at a time and place to be notified.

Visitors are most welcome

Newsletter of the Mineralogical Society of Western Australia
13 Buchan Place, Hillarys, 6025
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OUR SOCIETY'S MISSION

To encourage mineralogical study by amateur and professional alike and, in so doing, discover, document and preserve the earth's and in particular Western Australia's natural history.

OBJECTIVES

Whilst focusing on the minerals of Western Australia, the overall objectives of the Society shall be:

- (a) To advance the science of mineralogy.
- (b) To disseminate knowledge of minerals, their occurrence and associations.
- (c) To establish and maintain a register of mineral species and their occurrences in Western Australia.
- (d) To increase knowledge of related fields of earth science.
- (e) To keep members abreast of developments in mineralogy.
- (f) To encourage an appreciation of the aesthetic value of minerals.
- (g) To promote the proper care and preservation of mineral specimens.
- (h) To promote the conservation of the geologically unique and of the environment in general.
- (i) To provide a means of contact between professionals and amateurs in the various fields of the earth sciences.
- (j) To foster a sense of cooperation and understanding between individuals, institutions and resource companies in the field of mineralogy.
- (k) To provide a forum for debate and discussion on matters relating to mineralogy.

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